

DECnet-RSX

Guide to Network Management Utilities

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Preface

The *DECnet-RSX Guide to Network Management Utilities* presents information needed to use the utilities that manage a DECnet-RSX node within a DECnet network. The term "DECnet-RSX" collectively refers to four DECnet products:

- DECnet-11M, which runs on RSX-11M
- DECnet-11M-PLUS, which runs on RSX-11M-PLUS
- DECnet-Micro/RX, which runs on Micro/RX
- DECnet-11S, which runs on RSX-11S

This manual also describes network management utilities for RSX-11 PSI and DECnet-RSX/PSI. The term "DECnet-RSX/PSI" refers to an RSX system that runs RSX-11 PSI and DECnet-RSX simultaneously.

The utilities described in this manual are used to manage DECnet-11M V4.3, DECnet-11S V4.3, DECnet-11M-PLUS V4.0, and DECnet-Micro/RX V4.0 nodes. You can use these utilities to manage both local and remote DECnet systems, which may be other than RSX based. Although Phase IV DECnet provides for cross-system network command operation, there are also some system-specific commands. RSX system-specific commands are flagged in the *DECnet-RSX Network Management Pocket Guide*. For implementations other than DECnet-RSX, refer to the network documentation for that system.

Intended Audience

This manual is intended for anyone who is responsible for building, maintaining, and managing the network. In this manual, all such people are collectively referred to as the "network manager".

Structure of This Manual

This manual is tab divided into four distinct parts. The parts and their contents are summarized in the following sections.

Part I CFE, NCP, and VNP

Chapter 1 Network Management Utilities (CFE, NCP, VNP)

Describes the format, parameters, and usage of all CFE, NCP, and VNP commands.

Part II Network Management Tools

Each of the chapters in Part II describes the operation of a network management tool, including commands for its operation and examples of its use and/or output (where applicable).

Chapter 2 Console Carrier Requester (CCR)

Chapter 3 Event File Interpreter (EVF)

Chapter 4 KMX/KMY/KMV Dump Analyzer (KDA)

Chapter 5 LAT Control Program (LCP)

Chapter 6 Network Crash Dump Analyzer (NDA)

Chapter 7 Network Display Program (NTD)

Chapter 8 Queue Manager (QUE)

Chapter 9 Trace Interpreter Task (TRI)

Chapter 10 Proxy Access

Part III Error Messages

Chapter 11 Utility Error Messages

Summarizes all error messages for the following tools and utilities: CCR, CFE, EVF, HLD, LCP, NCP, NDA, NTD, NTINIT, NTL, TRI, VNP.

Part IV Appendixes

Appendix A Process Names

Lists the valid process names for DECnet-RSX/PSI.

Appendix B Object Type Codes

Lists the object type codes currently in use.

Associated Documents

Before reading this manual, you should have a working knowledge of DECnet and the RSX-11 operating system you are using. A prerequisite to the effective use of this manual is familiarity with the overall character of DECnet and RSX-11 PSI as described in the following manuals:

DECnet-RSX Network Management Concepts and Procedures

Introduction to RSX PSI

RSX-11 PSI System Manager's Guide

Network generation and postinstallation checkout procedures are described in the following manuals:

DECnet-RSX Network Generation and Installation Guide

RSX-11 PSI Generation Guide

Local Area Transport (LAT) Architecture Network Manager's Guide

Acronyms

The following acronyms for DECnet-RSX and RSX-11 PSI components are used in this manual:

ACK	Positive acknowledge message
BCUG	Bilateral closed user group
CCB	Communication control buffer
CCITT	Comite Consultatif International Telephonique et Telegraphique

CCR	Console carrier requester
CCS	Console carrier server
CDA	Crash Dump Analyzer
CEX	Communications Executive
CFE	Configuration File Editor
CSR	Control status register
CUG	Closed user group
DAP	Data Access Protocol
DCB	Device control block
DCE	Data circuit-terminating equipment
DDCMP	Digital Data Communications Message Protocol
DDM	Device driver module
DLC	Data link control process
DLL	Down-line system loader
DLM	Data link mapping
DLX	Direct line access controller
DNA	Digital Network Architecture
DSR	Dynamic storage region
DE	Data terminal equipment
DTR	DECnet test receiver
DTs	DECnet test sender
DUCK	Dump KMX task

DOOM	Up-line system dumper
ECL	End Communication layer
EPM	Ethernet Protocol Manager
EVF	Event File Interpreter
EVL	Event Logger
EVR	Event-logging receiver
FAL	File Access Listener
FRMR	Frame reject error
FTQ	File transfer queue manager
FTS	File Transfer Spooler
HLD	Host Task Loader utility
ICB	Interrupt Control Block
KDA	KMX/KMY/KMV dump analyzer
KRB	Controller request block
LAPB	Link access procedure, Version B (CCITT recommendation for frame level protocol)
LAT	Local Area Transport
LCP	LAT Control Program
LDB	Large data buffer
LLC	Logical link control process
LUN	Logical Unit Number
MIR	Loopback Mirror
MOP	Maintenance Operation Protocol

NAK	Negative acknowledgment message
NCP	Network Control Program
NDA	Network Crash Dump Analyzer
NFT	Network File Transfer utility
NICE	Network Information and Control Exchange Protocol
N(R)	Next expected sequence number
NS	DECnet user interface pseudodevice
NTD	Network Display Program
NTDEMO	Network Display Server
NTINIT	Network initializer
NTL	Network loader
NW	RSX-11 PSI user interface pseudodevice
ODT	On-line debugging tool
PIP	Peripheral Interchange Program
PLI	Packet level interface
PSDN	Packet Switching Data Network
PSI	Packetnet System Interface
PSIPAD	Host-based PAD
PVC	Permanent virtual circuit
QUE	Queue manager
RAM	Random access memory
RDB	Receive data buffer

RNR	Receive not ready
SCB	Status Control Block
SDB	Small data buffer
SLD	Satellite task loader
SVC	Switched virtual circuit
TDM	Time-division-multiplexed bus
TKB	Task builder
TRI	X.25 trace interpreter task
UCB	Unit Control Block
UFD	User file directory
UIC	User identification code
UMR	UNIBUS mapping register
URB	User Request Block
VMR	Virtual Monitor Console Routine
VNP	Virtual Network Processor
XDT	Executive Debugging Tool
XPT	Routing layer

Conventions Used in This Guide

Convention	Meaning
Special type	Special typeface is used for examples of system output (in black) or user input (in red).
[]	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.
{ }	Braces indicate that you must choose one, and only one, of the enclosed options. Do not type the braces when you enter the command.
()	Parentheses enclose a set of options that must be specified together or not at all.
Options in lists	The absence of brackets around vertical lists indicates that the items are optional.
UPPERCASE	Indicates text that must be entered as shown. Uppercase words can be abbreviated to the first 3 or more unique characters.
<i>lowercase italics</i>	Indicate generic terms that must be replaced with specific data.
key	Indicates that you should press the specified key. CTRL/x indicates that you should press the CONTROL key and the <i>x</i> key simultaneously. Unless otherwise indicated, every command line is terminated by pressing the RETURN key.
Gray shaded text	Indicates commands or parameters that are valid for RSX-11 PSI users only.
Red shaded text	Indicates commands or parameters that are valid for DECnet-11M-PLUS and DECnet-Micro/RSX systems only.
All numbers are decimal unless otherwise noted. All Ethernet addresses are given in hexadecimal.	

CFE, NCP, and VNP

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Network Management Utilities (CFE, NCP, VNP)

This chapter describes the network management utilities and summarizes their commands. CFE commands modify the permanent database, while NCP commands modify the volatile (running) database. VNP commands are used to modify the system image file. VNP is not supported for Micro/RSX systems. Each utility is described here, including how to invoke it and how to exit from it. Details on how to use the commands and individual command descriptions follow.

1.1 Configuration File Editor (CFE)

The Configuration File Editor (CFE) is a privileged utility program that accepts commands from a terminal or from an indirect command file to modify or display parameters in the configuration file, CETAB.MAC, which is produced during network generation. CFE commands operate exclusively on the permanent database. Note that all CFE commands are privileged. To invoke CFE, you must be privileged to access the CETAB.MAC file.

1.1.1 Invoking CFE

Before invoking CFE, you must know the device and UIC under which CETAB.MAC resides. After network generation, CETAB.MAC resides under one of the following UICs:

DECnet-RSX-11M/M-PLUS [x,54]

DECnet-RSX-11S [x,64]

where *x* is the network UIC selected during network generation.

There are two ways to invoke CFE:

1. MCR>RUN CFE (RET)

CFE then prompts

Enter filename:

Enter the name of the configuration file you want to modify. If you omit any part of the file specification, the default is SY:[*current-uid*]CETAB.MAC. The CFE utility reads the specified file and constructs a memory-resident version of this file. For large configuration files this process takes several seconds.

CFE then prompts

CFE>

Enter your CFE command after the prompt and press (RET).

2. MCR>CFE *command-file* [/TR] (RET)

where *command-file* is the name of an indirect command file containing CFE commands and /TR is an optional switch that allows you to trace the commands as they execute. You can nest command files.

1.1.2 Exiting CFE

There are three ways to exit CFE:

1. Use the EXIT command or (CTRL/Z) in response to the CFE prompt to terminate an editing session and update the configuration file.

CFE>EXIT (RET)

MCR>

2. Use the EXIT PURGE command in response to the CFE prompt to terminate an editing session, update the configuration file, and delete the old file.

CFE>EXIT PURGE (RET)

MCR>

3. Use the KILL command in response to the CFE prompt to abort an editing session. The configuration file is not updated, and the old file is retained.

CFE>KILL (RET)

MCR>

1.2 Network Control Program (NCP)

The Network Control Program (NCP) is a utility program that accepts commands from a terminal or from an indirect command file to load, control, monitor, and test the network software, as well as to down-line load an RSX-11S system.

There are two versions of NCP: a full set of commands for DECnet-11M and M-PLUS systems and a subset of these for DECnet-11S. Both sets of commands are described in detail in this chapter and are summarized in the *DECnet-RSX Network Manager's Pocket Guide*.

You can execute most NCP commands both locally and remotely (see Section 1.2.3). The *DECnet-RSX Network Manager's Pocket Guide* lists all NCP commands supported by DECnet-RSX and flags those that are not executable remotely. It also highlights those commands that are specific to DECnet-RSX only.

1.2.1 Invoking NCP

There are three ways to invoke NCP:

1. MCR>NCP (RET)

NCP then prompts

NCP>

Enter your NCP command after the prompt and press (RET).

2. MCR>NCP *command* (RET)

where *command* is any valid NCP command. With this method, you return to MCR after the command is executed.

3. MCR>NCP **command-file* [/TR] (RET)

where *command-file* is the name of an indirect command file containing NCP commands and /TR is an optional switch that allows you to trace the commands as they execute. You can nest command files.

1.2.2 Exiting NCP

Use either the EXIT command or (CTRL/Z) in response to the NCP prompt to exit NCP.

1.2.3 Executing NCP Remotely

Most DECnet-RSX NCP commands can be issued at your terminal for execution at any Phase IV or Phase III remote node. In addition, you can issue many NCP commands not executable by DECnet-RSX. This allows you to use NCP commands that are supported by other DECnet implementations but not by DECnet-RSX. For more information about these other NCP commands, see the DECnet documentation of the remote node.

Remote command execution is useful in many ways; for example, you can use it to modify parameters or display information at a remote node, or you can down-line load a node that is not adjacent to your system. Remote execution can be accomplished in two ways:

- To execute a single NCP command at a remote node, issue it with the TELL prefix (see the TELL command description in this chapter). The *DECnet-RSX Network Manager's Pocket Guide* summarizes all NCP commands and flags the few that cannot be executed with the TELL prefix.
- To execute a series of NCP commands at a remote node, use the SET EXECUTOR NODE command to temporarily set a specified remote node as the executor. Any subsequent commands that you issue are executed at that node until you return execution to your own node by issuing a CLEAR EXECUTOR NODE command. (Both commands are described in this chapter.) If you exit NCP, control automatically reverts to the local node.

When you issue commands to be executed at a remote node, you may have to specify access control information to access the node. You can append the access control information to the node name, or you can specify an alias node name that includes access control information. Section 1.5.2 provides more information on the format of access control information.

The remote node interprets all commands according to its own network management software and uses any required default parameters from its own database. Therefore, you must issue the command as if it were originating at the remote node. Consult the appropriate DECnet documentation if the node is other than DECnet-RSX.

1.3 Virtual Network Processor (VNP)

The Virtual Network Processor (VNP) is a privileged utility program. VNP is not supported on Micro/RSX systems. It accepts commands from a terminal or from an indirect command file to modify or display the DECnet-RSX software configuration as contained in an RSX-11 system image file. All VNP commands are privileged and operate exclusively on the system image file. VNP does not support commands that cause displays to be written to a file.

Before using VNP, you must use the Virtual Monitor Console Routine (VMR) to set the NETUIC in the RSX system image file. Use one of the following commands:

VMR> SET /NETUIC = [xxxx,54] (for RSX-11M/M-PLUS)

VMR> SET /NETUIC = [xxxx,64] (for RSX-11S)

VNP uses the NETUIC when it searches for the network software on the LB: device. Therefore, it is imperative that the proper NETUIC be set in the system image file and that LB: be assigned.

1.3.1 Invoking VNP

There are two ways to invoke VNP:

1. MCR> RUN VNP (RET)

VNP prompts

Enter filename:

Enter the name of the operating system file you want to modify. If you do not specify the device and UIC, the SY: device and the current UIC are used. (There is no default file name.) VNP then prompts

VNP>

Enter your VNP command after the prompt and press (RET).

2. MCR> VNP * *command-file* [/TR] (RET)

where *command-file* is the name of an indirect command file containing VNP commands and /TR is an optional switch that allows you to trace the commands as they execute. You can nest command files.

1.3.2 Exiting VNP

Use either the EXIT command or **CTRLZ** in response to the VNP prompt to exit VNP.

1.4 Using the Network Management Utility Commands

The following sections contain general information on command usage.

1.4.1 General Command Format

Most commands consist of three parts: the command verb, a component on which the command operates, and one or more parameters that further qualify the action to be taken on the component. Examples of the general command format follow.

Command Verbs	Components	Parameter Lists
CLEAR	EXECUTOR	HOST RECEIVE PASSWORD TRANSMIT PASSWORD
CLEAR	{LINE <i>line-id</i> KNOWN LINES}	{ALL COUNTER TIMER}

For each command, you must supply the verb, one component option, and (usually) one or more of the parameters. Generally, the order in which you specify parameters does not matter. However, some commands have parameters that are mutually exclusive for the component. For example, in the CLEAR LINE command, you must select either ALL or COUNTER TIMER (as indicated by the braces), whereas you can select one or more of the parameters for CLEAR EXECUTOR. On many of the SHOW and LIST commands, you do not have to specify any parameters because there is a default. The system will prompt you if you omit a required parameter.

1.4.2 Issuing Commands

Enter the command keywords separated by spaces.

Continuing a command. To continue a long command to the next line, insert a hyphen (-) where you wish to break the line; then enter (RET). You can continue the command following the prompt on the next line.

Example:

```
CFE>DEFINE LINE DZ-1-2 DUPLEX FULL SPEED 9600 (RET)
CFE>VECTOR 360 CSR 160120 (RET)
CFE>
```

Any necessary spaces in the command must be entered even if one occurs just before the hyphen.

Abbreviating command keywords. When entering a command, you can abbreviate any keyword to the first three or more unique characters. For example, the following two versions of the same command are equally valid:

```
NCP>SHOW MODULE X25-ACCESS ALL DESTINATIONS CHARACTERISTICS
NCP>SHO MOD X25-A ALL DES CHA
```

Note that X25-ACCESS is abbreviated to the first five unique characters to differentiate it from other entities beginning with the X25- character string. For clarity and consistency, all examples in this manual show the full command syntax.

Entering comment lines. You can enter comment lines by prefacing each line of text with a semicolon (;).

1.4.3 Using the Help Facility

Use the HELP command whenever you need assistance in selecting network management commands and parameter options. Execution of this command by any of the three utilities causes a summary of help text to be displayed.

Example:

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

Use the HELP keyword with a selected command and/or component to display the portion of the help file relevant to that command.

Example:

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

1.4.4 Command Prompting

Command prompting provides additional assistance when using network management commands. At any point where you can type a space, press **(RET)** instead. This produces a prompt requesting the required information. If you need additional information after a prompt, you can press **(ESC)** to display additional help information.

Example:

```
NCP>SET (RET)  
Set component: (ESC)
```

Options are:

ALIAS	KNOWN CIRCUIT	LOGGING	PROCESS
CIRCUIT	KNOWN LINES	NODE	SYSTEM
EXECUTOR	LINE	OBJECT	

1.4.5 Using the LIST and SHOW Commands

NCP, CFE, and VNP provide commands that enable you to display information about network components on your terminal. NCP provides the additional capability of sending display information to a file.

For more information about the SHOW and LIST commands and examples of the type of information displayed by these commands, see the *DECnet-RSX Network Management Concepts and Procedures* manual.

1.4.6 Exit Status and Error Handling

When CFE, NCP, or VNP terminates, it sets a bit that can be inspected using the normal RSX exit status handling techniques described in RSX-11M/M-PLUS operating system documentation. The utility sets the exit status to indicate the worst case for the commands executed. The exit status is especially useful when used in conjunction with the indirect command file processor's support of this operating system feature. The possible values and their meanings are summarized in the following table.

Status	Numeric Value	Meaning
Success	1	The command executed as requested.
Warning	0	Minor error. Processing continues.
Error	2	The command was accepted, but failed to execute completely. The system waits for a new command.
Severe Error	4	The command was not accepted. Processing stops and control returns to the monitor.

NOTE

The following NCP commands do not affect the exit status:

CLEAR EXECUTOR NODE
 EXIT (or **CTRLZ**)
 HELP
 SET EXECUTOR NODE

If the command executes successfully, you receive the utility prompt on the next line, whereupon you can issue another command. If the command is unsuccessful, you receive an error message on the next line indicating the reason for the error, followed by the utility prompt.

Example:

```
MCR>NCP RET
NCP>SET LINE DMC-0 TOP RET
NCP>LOAD NODE XYZ RET
NCP -- Load failed, line communication error
NCP>
```

Error messages for all three utilities are provided in Chapter 11.

1.5 Command Descriptions

The rest of this chapter is devoted to descriptions of the individual commands and their parameters. If you need more information on the command components or their parameters, refer to the *DECnet-RSX Network Management Concepts and Procedures* for a more detailed discussion.

Commands are presented in alphabetical order. The command name and the utility (or utilities) to which it applies are printed at the top of the page (many NCP and VNP commands have the same format and are described together). The full DECnet-RSX-11M/M-PLUS set is described first. The RSX-11S subset is described at the end of the chapter (NCP/S appears at the top of those pages). All commands are designated as privileged (P) or nonprivileged (NP) at the top of the page beneath the command name. On combined NCP/VNP commands, an NP designator applies to NCP commands only, as all VNP commands are privileged.

1.5.1 Graphic Conventions

Review the graphic conventions outlined at the front of this manual, especially the use of braces { } and brackets []. Text that is **shaded gray** indicates commands or parameters that are valid for RSX-11 PSI users only. Text that is shaded red indicates commands or parameters that are valid for DECnet-11M-PLUS and DECnet-Micro/RXS systems only.

1.5.2 Standard Definitions

The following parameters and user-supplied variables are frequently used in the command descriptions. They are described here to avoid needless repetition, and this section is marked by a gray border to help provide quick access for you. Exceptions to these definitions are indicated in individual parameter descriptions. More information about most of these parameters can be found in the *DECnet-RSX Network Management Concepts and Procedures* manual.

<i>acc-con-info</i>	Access control information in one of the following forms: <i>/user-id[/password[/account]]</i> USER <i>user-id</i> [PASSWORD <i>password</i> [ACCOUNT <i>account</i>]] NOTE: DECnet-RSX does not use the account field.
<i>alias-name</i>	An alternative name for a network node. 1 to 6 alphanumeric characters including at least 1 alphabetic character.
<i>area-number</i>	A decimal integer in the range of 1 to 63.
<i>circuit-id</i>	A DECnet circuit identification in the form <i>dev-c[-u].f</i> or an RSX-11 PSI circuit identification consisting of 1 to 6 alphanumeric characters.
<i>csr-address</i>	CSR address in the range of 160000 to 177774 (octal).
<i>dest-name</i>	An X.25 destination name consisting of 1 to 6 alphanumeric characters.
<i>dte-address</i>	A string of 1 to 15 decimal digits forming a DTE address.
<i>e-address</i>	An Ethernet address consisting of a string of 12 hexadecimal digits in the form <i>nn-nn-nn-nn-nn-nn</i> .
<i>event-list</i>	A list of events that belong to the same class, such as, <i>event-class.type</i> .
<i>file</i>	A file specification, which is interpreted according to the executor node's file system. The standard format for RSX is <i>dev:[uic] file-name.type.ver</i> .
<i>group-name</i>	An X.25 group name consisting of 1 to 6 alphanumeric characters.
<i>line-id</i>	A line identification in the form <i>dev-c[-u]</i> .
<i>node-address</i>	An area number followed by a period and a decimal integer in the range of 1 to 1023. When referring to the local area, the area number and period are optional.
<i>node-id</i>	A node name (see <i>node-name</i>) or node address (see <i>node-address</i>).

<i>node-name</i>	1 to 6 alphanumeric characters, including at least 1 alphabetic character.
<i>object-id</i>	An RSX task name (1 to 6 alphanumeric characters) or an object type code (see <i>type-code</i>).
<i>service-password</i>	A hexadecimal number used as a password for certain service requests. For DDCMP circuits, it is in the range of 0 to FFFFFFFF; for Ethernet circuits, it is in the range of 0 to FFFFFFFFFFFFFFFF (up to 16 hexadecimal digits).
<i>process-name</i>	A name of a DECnet-RSX process. The process name is 1 to 3 characters in length. For a list of valid process names, see Appendix A.
<i>range</i>	A subaddress range consisting of one or two 1- to 4-digit integers in the range of 0 to 9999. If you specify two subaddresses, they must be separated by a hyphen (-), and the second must be greater than the first (for example, 10-100). See RSX-11 PSI network-specific information for the maximum length of a subaddress on your network.
<i>type-code</i>	An object type code in the range of 1 to 255. Use an object type code from Appendix B.
<i>vector-address</i>	A vector address in the range of 0 to 774 (octal).
CHARACTERISTICS	(Default for CFE) Displays static information for the specified component. This type of information is automatically displayed for all CFE LIST commands.
COUNTERS	(NCP only) Displays error and performance statistics for the specified component.
STATUS	(NCP only) Displays dynamic information for the specified component.
SUMMARY	(Default for VNP and NCP, invalid for CFE) Displays only the most useful information for the specified component.
SCOPE <i>scope</i>	(Valid for privileged users only) Qualifies the extent to which the specified operation applies (default: requester's terminal). Possible values for <i>scope</i> are:
GLOBAL	The operation applies to all terminals.
TERMINAL <i>term-id</i>	The operation applies to the specified terminal only, where <i>term-id</i> is a standard RSX terminal device identification.
TO <i>file</i>	(Valid for NCP only) Directs output to the specified file or device at the local node (default: information displayed at the calling terminal). If you specify an existing file as output, the information is appended to that file. Information is transferred in ASCII in the same format as it is displayed at the terminal. (See the preceding description of <i>file</i> for format.)

1.5.3 RSX-11M/M-PLUS CFE, NCP, and VNP Command Summary

This section describes all of the CFE and NCP commands supported by RSX-11M/M-PLUS. VNP commands are described in tandem with the corresponding NCP command. RSX-11S NCP commands are described in Section 1.5.4.

NCP/VNP CLEAR ALIAS

CLEAR ALIAS (NP)

Use the NCP CLEAR ALIAS command to remove the specified alias node name(s) from the volatile database. Use the VNP command to do the same with the system image file.

Format:

```
CLEAR { ALL ALIASES  
        ALIAS alias-name  
        KNOWN ALIASES } [[SCOPE] scope]
```

where

ALL ALIASES (Valid for privileged users only) Removes all alias names.

ALIAS
alias-name Removes only the specified alias name.

KNOWN
ALIASES Removes all alias names for the specified scope.

SCOPE *scope* (Invalid for ALL ALIASES) See definition in Section 1.5.2.

Example:

```
NCP>CLEAR ALIAS NY5 SCOPE TERMINAL TT2: RET
```

This command removes the association of alias NY5 with terminal TT2:.

CLEAR CIRCUIT (P)

Use the CLEAR CIRCUIT command to zero the volatile parameters in the circuit database.

Format:

```
CLEAR (CIRCUIT circuit-id) COUNTER TIMER  
      [KNOWN CIRCUITS]
```

where

CIRCUIT
circuit-id Zeroes the counter timer for the specified circuit only.

KNOWN
CIRCUITS Zeroes the counter timer for all known circuits.

Example:

```
NCP>CLEAR CIRCUIT PVC1 COUNTER TIMER (RET)
```

This command zeroes the counter timer for circuit PVC1.

NCP/VNP CLEAR EXECUTOR

CLEAR EXECUTOR (P)

Use the NCP CLEAR EXECUTOR command to remove specified executor node parameters from the volatile database. Use the VNP command to do the same with the system image file.

Format:

```
CLEAR EXECUTOR  HOST  
                  RECEIVE PASSWORD  
                  TRANSMIT PASSWORD
```

where

HOST Removes identification of the host for the executor node. The executor then defaults to itself as host for service operations.

**RECEIVE
PASSWORD** Removes the executor node's receive password.

**TRANSMIT
PASSWORD** Removes the executor node's transmit password.

Example:

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

This command removes the receive password.

CLEAR EXECUTOR NODE (NP)

Use the **CLEAR EXECUTOR NODE** command to return NCP command execution to the local node after issuing an NCP **SET EXECUTOR NODE** command.

Restriction:

You cannot use the **TELL** prefix with this command.

Format:

CLEAR EXECUTOR NODE

Example:

```
NCP>SET EXECUTOR NODE BOS (RET)
```

.

.

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

The first command causes subsequent NCP commands to be executed at node BOS. The second command returns NCP command execution to the local node.

NCP/VNP CLEAR LINE

CLEAR LINE (P)

Use the NCP CLEAR LINE command to unload the specified line(s) and to remove all associated parameters from the volatile database. Use the VNP command to do the same with the system image file. You can also use the NCP command to zero the counter timer(s) for the specified line(s).

Restriction:

Before you unload a DECnet line, all circuits associated with the line must be in the OFF state (see SET CIRCUIT). Any line to be unloaded must also be in the OFF state (see SET LINE and SET KNOWN LINES).

Format:

```
CLEAR {LINE line-id } {ALL  
      {KNOWN LINES} {COUNTER TIMER}
```

where

LINE *line-id* Clears the specified line only.

KNOWN LINES Clears all known lines.

ALL Unloads the specified line(s) and removes all associated line parameters.

COUNTER TIMER (Invalid for VNP) Zeroes the counter timer(s) for the specified line(s).

Examples:

```
NCP> CLEAR LINE DMC-0 ALL (RET)
```

This command unloads DECnet line DMC-0 and removes all parameters associated with it, thus making DMC-0 unusable.

```
NCP> CLEAR LINE SDP-1 COUNTER TIMER (RET)
```

This command zeroes the counter timer for line SDP-1.

CLEAR LOGGING (P)

Use the NCP CLEAR LOGGING command to remove logging parameters from the volatile database. Use the VNP command to do the same with the system image file.

Restriction:

Whenever a circuit, line, module, node, or sink is specified in a CLEAR LOGGING command, an event list or KNOWN EVENTS parameter must also be included.

Format:

```

CLEAR { KNOWN LOGGING
        LOGGING CONSOLE
        LOGGING FILE
        LOGGING MONITOR } [NAME]
        [EVENTS event-list
        KNOWN EVENTS
        [CIRCUIT circuit-id
        LINE line-id
        MODULE { X25-PROTOCOL
                 X25-SERVER
                 X29-SERVER
        }
        NODE node-id
        SINK { EXECUTOR
               NODE { node-id
                     $HOST
               }
        }
        ] ] ]

```

where

KNOWN LOGGING	Removes parameters for all known logging components.
LOGGING CONSOLE	Removes parameters for the console logging component.
LOGGING FILE	Removes parameters for the file logging component.
LOGGING MONITOR	Removes parameters for the monitor logging component.
NAME	Returns the specified logging component to its default name (console: CO0::; file: LB:[1,6]EVENTLOG.SYS; monitor: MON...).

NCP/VNP CLEAR LOGGING

EVENTS <i>event-list</i>	Removes the event class and type(s) specified in <i>event-list</i> for the specified component.
KNOWN EVENTS	Removes all known events that DECnet-RSX can generate for the specified component.
CIRCUIT <i>circuit-id</i>	(Invalid for VNP) Inhibits event logging for the specified circuit (see restriction).
LINE <i>line-id</i>	Inhibits event logging for the specified line (see restriction).
MODULE	(Invalid for VNP) Inhibits event logging for the specified module (see restriction).
NODE <i>node-id</i>	Inhibits event logging for the specified node (see restriction).
SINK	Inhibits logging of the specified event(s) at the specified node (see restriction).
EXECUTOR	(Default) Events are not to be logged at the executor node.
NODE <i>node-id</i>	Events are not to be logged at the specified node.
NODE \$HOST	(Invalid for NCP) Events are not to be logged at the host node.

Examples:

NCP>CLEAR LOGGING CONSOLE EVENT 2.1 (RET)

This command ceases logging of event 2.1 to the console.

NCP>SET LOGGING CONSOLE EVENT 2.1 SINK NODE PHL (RET)

NCP>SET LOGGING CONSOLE NAME TT1: EVENT 2.1 STATE ON (RET)

NCP>CLEAR LOGGING CONSOLE EVENT 2.1 SINK NODE PHL (RET)

The first command in this example causes access control rejection events (2.1) to be logged on the console on node PHL. The second command enables logging of 2.1 events to TT1: on the local node. The third command reverts event logging to the local node only, and 2.1 events are no longer logged to the console on node PHL.

NCP

CLEAR MODULE X25-ACCESS

CLEAR MODULE X25-ACCESS

(P)

Use the CLEAR MODULE X25-ACCESS command to remove destination names from the volatile database.

Format:

```
CLEAR MODULE X25-ACCESS [ALL DESTINATIONS] [[SCOPE] scope]
                        DESTINATION dest-name
                        KNOWN DESTINATIONS
```

where

ALL
DESTINATIONS Removes all destination names, regardless of scope.

DESTINATION
dest-name Removes only the specified destination name.

KNOWN
DESTINATIONS Removes all destination names for the specified scope.

SCOPE *scope* See definition in Section 1.5.2.

Examples:

```
NCP>CLEAR MODULE X25-ACCESS ALL DESTINATIONS (RET)
```

This command removes all destination names.

```
NCP>CLEAR MODULE X25-ACCESS DESTINATION CUG111 TERMINAL TT2: (RET)
```

This command removes destination name CUG111 associated with terminal TT2:.

CLEAR MODULE X25-PROTOCOL (P)

Use the CLEAR MODULE X25-PROTOCOL command to zero the counter timer(s) for the specified DTE(s) or to remove from the volatile database all parameters for the specified DTE(s) or group(s).

Format:

```
CLEAR MODULE X25-PROTOCOL { DTE dte-address      [ALL  
                           KNOWN DTEs           [COUNTER TIMER] }  
                           { GROUP group-name      ALL  
                           KNOWN GROUPS          }
```

where

DTE <i>dte-address</i>	Clears the specified DTE only.
KNOWN DTEs	Clears all known DTEs.
GROUP <i>group-name</i>	Removes parameters for the specified group only.
KNOWN GROUPS	Removes parameters for all known groups.
ALL	Removes all parameters for the specified DTE(s) or group(s).
COUNTER TIMER	Zeroes the counter timer(s) for the specified DTE(s).

Examples:

NCP> CLEAR MODULE X25-PROTOCOL DTE 123456789 COUNTER TIMER (RET)

This command zeroes the counter timer for local DTE 123456789.

NCP> CLEAR MODULE X25-PROTOCOL KNOWN GROUPS ALL (RET)

This command removes parameters for all known groups.

NCP
CLEAR MODULE X25/X29-SERVER
CLEAR MODULE X25-SERVER
CLEAR MODULE X29-SERVER
(P)

Use the CLEAR MODULE X25/X29-SERVER commands to zero the counter timer or to remove the specified destination name(s) and all associated parameters from the volatile database.

Format:

```
CLEAR MODULE {X25-SERVER | X29-SERVER} {COUNTER-TIMER  
DESTINATION dest-name  
KNOWN-DESTINATIONS}
```

where

COUNTER-TIMER	Zeroes the server module counter timer.
DESTINATION <i>dest-name</i>	Removes parameters for the specified destination only.
KNOWN-DESTINATIONS	Removes parameters for all known destinations.

Example:

```
NCP>CLEAR MODULE X25-SERVER DESTINATION CHI205 ALL (RET)
```

This command removes all parameters for destination CHI205.

CLEAR NODE (P)

Use the CLEAR NODE command to remove specified node parameters from the volatile database on the local node. Use the VNP command to do the same with the system image file.

Restriction:

NAME is the only valid parameter for VNP.

Format:

CLEAR	NODE <i>node-id</i>	ALL CIRCUIT DIAGNOSTIC FILE DUMP ADDRESS DUMP COUNT DUMP FILE HARDWARE ADDRESS HOST LOAD FILE NAME SECONDARY LOADER SERVICE CIRCUIT SERVICE DEVICE SERVICE PASSWORD TERTIARY LOADER
-------	---------------------	---

where

NODE <i>node-id</i>	Specifies the node whose parameters are to be removed. You must use a node name if you are removing the circuit identification (see CIRCUIT parameter below).
ALL	Removes all parameters for the specified node. If you specify ALL, you cannot include any other parameters.
CIRCUIT	Removes the circuit identification associated with the node name for node level loopback testing.

NCP/VNP CLEAR NODE

DIAGNOSTIC FILE	Removes the identification of the down-line load diagnostics file.
DUMP ADDRESS	Removes the node's up-line dump address.
DUMP COUNT	Removes the up-line dump count.
DUMP FILE	Removes the up-line dump file identification.
HARDWARE ADDRESS	Removes the Ethernet address of the system hardware.
HOST	Removes the host node identification.
LOAD FILE	Removes the down-line load file identification.
NAME	Removes the node name associated with the specified node.
NODE CIRCUIT	Clears the assignment of a <i>node-id</i> to a circuit used for loopback testing. This command does not apply to Ethernet nodes.
SECONDARY LOADER	Removes the parameter associated with the file containing secondary loader software for down-line loading to the node.
SERVICE CIRCUIT	Removes the circuit parameter associated with the node for down-line load operations.
SERVICE DEVICE	Removes the service device type.
SERVICE PASSWORD	Removes the password parameter required to trigger the bootstrap mechanism.
TERTIARY LOADER	Removes the parameter associated with the file containing tertiary loader software for down-line loading to the node.

NCP/VNP CLEAR NODE

Example:

```
NCP>CLEAR NODE BOS ALL (RET)
```

This command removes all information for the node BOS from the volatile database.

NCP/VNP CLEAR OBJECT

CLEAR OBJECT

(P)

Use the NCP CLEAR OBJECT command to remove all object parameters from the volatile database. Use the VNP command to do the same with the system image file.

Format:

```
CLEAR {OBJECT type-code} ALL  
      {KNOWN OBJECTS}
```

where

OBJECT *type-code* Removes parameters for the specified object only.

KNOWN OBJECTS Removes parameters for all known objects.

ALL (Required for NCP; optional for VNP) Specifies that all parameters are to be removed.

Example:

```
NCP> CLEAR OBJECT 245 ALL (RET)
```

This command removes all parameters for object 245.

CLEAR PROCESS (P)

Use the NCP CLEAR PROCESS command to unload a process and remove all process parameters from the volatile database. Use the VNP command to do the same with the system image file.

Restrictions:

- You can unload a process only when it is not being used.
- If you clear NW from the volatile database and then reload it using NCP SET PROCESS, you must also issue the SET MODULE X25-PROTOCOL command (first with STATE OFF and then with STATE ON) to update the process pointers to the database.

Format:

CLEAR PROCESS *process-name*

where

PROCESS *process-name* Specifies the process to unload.

Example:

```
NCP>CLEAR PROCESS DLX (RET)
```

This command unloads the DLX process and removes all parameters associated with it.

NCP/VNP CLEAR SYSTEM

CLEAR SYSTEM (P)

Use the NCP CLEAR SYSTEM command to unload the Communications Executive, release any resources being used by the network, and remove all system parameters from the volatile database. Use the VNP command to unload the Communications Executive in the system image file.

Restrictions:

- You cannot use the TELL prefix with this command.
- Before you issue NCP CLEAR SYSTEM, the executor must be in the OFF state (see NCP SET EXECUTOR).
- If you are running RSX-11 PSI, the X.25 server module must be in the OFF state (see SET MODULE X25-SERVER), and the PSI line must be set OFF.

Format:

CLEAR SYSTEM

CLEAR TRACE (P)

Use the CLEAR TRACE command to stop tracing of RSX-11 PSI frames on the specified line(s). For more information on the trace interpreter task, see Chapter 9.

Format:

```
CLEAR TRACE (LINE line-id )
            (ACTIVE LINES)
```

where

LINE *line-id* Disables tracing on the specified line only.

ACTIVE LINES Disables tracing on all active lines.

Example:

```
NCP>CLEAR TRACE LINE SDP-0 (RET)
```

This command disables tracing of RSX-11 PSI frames on line SDP-0.

CFE

DEFINE CIRCUIT

DEFINE CIRCUIT

(P)

Use the DEFINE CIRCUIT command to modify circuit parameters in the permanent database. You can also use this command to create parameters for PVCs.

Restriction:

The values used for MAXIMUM DATA and MAXIMUM WINDOW must be the same as the packet size and window size agreed upon by the network authorities for the PVC.

Format:

```

DEFINE  (CIRCUIT circuit-id)
        (KNOWN CIRCUITS)

        CHANNEL channel-number
        COST cost
        COUNTER TIMER seconds
        DTE the-address
        HELLO TIMER seconds
        LEVEL ONE COST cost
        LEVEL TWO COST cost
        MAXIMUM BROADCAST ROUTERS number
        MAXIMUM DATA byte-count
        MAXIMUM RECALLS retry-count
        MAXIMUM WINDOW block-count
        MULTIPOINT ACTIVE active-ratio
        NUMBER the-address
        RECALL TIMER seconds
        ROUTER PRIORITY priority
        SERVICE (DISABLE)
                (ENABLE)
        STATE (OFF)
                (ON)
        TRIBUTARY trib-address
        USAGE (INCOMING)
                (OUTGOING)

```

where

CIRCUIT *circuit-id*

Modifies or creates parameters for the specified circuit only.

CFE DEFINE CIRCUIT

KNOWN CIRCUITS	Modifies (or creates) parameters for all known circuits.
CHANNEL <i>channel-number</i>	(DECnet DLM and RSX-11 PSI circuits only) Specifies the logical channel number for a PVC (range: 0 to 4095).
COST <i>cost</i>	(11M/S DECnet circuits only) Specifies the routing cost of the circuit. Messages will travel between nodes along the path with the smallest total cost (range: 1 to 25; default: varies according to circuit type).
COUNTER TIMER <i>seconds</i>	Sets a timer whose expiration causes the circuit counters to be logged and zeroed (range: 1 to 65,535).
DTE <i>dte-address</i>	(DECnet DLM and RSX-11 PSI circuits only) Specifies a local DTE for a PVC.
HELLO TIMER <i>seconds</i>	(DECnet circuits only) Specifies the frequency of routing hello messages sent to an adjacent node on the circuit (range: 1 to 8191).
LEVEL ONE COST <i>cost</i>	(Level 1 routers) Specifies the Level 1 routing cost of the circuit. Level 1 routes messages along the path between two nodes having the smallest cost (range: 1 to 25).
LEVEL TWO COST <i>cost</i>	(11M-PLUS area router only) Specifies the Level 2 routing cost of the circuit. Level 2 routes messages along the path between two areas having the smallest cost (range: 1 to 25).
MAXIMUM BROADCAST ROUTERS <i>number</i>	(DECnet Ethernet circuits only) Specifies the maximum number of routing nodes that an Ethernet circuit can maintain (range: 0 to 32; default: 5).

CFE DEFINE CIRCUIT

MAXIMUM DATA
byte-count

(DECnet DLM and RSX-11 PSI circuits only) Specifies the maximum packet size for a PVC. For DLM SVCs, this parameter specifies the maximum packet size to be negotiated with the network, if allowed. This parameter value must be at least 5 bytes less than the maximum data size specified for RSX-11 PSI lines (see DEFINE LINE). By default, packet size takes the network value specified by the MAXIMUM DATA parameter in the DEFINE MODULE X25-PROTOCOL command. See RSX-11 PSI network-specific information for the network value of this parameter (range: 16 to 4054).

MAXIMUM RECALLS
retry-count

(DECnet DLM circuits only) Specifies the maximum number of times that DECnet should attempt to place a call to establish an SVC (range: 0 to 255; default: 5).

MAXIMUM WINDOW
block-count

(DECnet DLM and RSX-11 PSI circuits only) Specifies the maximum number of blocks allowed to be outstanding on the circuit for RSX-11 PSI PVCs. For DLM SVCs, this specifies the maximum number of outstanding blocks to be negotiated with the network, if allowed. By default, window size takes the network value specified by the MAXIMUM WINDOW parameter in the DEFINE MODULE X25-PROTOCOL command. See RSX-11 PSI network-specific information for the network value of this parameter (range: 1 to 7).

MULTIPOINT ACTIVE
active-ratio

(DECnet non-DMP/DMV multipoint control circuits only) Specifies the rate at which a tributary in the active multipoint state is polled (range: 1 to 255).

NUMBER
dte-address

(DECnet DLM circuits only) **For outgoing calls:** specifies a remote DTE address used by DECnet when trying to establish an SVC.
For incoming calls: specifies the address the incoming call request must have in order for DECnet to establish the SVC. An alternate method is to use the SUBADDRESSES parameter of the DEFINE EXECUTOR command (if the network supports subaddresses).

CFE DEFINE CIRCUIT

RECALL TIMER <i>seconds</i>	(DECnet DLM circuits only) Sets the interval to wait after a failed call before attempting to place another call to establish an SVC (range: 0 to 65,535; default: 30).
ROUTER PRIORITY <i>priority</i>	(DECnet Ethernet circuits only) Specifies the priority that the executor node on this circuit is to have in selecting a designated router for the circuit (range: 0 to 255; default: 64).
SERVICE	(DECnet circuits only) Specifies whether the circuit is enabled or disabled for down-line loading and loopback testing.
STATE	Sets the circuit's operational state. OFF The circuit is not available for use. ON The circuit is available for normal use. For circuits owned by the executor, the state of the corresponding line(s) must be ON.
TRIBUTARY <i>trib-address</i>	(DECnet multipoint circuits only) Specifies the data link physical address of the multipoint circuit (range: 1 to 255).
USAGE	(DECnet DLM circuits only) Specifies the availability of a DLM SVC for either incoming or outgoing switched calls (default: incoming).

Examples:

```
CFE>DEFINE CIRCUIT DZ-3 STATE OFF (RET)
```

This command makes circuit DZ-3 unavailable for use.

```
CFE>DEFINE KNOWN CIRCUITS MAXIMUM RECALLS 10 (RET)
```

This command sets to 10 the maximum number of times DECnet should attempt to place a call on all known circuits.

CFE

DEFINE EXECUTOR

DEFINE EXECUTOR

(P)

Use the DEFINE EXECUTOR command to modify executor node parameters in the permanent database.

Format:

```

DEFINE EXECUTOR ADDRESS node-address
                  AREA MAXIMUM COST number
                  AREA MAXIMUM HOPS number
                  BROADCAST ROUTING TIMER seconds
                  HOST node-address
                  IDENTIFICATION id-string
                  INACTIVITY TIMER seconds
                  INCOMING TIMER seconds
                  MAXIMUM ADDRESS node-address
                  MAXIMUM AREAS number
                  MAXIMUM BROADCAST ENDNODES number
                  MAXIMUM COST number
                  MAXIMUM HOPS number
                  MAXIMUM LINKS number
                  MAXIMUM NODE COUNTERS number
                  MAXIMUM PARTS PER number
                  NAME node-name
                  OUTGOING TIMER seconds
                  RETRANSMIT FACTOR number
                  ROUTING TIMER seconds
                  SEGMENT BUFFER SIZE number
                  SUBADDRESSES range
                  VERIFICATION [STATE] {OFF}
                                      {ON}

```

where

ADDRESS Specifies the address of the executor node.
node-address

CFE DEFINE EXECUTOR

AREA MAXIMUM COST <i>number</i>	Specifies the total path cost allowed to any remote area (range: 1 to 1022; default: 1022).
AREA MAXIMUM HOPS <i>number</i>	Specifies the maximum number of routing hops allowed to any remote area (range: 1 to 30; default: 10).
BROADCAST ROUTING TIMER <i>seconds</i>	Sets a timer whose expiration forces a routing update on Ethernet circuits, which produces a routing configuration message for each adjacent node (range: 1 to 65,535; default: 30)
HOST <i>node-address</i>	Specifies the host node address for down-line load, trigger, and up-line dump operations.
IDENTIFICATION <i>id-string</i>	Specifies the text identification string for the executor node (range: 1 to 32 characters). You must use quotation marks (") to delimit any string containing blanks or tabs. To indicate a quotation mark within a quoted string, use a double quotation mark (to distinguish it from a string delimiter).
INACTIVITY TIMER <i>seconds</i>	Specifies the maximum time the executor will allow a link to remain idle (no user data traffic) before it checks to see if the circuit still works (range: 1 to 255).
INCOMING PROXY	(11M-PLUS and Micro/RSX only) Specifies whether proxy requests present on incoming logical links will be honored. ENABLE All proxy accounts are invoked. DISABLE The incoming proxy request is ignored. Access control information in the connect request is used instead.
INCOMING TIMER <i>seconds</i>	Specifies the maximum time a process has to answer an incoming connect request. If the process does not answer the connect request within this time interval, the node will reject the connect request on behalf of the process (range: 1 to 255).

CFE DEFINE EXECUTOR

MAXIMUM ADDRESS <i>node-address</i>	Specifies the maximum node address of the executor or any remote node known to the executor (range: 1 to 1023).				
MAXIMUM BROADCAST ENDNODES <i>number</i>	Specifies the maximum number of nonrouting nodes that the executor node can have on all its Ethernet circuits (range: 1 to 1022; default: 64).				
MAXIMUM AREAS <i>area-number</i>	Specifies the maximum area number of the executor or any remote area known to the executor (range: 1 to 63).				
MAXIMUM COST <i>number</i>	Specifies the maximum total path cost allowed to any node (range: 1 to 1022; default: 1022).				
MAXIMUM HOPS <i>number</i>	Specifies the maximum number of routing hops allowed from the executor node to any other node (range: 1 to 30; default: 10).				
MAXIMUM LINKS <i>number</i>	Specifies the maximum number of active logical links for the executor node (range: 1 to 255).				
MAXIMUM NODE COUNTERS <i>number</i>	Specifies the maximum number of node counters allowed. If you require more counters, the existing ones are reassigned on demand in the same order as they were originally assigned. Use a decimal integer greater than 1, but not exceeding the executor maximum address (range: 1 to 170).				
MAXIMUM PATH SPLITS <i>number</i>	(11M-PLUS routing nodes only) Specifies the maximum number of equal cost paths to split between (default: 1).				
NAME <i>node-name</i>	Specifies the node name of the executor.				
OUTGOING PROXY	(11M-PLUS and Micro/RSX only) Specifies whether proxy log-in is requested on outgoing connect requests. <table><tr><td>ENABLE</td><td>Proxy invocation is requested on all outgoing connects.</td></tr><tr><td>DISABLE</td><td>Proxy invocation is not requested on outgoing connects.</td></tr></table>	ENABLE	Proxy invocation is requested on all outgoing connects.	DISABLE	Proxy invocation is not requested on outgoing connects.
ENABLE	Proxy invocation is requested on all outgoing connects.				
DISABLE	Proxy invocation is not requested on outgoing connects.				

CFE DEFINE EXECUTOR

OUTGOING TIMER
seconds

Specifies the maximum time the executor node will wait for a pending connect request to be answered at a destination node. If the request is not answered in this time interval, the source process receives an error indication (range: 1 to 255).

**RETRANSMIT
FACTOR** *number*

Specifies the number of times the executor will restart the retransmission timer before the logical link is disconnected (range: 1 to 255).

ROUTING TIMER
seconds

Sets a timer whose expiration forces a routing update on non-Ethernet circuits (range: 1 to 65,535).

**SEGMENT BUFFER
SIZE** *number*

Specifies the maximum size of transmit buffers (in bytes), thereby controlling the size of the NSP message segment to be sent. This value is the maximum size message that the End Communication layer can transmit; it does not include routing or data link overhead (range: 1 to 4060; default: 18 bytes less than the large buffer size specified in the DEFINE SYSTEM command). The segment buffer size can never be greater than the large buffer size minus 18 bytes.

SUBADDRESSES
range

Specifies a range of local DTE subaddresses that are valid on any RSX-11 PSI circuit for incoming calls to the executor node.

**VERIFICATION
STATE**

Sets the logical link access control verification state for the executor node.

OFF The executor node does not verify access control on any incoming requests.

ON (Default) The executor node verifies access control on all incoming connect requests according to the options set for each object (see the discussion of access control in the *DECnet-RSX Network Management Concepts and Procedures* manual).

CFE DEFINE EXECUTOR

Examples:

```
CFE>DEFINE EXECUTOR ADDRESS 21 (RET)
```

This command sets the executor address to 21.

```
CFE>DEFINE EXECUTOR MAXIMUM LINKS 20 (RET)
```

This command sets the maximum number of active logical links to 20.

DEFINE LINE**(P)**

Use the DEFINE LINE command to modify line parameters in the permanent database.

Format:

```
DEFINE {LINE line-id } [CONTROLLER] CSR csr-address
      {KNOWN LINES}    CONTROLLER{LOOPBACK}
                        {NORMAL}
                        COUNTER TIMER seconds
                        DUPLEX{FULL}
                        {HALF}
                        HOLDBACK TIME milliseconds
                        MAXIMUM BACKLOG byte-count
                        MAXIMUM DEFERRED SLOTS slots-count
                        MAXIMUM WINDOW block-count
                        MULTIPOINT DEAD dead-ratio
                        PRIORITY hardware-priority
                        REFRAN SMT time-milliseconds
                        SPEED baud-rate
                        STATE {CLEARED}
                              {OFF}
                              {ON}
                        UNIT CSR csr-address
                        VECTOR vector-address
```

where

LINE <i>line-id</i>	Modifies parameters for the specified line only.
KNOWN LINES	Indicates that parameters for all known lines are to be modified.
CONTROLLER CSR <i>csr-address</i>	Specifies the address of the first CSR for the line controller.

CFE DEFINE LINE

CONTROLLER	(For Ethernet, DMC/DMR, DMP, DHU, and DHV lines) Specifies the controller mode for the line.
	LOOPBACK Internal device loopback mode.
	NORMAL Normal operating mode.
COUNTER TIMER <i>seconds</i>	Sets a timer whose expiration causes the line counters to be logged and zeroed (range: 0 to 65,535).
DUPLEX	(DECnet DDCMP lines only) Sets the hardware transmission mode to full duplex or half duplex.
HOLDBACK TIMER <i>milliseconds</i>	(RSX-11 PSI lines only) Specifies the length of time time that a message acknowledgment can be held back in order to be included with another data message (range: 0 to 65,535).
MAXIMUM DATA <i>byte-count</i>	(RSX-11 PSI lines only) Specifies the maximum frame size (in bytes) for the line. This value must be at least 5 bytes larger than the maximum data size specified for RSX-11 PSI circuits (see the DEFINE MODULE X25-PROTOCOL command) (range: 21 to 1029).
MAXIMUM RETRANSMITS <i>retry-count</i>	(RSX-11 PSI lines only) Specifies the maximum number of retransmissions of a frame over the specified line (range: 0 to 255).
MAXIMUM WINDOW <i>block-count</i>	(RSX-11 PSI lines only) Specifies the maximum number of frames for which outstanding RSX-11 PSI acknowledgment messages are allowed (range: 1 to 7).
MULTIPOINT DEAD <i>dead-ratio</i>	(DECnet non-DMP/DMV multipoint lines only) Specifies the polling rate for a tributary in the dead multipoint state (range: 1 to 255).
PRIORITY <i>hardware-priority</i>	Specifies the hardware priority of the controller (range: 4 to 7).
RETRANSMIT TIMER <i>milliseconds</i>	(RSX-11 PSI lines only) Specifies the time to elapse before a block is retransmitted. CFE rounds off all values within this range to the nearest hundred milliseconds (range: 1 to 10,049).

SPEED *baud-rate*

Sets the line baud rate to one of the following:

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

To set a high speed device (that is, over 9600 baud), enter >9600 or the actual baud rate.

STATE

Sets the line's operational state when the system is loaded.

CLEARED The line is not loaded. A DDCMP controller line may not be set to CLEARED if any circuits on it are in the ON state.

OFF The line is loaded, but not available for use. A DDCMP controller line may not be set to OFF if any circuits on it are in the ON state.

ON The line is loaded and available for normal use except during temporary overrides for service operations. All RSX-11 PSI lines are set to ON. If the line is a DDCMP point-to-point line or a DDCMP tributary, the corresponding circuit is also set to ON.

UNIT
csr-address

CSR Specifies the address of the first CSR for a DECnet device controlled by a KMC-11.

NOTE

With the KDP, a unit CSR can be specified for any unit on the controller.

With the KDZ, a unit CSR can be specified only for the first unit set in the associated DZ multiplex group.

VECTOR
vector-address

Specifies the vector address of the line controller.

CFE DEFINE LINE

Examples:

```
CFE>DEFINE KNOWN LINES MAXIMUM DATA 256 (RET)
```

This command establishes the maximum frame size for all known lines as 256 bytes.

```
CFE>DEFINE LINE DZ-3-0 SPEED 4800 (RET)
```

This command sets the baud rate of line DZ-3-0 at 4800.

DEFINE LOGGING **(P)**

Use the DEFINE LOGGING command to create or modify logging parameters in the permanent database.

Format:

```
DEFINE { KNOWN LOGGING
        LOGGING CONSOLE
        LOGGING FILE
        LOGGING MONITOR } [EVENTS event-list
                           KNOWN EVENTS
                           STATE {OFF
                                ON} ]
```

where

KNOWN LOGGING	Indicates that the specified parameters are to be created or modified for all known logging components.
LOGGING CONSOLE	Indicates that the specified parameters are to be created or modified for the console logging component.
LOGGING FILE	Indicates that the specified parameters are to be created or modified for the file logging component.
LOGGING MONITOR	Indicates that the specified parameters are to be created or modified for the monitor logging component.
EVENTS <i>event-list</i>	Specifies the event class and type(s) to be logged.
KNOWN EVENTS	Specifies that all events that DECnet-RSX can generate are to be logged.
STATE	Sets the operational state of the logging component when the system is loaded.
OFF	The logging component is disabled and events for that component are discarded.
ON	The logging component is enabled and events for that component are sent to a name currently defined for that component.

CFE DEFINE LOGGING

Example:

```
CFE>DEFINE LOGGING MONITOR STATE ON (RET)
```

This command changes the state of the logging monitor to ON.

DEFINE MODULE X25-ACCESS **(P)**

Use the DEFINE MODULE X25-ACCESS command to specify a destination name for a remote DTE in the permanent database. Destinations that are defined in the permanent database apply to all terminals.

Format:

DEFINE MODULE X25-ACCESS DESTINATION *dest-name* NUMBER *dte-address*

where

DESTINATION <i>dest-name</i>	Specifies a destination name for the identified remote DTE address.
NUMBER <i>dte-address</i>	Specifies the remote DTE address to be associated with the specified destination name.

Example:

```
CFE>DEFINE MODULE X25-ACCESS DESTINATION PRS44 NUMBER 219746 (RET)
```

This command establishes remote DTE 219746 as having the name PRS44.

CFE

DEFINE MODULE X25-PROTOCOL

DEFINE MODULE X25-PROTOCOL

(P)

Use the DEFINE MODULE X25-PROTOCOL command to create or modify DTE, group, or protocol module parameters in the permanent database. When using this command, you can choose one or no DTE component. You can also choose one or no GROUP component plus any of the other parameters listed, such as CALL TIMER *seconds*.

Format:

DEFINE MODULE X25-PROTOCOL	DTE <i>dte-address</i> KNOWN DTES	CHANNELS <i>its</i> COUNTER TIMER <i>seconds</i> LINE <i>line-id</i> MAXIMUM CIRCUITS <i>count</i> STATE (OFF) (ON)
	GROUP <i>group-name</i> KNOWN GROUPS	DTE <i>dte-address</i> NUMBER <i>group-number</i> TYPE <i>BI-LATERAL</i>
	CLEAR TIMER <i>seconds</i> DEFAULT DATA <i>byte-count</i> DEFAULT WINDOW <i>block-count</i> MAXIMUM DATA <i>byte-count</i> MAXIMUM CLEARS <i>count</i> MAXIMUM RESETS <i>count</i> MAXIMUM RESTARTS <i>count</i> MAXIMUM WINDOW <i>count</i> RESET TIMER <i>seconds</i> RESTART TIMER <i>seconds</i>	

where

DTE-related parameters:

DTE *dte-address*

Defines parameters for the specified local DTE only. See RSX-11 PSI network-specific information for the address format on your network.

KNOWN DTES

Defines parameters for all local DTEs.

CFE DEFINE MODULE X25-PROTOCOL

CHANNELS <i>list</i>	Specifies a list of logical channel numbers to be used for outgoing calls or to be taken by incoming calls. Use one or more 1- to 4-digit channel numbers in the range of 1 to 4095. Use a hyphen (-) to indicate ranges; use a comma (,) to separate numbers within the list. Channel numbers are used in the order in which they are listed.
COUNTER TIMER <i>seconds</i>	Sets a timer whose expiration causes a DTE counter logging event (range: 1 to 65,535).
LINE <i>line-id</i>	Specifies a particular line for use by the protocol module.
MAXIMUM CIRCUITS <i>count</i>	Specifies the maximum number of circuits the module can use (range: 1 to 255).
STATE	Sets the local DTE's operational state to OFF or ON when the system is loaded.

Group-related parameters:

GROUP <i>group-name</i>	Defines parameters for the specified group only.
KNOWN GROUPS	Defines parameters for all known groups.
DTE <i>dte-address</i>	Identifies the local DTE associated with the specified group. This parameter must be used with a group number.
NUMBER <i>group-number</i>	Specifies a 2-digit closed user group (CUG) number or a 4-digit bilateral closed user group (BCUG) number (range: 0 to 9999; you can omit leading zeroes). This parameter must be used with a DTE address.
TYPE BILATERAL	Required when the specified group is bilateral (BCUG).

CFE DEFINE MODULE X-25 PROTOCOL

Protocol-related parameters:

CALL TIMER <i>seconds</i>	Sets a timer that starts when a request is transmitted to set up a virtual circuit and whose expiration clears the request if no response has been received (range: 0 to 255).
CLEAR TIMER <i>seconds</i>	Sets a timer that starts when a request is transmitted to clear a virtual circuit and whose expiration causes a retransmission of the clear request if no response has been received (range: 0 to 255).
DEFAULT DATA <i>byte-count</i>	Specifies the default packet size (in bytes) for all SVCs. This value must not exceed that specified for the MAXIMUM DATA parameter and must be a power of 2 (range: 16 to 1024).
DEFAULT WINDOW <i>block-count</i>	Specifies the default number of data packets that can be sent over an SVC before you have to wait for an acknowledgment (range: 1 to 7). This value must not exceed that specified for MAXIMUM WINDOW.
MAXIMUM DATA <i>byte-count</i>	Specifies the maximum packet size you expect to receive on any SVC. This value must be at least 5 bytes less than the maximum data size specified for RSX-11 PSI lines (see DEFINE LINE) and must be a power of 2 (range: 16 to 1024).
MAXIMUM CLEARS <i>count</i>	Specifies the maximum number of times that the protocol module can try clearing a virtual circuit (range: 0 to 255).
MAXIMUM RESETS <i>count</i>	Specifies the maximum number of times the protocol module can try resetting a virtual circuit (range: 0 to 255).
MAXIMUM RESTARTS <i>count</i>	Specifies the maximum number of times the protocol module can try restarting a DTE (range: 0 to 255).
MAXIMUM WINDOW <i>count</i>	Specifies the maximum number of data packets that can be sent over an SVC before you have to wait for an acknowledgment (range: 1 to 7).

CFE DEFINE MODULE X25-PROTOCOL

RESET TIMER
seconds

Sets a timer that starts when a reset is transmitted and whose expiration causes a retransmission of the reset message if no response has been received (range: 0 to 255).

RESTART TIMER
seconds

Sets a timer that starts when a restart is transmitted and whose expiration causes a retransmission of the restart message if no response has been received (range: 0 to 255).

Examples:

CFE>DEFINE MODULE X25-PROTOCOL KNOWN DTES STATE ON **RET**

This command sets the state of all local DTEs to ON when the system is loaded.

CFE>DEFINE MODULE X25-PROTOCOL MAXIMUM RESTARTS 20 **RET**

This command limits to 20 the number of times the protocol module is to try restarting a virtual circuit.

CFE
DEFINE MODULE X25/X29-SERVER

DEFINE MODULE X25-SERVER
DEFINE MODULE X29-SERVER
(P)

Use the DEFINE MODULE X25/X29-SERVER commands to create or modify server module parameters in the permanent database.

Restriction:

If you specify CALL MASK or CALL VALUE, you must specify both, and the *hex-value* of each must contain the same number of digits.

Format:

```

DEFINE MODULE X25-SERVER COUNTER TIMER seconds
                  X29-SERVER MAXIMUM CIRCUITS count
                  [ DESTINATION dest-name CALL MASK hex-value
                    KNOWN DESTINATIONS CALL VALUE hex-value
                    GROUP group-name
                    NUMBER die-address
                    OBJECT object-id
                    PRIORITY priority
                    SUBADDRESSES range ]

```

where

COUNTER TIMER <i>seconds</i>	Sets a timer whose expiration causes a server module counter logging event (range: 0 to 65,535).
MAXIMUM CIRCUITS <i>count</i>	Specifies the maximum number of circuits that the module (that is, all destinations) can use (range: 1 to 255).
DESTINATION <i>dest-name</i>	Defines parameters for the specified destination only.
KNOWN DESTINATIONS	Defines parameters for all known destinations.

CFE DEFINE MODULE X-25/X29-SERVER

CALL MASK
hex-value

Specifies the mask applied to incoming call data before it is tested against the call value (default: no mask). Use a hexadecimal string of 2 to 32 digits (must be an even number of digits); see restriction.

CALL VALUE
hex-value

Specifies a string of information used to test incoming call data (default: no test string). Use a hexadecimal string of 2 to 32 digits (must be an even number of digits); see restriction.

GROUP
group-name

Specifies the name of a closed user group (CUG) or a bilateral closed user group (BCUG) (default: no group).

NUMBER
dte-address

Identifies the remote DTE that originates the call for the specified destination (default: no DTE).

OBJECT
object-id

Specifies the task that runs when an incoming call activates it; required when creating a destination.

PRIORITY
priority

Specifies the priority of the destination. This is used to select one of a set of destinations for which the incoming call may be valid (range: 0 to 255, where 255 is the highest priority; default: 127).

SUBADDRESSES
range

Specifies a range of local DTE subaddresses that identifies the destination for the incoming call.

Examples:

```
CFE>DEFINE MODULE X25-SERVER MAXIMUM CIRCUITS 20 (RET)
```

This command limits the module to 20 circuits.

```
CFE>DEFINE MODULE X29-SERVER DESTINATION TKY029 PRIORITY 5 (RET)
```

This command sets the priority of destination TKY029 to 5.

CFE

DEFINE NODE

DEFINE NODE

(P)

Use the DEFINE NODE command to create or modify parameters in the permanent database for down-line loading and up-line dumping to the specified node (see the *DECnet-RSX Network Management Concepts and Procedures* manual for a discussion of down-line loading and up-line dumping). If you are not performing service operations on the node, NAME is the only meaningful parameter.

Restriction:

You must specify the NAME parameter if a node name has not previously been defined for the specified node.

Format:

```
DEFINE NODE node-id  DIAGNOSTIC FILE file
                        DUMP ADDRESS address
                        DUMP COUNT number
                        DUMP FILE file
                        HARDWARE ADDRESS e-address
                        HOST node-id
                        LOAD FILE file
                        NAME node-name
                        SECONDARY [LOADER] file
                        SERVICE    CIRCUIT circuit-id
                        SERVICE DEVICE device-type
                        SERVICE NODE VERSION {PHASE III}
                                              {PHASE IV}
                        [SERVICE] PASSWORD password
                        TERTIARY [LOADER] file
```

where

NODE <i>node-id</i>	Specifies the node for which parameters are to be created or modified. The <i>node-id</i> must be a node address if you wish to assign a name to an unnamed node.
DIAGNOSTIC FILE <i>file</i>	(For Ethernet nodes only) Specifies the file to be read when the node is down-line loaded and requests diagnostics.

DUMP ADDRESS
address

Specifies an octal address in memory at which to begin an up-line dump of the node; range: 0 to 77777 (octal).

DUMP COUNT
blocks

Specifies the default number of memory units to up-line dump from the node (range: 0 to 77777).

DUMP FILE *file-id*

Specifies the file that is to receive a copy of the system at the time of the crash when the node is up-line dumped.

HARDWARE ADDRESS
e-address

Identifies the Ethernet hardware address that was originally assigned to the DEUNA or DELUA controller for the system on the node. This address is used during operations such as down-line load to communicate with the system before it has set up its physical address.

HOST *node-id*

Specifies a host node for all service operations (default: executor node).

LOAD FILE *file*

Specifies a file containing the system software for down-line loading to the node.

NAME *node-name*

Specifies a node name to be associated with the node ID.

SECONDARY LOADER *file*

Specifies a file containing secondary loader software for down-line loading to the node.

SERVICE CIRCUIT
circuit-id

Specifies the circuit to be used for down-line loading and up-line dumping. This circuit is the default value for the VIA parameter of the LOAD command.

SERVICE DEVICE
device-type

Specifies the node's line controller for the service line over which the operation is to take place. Possible devices are:

DA	DMP	DUP	KDZ
DL	DMV	DV	LUA
DLV	DPV	DZ	QNA
DMC	DU	KDP	UNA

CFE DEFINE NODE

SERVICE NODE VERSION	Specifies the node as a Phase III or Phase IV (default) node.
SERVICE PASSWORD <i>password</i>	Specifies the password required to trigger the bootstrap mechanism on the node.
TERTIARY LOADER <i>file</i>	Specifies a file containing tertiary loader software for down-line loading to the node.

Example:

```
CFE>DEFINE NODE 205 NAME DALLAS (HEL)
```

This command identifies node 205 as DALLAS.

DEFINE OBJECT (P)

Use the DEFINE OBJECT command to create a new object or to modify object parameters in the permanent database.

Format:

```
DEFINE OBJECT type-code COPIES{number}  
                        {SINGLE}  
NAME object-name  
USER{DEFAULT}  
   {LOGIN}  
VERIFICATION {INSPECT}  
              {OFF}  
              {ON}
```

where

OBJECT <i>type-code</i>	Specifies the object for which parameters are to be created or modified.
COPIES <i>number</i>	Specifies the maximum number of copies of a task that can be run at once (range: 2 to 64). Use the keyword SINGLE (default) if the task is not multicopy.
NAME <i>object-name</i>	Specifies a name to be associated with the object. Use any valid RSX task name. If the task is multicopy, the name must end with \$\$\$.
USER	Specifies the UIC under which a task is to run when the object's VERIFICATION option is set to ON or INSPECT. DEFAULT (Default) The task runs under the default UIC under which it was built or installed. LOGIN The task runs under the login UIC.

CFE DEFINE OBJECT

VERIFICATION

Specifies the degree of access to the controlled object.

- | | |
|---------|--|
| INSPECT | Allows access to the object while indicating to it whether or not the access control information is valid. |
| OFF | (Default) Allows access to the object regardless of the validity of the access control information. |
| ON | Allows access to the object only for inbound connections with valid access control information. |

Example:

```
CFE>DEFINE OBJECT 23 VERIFICATION ON (RET)
```

This command allows access to object 23 only to inbound connections with valid access control information.

DEFINE PROCESS (P)

Use the DEFINE PROCESS command to modify process parameters in the permanent database.

Restriction:

Data space is allocated within the process's addressing space only.

Format:

```
DEFINE {PROCESS process-name } MAXIMUM CONTROLLERS count
      {KNOWN PROCESSES } MAXIMUM LINES number
                        STATE {CLEARED }
                              {ON }
```

where

PROCESS <i>process-name</i>	Modifies parameters for the specified process only.
KNOWN PROCESSES	Modifies parameters for all known processes.
MAXIMUM CONTROLLERS <i>count</i>	Specifies the maximum number of hardware controllers (range 1 64) for which the process is to allocate data space (see restriction).
MAXIMUM LINES <i>number</i>	Specifies the maximum number of lines (range: 1 to 64) for which the process is to allocate data space (see restriction).
STATE	Sets the operational state of the process when the system is loaded.
CLEARED	Not available; must be loaded.
ON	Automatically loaded and available.

CFE DEFINE PROCESS

Example:

```
CFE>DEFINE PROCESS DMC MAXIMUM CONTROLLERS 5 RET
```

This command specifies that process DMC allocate data space for five controllers.

DEFINE SYSTEM (P)

Use the DEFINE SYSTEM command to modify Communications Executive parameters in the permanent database.

Format:

```
DEFINE SYSTEM  LARGE BUFFER SIZE number
                [LOCATION] { FIRSTFIT
                           TOPDOWN }
                MAXIMUM CONTROL BUFFERS number
                MAXIMUM LARGE BUFFERS number
                MAXIMUM SMALL BUFFERS number
                MINIMUM RECEIVE BUFFERS number
                POOL BYTE-AREA byte-count
                POOL NAME pool-name
                POOL PARTITION partition-name
```

where

LARGE BUFFER SIZE <i>number</i>	Specifies the size (in bytes) of large buffers (range: for RSX-11 PSI only, 69 to 4096. For DECnet, 192 to 4096, however 4060 is the maximum that users can specify because of protocol overhead).
LOCATION	Specifies the type of dynamic memory allocation for any process whose state is ON in the permanent database.
	FIRSTFIT (Default) Loads the processes at the first available space that is large enough.
	TOPDOWN Loads the processes at the top of the partition.
MAXIMUM CONTROL BUFFERS <i>number</i>	Specifies the maximum number of control buffers available for Communications Executive system use. There must be more control buffers than large data buffers (range: 4 to 200).

CFE DEFINE SYSTEM

MAXIMUM LARGE BUFFERS <i>number</i>	Specifies the maximum number of large buffers available for Communications Executive system use (range: 4 to 200).
MAXIMUM SMALL BUFFERS <i>number</i>	Specifies the maximum number of small buffers available for Communications Executive system use (range: 3 to the maximum number of control buffers).
MINIMUM RECEIVE BUFFERS <i>number</i>	Specifies the minimum number of receive buffers available for Communications Executive system use (range: 1 to n ; n is the maximum number of large buffers minus 1).
POOL BYTE-AREA <i>byte-count</i>	Specifies the number of bytes needed in the network pool (range: n to 64,572, where n is calculated by CFE and includes space for all currently defined remote nodes, objects, and so on; default: m , where m is the calculated by CFE and is equal to the value n plus a variable amount of extra free space).
POOL NAME <i>pool-name</i>	Specifies the name of the subpartition to be created. Use a name consisting of 1 to 6 Radix-50 characters.
POOL PARTITION <i>partition-name</i>	Specifies the name of the partition into which the network pool is to be loaded. Use a name consisting of 1 to 6 Radix-50 characters.

Example:

```
CFE>DEFINE SYSTEM MAXIMUM SMALL BUFFERS 50 (RET)
```

This command sets the maximum number of small buffers in the system to 50.

KMX-DUMP (P)

Use the KMX-DUMP command to dump KMX, KMY, or KMV microcode to disk for analysis by the KMX/KMY/KMV dump analyzer task (KDA). For information on the KDA utility, see Chapter 4.

NOTE

This command halts all lines on the KMX, KMY, or KMV device. To bring the device back up after the dump, use the NCP SET LINE command to set the state of all lines first to OFF and then to ON.

Format:

KMX-DUMP LINE *line-id* [FILENAME *file*]

where

LINE <i>line-id</i>	Specifies a KMX, KMY, or KMV line (see preceding note). Specify <i>line-id</i> in the form KMX- <i>c-u</i> , KMY- <i>u</i> or KMV- <i>c-u</i> .
FILENAME <i>file</i>	Names the file to hold the binary dump (default: LB:[1,6]PSIKMXMEM.SYS).

Example:

NCP>KMX-DUMP LINE KMX-0-1 LB:[1,6]KMXMC.DMP (RET)

This command dumps the microcode of KMX-0-1 to file LB:[1,6]KMXMC.DMP.

CFE

LIST CIRCUIT

LIST CIRCUIT

(P)

Use the LIST CIRCUIT command to display circuit information stored in the permanent database.

Format:

LIST {CIRCUIT *circuit-id*}
 {KNOWN CIRCUITS}

where

CIRCUIT *circuit-id* Displays information for the specified circuit only.

KNOWN CIRCUITS Displays information for all known circuits.

Example:

CFE>LIST CIRCUIT DMC-0 (RET)

This command causes the system to display static information for circuit DMC-0.

LIST EXECUTOR (P)

Use the LIST EXECUTOR command to display executor node information stored in the permanent database.

Format:

LIST EXECUTOR

CFE LIST LINE

LIST LINE (P)

Use the LIST LINE command to display line information stored in the permanent database.

Format:

```
LIST {LINE line-id }  
      {KNOWN LINES}
```

where

LINE *line-id* Displays information for the specified line only.

KNOWN LINES Displays information for all known lines.

Example:

```
CFE> LIST KNOWN LINES (RET)
```

This command causes the system to display static information for every line attached to the executor node.

LIST LOGGING (P)

Use the LIST LOGGING command to display logging information stored in the permanent database.

Format:

LIST { KNOWN LOGGING
LOGGING CONSOLE
LOGGING FILE
LOGGING MONITOR }

where

KNOWN LOGGING	Displays information for all known logging components.
LOGGING CONSOLE	Displays information for the console logging component.
LOGGING FILE	Displays information for the file logging component.
LOGGING MONITOR	Displays information for the monitor logging component.

Example:

CFE>LIST LOGGING MONITOR EVENTS (RET)

This command causes the system to display static information for the logging monitor program.

CFE
LIST MODULE X25-ACCESS

LIST MODULE X25-ACCESS
(P)

Use the LIST MODULE X25-ACCESS command to display remote DTE destination information stored in the permanent database.

Format:

```
LIST MODULE X25-ACCESS [DESTINATION dest-name]  
[KNOWN DESTINATIONS]
```

where

DESTINATION Displays information for the specified destination only.
dest-name

KNOWN Displays information for all known destinations.
DESTINATIONS

Example:

```
CFE>LIST MODULE X25-ACCESS DESTINATION NYC42 (RET)
```

This command causes the system to display static information for destination NYC42.

LIST MODULE X25-PROTOCOL

(P)

Use the LIST MODULE X25-PROTOCOL command to display protocol module information stored in the permanent database. The information must be qualified by either DTE or group.

Format:

```
LIST MODULE X25-PROTOCOL { DTE dte-address
                           KNOWN DTES
                           GROUP group-name
                           KNOWN GROUPS }
```

where

DTE <i>dte-address</i>	Displays information for the specified DTE only.
KNOWN DTES	Displays information for all known DTEs.
GROUP <i>group-name</i>	Displays information for the specified group only.
KNOWN GROUPS	Displays information for all known groups.

Example:

```
CFE> LIST MODULE X25-PROTOCOL GROUP CUG98 (RET)
```

This command causes the system to display static information for group CUG98.

CFE
LIST MODULE X25/X29-SERVER

LIST MODULE X25-SERVER
LIST MODULE X29-SERVER
(P)

Use the LIST MODULE X25/X29-SERVER commands to display server module information stored in the permanent database. This information may be qualified by destination.

Format:

LIST MODULE	X25-SERVER	DESTINATION <i>dest-name</i>
	X29-SERVER	KNOWN DESTINATIONS

where

DESTINATION
dest-name

Displays information for the specified destination only.

**KNOWN
DESTINATIONS**

Displays information for all known destinations.

Example:

CFE> LIST MODULE X29-SERVER DESTINATION PG49 (RET)

This command causes the system to display static server module information for destination PG49.

LIST NODE
(P)

Use the LIST NODE command to display node information stored in the permanent database.

Format:

```
LIST {NODE node-id }  
    {KNOWN NODES}
```

where

NODE *node-id* Displays information for the specified node only.

KNOWN NODES Displays information for all known nodes.

Example:

```
CFE> LIST NODE BOS51 (RET)
```

This command causes the system to display static information for node BOS51.

CFE

LIST OBJECT

LIST OBJECT

(P)

Use the LIST OBJECT command to display object information stored in the permanent database.

Format:

```
LIST {OBJECT type-code}  
      {KNOWN OBJECTS}
```

where

OBJECT *type-code* Displays information for the specified object only.

KNOWN OBJECTS Displays information for all known objects.

Example:

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

This command causes the system to display static information for all objects known to the executor node.

LIST PROCESS (P)

Use the LIST PROCESS command to display process information stored in the permanent database.

Format:

```
LIST {PROCESS process-name
      KNOWN PROCESSES }
```

where

PROCESS *process-name* Displays information for the specified process only.

KNOWN PROCESSES Displays information for all known processes.

Example:

```
CFE>LIST PROCESS KDZ (RET)
```

This command causes the system to display static process information.

CFE LIST SYSTEM

LIST SYSTEM (P)

Use the **LIST SYSTEM** command to display system information stored in the permanent database.

Format:

LIST SYSTEM

LOAD NODE **(P)**

Use the LOAD NODE command to down-line load a specified RSX-11S remote node. For more information about down-line loading system images, see the *DECnet-RSX Network Management Concepts and Procedures* manual.

Format:

```
LOAD NODE node-id      ADDRESS node-address
                        FROM file
                        HOST node-id
                        NAME node-name
                        PHYSICAL ADDRESS e-address
                        SECONDARY [LOADER] file
                        SERVICE DEVICE device-type
                        SERVICE NODE VERSION(PHASE III)
                                           (PHASE IV)
                        [SERVICE] PASSWORD service-password
                        TERTIARY [LOADER] file
                        VIA circuit-id
```

where

NODE <i>node-id</i>	Specifies the node to be down-line loaded.
ADDRESS <i>node-address</i>	Specifies the address that the node is to use when it comes up.
FROM <i>file</i>	Specifies the file specification of the load file containing the system software to be down-line loaded.
HOST <i>node-id</i>	Specifies the default host that the node is to use when it comes up.
NAME <i>node-name</i>	Specifies the node name that the node is to use when it comes up.

NCP LOAD NODE

PHYSICAL ADDRESS
e-address (For Ethernet nodes only) Identifies the Ethernet physical address that the node currently uses to identify itself. (Required for Ethernet circuits if the hardware address parameter has not been specified in the volatile database; see SET NODE.)

**SECONDARY
LOADERfile** Specifies a file containing secondary loader software for down-line loading to the node.

SERVICE DEVICE
device-type Specifies the node's line controller for the service line over which the operation is to take place. Possible devices are:

DA	DMC	DPV	DV	KDZ
DL	DMP	DU	DZ	QNA
DLV	DMV	DUP	KDP	UNA

**SERVICE NODE
VERSION** Specifies the node as a Phase III or Phase IV (default) node.

SERVICE PASSWORD
service-password Specifies the password required to trigger the bootstrap mechanism on the node.

NOTE

If you do not want a password echoed to your terminal while you enter it, press the RETURN key after the keyword PASSWORD. NCP prompts for the password and turns off echoing until the next prompt.

TERTIARY LOADER
file Specifies a file containing tertiary loader software for down-line loading to the node.

VIA *circuit-id* Specifies the circuit over which the load is to take place.

NCP LOAD NODE

Examples:

NCP>LOAD NODE ATL25 (RET)

This command loads node ATL25. Default load parameters are obtained from the volatile database.

NCP>LOAD NODE ATL25 VIA DMC-1 (RET)

This command loads node ATL25 by way of circuit DMC-1.

NCP

LOAD VIA

LOAD VIA

(P)

Use the LOAD VIA command to down-line load an RSX-11S remote node over the specified circuit. For more information about down-line loading system images, see the *DECnet-RSX Network Management Concepts and Procedures* manual.

Format:

```
LOAD VIA circuit-id      ADDRESS node-address
                           FROM file
                           HARDWARE ADDRESS e-address
                           HOST node-id
                           NAME node-name
                           PHYSICAL ADDRESS e-address
                           SECONDARY [LOADER] file
                           SERVICE DEVICE device-type
                           SERVICE NODE VERSION(PHASE III)
                                           (PHASE IV)
                           [SERVICE] PASSWORD service-password
                           TERTIARY [LOADER] file
```

where

VIA <i>circuit-id</i>	Specifies a circuit over which the load is to take place.
ADDRESS <i>node-address</i>	Specifies the address the node is to use when it comes up.
FROM <i>file</i>	Specifies the file specification of the load file containing the system software to be down-line loaded.
HARDWARE ADDRESS <i>e-address</i>	(For Ethernet nodes only) Identifies the Ethernet hardware address that was originally assigned to the DEUNA, DELUA, DEQNA, or DELQA controller for the system on the node. This address is used during operations such as down-line load to communicate with the system before it has set up its physical address.

HOST <i>node-id</i>	Specifies the default host that the node is to use when it comes up.															
NAME <i>node-name</i>	Specifies the node name that the node is to use when it comes up.															
PHYSICAL ADDRESS <i>e-address</i>	(For Ethernet nodes only) Identifies the Ethernet physical Ethernet physical address that the node currently uses to identify itself. Required for Ethernet circuits if the hardware address parameter has not been specified in the volatile database; see SET NODE.															
SECONDARY LOADER <i>file</i>	Specifies the file specification of a secondary load program to be down-line loaded.															
SERVICE DEVICE <i>device-type</i>	Specifies the node's line controller for the service line over which the operation is to take place. Possible devices are: <table><tr><td>DA</td><td>DMC</td><td>DPV</td><td>DV</td><td>KDZ</td></tr><tr><td>DL</td><td>DMP</td><td>DU</td><td>DZ</td><td>QNA</td></tr><tr><td>DLV</td><td>DMV</td><td>DUP</td><td>KDP</td><td>UNA</td></tr></table>	DA	DMC	DPV	DV	KDZ	DL	DMP	DU	DZ	QNA	DLV	DMV	DUP	KDP	UNA
DA	DMC	DPV	DV	KDZ												
DL	DMP	DU	DZ	QNA												
DLV	DMV	DUP	KDP	UNA												
SERVICE NODE VERSION	Specifies the node as a Phase III or Phase IV (default) node.															
SERVICE PASSWORD <i>service-password</i>	Specifies the password required to trigger the bootstrap mechanism on the node.															

NOTE

If you do not want a password echoed to your terminal while you enter it, press the RETURN key after the keyword PASSWORD. NCP prompts for the password and turns off echoing until the next prompt.

TERTIARY LOADER <i>file</i>	Specifies the file specification of a third load program to be down-line loaded.
---------------------------------------	--

NCP LOAD VIA

Example:

NCP>LOAD VIA DMC-0 **RET**

This command loads the node connected to the executor node over circuit DMC-0.

LOOP CIRCUIT (P)

Use the LOOP CIRCUIT command to test a DECnet circuit in the network. See the *DECnet-RSX Network Management Concepts and Procedures* manual for more information on loopback testing.

When testing an Ethernet circuit, you can specify a destination node using either its node name or its physical address. You can also use the HELP parameter to specify a third node to assist with the test. If you do not specify a destination node, the loop request is sent to the multicast address and the first node to respond will complete the loop test.

Format:

```

LOOP  CIRCUIT circuit-id [
    NODE node-name
    PHYSICAL ADDRESS e-address
    HELP {
        FULL
        RECEIVE
        TRANSMIT
    } ] (
    ASSISTANT NODE node-name
    ASSISTANT PHYSICAL ADDRESS e-address
)

COUNT count
LENGTH length
WITH {
    MIXED
    ONES
    ZEROES
}

```

where

CIRCUIT <i>circuit-id</i>	Specifies the circuit to use for the loopback test.
NODE <i>node-name</i>	Specifies the name of an Ethernet node that is to be the destination of a loop test message.
PHYSICAL ADDRESS <i>e-address</i>	Specifies the physical address (not a multicast address) of an Ethernet node that is to be the destination of a loop test message.

NCP LOOP CIRCUIT

HELP *help-type*

Specifies the degree to which a third node is to assist with an Ethernet loop circuit test.

FULL The assisting node is to both receive and transmit the test packet (see the example).

RECEIVE The assisting node is only to receive the test packet.

TRANSMIT The assisting node is only to transmit the test packet.

If you specify **HELP**, you must also specify either the **PHYSICAL ADDRESS** and **ASSISTANT PHYSICAL ADDRESS** parameters or, if the addresses are not known, you must specify the **NODE** and **ASSISTANT NODE** parameters. If you specify **ASSISTANT NODE** or **ASSISTANT ADDRESS** and do not specify **HELP**, the default is **HELP FULL**.

ASSISTANT NODE
node-name

Specifies the name of an Ethernet node that is to assist in the loop circuit test.

ASSISTANT PHYSICAL ADDRESS *e-address*

Specifies the physical address (not a multicast address) of an Ethernet node that is to assist in the loop circuit test.

COUNT *count*

Specifies the number of blocks to be sent during loopback testing (range: 1 to 65,535; default: 1 block is looped).

LENGTH *length*

Specifies the length (in bytes) of blocks to be sent during loopback testing. The length must be a decimal integer in the range of 1 to n , where n must be less than the smaller of either the local looper buffer size or the remote mirror buffer size (default: 40 bytes).

NCP LOOP CIRCUIT

When testing over the Ethernet, the maximum length of the data pattern varies according to the level of assistance:

Level of Assistance	Allowable Length
No assistance	32 ~ 1486 bytes
Transmit or receive assistance	32 ~ 1478 bytes
Full assistance	32 ~ 1470 bytes

WITH

Specifies the type of binary information to be sent during testing (default: MIXED — a combination of ones and zeroes).

Example:

```
NCP>LOOP CIRCUIT UNA-0 HELP FULL PHYSICAL ADDRESS AA-00-04-00-F9-04 -(RET)
NCP>ASSISTANT PHYSICAL ADDRESS AA-00-04-00-04-A9 (RET)
```

This command, shown in continuation format, tests circuit UNA-0 with the assistance of the node specified in ASSISTANT PHYSICAL ADDRESS. The initiating node sends a test packet to the assisting node. The assisting node processes the packet and passes the packet to the destination node specified in PHYSICAL ADDRESS. The destination node receives the packet and transmits the packet back to the assisting node. The assisting node then returns the packet to the initiating node.

NCP

LOOP EXECUTOR/NODE

LOOP EXECUTOR/NODE

(NP)

Use the LOOP NODE command to test a node in the network. If you are testing the executor node, you can use the LOOP EXECUTOR command. You can include access control information if the node requires it. Either command causes test blocks of data to be transmitted to the specified node. See the *DECnet-RSX Network Management Concepts and Procedures* manual for more information on loopback testing.

Format:

```
LOOP {NODE node-id{acc-con-info}} COUNT count  
    {EXECUTOR} LENGTH length  
    WITH { MIXED  
          ONES  
          ZEROES }
```

where

NODE <i>node-id</i>	Specifies a node for loopback testing.
<i>acc-con-info</i>	Specifies access control information, if required.
EXECUTOR	Specifies the executor node for loopback testing.
COUNT <i>count</i>	Specifies the number of blocks to be sent during loopback testing (range: 1 to 65,535; default: 1 block is looped).
LENGTH <i>length</i>	Specifies the length (in bytes) of blocks to be sent during loopback testing. When testing over the Ethernet, the length must be a decimal integer in the range of 32 to 1484. Otherwise, the length must be a decimal integer in the range of 1 to <i>n</i> , where <i>n</i> must be less than the smaller of either the local loop buffer size or the remote mirror buffer size (default: 40 bytes).
WITH	Specifies the type of binary information to be sent during testing (default: MIXED — a combination of ones and zeroes).

NCP LOOP EXECUTOR/NODE

Example:

NCP>LOOP NODE NYC COUNT 10 (RET)

This command loops 10 blocks of mixed test messages to remote node NYC. Each block is 40 bytes.

NCP

LOOP LINE

LOOP LINE

(P)

Use the LOOP LINE command to test a RSX-11 PSI line in the network. This command causes test blocks of data to be transmitted over the specified line. See the *DECnet-RSX Network Management Concepts and Procedures* manual for more information on loopback testing.

Restriction:

You cannot use the LOOP LINE command for a KMX, KMY, or KMV device.

Format:

```
LOOP LINE line-id COUNT count
          LENGTH length
          WITH { MIXED
                ONES
                ZEROS }
```

where

LINE <i>line-id</i>	Specifies the line to use for the loopback test.
COUNT <i>count</i>	Specifies the number of blocks to be sent during loopback testing (range: 1 to 65,535; default: 1 block is looped).
LENGTH <i>length</i>	Specifies the length (in bytes) of blocks to be sent during loopback testing. The length must be a decimal integer in the range of 1 to <i>n</i> , where <i>n</i> must be less than the smaller of either the local looper buffer size or the remote mirror buffer size (default: 40 bytes).
WITH	Specifies the type of binary information to be sent during testing (default: MIXED — a combination of ones and zeroes).

Example:

NCP>LOOP LINE SDP-0 COUNT 10 LENGTH 100 **RET**

This command loops a 100-byte message over line SDP-0 10 times. The data consists of mixed ones and zeroes.

CFE PURGE CIRCUIT

PURGE CIRCUIT (P)

Use the PURGE CIRCUIT command to clear the specified circuit counter timer(s) in the permanent database.

Format:

```
PURGE [CIRCUIT circuit-id] COUNTER TIMER  
      [KNOWN CIRCUITS]
```

where

CIRCUIT *circuit-id* Clears the counter timer for the specified circuit only.

KNOWN CIRCUITS Clears the counter timers for all known circuits.

Example:

```
CFE>PURGE KNOWN CIRCUITS COUNTER TIMER (RET)
```

This command clears the counter timers for all known circuits.

PURGE LINE (P)

Use the PURGE LINE command to clear the specified line counter timer(s) in the permanent database.

Format:

```
PURGE [LINE line-id] COUNTER TIMER  
      [KNOWN LINES]
```

where

LINE *line-id* Clears the counter timer for the specified line only.

KNOWN LINES Clears the counter timers for all known lines.

Example:

```
CFE>PURGE LINE SDP-0 COUNTER TIMER (RET)
```

This command clears the counter timer for line SDP-0.

CFE

PURGE LOGGING

PURGE LOGGING

(P)

Use the PURGE LOGGING command to remove the specified logging event parameters from the permanent database.

Format:

PURGE { KNOWN LOGGING
LOGGING CONSOLE
LOGGING FILE
LOGGING MONITOR } { ALL EVENTS
EVENTS *event-list*
KNOWN EVENTS }

where

KNOWN LOGGING	Removes parameters for all known logging components.
LOGGING CONSOLE	Removes parameters for the console logging component.
LOGGING FILE	Removes parameters for the file logging component.
LOGGING MONITOR	Removes parameters for the monitor logging component.
ALL EVENTS	Removes parameters for all logging event classes and types.
EVENTS <i>event-list</i>	Removes the event class and type(s) specified in <i>event-list</i> for the specified component.
KNOWN EVENTS	Removes all logging events that DECnet-RSX can generate for the specified component.

Example:

```
CFE>PURGE KNOWN LOGGING ALL EVENTS (RET)
```

This command removes all classes and types of events for all known logging components.

PURGE MODULE X25-ACCESS (P)

Use the PURGE MODULE X25-ACCESS command to remove parameters for the specified destination(s) from the permanent database.

Format:

```
PURGE MODULE X25-ACCESS [DESTINATION dest-name] ALL  
[KNOWN DESTINATIONS]
```

where

DESTINATION Removes parameters for the specified destination only.
dest-name

KNOWN
DESTINATIONS Removes parameters for all known destinations.

ALL (Required) Removes all parameters for the specified destination(s).

Example:

```
CFE>PURGE MODULE X25-ACCESS DESTINATION DALLAS ALL (RET)
```

This command removes destination DALLAS and all associated parameters.

CFE

PURGE MODULE X25-PROTOCOL

PURGE MODULE X25-PROTOCOL

(P)

Use the PURGE MODULE X25-PROTOCOL command to zero the counter timer(s) for the specified DTE(s) or to remove all parameters for the specified DTE(s) or group(s) from the permanent database.

Format:

```
PURGE MODULE X25-PROTOCOL { DTE dte-address (ALL  
KNOWN DTES (COUNTER TIMER)  
GROUP group-name ALL  
KNOWN GROUPS
```

where

DTE	Clears the specified DTE only. Be aware that purging a DTE removes
<i>dte-address</i>	all PVCs and CUGs associated with it and purges them from the permanent database.
KNOWN DTES	Clears all known DTEs.
GROUP <i>group-name</i>	Removes parameters for the specified group only.
KNOWN GROUPS	Removes parameters for all known groups.
ALL	Removes all parameters for the specified DTE(s) or group(s).
COUNTER TIMER	Clears the counter timer(s) for the specified DTE(s).

Example:

```
CFE>PURGE MODULE X25-PROTOCOL GROUP CUG111 ALL (RET)
```

This command removes parameters for group CUG111.

PURGE MODULE X25-SERVER

PURGE MODULE X29-SERVER

(P)

Use the PURGE MODULE X25/X29-SERVER commands to zero the counter timer or to remove parameters for the specified destination(s) from the permanent database.

Format:

PURGE MODULE	X25-SERVER	COUNTER TIMER
	X29-SERVER	DESTINATION <i>dest-name</i> ALL
		KNOWN DESTINATIONS ALL

where

COUNTER TIMER	Clears the server module counter timer.
DESTINATION <i>dest-name</i>	Removes parameters for the specified destination only.
KNOWN DESTINATIONS	Removes parameters for all known destinations.
ALL	Required when you specify a destination parameter; removes all parameters for the specified destination(s).

Example:

CFE>PURGE MODULE X25-SERVER DESTINATION ALBANY ALL (RET)

This command removes destination ALBANY and all associated parameters.

CFE PURGE NODE

PURGE NODE (P)

Use the PURGE NODE command to remove specified node parameters from the permanent database on the local node.

Format:

```
PURGE {NODE node-id }  
      {KNOWN NODES}  
  
      ALL  
      DIAGNOSTIC FILE  
      DUMP ADDRESS  
      DUMP COUNT  
      DUMP FILE  
      HARDWARE ADDRESS  
      HOST  
      LOAD FILE  
      SECONDARY [LOADER]  
      SERVICE CIRCUIT  
      SERVICE DEVICE  
      [SERVICE] PASSWORD  
      TERTIARY [LOADER]
```

where

NODE <i>node-id</i>	Removes parameters for the specified node only.
KNOWN NODES	Removes parameters for all known nodes.
ALL	Removes all parameters for the specified node(s). If you specify ALL, you cannot include any other parameters.
DIAGNOSTIC FILE	Removes the identification of the down-line load diagnostics file.
DUMP ADDRESS	Removes the node's up-line dump address.
DUMP COUNT	Removes the up-line dump count.
DUMP FILE	Removes the up-line dump file identification.
HARDWARE ADDRESS	Removes the Ethernet address of the system hardware.

CFE PURGE NODE

HOST	Removes the host node identification.
LOAD FILE	Removes the down-line load file identification.
SECONDARY LOADER	Removes the parameter associated with the file containing secondary loader software for down-line loading to the node.
SERVICE CIRCUIT	Removes the circuit parameter associated with the node for down-line load operations.
SERVICE DEVICE	Removes the service device type.
SERVICE PASSWORD	Removes the password parameter required to trigger the bootstrap mechanism.
TERTIARY LOADER	Removes the parameter associated with the file containing tertiary loader software for down-line loading to the node.

Example:

```
CFE>PURGE NODE BOS ALL (RET)
```

This command removes node BOS from the database.

CFE PURGE OBJECT

PURGE OBJECT (P)

Use the PURGE OBJECT command to remove all parameters for the specified object(s) from the permanent database.

Format:

```
PURGE {OBJECT object-type
      {KNOWN OBJECTS}}
```

where

OBJECT *object-type* Removes parameters for the specified object only.

KNOWN OBJECTS Removes parameters for all known objects.

Example:

```
CFE>PURGE OBJECT 200 (RET)
```

This command removes all parameters for object 200.

SET ALIAS (NP/P)

Use the NCP SET ALIAS command to specify an alias name for a node in the volatile database. Use the VNP command to do the same with the system image file.

Format:

SET ALIAS *alias-name* DESTINATION *dest-node* [[SCOPE] *scope*]

where

ALIAS *alias-name* Specifies the alias name to be assigned to the destination node.

DESTINATION *dest-node* Specifies the destination node and any access control parameters associated with this alias for that node. See Section 1.5.2 for access control information format.

SCOPE *scope* See definition in Section 1.5.2.

Example:

```
NCP>SET ALIAS PETSKY DESTINATION MAINE/DAVIES/LESLIE - (RET)
```

```
NCP>SCOPE TERMINAL TT22: (RET)
```

This command (shown in continuation format) sets alias PETSKY to terminal TT22: on node MAINE. DAVIES is the account name, and LESLIE is the password.

NCP/VNP SET CIRCUIT

SET CIRCUIT (P)

Use the NCP SET CIRCUIT command to create or modify specified circuit parameters in the volatile database. Use the VNP command to do the same with the system image file.

Restriction:

The VNP SET CIRCUIT command is invalid for RSX-11 PSI circuits.

Format:

```
SET {CIRCUIT circuit-id
    {KNOWN CIRCUITS}}
    COST cost
    COUNTER TIMER seconds
    HELLO TIMER seconds
    LEVEL ONE COST cost
    LEVEL TWO COST cost
    MULTIPOINT ACTIVE active-ratio
    OWNER(DLX
        {XPT})
    SERVICE(DISABLE
        {ENABLE})
    STATE {OFF
        {ON
            {SERVICE}}}
    TRIBUTARY trib-address
```

where

CIRCUIT <i>circuit-id</i>	Sets parameters for the specified circuit only.
KNOWN CIRCUITS	Sets parameters for all known circuits.
COST <i>cost</i>	(11M/S DECnet circuits only) Specifies the routing cost of the circuit. Messages will travel between nodes along the path with the smallest total cost (range: 1 to 25; default: varies according to circuit type).

NCP/VNP SET CIRCUIT

COUNTER TIMER <i>seconds</i>	(Invalid for VNP) Sets a timer whose expiration causes the circuit counters to be logged and <i>seconds</i> zeroed (range: 1 to 65,535).
HELLO TIMER <i>seconds</i>	(DECnet circuits only) Specifies the frequency of routing hello messages sent to adjacent nodes over the circuit (range: 1 to 8191).
LEVEL ONE COST <i>cost</i>	(Level 1 routers) Specifies the Level 1 routing cost of the circuit. Level 1 routes messages along the path between two nodes having the smallest cost (range: 1 to 25).
LEVEL TWO COST <i>cost</i>	(11M-PLUS area router only) Specifies the Level 2 routing cost of the circuit. Level 2 routes messages along the path between two areas having the smallest cost (range: 1 to 25).
MULTIPOINT ACTIVE <i>active-ratio</i>	(DECnet non-DMP/DMV multipoint control circuits only) Specifies the rate at which a tributary in the active multipoint state is polled (range: 1 to 255).
OWNER	(DECnet circuits only) Specifies the circuit owner.
DLX	DLX (See the <i>DECnet-RSX Programmer's Reference Manual</i> .)
XPT	DECnet
SERVICE	(DECnet circuits only) Specifies whether the circuit is enabled or disabled for down-line loading and loopback testing.
STATE	Sets the circuit's operational state. For circuits owned by the executor, the state of the corresponding lines must be ON.

NCP/VNP SET CIRCUIT

OFF Not available.

ON Available for normal use.

SERVICE Available for service operations only.

TRIBUTARY
trib-address

(DECnet multipoint circuits only) Specifies the data link physical tributary address of the multipoint circuit (range: 1 to 255).

Example:

```
NCP>SET CIRCUIT KDZ-1-3 STATE OFF (RET)
```

This command sets the state of circuit KDZ-1-3 to OFF.

SET EXECUTOR (P)

Use the NCP SET EXECUTOR command to create or modify executor node parameters in the volatile database. Use the VNP command to do the same with the system image file.

Format:

```
SET EXECUTOR  HOST node-id
                INCOMING PROXY [ENABLE]
                               [DISABLE]
                INACTIVITY TIMER seconds
                INCOMING TIMER seconds
                MAXIMUM BROADCAST ENDNODES number
                MAXIMUM PATH SPLITS number
                OUTGOING PROXY [ENABLE]
                               [DISABLE]
                OUTGOING TIMER seconds
                RECEIVE PASSWORD password
                RETRANSMIT FACTOR number
                ROUTING TIMER seconds
                SEGMENT BUFFER SIZE number
                STATE { OFF
                      ON [FIXED]
                        [UNFIXED]
                      SHUT }
                SUBADDRESSES range
                TRANSMIT PASSWORD password
                VERIFICATION [STATE] { OFF
                                      ON }
```

where

HOST <i>node-id</i>	Specifies the host node identification for down-line load, trigger, and up-line dump.
INCOMING PROXY	(11M-PLUS and Micro/RSX only) Specifies whether proxy requests present on incoming logical links will be honored.

NCP/VNP SET EXECUTOR

	ENABLE All proxy accounts are invoked. DISABLE The incoming proxy request is ignored. Access control information in the connect request is used instead.
INACTIVITY TIMER <i>seconds</i>	Specifies the maximum time the executor will allow a link to remain idle (no user data traffic) before it checks to see if the circuit still works (range: 1 to 255).
INCOMING TIMER <i>seconds</i>	Specifies the maximum time a process has to answer an incoming connect request. If the process does not answer the connect request within this time interval, the node will reject the connect request on behalf of the process (range: 1 to 255).
MAXIMUM BROADCAST ENDNODES <i>number</i>	Specifies the maximum number of end nodes the executor node can have on its circuits.
MAXIMUM PATH SPLITS <i>number</i>	(11M-PLUS routing nodes only) Specifies the maximum number of equal cost paths to split between (default: 1).
OUTGOING PROXY	(11M-PLUS and Micro/RSX only) Specifies whether proxy is requested on outgoing connect requests.
	ENABLE Proxy invocation is requested on all outgoing connects. DISABLE Proxy invocation is not requested on outgoing connects.
OUTGOING TIMER <i>seconds</i>	Specifies the maximum time the executor node will wait for a pending connect request to be answered at a destination node. If the request is not answered in this time interval, the source process receives an error indication (range: 1 to 255).
RECEIVE PASSWORD <i>password</i>	Specifies a 1- to 8-character ASCII password that the executor expects to receive during initialization with an adjacent Phase III node.

NCP/VNP SET EXECUTOR

**RETRANSMIT
FACTOR** *number*

Specifies the number of times the executor will restart the retransmission timer before the logical link is disconnected (range: 1 to 255).

ROUTING TIMER
seconds

Sets a timer whose expiration forces a routing update on non-Ethernet circuits (range: 1 to 65,535).

**SEGMENT BUFFER
SIZE** *number*

Specifies the maximum size of transmit buffers (in bytes), thereby controlling the size of the NSP message segment to be sent. This value is the maximum size message that the End Communication layer can transmit; it does not include routing or data link overhead (range: 1 to 4060; default: 18 bytes less than the large buffer size specified in the DEFINE SYSTEM command). The segment buffer size can never be greater than the large buffer size minus 18 bytes.

STATE

Sets the operational state of the executor node. This parameter cannot be specified if you use the TELL prefix.

OFF Allows no new logical links; terminates existing links; forces the release of all mailboxes as quickly as possible. However, this command does not set PSI lines to OFF.

ON (Invalid for VNP on RSX-11M/M-PLUS; see *DECnet-RSX Network Management Concepts and Procedures*) Allows normal logical link activity. When using VNP to set the executor state to ON for DECnet-11S systems, you can specify one of the following task states for NTINIT after it has initialized the node:

FIXED (Default) NTINIT remains in memory.

UNFIXED NTINIT is removed from memory.

NCP/VNP SET EXECUTOR

SHUT	(Invalid for VNP) Allows no new logical links; does not destroy existing links; goes to the OFF state when all logical links terminate and all mailboxes are released.
SUBADDRESSES <i>range</i>	(Invalid for VNP) Specifies a range of local DTE subaddresses that are valid on any DLM circuit for incoming calls to the executor node.
TRANSMIT PASSWORD <i>password</i>	Specifies a 1- to 8-character ASCII password that the executor sends to the adjacent Phase III node during a node initialization sequence.
VERIFICATION STATE	Sets the logical link access control verification state for the executor node.
OFF	The executor node does not verify access control on any incoming connect requests.
ON	The executor node verifies access control on all incoming connect requests according to the options set for each object (see the discussion of access control in the <i>DECnet-RSX Network Management Concepts and Procedures</i> manual).

Example:

```
NCP>SET EXECUTOR HOST 12 (RET)
```

This command sets node 12 as the host node for down-line load, trigger, and up-line dump operations.

SET EXECUTOR NODE (NP)

Use the SET EXECUTOR NODE command to set a default executor for all NCP commands. This causes subsequent remotely executable NCP commands to be executed at the specified destination. The *DECnet-RSX Network Manager's Pocket Guide* lists all NCP commands and flags those that are not remotely executable.

Restriction:

You cannot use the TELL prefix with this command (that is, this command is not remotely executable).

Format:

SET EXECUTOR NODE *node-id*[*acc-con-info*]

where

NODE <i>node-id</i>	Specifies the node by address, alias, or name, that is to serve as the executor for subsequent NCP commands.
<i>acc-con-info</i>	Specifies access control information (if required by the node).

Example:

NCP>SET EXECUTOR NODE ATL25/NELSON/PAT (SET)

This command sets node ATL25 (user NELSON, password PAT) to executor status. Future commands will be sent to ATL25 for execution.

NCP/VNP SET KNOWN LINES

SET KNOWN LINES

(P)

Use the NCP SET KNOWN LINES command either to load all known lines and create their associated parameters in the volatile database or to create or modify parameters in the database for all known lines that are already loaded. Use the VNP command to do the same with the system image file.

Restriction:

Except for STATE, the options allowed when you are loading lines are different from those used to create or modify parameters for lines that are already loaded. Any lines that you are loading must be in the CLEARED state. Lines that are already loaded must be in the ON or OFF states (that is, not CLEARED).

Format:

SET KNOWN LINES

STATE {OFF
ON}

Loading options:

ALL
DEAD TIMER *milliseconds*
DELAY TIMER *milliseconds*
DUPLEX {FULL
HALF}
{LOCATION} {FIRSTFIT
TOPDOWN}

Loaded options:

COUNTER TIMER *seconds*
OWNER (DLX)
PLI

where

STATE

(Invalid for VNP) Sets the operational state for all RSX-11 PSI lines to either OFF or ON.

Loading options:

ALL

Loads the lines with all of the default parameters specified in the permanent database. If you specify ALL, you cannot include any other parameters.

NCP/VNP SET KNOWN LINES

DEAD TIMER
milliseconds

(For DECnet DMP/DMV multipoint control lines only)
Specifies the polling interval for a dead tributary (range: 1 to 65,535).

DELAY TIMER
milliseconds

(For DECnet DMP/DMV multipoint control lines only)
Specifies the minimum time to delay between polls in order to limit the effect of a fast control station on a slow tributary (range: 1 to 65,535).

DUPLEX

(DECnet DDCMP lines only) Sets the hardware transmission mode to full duplex or half duplex.

LOCATION

(Invalid for VNP) Specifies the type of dynamic memory allocation.

FIRSTFIT (Default) Loads the driver processes at the first available space that is large enough in the partition.

TOPDOWN Loads the driver processes at the top of the partition.

Loaded options:

COUNTER TIMER
seconds

Sets a timer whose expiration causes the line counters to be logged and zeroed (range: 1 to 65,535).

OWNER

Specifies line ownership.

DLX DLX (See the *DECnet-RSX Programmer's Reference Manual*.)

PLI RSX-11 PSI (Invalid for VNP)

Example:

```
NCP>SET KNOWN LINES DUPLEX FULL (RET)
```

This command sets all lines known to the system to full duplex.

NCP/VNP SET LINE

SET LINE (P)

Use the NCP SET LINE command either to load the specified line and create its associated parameters in the volatile database or to create or modify parameters in the database for a line that is already loaded. Use the VNP command to do the same with the system image file.

Restriction:

Except for STATE, the options allowed when you are loading a line are different from those used to create or modify parameters for a line that is already loaded. Any line that you are loading must be in the CLEARED state. A line that is already loaded must be in the ON or OFF state (that is, not CLEARED).

Format:

SET LINE *line-id*

STATE {OFF
ON}

Loading options:

ALL
[CONTROLLER] CSR *csr-address*
DEAD TIMER *milliseconds*
DELAY TIMER *milliseconds*
DUPLEX {FULL
HALF}
[LOCATION] {FIRSTFIT
TOPDOWN}
MULTIPOINT DEAD *dead-ratio*
PRIORITY *hardware-priority*
UNIT CSR *csr-address*
VECTOR *vector-address*

Loaded options:

CONTROLLER {LOOPBACK
NORMAL}
COUNTER TIMER *seconds*
OWNER {DLX
PLI}

where

LINE *line-id* Specifies the line to be loaded and for which parameters are to be created or modified.

STATE (Invalid for VNP) Sets a RSX-11 PSI line's operational state to OFF or ON.

Loading options:

ALL Loads the line with all of the default parameters specified in the permanent database. If you specify ALL, you cannot include any other parameters.

CONTROLLER CSR
csr-address Specifies the address of the first CSR for the line controller.

DEAD TIMER
milliseconds (For DECnet DMP/DMV multipoint control lines only) Specifies the polling interval for a dead tributary (range: 1 to 65,535).

DELAY TIMER
milliseconds (For DECnet DMP/DMV multipoint control lines only) Specifies the minimum time to delay between polls in order to limit the effect of a fast control station on a slow tributary (range: 1 to 65,535).

DUPLEX (DECnet DDCMP lines only) Sets the hardware transmission mode to full duplex or half duplex.

LOCATION (Invalid for VNP) Specifies the type of dynamic memory allocation.

FIRSTFIT (Default) Loads the driver process at the first available space that is large enough in the partition.

TOPDOWN Loads the driver process at the top of the partition.

MULTIPOINT DEAD
dead-ratio (DECnet non-DMP/DMV multipoint control lines only) Specifies the polling rate for a tributary in the dead multipoint state (range: 1 to 255).

NCP/VNP SET LINE

PRIORITY <i>hardware-priority</i>	Specifies the hardware priority of the controller (range: 4 to 7).
UNIT CSR <i>csr-address</i>	Specifies the address of the first CSR for a DECnet device controlled by a KMC-11.

NOTE

With the KDP, a unit CSR can be specified for any unit on the controller.

With the KDZ, a unit CSR can be specified only for the first unit set in the associated DZ multiplex group.

VECTOR <i>vector-address</i>	Specifies the vector address of the line controller. You must use the vector address selected on the device or 0 if the address is unknown (range: 0 to 774 octal).
--	---

Loaded options:

CONTROLLER	(For DMC/DMR, DMP, DHU, DHV, QNA, and UNA lines; invalid for VNP) Specifies the controller mode for the line. The line's circuit must be in the OFF state.
-------------------	--

LOOPBACK Internal device loopback mode

NORMAL Normal operating mode

COUNTER TIMER <i>seconds</i>	(Invalid for VNP) Sets a timer whose expiration causes the line counters to be logged and zeroed (range: 1 to 65,535).
--	--

OWNER	Specifies line ownership.
--------------	---------------------------

DLX DLX (See the *DECnet-RSX Programmer's Reference Manual*.)

PLI RSX-11 PSI (Invalid for VNP)

Example:

NCP>SET LINE SDP-0 OWNER PLI **(RET)**

This command sets the owner of line SDP-0 as PLI, which assigns the line for RSX-11 PSI operations only.

NCP/VNP SET LOGGING

SET LOGGING (P)

Use the NCP SET LOGGING command to create or modify logging component parameters in the volatile database. Use the VNP command to do the same with the system image file.

Restriction:

Whenever a circuit, line, module, node, or sink is specified in a SET LOGGING command, an event list or KNOWN EVENTS parameter must also be included.

Format:

```
SET { KNOWN LOGGING
      LOGGING CONSOLE
      LOGGING FILE
      LOGGING MONITOR } NAME name
                             STATE { OFF
                                    ON }
                                EVENTS event-list
                                KNOWN EVENTS
                                [ CIRCUIT circuit-id
                                LINE line-id
                                MODULE { X25-PROTOCOL
                                       X25-SERVER
                                       X29-SERVER }
                                NODE node-id
                                SINK { EXECUTOR
                                       NODE { node-id
                                             $HOST } } ] ]
```

where

- | | |
|-----------------|--|
| KNOWN LOGGING | Indicates that the specified parameters are to be created or modified for all known logging components. |
| LOGGING CONSOLE | Indicates that the specified parameters are to be created or modified for the console logging component. |
| LOGGING FILE | Indicates that the specified parameters are to be created or modified for the file logging component. |
| LOGGING MONITOR | Indicates that the specified parameters are to be created or modified for the monitor logging component. |

NCP/VNP SET LOGGING

NAME <i>name</i>	Specifies the name of the console (default: CO0:), file (default: LB:[1,6]EVENTLOG.SYS), or monitor program (default: MON...) to which events are to be logged.
STATE	Sets the operational state of the logging component on the executor node. When the state is OFF, events are discarded.
EVENTS <i>event-list</i>	Specifies the event class and type(s) to be logged.
KNOWN EVENTS	Specifies that all events that DECnet-RSX can generate are to be logged.
CIRCUIT <i>circuit-id</i>	(Invalid for VNP) Logs the specified event(s) occurring on the specified circuit (see restriction).
LINE <i>line-id</i>	Logs the specified event(s) occurring on the specified line (see restriction).
MODULE	(Invalid for VNP) Logs the specified event(s) occurring on the specified module (see restriction).
NODE <i>node-id</i>	Logs the specified event(s) occurring on the specified node (see restriction).
SINK	Identifies the node where the specified event(s) are to be logged (see restriction).
EXECUTOR	(Default) Executor node
NODE <i>node-id</i>	The specified remote node
NODE \$HOST	Host node

NCP/VNP SET LOGGING

Examples:

NCP>SET KNOWN LOGGING KNOWN EVENTS CIRCUIT DMC-0 SINK NODE BOSTON (RET)

This command dictates that known events on circuit DMC-0 be sent to node BOSTON.

NCP>SET LOGGING CONSOLE EVENT 2.1 SINK NODE ATL (RET)

This command dictates that any occurrence of event 2.1 be logged on the console at node ATL.

SET MODULE X25-ACCESS (P)

Use the SET MODULE X25-ACCESS command to specify a destination name for a remote DTE in the volatile database.

Format:

```
SET MODULE X25-ACCESS DESTINATION dest-name NUMBER dte-address [SCOPE scope]
```

where

DESTINATION <i>dest-name</i>	Specifies a destination name for the identified remote DTE address.
NUMBER <i>dte-address</i>	Specifies the remote DTE address to be associated with the specified destination name.
SCOPE <i>scope</i>	See definition in Section 1.5.2.

Example:

```
NCP>SET MODULE X25-ACCESS DESTINATION RDG724 (RET)
NCP>NUMBER 41106700200 SCOPE TERMINAL TT51: (RET)
```

This command (shown in continuation format) sets a destination name of RDG724 for DTE address 41106700200 at terminal TT51:.

NCP

SET MODULE X25-PROTOCOL

SET MODULE X25-PROTOCOL

(P)

Use the SET MODULE X25-PROTOCOL command to create or modify DTE or group parameters in the volatile database.

Format:

SET MODULE X25-PROTOCOL	DTE <i>dte-address</i>	COUNTER TIMER <i>seconds</i>
	KNOWN DTES	STATE { OFF ON SHUT }
	GROUP <i>group-name</i>	DTE <i>dte-address</i>
	KNOWN GROUPS	NUMBER <i>group-number</i>
		TYPE <i>BI-LATERAL</i>

where

DTE-related parameters:

DTE *dte-address* Sets parameters for the specified local DTE only. See RSX-11 PSI network-specific information for the address format on your network.

KNOWN DTES Sets parameters for all local DTEs.

COUNTER TIMER *seconds* Sets a timer whose expiration causes the DTE counters to be logged and zeroed (range: 1 to 65,535).

STATE Sets the local DTE's operational state.

OFF Not available.

ON Available for normal use.

SHUT Not available for new virtual circuit connections; turns off when the last virtual circuit disconnects.

NCP SET MODULE X25-PROTOCOL

Group-related parameters:

GROUP <i>group-name</i>	Sets parameters for the specified group only.
KNOWN GROUPS	Sets parameters for all known groups.
DTE <i>dte-address</i>	Specifies the local DTE associated with the specified group. This parameter must be used with a group number.
NUMBER <i>group-number</i>	Specifies a 2-digit closed user group (CUG) number or a 4-digit bilateral closed user group (BCUG) number (range: 0 to 9999; you can omit leading zeroes). This parameter must be used with a DTE address.
TYPE BILATERAL	Required when the specified group is bilateral (BCUG).

Example:

```
NCP>SET MODULE X25-PROTOCOL GROUP CUG247 NUMBER 95 - (RET)
NCP>DTE 16175554236 (RET)
```

This command (shown in continuation format) assigns group number 95 to closed user group CUG247 on DTE 16175554236.

NCP/VNP SET MODULE X25-SERVER

NCP SET MODULE X29-SERVER

SET MODULE X25-SERVER

(P)

SET MODULE X29-SERVER

(P)

Use the NCP SET MODULE X25/X29-SERVER commands to create or modify server module parameters in the volatile database. Use the VNP SET MODULE X25-SERVER command to change the server module state in the system image file. (There is no VNP SET MODULE X29-SERVER command.)

Restrictions:

- The STATE parameter is valid only for SET MODULE X25-SERVER commands. It is the only valid parameter for VNP.
- You cannot modify parameters for existing destinations. You can only create new destinations. Existing destinations can be cleared, then reset with new parameters. If you specify a destination name, you must also specify the object.
- If you specify CALL MASK or CALL VALUE, you must specify both, and the *hex-value* of each must contain the same number of digits.

Format:

```
SET MODULE {X25-SERVER | X29-SERVER} COUNTER TIMER seconds
          STATE {OFF | ON | SHUT}
          DESTINATION dest-name {CALL MASK hex-value | CALL VALUE hex-value}
                                GROUP group-name
                                NUMBER die-address
                                OBJECT object-id
                                PRIORITY priority
                                SUBADDRESSES range
```

NCP/VNP SET MODULE X25-SERVER

NCP SET MODULE X29-SERVER

where

COUNTER TIMER
seconds

Sets a timer whose expiration causes the server module counters to be logged and zeroed (range: 0 to 65,535).

STATE

(Valid only for X25-SERVER commands) Sets the module's operational state.

OFF Not available.

ON Available for normal use.

SHUT (Invalid for VNP) Not available for new virtual circuit connections; turns off when the last virtual circuit disconnects.

DESTINATION
dest-name

Specifies the destination for which server parameters are to be created.

OBJECT *object-id*

Specifies the task that runs when an incoming call activates it. Use either an object name or an object type code to identify the task. See Section 1.5.2.

CALL MASK
hex-value

Specifies the mask applied to incoming call data before it is tested against the call value (default: no mask). Use a hexadecimal string of 2 to 32 digits (must be an even number of digits); see restrictions.

CALL VALUE
hex-value

Specifies a string of information used to test incoming call data (default: no test string). Use a hexadecimal string of 2 to 32 digits (must be an even number of digits); see restrictions.

GROUP *group-name*

Specifies the name of a closed user group (CUG) or a bilateral closed user group (BCUG) (default: no group).

NUMBER
dte-address

Specifies the remote DTE that originates the call for the specified destination (default: no DTE).

NCP/VNP SET MODULE X25-SERVER

NCP SET MODULE X29-SERVER

PRIORITY
priority

Specifies the priority of the destination. This is used to select one of a set of destinations for which the incoming call may be valid (range: 0 to 255, where 255 is the highest priority; default: 128).

SUBADDRESSES
range

Specifies a range of local DTE subaddresses that identifies the destination for the incoming call.

Examples:

NCP>SET MODULE X25-SERVER STATE SHUT (RET)

This command makes the module unavailable for new virtual circuit connections and turns it off when the last virtual circuit disconnects.

NCP>SET MODULE X29-SERVER COUNTER TIMER 600 (RET)

This command sets the module counter timer to 600.

SET NODE (P)

Use the NCP SET NODE command to create or modify parameters in the volatile database for down-line loading and up-line dumping to the specified node. If you are not performing service operations on the node, NAME is the only meaningful parameter. Use the VNP command to associate a node name with a node address in the system image file. For more information on down-line loading and up-line dumping, see the *DECnet-RSX Network Management Concepts and Procedures* manual.

Restriction:

NAME is the only valid parameter for VNP.

Format:

```
SET NODE node-id ADDRESS node-address
        DIAGNOSTIC FILE file
        DUMP ADDRESS address
        DUMP COUNT number
        DUMP FILE file
        HARDWARE ADDRESS e-address
        HOST node-id
        LOAD FILE file
        NAME node-name
        SECONDARY [LOADER] file
        SERVICE CIRCUIT circuit-id
        SERVICE DEVICE device-type
        SERVICE NODE VERSION (PHASE III)
                             (PHASE IV)
        [SERVICE] PASSWORD service-password
        TERTIARY [LOADER] file
```

where

NODE <i>node-id</i>	Specifies the node for which parameters are to be created or modified.
ADDRESS	Specifies a node address to be associated with the name given in <i>node-id</i> .

NCP/VNP SET NODE

DIAGNOSTIC FILE <i>file</i>	(For Ethernet nodes only) Specifies the file to be read when the node is down-line loaded and requests diagnostics.															
DUMP ADDRESS <i>address</i>	Specifies an octal address in memory at which to begin an up-line dump of the node (range: 0 to 77777 [octal]).															
DUMP COUNT <i>number</i>	Specifies the default number of blocks to up-line dump from the node (range: 0 to 65,535 decimal).															
DUMP FILE <i>file-id</i>	Specifies the file that is to receive a copy of the system when the node is up-line dumped.															
HARDWARE ADDRESS <i>e-address</i>	Identifies the Ethernet hardware address that was originally assigned to the DEUNA, DELUA, DEQNA, or DELQA controller for the system on the node. This address is used during operations such as down-line load to communicate with the system before it has set up its physical address.															
HOST <i>node-id</i>	Specifies (for the executor node) the node from which the executor receives its services, or represents (for the adjacent node) the host identification received by the node when it is down-line loaded (default: executor node).															
LOAD FILE <i>file</i>	Specifies a file containing the system software for down-line loading to the node.															
SECONDARY LOADER <i>file</i>	Specifies a file containing secondary loader software for down-line loading to the node.															
SERVICE CIRCUIT <i>circuit-id</i>	Specifies the circuit to be used for down-line loading and up-line dumping. This circuit is the default value for the VIA parameter of the LOAD command.															
SERVICE DEVICE <i>device-type</i>	Specifies the line controller for the service line over which the operation is to take place. Possible devices are: <table><tr><td>DA</td><td>DMC</td><td>DPV</td><td>DV</td><td>KDZ</td></tr><tr><td>DL</td><td>DMP</td><td>DU</td><td>DZ</td><td>QNA</td></tr><tr><td>DLV</td><td>DMV</td><td>DUP</td><td>KDP</td><td>UNA</td></tr></table>	DA	DMC	DPV	DV	KDZ	DL	DMP	DU	DZ	QNA	DLV	DMV	DUP	KDP	UNA
DA	DMC	DPV	DV	KDZ												
DL	DMP	DU	DZ	QNA												
DLV	DMV	DUP	KDP	UNA												

NCP/VNP SET NODE

SERVICE NODE VERSION	Specifies the node as a Phase III or Phase IV (default) node.
SERVICE PASSWORD <i>service-password</i>	Specifies the password required to trigger the bootstrap mechanism on the node.
TERTIARY LOADER <i>file</i>	Specifies a file containing tertiary loader software for down-line loading to the node.

Example:

```
NCP>SET NODE 12 NAME BLAKE (RET)
```

This command assigns the name BLAKE to node 12.

NCP/VNP SET NODE CIRCUIT

SET NODE CIRCUIT (P)

Use the NCP SET NODE CIRCUIT command to associate a DECnet circuit with a loop node name in the volatile database. Use the VNP command to do the same with the system image file.

Restriction:

The *circuit-id* used in this command cannot specify an Ethernet circuit; loop nodes are not supported for Ethernet circuits. For more details about loop nodes, see the *DECnet-RSX Network Management Concepts and Procedures* manual.

Format:

SET NODE *node-name* CIRCUIT *circuit-id*

where

NODE <i>node-name</i>	Specifies the loop node with which the circuit is to be associated.
CIRCUIT <i>circuit-id</i>	Specifies a DECnet circuit to be used for all traffic to the specified loop node.

Example:

```
NCP>SET NODE LASVGS CIRCUIT DMP-0.2 (RET)
```

This command sets node LASVGS as the loop node name for circuit DMP-0.2.

SET OBJECT (P)

Use the NCP SET OBJECT command to create or modify object parameters in the volatile database. Use the VNP command to do the same with the system image file.

Format:

```
SET OBJECT type-code      COPIES {number
                               {SINGLE}
                               NAME object-name
                               USER {DEFAULT
                                     {LOGIN
                                     VERIFICATION {INSPECT
                                                    {OFF
                                                    {ON
```

where

OBJECT <i>type-code</i>	Specifies the object for which parameters are to be created or modified.
COPIES <i>number</i>	Specifies the maximum number of copies of a task that can be run at once (range: 2 to 64). Use the keyword SINGLE (default) if the task is not multicopy.
NAME <i>object-name</i>	Specifies a name to be associated with the object. Use any valid RSX task name. If the task is multicopy, the name must end with \$\$\$.
USER	Specifies the UIC under which a task is to run when the object's VERIFICATION option is set to ON or INSPECT.
	DEFAULT (Default) The task runs under the default UIC under which it was built or installed. LOGIN The task runs under the login UIC.

NCP/VNP SET OBJECT

VERIFICATION

Specifies the degree of access to the controlled object.

INSPECT Allows access to the object while indicating to it whether or not the access control information is valid.

OFF (Default) Allows access to the object regardless of the validity of the access control information.

ON Allows access to the object only for inbound connections with valid access control information.

Example:

```
NCP>SET OBJECT 19 USER LOGIN VERIFICATION ON (RET)
```

This command specifies that object 19 is to run under the login UIC and that access is to be allowed only with valid access control information.

SET PROCESS (P)

Use the NCP SET PROCESS command to load processes and to modify process parameters in the volatile database. With NCP, a network process remains in memory until you clear the system or the process (see CLEAR SYSTEM and CLEAR PROCESS) or until you reboot the system. Use the VNP SET PROCESS command to load processes and to modify process parameters in the system image file.

Restrictions:

- If you reload NW after clearing it, you must also issue the SET MODULE X25-PROTOCOL command (first with STATE OFF and then with STATE ON) to update the process pointers to the database.
- Data space is allocated within the process's addressing space only.

Format:

```
SET PROCESS process-name    ALL
                               [LOCATION] {FIRSTFIT
                                   {TOPDOWN}
                               MAXIMUM CONTROLLERS count
                               MAXIMUM LINES count
                               PARTITION partition-name
```

where

PROCESS <i>process-name</i>	Specifies the process for which parameters are to be modified.
ALL	Loads the process with all process parameter defaults specified in the permanent database. If you specify ALL, you cannot include any other parameters.
LOCATION	(Invalid for VNP) Specifies the type of dynamic memory allocation for the driver process.
FIRSTFIT	(Default) Loads the process at the first available space that is large enough.

NCP/VNP SET PROCESS

TOPDOWN Loads the process at the top of the partition.

**MAXIMUM
CONTROLLERS**
count

Specifies the maximum number of hardware controllers (range: 1 to 64) for which the process is to allocate data space (see restrictions).

MAXIMUM LINES
count

Specifies the maximum number of lines (range: 0 to 64) for which the process is to allocate data space (see restrictions).

PARTITION
partition-name

Specifies the partition name. Use a name consisting of 1 to 6 Radix-50 characters.

Example:

```
NCP>SET PROCESS DPV MAXIMUM LINES 2 (RET)
```

This command limits process DPV to the control of two lines.

SET SYSTEM (P)

Use the NCP or VNP SET SYSTEM command to load the Communications Executive and the volatile database into the system. The volatile database is loaded from the permanent database, which includes all the network process, line, circuit, module, and node defaults that have been set or defined.

Restriction:

On RSX-11M/M-PLUS systems, you must have installed NTINIT using VMR before you can execute a VNP SET SYSTEM command.

Format:

SET SYSTEM [TOP]

where

TOP (Invalid for VNP) Specifies that the system be loaded at the top of memory.

NCP SET TRACE

SET TRACE (P)

Use the SET TRACE command to start tracing the specified RSX-11 PSI line(s). For more information on the trace interpreter task, see Chapter 9. Note that only one trace file can be active at a time. To turn off tracing, use the CLEAR TRACE command.

Format:

```
SET TRACE (LINE line-id ) BUFFER SIZE block-count  
          (ACTIVE LINES) FILE file
```

where

LINE <i>line-id</i>	Sets tracing for the specified line only.
ACTIVE LINES	Sets tracing for all active lines.
BUFFER SIZE <i>block-count</i>	Specifies the size (in 32-word blocks) of the trace buffer used to collect trace data (range: 1 to 255; default: 4).
FILE <i>file</i>	Specifies the name of the file to which trace data is to be copied (default: LB:[1,6]PSITRACE.SYS).

Examples:

```
NCP>SET TRACE LINE SDP-0 STATE ON BUFFER SIZE 10 (RET)
```

This command turns tracing on for line SDP-0 and allocates a 10-block buffer in which to collect trace data.

SHOW ALIAS (NP)

Use the NCP SHOW ALIAS command to display alias information stored in the volatile database. Use the VNP command to do the same with the system image file.

Format:

```
SHOW { ALL ALIASES
      ALIAS alias-name
      KNOWN ALIASES } [ CHARACTERISTICS ] [[SCOPE] scope] [TO file]
                        SUMMARY
```

where

ALL ALIAS	Displays information for all aliases.
ALIAS <i>alias-name</i>	Displays information for the specified alias only.
KNOWN ALIASES	Displays information for all aliases for the specified scope (default scope is your terminal).
CHARACTERISTICS SUMMARY	See definitions in Section 1.5.2.
SCOPE <i>scope</i>	(Invalid for ALL ALIASES) See definition in Section 1.5.2.
TO <i>file</i>	(Valid for NCP only) See definition in Section 1.5.2.

Example:

```
NCP> SHOW ALIAS SMITH CHARACTERISTICS TERMINAL TT24: - (RET)
NCP> TO LB:[1,9]ALIAS.SYS (RET)
```

This command (shown in continuation format) directs static display information for alias SMITH on terminal TT24: to file LB:[1,9]ALIAS.SYS.

NCP

SHOW AREA

SHOW AREA

(NP)

Use the NCP SHOW AREA command to display area information stored in the volatile database.

Format:

```
SHOW { AREA area-number } [ CHARACTERISTICS ] [ TO file ]  
    { ACTIVE AREAS  
      KNOWN AREAS  
      SIGNIFICANT AREAS }
```

where

AREAS <i>area-number</i>	Displays information for the specified area only.
ACTIVE AREAS	Displays information for all active areas.
KNOWN AREAS	Displays information for all areas.
SIGNIFICANT AREAS	Displays information for all areas for which information is available.
CHARACTERISTICS STATUS SUMMARY	See definitions in Section 1.5.2.
TO <i>file</i>	See definition in Section 1.5.2.

Example:

```
NCP>SHOW AREA 4 CHARACTERISTICS (RET)
```

This command displays static information for area number 4.

SHOW CIRCUIT (NP)

Use the NCP SHOW CIRCUIT command to display circuit information stored in the volatile database. Use the VNP command to do the same with the system image file.

Format:

```
SHOW {CIRCUIT circuit-id
      ACTIVE CIRCUITS
      KNOWN CIRCUITS
      SIGNIFICANT CIRCUITS} [CHARACTERISTICS
                             COUNTERS
                             STATUS
                             SUMMARY] [TO file]
```

where

CIRCUIT <i>circuit-id</i>	Displays information for the specified circuit only.
ACTIVE CIRCUITS	(Invalid for VNP) Displays information for all active circuits.
KNOWN CIRCUITS	Displays information for all known circuits.
SIGNIFICANT CIRCUITS	(Invalid for VNP) Displays information about all circuits for which information is available.
CHARACTERISTICS COUNTERS STATUS SUMMARY	See definitions in Section 1.5.2.
TO <i>file</i>	(Valid for NCP only) See definition in Section 1.5.2.

Example:

```
NCP>SHOW ACTIVE CIRCUITS COUNTERS (RET)
```

This command displays circuit error and performance statistics for all active circuits.

NCP/VNP SHOW EXECUTOR

SHOW EXECUTOR (NP)

Use the NCP SHOW EXECUTOR command to display local node information stored in the volatile database. Use the VNP command to do the same with the system image file.

Format:

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

where

CHARACTERISTICS See definitions in Section 1.5.2.
COUNTERS
STATUS
SUMMARY

TO file (Valid for NCP only) See definition in Section 1.5.2.

Example:

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

This command displays local node dynamic information.

SHOW LINE (NP)

Use the NCP SHOW LINE command to display line information stored in the volatile database. Use the VNP command to do the same with the system image file.

Format:

```
SHOW { LINE line-id
      ACTIVE LINES
      KNOWN LINES
      SIGNIFICANT LINES } [ CHARACTERISTICS
                           COUNTERS
                           STATUS
                           SUMMARY ] [TO file]
```

where

LINE <i>line-id</i>	Displays information for the specified line only.
ACTIVE LINES	(Invalid for VNP) Displays information for all active lines.
KNOWN LINES	Displays information for all known lines.
SIGNIFICANT LINES	(Invalid for VNP) Displays information about all lines for which information is available.
CHARACTERISTICS COUNTERS STATUS SUMMARY	See definitions in Section 1.5.2.
TO <i>file</i>	(Valid for NCP only) See definition in Section 1.5.2.

Example:

```
NCP>SHOW LINE DMC-1 SUMMARY TO LB:[1,6]LINSUM.SYS (RET)
```

This command directs the most useful information about line DMC-1 to a file named LB:[1,6]LINSUM.SYS.

NCP/VNP SHOW LOGGING

SHOW LOGGING (NP)

Use the NCP SHOW LOGGING command to display logging information stored in the volatile database. Use the VNP command to do the same with the system image file.

Format:

```
SHOW { ACTIVE LOGGING  
      KNOWN LOGGING  
      LOGGING CONSOLE  
      LOGGING FILE  
      LOGGING MONITOR  
      SIGNIFICANT LOGGING } [ CHARACTERISTICS  
                             STATUS  
                             SUMMARY  
                             EVENTS ] [ KNOWN SINKS  
                                       SINK NODE node-id ] [TO file]
```

where

ACTIVE LOGGING	(Invalid for VNP) Displays all active logging information.
KNOWN LOGGING	Displays information for all known logging components.
LOGGING CONSOLE	Displays information for the console logging component.
LOGGING FILE	Displays information for the file logging component.
LOGGING MONITOR	Displays information for the monitor logging component.
SIGNIFICANT LOGGING	(Invalid for VNP) Displays logging information about all sink types for which information is available.
CHARACTERISTICS STATUS SUMMARY	See definitions in Section 1.5.2.
EVENTS	Displays event class and type information for the given logging component.

NCP/VNP SHOW LOGGING

<i>TO file</i>	(Valid for NCP only) See definition in Section 1.5.2.
KNOWN SINKS	(Default) Displays logging information for all known sink nodes.
SINK NODE <i>node-id</i>	Displays logging information for the specified sink node only.

Example:

```
NCP>SHOW LOGGING FILE EVENTS SINK NODE CHI42 (RET)
```

This command displays event class and type information for the logging file on node CHI42.

NCP/VNP

SHOW MODULE X25-ACCESS

SHOW MODULE X25-ACCESS

(NP)

Use the NCP SHOW MODULE X25-ACCESS command to display remote DTE destination information stored in the volatile database. Use the VNP command to do the same with the system image file.

Format:

```
SHOW MODULE X25-ACCESS { ALL DESTINATIONS
                        DESTINATION dest-name
                        KNOWN DESTINATION
                        } [ CHARACTERISTICS
                        SUMMARY
                        ]
                        [[SCOPE] scope] [TO file]
```

where

ALL DESTINATIONS	Displays information for all destinations, regardless of scope.
DESTINATION <i>dest-name</i>	Displays information for the specified destination only.
KNOWN DESTINATIONS	Displays information for all known destinations within the specified scope.
CHARACTERISTICS SUMMARY	See definitions in Section 1.5.2.
SCOPE <i>scope</i>	See definition in Section 1.5.2.
TO <i>file</i>	(Valid for NCP only) See definition in Section 1.5.2.

Example:

```
NCP>SHOW MODULE X25-ACCESS ALL DESTINATIONS CHARACTERISTICS (RET)
```

This command displays static information for all destinations.

SHOW MODULE X25-PROTOCOL (NP)

Use the NCP SHOW MODULE X25-PROTOCOL command to display protocol module information stored in the volatile database. Use the VNP command to do the same with the system image file. Some types of information can be qualified by either DTE or group.

Format:

SHOW MODULE X25-PROTOCOL	[DTE <i>dte-address</i>]	[CHARACTERISTICS]	[TO <i>file</i>]
	KNOWN DTES	COUNTERS	
		SUMMARY	
	[GROUP <i>group-name</i>]	[CHARACTERISTICS]	[TO <i>file</i>]
	KNOWN GROUPS	SUMMARY	
	CHARACTERISTICS	[TO <i>file</i>]	
	STATUS		
	SUMMARY		

where

DTE <i>dte-address</i>	Displays information for the specified DTE only.
KNOWN DTES	Displays information for all known DTES.
GROUP <i>group-name</i>	Displays information for the specified group only.
KNOWN GROUPS	Displays information for all known groups.
CHARACTERISTICS	See definitions in Section 1.5.2.
COUNTERS	
STATUS	
SUMMARY	
TO <i>file</i>	(Valid for NCP only) See definition in Section 1.5.2.

NCP/VNP SHOW MODULE X25-PROTOCOL

Example:

```
NCP>SHOW MODULE X25-PROTOCOL KNOWN GROUPS SUMMARY (RET)
```

This command displays the most useful information about all known groups in the network.

SHOW MODULE X25-SERVER SHOW MODULE X29-SERVER (NP)

Use the NCP SHOW MODULE X25/X29-SERVER commands to display server module information stored in the volatile database. Use the VNP commands to do the same with the system image file. Some types of information can be qualified by destination.

Format:

SHOW MODULE	X25-SERVER X29-SERVER	DESTINATION <i>dest-name</i> KNOWN DESTINATIONS	CHARACTERISTICS SUMMARY	[TO <i>file</i>]
		CHARACTERISTICS COUNTERS STATUS SUMMARY		

where

DESTINATION <i>dest-name</i>	Displays information for the specified destination only.
KNOWN DESTINATIONS	Displays information for all known destinations.
CHARACTERISTICS COUNTERS STATUS SUMMARY	See definitions in Section 1.5.2.
TO <i>file</i>	(Valid for NCP only) See definition in Section 1.5.2.

NCP/VNP SHOW MODULE X25/X29-SERVER

Examples:

NCP>SHOW MODULE X25-SERVER COUNTERS TO LB:[1,6]X25CTR.SYS (RET)

This command directs the error and performance statistics for the module to a file named LB:[1,6]X25CTR.SYS.

NCP>SHOW MODULE X29-SERVER DESTINATION CHI55 CHARACTERISTICS (RET)

This command displays static module information for destination CHI55.

SHOW NODE (NP)

Use the NCP SHOW NODE command to display node information stored in the volatile database. Use the VNP command to do the same with the system image file. See the SHOW EXECUTOR command for executor node displays.

Restriction:

No information will be displayed for an end node until a link has been established to it. The node may appear to be unreachable even when it is not.

Format:

```
SHOW { NODE node-id
      ACTIVE NODES
      ADJACENT NODE
      KNOWN NODES
      LOOP NODES
      SIGNIFICANT NODES } [ CHARACTERISTICS ] [ TO file ]
                        [ COUNTERS
                        STATUS
                        SUMMARY ]
```

where

- | | |
|---------------------|---|
| NODE <i>node-id</i> | Displays information for the specified node. You can also use the wildcard character (*) in place of the <i>node-id</i> (for example, *. * specifies all nodes in all areas, <i>n</i> . * specifies all nodes in area number <i>n</i> , and *. <i>n</i> specifies all areas that have a node address of <i>n</i>). |
| ACTIVE NODES | (Invalid for VNP) For a routing node, displays information for all reachable nodes. For a nonrouting node, displays information for all nodes that are (1) adjacent, (2) designated routers, or (3) connected to the executor by a logical link. |
| KNOWN NODES | Displays information for all known nodes. |
| LOOP NODES | Displays information for all loop nodes. |
| SIGNIFICANT NODES | (Invalid for VNP) Displays information about all nodes for which any information is available. |

NCP/VNP SHOW NODE

CHARACTERISTICS
COUNTERS
STATUS
SUMMARY

See definitions in Section 1.5.2.

TO file

(Valid for NCP only) See definition in Section 1.5.2.

Example:

```
NCP>SHOW KNOWN NODES COUNTERS RET
```

This command displays error and performance statistics for all known nodes.

SHOW OBJECT (NP)

Use the NCP SHOW OBJECT command to display object information stored in the volatile database. Use the VNP command to do the same with the system image file.

Format:

```
SHOW [OBJECT type-code] [CHARACTERISTICS] [TO file]  
    [KNOWN OBJECTS] [SUMMARY]
```

where

OBJECT <i>type-code</i>	Displays information for the specified object only.
KNOWN OBJECTS	Displays information for all known objects.
CHARACTERISTICS SUMMARY	See definitions in Section 1.5.2.
TO <i>file</i>	(Valid for NCP only) See definition in Section 1.5.2.

Example:

```
NCP>SHOW OBJECT 25 (RET)
```

This command displays only the most useful information about object 25.

NCP/VNP

SHOW PROCESS

SHOW PROCESS

(NP)

Use the NCP SHOW PROCESS command to display process information stored in the volatile database. Use the VNP command to do the same with the system image file.

Format:

```
SHOW { PROCESS process-name } [ STATUS ] [ TO file ]  
      { ACTIVE PROCESSES }  
      { KNOWN PROCESSES }
```

where

PROCESS <i>process-name</i>	Displays information for the specified process only.
ACTIVE PROCESSES	(Invalid for VNP) Displays information for all active processes.
KNOWN PROCESSES	Displays information for all known processes.
STATUS SUMMARY	See definitions in Section 1.5.2.
TO <i>file</i>	(Valid for NCP only) See definition in Section 1.5.2.

Example:

```
NCP>SHOW PROCESS KDP STATUS (RET)
```

This command displays dynamic information for process KDP.

SHOW SYSTEM (NP)

Use the NCP SHOW SYSTEM command to display system information stored in the volatile database. Use the VNP command to do the same with the system image file.

Format:

```
SHOW SYSTEM [ CHARACTERISTICS ] [ TO file ]  
            [ COUNTERS  
            [ STATUS  
            [ SUMMARY ]
```

where

CHARACTERISTICS See definitions in Section 1.5.2.
COUNTERS
STATUS
SUMMARY

TO *file* (Valid for NCP only) See definition in Section 1.5.2.

Example:

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

This command displays system error and performance statistics.

NCP

SHOW TRACE

SHOW TRACE

(NP)

Use the SHOW TRACE command to display trace information stored in the volatile database (see Chapter 9 for more information on the trace interpreter task). Trace information is kept only for RSX-11 PSI lines.

Format:

```
SHOW TRACE [STATUS] [TO file]
           [SUMMARY]
```

where

STATUS SUMMARY See definitions in Section 1.5.2.

TO file See definition in Section 1.5.2.

Example:

```
NCP>SHOW TRACE TO LB:[1,6]TRACE.SYS (RET)
```

This command directs a summary (by default) of trace information to file LB:[1,6]TRACE.SYS.

TELL (NP)

Use the TELL prefix to send an NCP command to a remote node for execution. TELL sets the executor for only one command and must prefix the command for which it is intended. The TELL part of the command always executes at the local node, even though the executor may be set to a remote node identification. You can specify access control information (if required) to connect to the remote node.

Format:

TELL *node-id*[*acc-con-info*] *ncp-command*

where

<i>node-id</i>	Specifies the node, by name or alias, to receive and execute the NCP command.
<i>acc-con-info</i>	Specifies access control information (if required) to connect to the node. (See format description in Section 1.5.2.)
<i>ncp-command</i>	Represents any valid NCP command that is remotely executable. The <i>DECnet-RSX Network Manager's Pocket Guide</i> lists all NCP commands and flags those that are not executable remotely.

Example:

NCP> TELL BOS LOAD NODE ALB **RET**

This command sends the LOAD NODE command to node BOS, where it executes.

NCP

TRIGGER NODE

TRIGGER NODE

(P)

Use the TRIGGER NODE command to trigger the bootstrap mechanism of a node so that the node loads itself. This command initiates the loading sequence for an unattended system. For information on down-line load operations, see the *DECnet-RSX Network Management Concepts and Procedures* manual.

Format:

TRIGGER NODE *node-id* VIA *circuit-id*
 PHYSICAL ADDRESS *e-address*
 [SERVICE] PASSWORD *service-password*

where

NODE *node-id* Specifies the node whose bootstrap is to be triggered.

VIA *circuit-id* Specifies the circuit over which the operation is to take place.

PHYSICAL ADDRESS *e-address* (For Ethernet nodes only) Identifies the Ethernet physical address that the node currently uses to identify itself. Required for Ethernet circuits if the hardware address parameter has not been specified in the volatile database; see SET NODE.

SERVICE PASSWORD *service-password* Specifies the password required to trigger the bootstrap mechanism on the node.

NOTE

If you do not want a password echoed to your terminal while you enter it, press the RETURN key after the keyword PASSWORD. NCP prompts for the password and turns off echoing until the next prompt.

Examples:

NCP>TRIGGER NODE NYC (RET)

This command triggers the bootstrap mechanism on node NYC to initiate a down-line load.

NCP>TRIGGER NODE NYC VIA DMC-0 PASSWORD 5A5A5A5A (RET)

This command provides service password 5A5A5A5A to trigger the bootstrap mechanism on node NYC and initiate a down-line load over circuit DMC-0.

NCP

TRIGGER VIA

TRIGGER VIA

(P)

Use the TRIGGER VIA command to trigger the bootstrap mechanism of a node so that the node loads itself. This command initiates the loading sequence for an unattended system by triggering the node by way of the specified circuit. The node identification is obtained from the volatile database on the executor node. For information on down-line load operations, see the *DECnet-RSX Network Management Concepts and Procedures* manual.

Format:

TRIGGER VIA *circuit-id* PHYSICAL ADDRESS *e-address*
[SERVICE] PASSWORD *service-password*

where

VIA *circuit-id* Specifies the circuit over which the operation is to take place.

PHYSICAL ADDRESS (For Ethernet nodes only) Identifies the Ethernet physical address that the node currently uses to identify itself. Required for Ethernet circuits if the hardware address parameter has not been specified in the volatile database; see SET NODE.
e-address

SERVICE PASSWORD Specifies the password required to trigger the bootstrap mechanism on the node.
service-password

NOTE

If you do not want a password echoed to your terminal while you enter it, press the RETURN key after the keyword PASSWORD. NCP prompts for the password and turns off echoing until the next prompt.

NCP TRIGGER VIA

Examples:

NCP> TRIGGER VIA DMC-0 (RET)

This command triggers the bootstrap mechanism on the node connected to circuit DMC-0.

NCP> TRIGGER VIA DMC-0 PASSWORD FFFFFFFF (RET)

This command provides service password FFFFFFFF to trigger the bootstrap mechanism on the node connected to circuit DMC-0.

NCP

ZERO CIRCUIT

ZERO CIRCUIT

(P)

Use the ZERO CIRCUIT command to zero circuit counters for the specified circuit(s). The executor node maintains these counters on a per circuit basis.

Format:

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

where

CIRCUIT *circuit-id* Zeroes counters for the specified circuit only.

KNOWN CIRCUITS Zeroes counters for all known circuits.

Example:

NCP>ZERO CIRCUIT DMC-0 (KEY)

This command zeroes circuit counters for circuit DMC-0.

ZERO EXECUTOR
(P)

Use the ZERO EXECUTOR command to zero node counters associated with and maintained on the executor node.

Format:

ZERO EXECUTOR [COUNTERS]

NCP

ZERO LINE

ZERO LINE

(P)

Use the ZERO LINE command to zero line counters for the specified line(s). The executor node maintains these counters on a per line basis.

Format:

ZERO {LINE *line-id* } [COUNTERS]
 KNOWN LINES

where

LINE *line-id* Zeroes counters for the specified line only.

KNOWN LINES Zeroes counters for all known lines.

Example:

NCP>ZERO LINE DUV-3 (RET)

This command zeroes line counters for line DUV-3.

ZERO MODULE X25-PROTOCOL

ZERO MODULE X25-PROTOCOL**(P)**

Use the ZERO MODULE X25-PROTOCOL command to zero module counters for the specified DTE(s). The executor node maintains these counters on a per DTE basis.

Format:

```
ZERO MODULE X25-PROTOCOL DTE dte-address [COUNTERS]
                                [KNOWN DTES]
```

where

DTE *dte-address* Zeroes counters for the specified DTE only.

KNOWN DTES Zeroes counters for all known DTEs.

Example:

```
NCP>ZERO MODULE X25-PROTOCOL DTE 123456789 (RET)
```

This command zeroes X.25 protocol module counters for DTE 123456789.

NCP
ZERO MODULE X25/X29-SERVER

ZERO MODULE X25-SERVER
ZERO MODULE X29-SERVER
(P)

Use the ZERO MODULE X25/X29-SERVER commands to zero X.25/X.29 server module counters that are maintained on the executor node.

Format:

```
ZERO MODULE [X25-SERVER] [COUNTERS]  
[X29-SERVER]
```

ZERO NODE (P)

Use the ZERO NODE command to zero node counters for the specified node(s).
The executor node maintains node counters on a per node basis.

Format:

ZERO {NODE *node-id* } [COUNTERS]
 {KNOWN NODES}

where

NODE *node-id* Zeroes counters for the specified node only.

KNOWN NODES Zeroes counters for all known nodes.

Example:

NCP>ZERO NODE GEERT (RET)

This command zeroes node counters for node GEERT.

NCP
ZERO SYSTEM

ZERO SYSTEM
(P)

Use the **ZERO SYSTEM** command to zero system counters associated with and maintained on the executor node.

Format:

ZERO SYSTEM [COUNTERS]

1.5.4 RSX-11S NCP Command Summary

This section summarizes the NCP commands that are supported by RSX-11S. CFE and VNP cannot be used on an RSX-11S system directly; they can, however, be used to modify an RSX-11S system image stored on a host system. The supported NCP commands are a subset of the commands supported on RSX-11M and RSX-11M-PLUS operating systems. Unless otherwise noted in the restriction section of an individual command description, all of the following commands can be initiated both locally (that is, at the RSX-11S node) and remotely (not at the RSX-11S node).

The commands are presented in alphabetical order, using the same definitions described in Section 1.5.2. To distinguish this subset from the full set, NCP/S is printed at the top of each page above the command name. In addition, each command is designated as privileged (P) or nonprivileged (NP).

NCP/S

LOOP EXECUTOR/NODE

LOOP EXECUTOR/NODE

(NP)

Use the LOOP NODE command to test a node in the network. You can include access control information if the node requires it. If you are testing the executor node, you can use the LOOP EXECUTOR command. Either command causes test blocks of data to be transmitted to the specified node. See the *DECnet-RSX Network Management Concepts and Procedures* manual for more information on loopback testing.

Format:

```
LOOP {NODE node-id[acc-con-info]} COUNT count
    {EXECUTOR}                     LENGTH length
                                   WITH { MIXED
                                         ONES
                                         ZEROES }
```

where

NODE <i>node-id</i>	Specifies a node for loopback testing.
<i>acc-con-info</i>	Specifies access control information, if required.
EXECUTOR	Specifies the executor node for loopback testing.
COUNT <i>count</i>	Specifies the number of blocks to be sent during loopback testing (range: 1 to 65,535; default: 1 block is looped).
LENGTH <i>length</i>	Specifies the length (in bytes) of blocks to be sent during loopback testing. When testing over the Ethernet, the length must be a decimal integer in the range of 32 to 1484. Otherwise, the length must be a decimal integer in the range of 1 to <i>n</i> , where <i>n</i> must be less than the smaller of either the local looper buffer size or the remote mirror buffer size (default: 40 bytes).
WITH	Specifies the type of binary information to be sent during testing (default: MIXED — a combination of ones and zeroes).

NCP/S LOOP EXECUTOR/NODE

Example:

NCP>LOOP NODE NYC COUNT 10 **RET**

This command loops 10 blocks of mixed test messages to remote node NYC. Each block is 40 bytes.

NCP/S

SET CIRCUIT

SET CIRCUIT

(P)

Use the SET CIRCUIT command to set the operational state for the specified circuit in the volatile database.

Format:

```
SET CIRCUIT circuit-id    STATE{OFF  
                             (ON)
```

where

CIRCUIT
circuit-id Specifies the circuit whose state is to be set.

STATE Sets the circuit's operational state to ON or OFF.

Example:

```
NCP>SET CIRCUIT KDZ-1-3 STATE OFF (RET)
```

This command sets the state of circuit KDZ-1-3 to OFF.

SET EXECUTOR HOST (P)

Use the SET EXECUTOR HOST command to specify a host node in the volatile database.

Format:

SET EXECUTOR HOST {*node-address*
\$HOST
\$LOCAL }

where

HOST *node-address* Specifies the address for the host node or the local node to be used for down-line load, trigger, and up-line dump service operations.

Example:

NCP>SET EXECUTOR HOST 08 (RET)

This command sets node 08 as the host node for down-line load, trigger, and up-line dump.

NCP/S

SET LINE

SET LINE

(P)

Use the SET LINE command to set the controller mode for a specified loaded line in the volatile database.

Restrictions:

- SET LINE cannot be initiated from a remote node.
- The specified line must be in the OFF state (that is, not CLEARED).

Format:

SET LINE *line-id* CONTROLLER {LOOPBACK
NORMAL }

where

LINE *line-id* Specifies the line for which the controller mode is to be specified.

CONTROLLER (For Ethernet, DMC/DMR, DMP, DHU, and DHV lines)
Specifies the controller mode for the line. The line's circuit must be in the OFF state.

LOOPBACK Internal device loopback mode

NORMAL Normal operating mode

Example:

NCP>SET LINE DMC-0 CONTROLLER LOOPBACK (RET)

This command sets the operating mode for line DMC-0 to loopback mode.

SET LOGGING CONSOLE (P)

Use the SET LOGGING CONSOLE command to modify the operational state of the logging console in the volatile database.

Format:

SET LOGGING CONSOLE STATE ☐ OFF
☐ ON

where

STATE Sets the operational state of the logging console on the executor node. When the state is OFF, events are discarded.

Example:

NCP>SET LOGGING CONSOLE STATE OFF ☐ RET

This command sets the state of the logging console to OFF.

NCP/S

SHOW CIRCUIT

SHOW CIRCUIT

(NP)

Use the SHOW CIRCUIT command to display circuit information stored in the volatile database.

Restriction:

ACTIVE, SIGNIFICANT, and KNOWN CIRCUITS cannot be initiated locally.

Format:

```
SHOW {CIRCUIT circuit-id
      ACTIVE CIRCUITS
      KNOWN CIRCUITS
      SIGNIFICANT CIRCUITS} [COUNTERS
                             STATUS
                             SUMMARY]
```

where

CIRCUIT <i>circuit-id</i>	Displays information for the specified circuit only.
ACTIVE CIRCUITS	Displays information for all active circuits.
KNOWN CIRCUITS	Displays information for all known circuits.
SIGNIFICANT CIRCUITS	Displays information for all significant circuits.
COUNTERS STATUS SUMMARY	See definitions in Section 1.5.2.

Example:

```
NCP>SHOW CIRCUIT DMC-0 COUNTERS (RET)
```

This command displays error and performance statistics for circuit DMC-0.

SHOW EXECUTOR (NP)

Use the SHOW EXECUTOR command to display local node information stored in the volatile database.

Format:

```
SHOW EXECUTOR [CHARACTERISTICS  
COUNTERS  
STATUS  
SUMMARY]
```

where

CHARACTERISTICS	See definitions in Section 1.5.2.
COUNTERS	
STATUS	
SUMMARY	

Example:

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

This command displays local node dynamic information.

NCP/S SHOW LINE

SHOW LINE (NP)

Use the SHOW LINE command to display line information stored in the volatile database.

Restriction:

Only LINE *line-id* COUNTERS can be initiated locally. All other commands can be initiated only from remote nodes.

Format:

```
SHOW { LINE line-id
      ACTIVE LINES
      KNOWN LINES
      SIGNIFICANT LINES } [ COUNTERS
                          STATUS
                          SUMMARY ]
```

where

LINE <i>line-id</i>	Displays information for the specified line only.
ACTIVE LINES	Displays information for all active lines.
KNOWN LINES	Displays information for all known lines.
SIGNIFICANT CIRCUITS	Displays information for all significant circuits.
COUNTERS STATUS SUMMARY	See definitions in Section 1.5.2.

Example:

```
NCP>SHOW LINE DMC-1 SUMMARY (RET)
```

This command displays the most useful information about line DMC-1.

SHOW LOGGING CONSOLE (NP)

Use the SHOW LOGGING CONSOLE command to display dynamic logging console information stored in the volatile database.

Format:

SHOW LOGGING CONSOLE STATUS

where

STATUS (NCP only) Displays dynamic information for the specified component.

NCP/S

SHOW NODE

SHOW NODE

(NP)

Use the SHOW NODE command to display node information stored in the volatile database. See the SHOW EXECUTOR command for executor node displays.

Restrictions:

- ACTIVE NODES and KNOWN NODES cannot be initiated locally.
- No information will be displayed for an end node until a link has been established to it. The node may appear to be unreachable even when it is not.
- Only name and address static characteristics are kept on 11S.

Format:

```
SHOW { NODE node-id } [ CHARACTERISTICS  
    ACTIVE NODES      COUNTERS  
    KNOWN NODES      STATUS  
                      SUMMARY ]
```

where

NODE <i>node-id</i>	Displays information for the specified node only.
ACTIVE NODES	Displays information for all active nodes.
KNOWN NODES	Displays information for all known nodes.
CHARACTERISTICS	See definitions in Section 1.5.2.
COUNTERS	
STATUS	
SUMMARY	

Example:

```
NCP>SHOW NODE LOSANG COUNTERS (RET)
```

This command displays error and performance statistics for node LOSANG.

SHOW SYSTEM **(NP)**

Use the **SHOW SYSTEM** command to display system information stored in the volatile database.

Format:

```
SHOW SYSTEM [CHARACTERISTICS  
COUNTERS  
STATUS  
SUMMARY]
```

where

CHARACTERISTICS	See definitions in Section 1.5.2.
COUNTERS	
STATUS	
SUMMARY	

Example:

```
NCP>SHOW SYSTEM COUNTERS (RED)
```

This command displays system error and performance statistics.

NCP/S

ZERO CIRCUIT

ZERO CIRCUIT

(P)

Use the **ZERO CIRCUIT** command to zero circuit counters for the specified circuit(s). The executor node maintains these counters on a per circuit basis.

Restriction:

KNOWN CIRCUITS cannot be initiated locally.

Format:

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

where

CIRCUIT *circuit-id* Zeroes counters for the specified circuit only.

KNOWN CIRCUITS Zeroes counters for all known circuits.

Example:

NCP>ZERO CIRCUIT DUP-0 (RET)

This command zeroes circuit counters for circuit DUP-0.

ZERO EXECUTOR (P)

Use the ZERO EXECUTOR command to zero node counters associated with and maintained on the executor node.

Format:

ZERO EXECUTOR [COUNTERS]

NCP/S

ZERO LINE

ZERO LINE

(P)

Use the ZERO LINE command to zero line counters for the specified line(s). The executor node maintains these counters on a per line basis.

Restriction:

KNOWN LINES cannot be initiated locally.

Format:

```
ZERO {LINE line-id } [COUNTERS]
      {KNOWN LINES}
```

where

LINE *line-id* Zeroes counters for the specified line only.

KNOWN LINES Zeroes counters for all known lines.

Example:

```
NCP>ZERO LINE DUV-3 (RET)
```

This command zeroes line counters for line DUV-3.

ZERO NODE

(P)

Use the ZERO NODE command to zero node counters for the specified node(s).
The executor node maintains node counters on a per node basis.

Restriction:

This command cannot be initiated locally.

Format:

ZERO {*NODE node-id*
 KNOWN NODES} [COUNTERS]

where

NODE node-id Zeroes counters for the specified node only.

KNOWN NODES Zeroes counters for all known nodes.

Example:

NCP>TELL NET11S ZERO KNOWN NODES (RET)

This command zeroes node counters for all known nodes.

NCP/S
ZERO SYSTEM

ZERO SYSTEM
(P)

Use the ZERO SYSTEM command to zero system counters associated with and maintained on the executor node.

Format:

ZERO SYSTEM [COUNTERS]

Console Carrier Requester (CCR)

The console carrier requester (CCR) uses the DLX interface to communicate with the console carrier server (CCS) residing on a target node to provide remote access to normal console services. More information about the use of CCR can be found in the *DECnet-RSX Network Management Concepts and Procedures* manual.

2.1 Running CCR

To use CCR use the following command:

```
CCR NODE node-id      SERVICE CIRCUIT circuit-id
                        SERVICE PASSWORD password
                        PHYSICAL ADDRESS e-address
```

where

NODE <i>node-id</i>	Specifies the target node by address (range: 1 to 1023) or name (1 to 6 alphanumeric characters, including at least 1 alphabetic character).
SERVICE CIRCUIT <i>circuit-id</i>	Identifies the circuit to the target node. The <i>circuit-id</i> variable has the format <i>dev-c[-u][.t]</i> .
SERVICE PASSWORD <i>password</i>	Defines the password required to access the target node. The password is a hexadecimal number in the range of 0 to FFFFFFFFFFFFFFFF (up to 16 hexadecimal digits).

PHYSICAL ADDRESS
e-address

Identifies the Ethernet physical address that the node currently uses to identify itself. (Required if the hardware address parameter has not been specified in the volatile database; see the SET NODE command in Chapter 1.)

The *node-id* is required. If the other parameters are not specified in the command line, they must be specified in the down-line load database. If they are specified in the command line, they override the parameters set in the down-line load database.

2.2 CCR Special Characters

Two special characters are supplied with the CCR software:

CTRLB

Operates as a BREAK command to get the attention of the console on-line debugging tool (ODT).

CTRLD

Initiates an exit from console carrier mode.

2.3 CCR Error Handling

CCR error messages are listed in Chapter 11.

Event File Interpreter (EVF)

The Event File Interpreter (EVF) is part of the event logging facility provided by DECnet-RSX. This facility enables you to collect events in a machine-readable file for later formatting by EVF. The event collector and Event File Interpreter are similar to the Error Logger and Error Report Generator provided by RSX-11M/M-PLUS.

3.1 Invoking EVF

Any user can use EVF to create a formatted event listing because EVF is a nonprivileged task. EVF can be invoked using either the DCL CLI or the MCR CLI. To invoke EVF using the DCL CLI type the following command:

```
ANALYZE/EVENT__LOG[qualifiers] [infile]
```

where *qualifiers* is a list of command qualifiers and *infile* is the name of the input file.

There are three methods of invoking EVF using the MCR CLI:

1. MCR>EVF (RET)

EVF then prompts:

EVF>

Enter an EVF command immediately following the prompt. If the command executes successfully, the utility will redisplay the prompt on the next line. If an error occurs, an error message is displayed indicating the reason for the error followed by a prompt.

2. MCR>EVF *command* (RET)

where *command* is a valid EVF command. With this method you will return to MCR after the command is executed.

3. MCR>EVF * *command-file* (RET)

where *command-file* is the name of an indirect command file containing valid EVF commands. Command files can be nested up to six deep. You will return to MCR after the commands in the file(s) have been executed.

3.2 Exiting EVF

To exit the EVF utility, enter (CTRL)Z in response to the utility prompt.

3.3 EVF Command Format

The EVF command line has the following format:

DCL format: ANALYZE/EVENT__LOG[*qualifiers*] [*infile*]

MCR format: EVF [*outfile*][*output-switches*] = [*infile*][*input-switches*]

where:

outfile is the output file name. If this file is not specified, the output file defaults to EVENTLOG.LST in the current UIC. This file will contain the formatted events.

infile is the input file name. If this file is not specified, the input file defaults to LB:[1,6]EVENTLOG.SYS. This file contains the machine-readable events. The file is generated by using the NCP SET LOGGING FILE command. For information on logging and NCP control of logging see the *DECnet-RSX Network Management Concepts and Procedures* manual and the NCP command descriptions in Chapter 1.

qualifiers is one or more of the command qualifiers shown in Table 3-1 and 3-2. For more information on the use of these qualifiers, see the description of *input-switches*.

output-switches is one or more of the switches shown in Table 3-1. These switches control the output of the file.

input-switches

is one or more of the switches shown in Table 3-2. These switches control which events in the event logging file will be formatted by EVF. The switches allow for event filtering based on the time of the event, the entity the event is associated with, the type of event, and the source node of the event. Many of the switches have a positive and a negated form. The positive form (*/sw*) causes all events specified by the switch to be formatted. The negated form (*/-sw* or */NOsw*) causes all events **except** those specified by the switch to be formatted. Most of the filtering switches allow an argument to be specified with the switch (*/sw:argument*). The switches can be combined to provide a greater degree of event filtering; however, care must be taken to avoid specifying too many event filters in order to avoid generating an empty report.

3.3.1 Using the EVF Default Command Line

To use the EVF default command line, enter the following command:

DCL format: DCL>ANALYZE/EVENT__LOG

MCR format: EVF> = <RET>

This command causes EVF to use the file specification defaults and qualifier or switch defaults. In general this command creates a full format report using all the events in the event log file.

The EVF default command line invokes the following qualifiers or switches:

DCL qualifier: /FULL

MCR switch: /FORMAT:FULL

This command creates a full format report containing the complete event information for each event.

DCL qualifier: /ALL

MCR switch: /ALL

This command creates a report with all events found in the error log file.

3.4 EVF Option Descriptions

This section describes in detail the EVF options. These options tell EVF the type of filtering desired on events as well as govern the disposition of the files used during the operation requested.

When using the MCR CLI, these options are specified as switches that are appended to either the input or output file name depending on which file the switch affects. You also have the option of using the default file names by specifying the switches without any input or output file name. The MCR switches may be abbreviated to the first two letters of the switch name. If the switch is abbreviated to one letter you will receive the following error message:

Unknown switch - s

where *s* is the one letter switch.

When using the DCL CLI, the options are specified as command qualifiers and the qualifiers are classified as input or output qualifiers only to indicate their logical use.

The EVF output options are summarized in Table 3-1. The EVF input options are summarized in Table 3-2.

Table 3-1: EVF Output Options

MCR Switch	DCL Qualifier	Function
(specified in command)	/OUTPUT:filename	Specifies output file name
/SPOOL	/SPOOL	Controls output file spooling
/FORMAT:BRIEF	/BRIEF	Specifies brief report
/FORMAT: FULL	/FULL	Specifies full report

Table 3-2: EVF Input Options

MCR Switch (See Note 1)	DCL Qualifier	Function
/DELETE	/DELETE	Controls input file disposition
/ALL	/ALL	Selects all events
/DATE:PREVIOUS:<i>n-days</i> /DATE:RANGE:<i>/start:end</i>	/PREVIOUS:<i>n-days</i> /SINCE:<i>start</i> /THROUGH:<i>end</i>	Selects time frame for formatting
DATE:TODAY /DATE:YESTERDAY	/TODAY /YESTERDAY	
/ENTITY:ALL /ENTITY:AREA[:<i>area-id</i>] /ENTITY:CIRCUIT[:<i>cir-id</i>] /ENTITY:LINE[:<i>line-id</i>] /ENTITY:MODULE[:<i>mod-id</i>] /ENTITY:NODE[:<i>node-id</i>] /ENTITY:NULL	/ENTITY:ALL /ENTITY:AREA[:<i>area-id</i>] /ENTITY:CIRCUIT[:<i>cir-id</i>] /ENTITY:LINE[:<i>line-id</i>] /ENTITY:MODULE[:<i>mod-id</i>] /ENTITY:NODE[:<i>node-id</i>] /ENTITY:NULL	Selects entity (See Note 2)
/EVENT:<i>event-id</i>	/EVENT:<i>event-id</i>	Selects event types for formatting (See Note 2)
/SOURCE:<i>node-id</i>	/SOURCE:<i>node-id</i>	Selects source node for formatting (See Note 2)

1. All MCR switches and switch argument keywords must be at least two letters.
2. The /ENTITY, /EVENT, and /SOURCE options can have multiple arguments as described in Section 3.4.1.

3.4.1 Using Multiple Option Arguments

You can specify each EVF option only once in a command line. However, the same options provide an alternative syntax that allows you to specify a list of arguments for the option. The options that support multiple arguments are shown in Tables 3-1 and 3-2.

To specify more than one argument for an EVF option that allows multiple arguments, use the following command syntax:

/option:(argument1,argument2,...argumentn)

The parentheses, which are a required part of the command syntax, allow EVF to use more than one argument for the option. If you do not use the parentheses, EVF displays the following error message on your terminal:

Command line syntax error

For example, to specify multiple event types, use the following EVF option:

`/EVENT:(4.*,5.*,6.*)`

EVF will format all events for event classes 4, 5, and 6.

3.4.2 File Control Options

The file control options determine the disposition of the files after the execution of the EVF command.

3.4.2.1 The Output File Option

MCR Format:

(Specified in command)

Default:

EVENTLOG.LST

DCL Format:

`/OUTPUT:filename`

`/OUTPUT:EVENTLOG.LST`

The OUTPUT option is only available when using DCL. This option specifies the output file name that EVF is to use. When using MCR you specify the output file name as part of the command syntax.

3.4.2.2 The Spooling Option

MCR Format:

`/SP[OOL]`
`/-SP[OOL]`
`/NOSP[OOL]`

Default:

`/-SP`

DCL Format:

`/SPOOL`
`/NOSPOOL`

`/NOSPOOL`

The SPOOL option is used to control the spooling of the resultant formatted file. If the SPOOL option is used, the file will be spooled to the system line printer.

3.4.2.3 The Delete Option

MCR Format:

/DE[LETE]
/-DE[LETE]
/NODE[LETE]

DCL Format:

/DELETE
/NODELETE

Default:

/-DE

/NODELETE

The DELETE option is used to control the disposition of the input file. If the DELETE option is used, the input file will be deleted after formatting is complete.

3.4.3 Output File Format Control

MCR Format:

/FO[RMAT]:BR[IEF]
FU[LL]

DCL Format:

/BRIEF
/FULL

Default:

/FO:FU

/FULL

The FORMAT option (or BRIEF and FULL option in DCL) is used to control the format of the output file.

The BRIEF argument (or BRIEF option in DCL) causes an abbreviated event description to be used for all events formatted in the report. This shortened form consists of the first three lines of the event text.

The FULL argument (or FULL option in DCL) causes the entire event text to be included in the report.

3.4.4 Event Selection Options

The following options are used to make a selection of the events to be formatted. You can select events based on the time of the event, the entity type, the event type, and source node of the event. These options can be combined to limit further the events formatted.

3.4.4.1 The ALL Event Option

MCR Format:

/AL[L]

Default:

/AL

DCL Format:

/ALL

/ALL

The ALL option specifies that all events are to be formatted. This option has the effect of specifying /DATE:RA:*, ENTITY:AL, EVENT:*, and SOURCE:*.

3.4.4.2 The DATE Options

MCR Format:

/DA[TE]:PR[EVIOUS]:*n-days*
RA[NGE]:*start:end*

TO[DAY]
YE[STERDAY]

DCL Format:

/PREVIOUS:*n-days*
/SINCE:*start*
/THROUGH:*end*
/TODAY
/YESTERDAY

Default:

/DA:RA:*

/SINCE:/THROUGH:

The DATE option allows you to select events based on the date that an event occurred. This option includes arguments to specify a range of dates or to specify a particular day.

The RANGE argument (or SINCE and THROUGH options in DCL) accepts starting and ending dates in the standard RSX format:

dd-mmm-yy or (*dd-mmm-yy hh:mm:ss*)

When you use the date only format, EVF uses a starting time of 00:00:00 and an ending time of 23:59:59. If you use the second format, you must include the parentheses.

In MCR command lines the asterisk (*) can be used at the beginning of a range specification to indicate any date through the specified ending date. For example, *:12-MAR-86 specifies that all events from the beginning of the event file through March 12, 1986, are to be formatted.

In MCR command lines the asterisk (*) can be used at the end of a range specification to indicate any date since the specified starting date. For example, 23-FEB-86:* specifies that all events since February 23, 1986, are to be formatted.

You may not combine the arguments of the MCR DATE switch. You can combine the SINCE and THROUGH qualifiers when using DCL.

3.4.4.3 The Entity Filter Option

MCR Format:

```
/EN[TITY]:AL[L]
      AR[EA][:area-id]
      CI[RCUIT][:cir-id]
      LI[NE][:line-id]
      MO[DULE][:mod-id]
      NO[DE][:node-id]
      NU[LL]
```

DCL Format:

```
/ENTITY:ALL
      AREA[:area-id]
      CIRCUIT[:cir-id]
      LINE[:line-id]
      MODULE[:mod-id]
      NODE[:node-id]
      NULL
```

Default:

```
/EN:AL
```

```
/ENTITY:ALL
```

The ENTITY option allows you to select events based on the entity type. This option includes arguments to specify the entity type desired as well as the ALL argument. The arguments (with the exception of the ALL argument) can be negated using the *-argument*(MCR only) or *NOargument* syntax. The arguments can be combined using the syntax described in Section 3.4.1. For example:

```
/ENTITY:(CIRCUIT,LINE,NO NODE:4.456)
```

will cause EVF to format all circuit and line events and node events for all nodes except node 4.456.

For a list of the entities associated with each event, see the *DECnet-RSX Network Management Concepts and Procedures* manual.

NOTE

Although you may specify multiple option arguments or the /ENTITY option, you cannot specify more than one specific ID value for any one of the arguments.

The following is a detailed description of each of the /ENTITY option arguments.

- The ALL argument specifies that there is to be no entity filtering. The ALL argument cannot be negated.
- The AREA argument allows filtering on area entity events. You can specify an area ID in the range 0–63. The negated form of this argument (NOAREA:*area-id*) will cause all events **except** the specified area events to be included in the report.
- The CIRCUIT argument allows filtering on circuit entity events. You can specify a circuit ID of the form *dev-ctl[-unit][.trib]* where *dev* is the device name, *ctl* is the controller number, *unit* is the unit number, and *trib* is the tributary address. When specifying the circuit ID, you can use the wildcard symbol (*) for *ctl*, *unit*, or *trib*. If you specify a wildcard symbol, you cannot specify any explicit values for the parameters following the wildcard symbol (for example, PCL-* is correct; PCL-*.0 is not correct). The negated format of this argument (NOCIRCUIT:*cir-id*) will cause all events **except** the specified circuit events to be included in the report.
- The LINE argument allows filtering on line entity events. You can specify a line ID of the form *dev-ctl[-unit]* where *dev* is the device name, *ctl* is the controller number, and *unit* is the unit number. When specifying the line ID, you can use the wildcard symbol (*) for *ctl* or *unit*. If you specify a wildcard symbol for *ctl*, you cannot specify an explicit value for *unit*. (for example, DZ-*-* is correct; DZ-*-.0 is not correct). The negated form of this argument (NOLINE:*line-id*) will cause all events **except** the specified line events to be included in the report.
- The MODULE argument allows filtering on module entity events. You can specify a module ID where the module ID is an alphanumeric string. The negated form of this argument (NOMODULE:*module-id*) will cause all events **except** the specified module events to be included in the report.
- The NODE argument allows filtering on node entity events. You can specify a node ID where the node ID is of the form [*area.*]*number*. The value for *area* must be in the range 0–63 and *number* must be in the range 1–1023. The node ID can also be a node name. The negated form of this argument (NONODE:*node-id*) will cause all events **except** the specified node events to be included in the report.
- The NULL argument allows filtering on events that do not have an entity. The negated form of this argument (NONULL) will cause all events **except** the events without entities to be included in the report.

3.4.4.4 The Event Specification Filter Option

MCR Format:

/EV[ENT]:event-type
/-EV[ENT]:event-type
/NOEV[ENT]:event-type

DCL Format:

/EVENT:event-type
/NOEVENT:event-type

Default:

/EV: **

/EVENT: **

The **EVENT** option allows you to select events based on the event class and type. If the negated format is used (*/NOEVENT:event-type*) all events **except** those with the specified event ID will be formatted. The *event-type* argument is of the form *class.type* where *class* is the event class (0-511) and *type* is the event type (0-63). This option allows multiple events to be specified using the syntax described in Section 3.4.1.

If the asterisk (*) is used for *type*, all events of the requested class are included in the report.

For a list of the event classes and types associated with each event, see the *DECnet-RSX Network Management Concepts and Procedures* manual.

3.4.4.5 The Source Node Filter Option

MCR Format:

/SO[URCE]:node-id
/-SO[URCE]:node-id
/NOSO[URCE]:node-id

DCL Format:

/SOURCE:node-id
/NOSOURCE:node-id

Default:

/SO: **

/SOURCE: **

The **SOURCE** option allows you to select events based on the source node. If the negated format is used (*/NOSOURCE:node-id*), EVF formats all events **except** those with a source of *node-id*. The *node-id* value is a node address of the form [*area*].*number* where *area* is in the range 1-63 and *number* is in the range 0-1023. The node ID can also be a node name. This option allows multiple nodes to be specified using the syntax described in Section 3.4.1.

If *area* is not specified, only events with an area value of 0 will be formatted. If the asterisk (*) is used for *number*, all events in the specified area will be formatted.

NOTE

The node identified by this option is the node that generated the event. This node may or may not be the node entity associated with the event. The node argument on the ENTITY option should be used to filter events based on the node entity associated with the event.

3.4.4.6 /SO Switch – Specify Source Node Filter

Format:

/SO[URCE]:*node-id*
/-SO[URCE]:*node-id*
/NOSO[URCE]:*node-id*

Default:

/SO:*. *

The /SOURCE switch allows you to select events based on the source node. If the negated format is used (/SO:*node-id* or /NOSO:*node-id*), EVF formats all events except those with a source of *node-id*. The *node-id* value is a node address of the form [*area*.]*number* where *area* is in the range 1–63 and *number* is in the range 0–1023. If *area* is not specified, only events with an area value of 0 or 1 will be formatted.

If the asterisk (*) is used for *number*, all events in the specified area will be formatted.

NOTE

The node identified by this switch is the node that generated the event. This node may or may not be the node associated with the event. The node qualifier on the ENTITY switch should be used to filter events based on the node associated with the event.

3.5 EVF Error Messages

EVF prints an error message on your terminal when an invalid command request is detected. EVF error messages are summarized in Chapter 11. EVF also generates errors if the input file is found to be in an unreadable format.



KMX/KMY/KMV Dump Analyzer (KDA)

If the performance of a KMX/KMY/KMV device deteriorates and this cannot be attributed to a hardware fault, you can dump the KMX/KMY/KMV microcode for analysis by your local software specialist. The NCP KMX-DUMP command controls the dumping of the microcode to disk (see Chapter 1). The KMX/KMY/KMV dump analyzer task (KDA) formats and prints the contents of the KMX/KMY/KMV dump disk file.

You must have included both the dump KMX/KMY/KMV task (DUK) and the KMX/KMY/KMV dump analyzer task (KDA) in your system during NETGEN if you want to use this facility. The *RSX-11 PSI Generation Guide* gives details of the DUK and KDA tasks.

4.1 Invoking and Exiting KDA

Use any RSX-11 method of invoking tasks to enter KDA. The simplest method is to type:

```
MCR>KDA (RET)
```

Once KDA is running, it returns the prompt:

```
KDA>
```

Exit from KDA by entering **(CTRLZ)**.

4.2 Using the KDA Command

The KDA command has the following format:

[outfile[switches] =] [infile[switches]]

where

- outfile** Is the file specification for the analyzed dump listing file (default is SY:[UFD]input-name.LST, where UFD is the user's default user file directory). The = symbol marks this as the output file specification.
- infile** Is the file specification for the binary input file containing the dump (default is LB:[1,6]PSIKMXMEM.SYS). Specify the same file that you specified for the output file in the KMX-DUMP LINE command.
- switches** Are options to control the listing that KDA produces. Any compatible combination of the switches shown in Table 4-1 can be specified for either the input file or the output file.

Table 4-1: KDA Command Switches

Switch	Meaning	Comments
/ALL	Analyze and print the control memory	
/-ALL	Analyze and print only the data memory and registers	Default switch
/SP	Spool the output file	Default switch (Output is spooled unless /-SP is specified.)
/-SP	Do not spool the output file	Output file is retained for printing later
/KMV	Do not spool the output file	Input file is assumed to be a KMV device.

Example:

```
>KDA (RET)
KDA>VORTEX/ALL=DK0:[7,21]FROGST.DMP (RET)
```

This command uses input file FROGST.DMP from UFD [7,21] on DK0: and prints an analysis of control memory to output file SY:[UFD]VORTEX.LST.

LAT Control Program (LCP)

This chapter discusses the Local Area Transport (LAT) process and the LAT Control Program (LCP) commands that enable you to monitor and control the LAT process on a DECnet-RSX-11M-PLUS or a DECnet-Micro/RSX service node.

5.1 Overview of LAT

LAT is a communications system that enables terminals that are connected to a terminal server to communicate with host operating systems over a single, shared Ethernet physical layer. Refer to the *Local Area Transport (LAT) Architecture Network Manager's Guide* and the *DECnet-RSX Network Management Concepts and Procedures* for a description of LAT.

5.1.1 LAT Characteristics

When you select LAT during the network generation procedure, the procedure automatically writes the default characteristics to the permanent database. When the process is started (see the START command in section 5.3.11), LCP uses the information stored in the permanent database to set up the volatile database. Characteristics recorded in the volatile database define the LAT protocol to the running system.

You can make changes to the permanent database using the DEFINE command (section 5.3.2). These changes take effect the next time the LAT process is started. Any changes made to the volatile database using the SET command (section 5.3.7) are effective immediately and are not saved when the LAT process is stopped.

5.2 Invoking and Exiting LCP

You invoke the LAT control program by typing:

```
>LCP (RET)
```

The following prompt appears on your screen:

```
LCP>
```

Enter the LCP command after the prompt and press (RET). You can also invoke LCP and enter a command on the same line:

```
>LCP command (RET)
```

To exit from LCP, type EXIT or press (CTRL/Z).

5.3 LCP Commands: Format and Syntax

The following sections describe the format and syntax of each LCP command and specify the default values initially assigned to the LAT parameters. For information on how these commands affect the Ethernet, the service node, and the LAT terminals, refer to the *Local Area Transport (LAT) Architecture Network Manager's Guide*.

5.3.1 CLEAR

Use the CLEAR command to clear the LAT process group (or groups) in the volatile database. The CLEAR command can execute only after the LAT process has been started, and while it is active.

Format:

CLEAR /GROUPS = (*group1*[,*group2*,...*groupn*])

where:

/GROUPS = (*group1*[,*group2*,
...*groupn*])

Clears the specified group or groups. There are 256 groups, numbered 0 to 255 decimal. The default is /GROUP = (0). For more information on group and group codes, see the individual server operations guides and the *Local Area Transport (LAT) Architecture Network Manager's Guide*.

5.3.2 CREATE

Use the CREATE command to create the system data structures to support the LAT terminals. Before issuing the CREATE command make sure that the communication executive is loaded.

NOTE

You must issue the CREATE command before using the START command.

Once the LAT terminals are added to the system, they cannot be removed until the system has been rebooted.

Format:

CREATE [/TERMINALS = *n*] [/RESERVED = *n, m, o*]

where:

[/TERMINALS = *n*]

Creates *n* terminals where *n* is an integer in the range of 1 to 64. If you do not use the /TERMINALS qualifier, LAT creates the number of terminals that is defined in the permanent database (see DEFINE /TERMINALS).

[/RESERVED = *n, m, o*]

Creates the LAT terminals and reserves ports *n*, *m*, and *o* for application use only. You can reserve any port that has been created. Once a port is reserved, it can only be used as an application terminal. If you do not use the /TERMINALS qualifier, LAT creates the number of terminals specified in the permanent database.

5.3.3 DEFINE

Use the DEFINE command to change the LAT process characteristics in the permanent database. The DEFINE command can execute before or after LAT is started, but it does not affect the running system.

Format:

```
DEFINE [CHARACTERISTICS] /DEVICE = line-id
                               /GROUPS = (group1[,group2,...groupn])
                               /MAXIMUM__BUFFERS = number
                               /MULTICAST__TIMER = seconds
                               /NODE__IDENTIFICATION = announcement-string
                               /NODE__NAME = node-name
                               /RECEIVE__TIMEOUT = seconds
                               /RETRANSMIT__TIMER = seconds
                               /SERVICE__IDENTIFICATION = announcement-string
                               /SERVICE__NAME = service-name
                               /TERMINALS = number
```

where:

/DEVICE = *line-id*

Specifies the Ethernet device that is to be used for LAT connections. In a multi-Ethernet device environment, specify the Ethernet device to be used for LAT terminal support. The default is the first Ethernet line in the system.

**/GROUPS = (*group1*
[*group2*, ...*groupn*])**

Sets the groups to which the host belongs. There are 256 groups, numbered 0 to 255 decimal. The default is /GROUP = (0). For more information on group and group codes, see the individual server operations guides and the *Local Area Transport (LAT) Architecture Network Manager's Guide*.

**/MAXIMUM__BUFFERS
= *number***

Sets the upper limit for the number of large data buffers (LDBs) that the LAT process can have in use at any one time. For more information about LDBs and their use in the system, see the chapter on system buffers in the *DECnet-RSX Network Management Concepts and Procedures* manual. The default is 3 and the maximum is 255.

/MULTICAST__TIMER
= *seconds*

Sets the minimum rate at which the node will send multicast messages in seconds. The default is 20 and the maximum is 177.

/NODE__IDENTIFICATION
= *announcement-string*

Specifies the announcement string for the node. It can be up to 32 characters in length. Nonprintable characters are translated to spaces. You must enclose the string in double quotation marks (") if it contains one or more spaces.

/NODE__NAME
= *node-name*

Specifies the name by which the service node is known to the terminal servers. The name is a string of 1 to 6 alphanumeric characters. The default is the RSX system name.

/RECEIVE__TIMEOUT
= *seconds*

Sets the maximum time interval, in seconds, that the service node waits for a reply from a terminal server before declaring to the server that the circuit is "down". The default is 3 and the maximum is 255.

/RETRANSMIT__TIMER
= *seconds*

Specifies, in seconds, the interval between retransmission attempts. The default is 3 and the maximum is 255. For more information about this parameter, see the *Local Area Transport (LAT) Architecture Network Manager's Guide*.

/SERVICE__IDENTIFICATION
= *announcement-string*

Specifies the announcement string for the service. It can be up to 32 characters in length. Nonprintable characters are translated to spaces. You must enclose the string in double quotation marks (") if it contains one or more spaces.

/SERVICE__NAME
= *service-name*

Specifies the service name for the service node. Service names allow a service node to be known by more than just the node name. The service name is a string of 1 to 6 alphanumeric characters. The default is the node name.

NOTE

Terminal server users always connect to service names, **not** service node names.

/TERMINALS = *number*

Specifies the number of terminals that will be created when you use the CREATE command. The number of terminals can be from 1 to 64. The default is 4.

5.3.4 DISCONNECT

Use the DISCONNECT command to disconnect a terminal or port from a LAT session.

Format:

```
DISCONNECT TTnn:  
            PORT nn
```

where:

TT*nn*: Specifies the terminal number (*nn*) that you want to disconnect.

PORT *nn* Specifies the number (*nn*) of the port that you want to disconnect.

5.3.5 EXIT

Use the EXIT command to exit LCP. You can also use **CTRL/Z** to exit LCP.

5.3.6 HELP

Use the **HELP** command to obtain on-line help about LAT commands and topics. You can access **HELP** by typing **HELP** after the **LCP>** prompt, followed by the desired command or topic. For example, to access help information on the **DEFINE /NODE__NAME** command you would type the following entry at the **LCP>** prompt:

```
HELP DEFINE /NODE_NAME
```

HELP is available for the following commands and topics:

CLEAR	DISCONNECT	LIST	SHOW	STOP	Commands
CREATE	EXIT	SET	START	ZERO	Privileged
DEFINE	HELP				Nonprivileged

5.3.7 LIST

Use the *LIST* command to display the characteristics of the LAT service node. The *LIST* command displays characteristics in the permanent database. You can use the *LIST* command before or after LAT is started.

Example:

```
LCP>LIST (RET)
```

LCP Node Characteristics

```
Node name = /Boston/  
Node identification = /Boston- Corporate planning system/  
Service name = /Boston/  
Service identification = /Boston- Corporate planning system/  
Group codes 42,52,65  
Multicast timer = 20           Maximum buffers = 3  
Receive timeout = 30          Retransmit timer = 2  
Terminals = 28                Device = UNA-0
```

5.3.8 SET

Use the SET command to change the LAT process characteristics in the volatile database. The SET command can execute only after the LAT process has been started, and while it is active. SET PORT is described in the next section.

Format:

```
SET    /DEVICE = line-id
        /GROUPS = (group1 [, group2, ... groupn])
        /MAXIMUM__BUFFERS = number
        /MULTICAST__TIMER = seconds
        /NODE__IDENTIFICATION = announcement-string
        /NODE__NAME = node-name
        /RECEIVE__TIMEOUT = seconds
        /RETRANSMIT__TIMER = seconds
        /SERVICE__IDENTIFICATION = announcement-string
        /SERVICE__NAME = service-name
```

where:

/DEVICE = *line-id*

Specifies the Ethernet device that is to be used for LAT connections. In a multi-Ethernet device environment, specify the Ethernet device to be used for LAT terminal support. The default is the first Ethernet line in the system.

**/GROUPS = (*group1* [, *group2*,
... *groupn*])**

Sets the groups to which the host belongs. There are 256 groups, numbered 0 to 255 decimal. The default is /GROUP = (0). For more information on group and group codes, see the individual server operations guides and the *Local Area Transport (LAT) Architecture Network Manager's Guide*.

**/MAXIMUM__BUFFERS
= *number***

Sets the upper limit for the number of large data buffers (LDBs) that the LAT process can have in use at any one time. For more information about LDBs and their use in the system, see the chapter on system buffers in the *DECnet-RSX Network Management Concepts and Procedures* manual. The default is 3 and the maximum is 255.

/MULTICAST__TIMER
= *seconds*

Sets the minimum rate at which the node will send multicast messages in seconds. The default is 20 and the maximum is 177.

/NODE__IDENTIFICATION
= *announcement-string*

Specifies the announcement string for the node. It can be up to 32 characters in length. Nonprintable characters are translated to spaces. You must enclose the string in double quotation marks (") if it contains one or more spaces.

/NODE__NAME
= *node-name*

Specifies the name by which the service node is known to the terminal servers. The name is a string of 1 to 6 alphanumeric characters. The default is the RSX system name.

/RECEIVE__TIMEOUT
= *seconds*

Sets the maximum time interval, in seconds, that the service node waits for a reply from a terminal server before declaring to the server that the circuit is "down". The default is 3 and the maximum is 255.

/RETRANSMIT__TIMER
= *seconds*

Specifies, in seconds, the interval between retransmission attempts. The default is 3 and the maximum is 255. For more information about this parameter, see the *Local Area Transport (LAT) Architecture Network Manager's Guide*.

/SERVICE__IDENTIFICATION
= *announcement-string*

Specifies the announcement string for the service. It can be up to 32 characters in length. Nonprintable characters are translated to spaces. You must enclose the string in double quotation marks (") if it contains one or more spaces.

/SERVICE__NAME
= *service-name*

Specifies the service name for the service node. Service names allow a service node to be known by more than just the node name. The service name is a string of 1 to 6 alphanumeric characters. The default is the node name.

NOTE

Terminal server users always connect to service names, not service node names.

5.3.9 SET PORT

Use the SET PORT command to set and modify LAT application terminals in the volatile database. The SET command can execute only after the LAT process has been started, and while it is active.

NOTE

You must specify a server name (*SERVER = server-name*) and use one or both of the */PORT = port-name* and */SERVER = server-name* parameters.

Format:

```
SET PORT {TTnn: } /PORT = port-name  
          {nn      } /SERVER = server-name  
                   /SERVICE = service-name  
                   /NOAPP
```

where:

TTnn: Is a terminal that you want to define.

nn Is a local port number (decimal) that you want to define.

/PORT
= *port-name* Specifies the name of the port at the terminal server to be associated with the application terminal. The maximum length is 16 alphanumeric characters.

/SERVER
= *server-name* Is the name of the terminal server that is associated with the application terminal. The maximum length is 16 alphanumeric characters.

/SERVICE
= *service-name* Specifies the service at the terminal server. The maximum length is 16 alphanumeric characters.

/NOAPP Removes the specified terminal or port from the list of application terminals and makes the terminal available for interactive sessions. If the terminal was previously a reserved terminal, it reverts back to the reserved status.

Example:

```
LCP>SET PORT TT51: /SERVER=T1303b /PORT=PRINTERS (RET)
```

5.3.10 SHOW CHARACTERISTICS

Use the **SHOW CHARACTERISTICS** command to display the characteristics of the LAT service node or the LAT terminal server. The **SHOW CHARACTERISTICS** command displays characteristics in the volatile database. You can use the **SHOW** command only after LAT is started and while it is running.

Format:

```
SHOW CHARACTERISTICS /NODE  
/SERVER[ = server-name]
```

where:

/NODE (Default) Displays information about the characteristics of the service node.

/SERVER = *server-name* Displays information about the specified server. If you do not supply a server name, you receive the characteristics of all servers.

Example 1:

```
LCP>SHOW CHARACTERISTICS/NODE (RET)
```

LCP Node Characteristics

```
Node name = /Boston/  
Node identification = /Boston- Corporate planning system/  
Service name = /Boston/  
Service identification = /Boston- Corporate planning system/  
Group codes 42,52,65  
Multicast timer = 20           Maximum buffers = 3  
Receive timeout = 30          Retransmit timer = 2  
Terminals = 28  
LAT Version = 5.1             LAT Protocol is active
```

Example 2:

```
LCP>SHOW CHARACTERISTICS/SERVER=GREENFIELD (RET)
```

LCP Server Characteristics for GREENFIELD

```
Ethernet address = AA-00-03-01-05-CD  
Server is active           Active users = 2
```

5.3.11 SHOW COUNTERS

Use the SHOW command to display the counters which are kept by the LAT process.

Format:

```
SHOW COUNTERS /NODE
                        /SERVER[ = server-name]
```

where:

/NODE (Default) Shows the counters kept for the service node.

/SERVER = *server-name* Displays counters for the specified server. If you do not supply a server name, LCP displays the counters of all servers.

Example 1:

```
LCP>SHOW COUNTERS/NODE (RET)
```

LCP Node Counters

```
2052 Seconds since last zeroed
 92 Messages transmitted
3712 Bytes transmitted
 83 Messages received
5256 Bytes received
 0 Messages retransmitted
 0 Messages received out of sequence
 0 Invalid messages received
 0 Invalid slots received
 0 Illegal messages received
 0 Illegal slots received
 0 Resource allocation errors
```

Example 2:

LCP>SHOW COUNTERS/SERVER=GREENFIELD (RET)

LCP Server Counters for Greenfield

2052 Seconds since last zeroed
92 Messages transmitted
3712 Bytes transmitted
83 Messages received
5256 Bytes received
0 Messages retransmitted
0 Messages received out of sequence
0 Invalid messages received
0 Invalid slots received

5.3.12 SHOW PORT

Use the SHOW PORT command to display information about the interactive and application ports of the terminal server.

Format:

SHOW PORT /APPLICATION
/FULL

where:

no qualifier Displays the following information: terminal ID, local port number, server name, server port number, user name (for interactive terminals), and service name (for application terminals).

/APPLICATION Displays the following information for application terminals: terminal ID, local port number, server name, server port number, service name, terminal status, connect request counters, and flags. Refer to tables 5-1, 5-2, and 5-3 for descriptions of flags, status, and request counters.

/FULL Provides all information displayed by both the SHOW PORT and SHOW PORT /APPLICATION commands.

Example:

LCP>SHOW PORT (HEI)

LAT Interactive Terminals:

Terminal	Local Port	User Name	Server Name	Server Port Name
TT21:	PORT_4	G. JONES	T1303B	PORT_5
TT23:	PORT_6	D. SMITH	T1303B	PORT_1
TT24:	PORT_7	R. WHITE	GREENFIELD	WHITE
TT25:	PORT_8	B. KING	GREENFIELD	KING
TT26:	PORT_9	M. DAVIS	T1324a	DAVIS

LAT Application Terminals:

Terminal	Local Port	Server Name	Service Name	Server Port Name
TT46:	PORT_25	**- Reserved for application use -**		
TT51:	PORT_28	T1303A	None Provided	LN03_8

Table 5-1: Show Port Flags

Flag	Description
BSY	Busy. The terminal is busy with an active session.
LTM	Long timer flag. The terminal has received a status message and is waiting for the terminal server to start a session. Typically indicates that the requested remote port or service is busy and the request is in the queue.
ORG	The connection is the result of an IO.ORG (explicit) QIO.
RAF	Resource allocation failure. A network buffer allocation failure occurred during the connection sequence. The sequence will be repeated once each second for five attempts, then abort.
RSV	The terminal is reserved for application use only. The message "*** - Reserved for application use - ***" denotes that no target terminal server port and/or service has been specified for the terminal.
WFR	Waiting for response. The terminal server has responded with its Ethernet address; however the terminal is still waiting for a response from the terminal server regarding the connect request.
WSI	Waiting for solicit information response. A connection sequence has started; however no response has been received from the terminal server.
WSL	Waiting for session start. The terminal is waiting for a session start from the terminal server.
WTC	Waiting for Transmit complete. A transmit request has been dispatched to EPM, but is not yet completed.

Table 5-2: Show Port Terminal Status

Status	Description
Connected	The terminal is connected to the server.
Not Connected	The terminal is recognized but is not currently connected to the server.
Queued, Position = <i>n</i>	The terminal is in a queue of connect requests that is kept at the terminal server. Position = <i>n</i> indicates the terminal's position in the queue.

Table 5-3: Show Port Connect Request Counters

Counter	Description
Connect Requests	The number of times a connection sequence was initiated. Maximum value is 65,535.
Connect Request Failures	The number of unsuccessful connect requests. Maximum value is 65,535.
Requests Retransmitted	The number of times connection sequence messages have been transmitted (one request can be transmitted more than once). Maximum value is 65,535.

5.3.13 START

Use the START command to start the LAT process and to override parameter values in the permanent database.

NOTE

Be sure that you have loaded the communications executive and created the LAT terminals with the CREATE command before using the START command.

If the LAT process has not been loaded, and you issue the START command, the following message appears on the screen:

LAT process being loaded

When you issue the START command, it creates the volatile database using information contained in the permanent database. If you specify parameters when you issue the START command, they are placed in the volatile database.

Format:

```
START  /DEVICE = line-id
        /GROUPS = (group1 [, group2, ..., groupn])
        /MAXIMUM__BUFFERS = number
        /MULTICAST__TIMER = seconds
        /NODE__IDENTIFICATION = announcement-string
        /NODE__NAME = node-name
        /RECEIVE__TIMEOUT = seconds
        /RETRANSMIT__TIMER = seconds
        /SERVICE__IDENTIFICATION = announcement-string
        /SERVICE__NAME = service-name
```

where:

/DEVICE = *line-id*

Specifies the Ethernet device that is to be used for LAT connections. In a multi-Ethernet device environment, specify the Ethernet device to be used for LAT terminal support. The default is the first Ethernet line in the system.

**/GROUPS = (group1[,group2,
...groupn])**

Sets the groups to which the host belongs. There are 256 groups, numbered 0 to 255 decimal. The default is /GROUP = (0). For more information on group and group codes, see the individual server operations guides and the *Local Area Transport (LAT) Architecture Network Manager's Guide*.

**/MAXIMUM__BUFFERS
= number**

Sets the upper limit for the number of large data buffers (LDBs) that the LAT process can have in use at any one time. For more information about LDBs and their use in the system, see the chapter on system buffers in the *DECnet-RSX Network Management Concepts and Procedures* manual. The default is 3 and the maximum is 255.

**/MULTICAST__TIMER
= seconds**

Sets the minimum rate at which the node will send multicast messages in seconds. The default is 20 and the maximum is 177.

**/NODE__IDENTIFICATION
= announcement-string**

Specifies the announcement string for the node. It can be up to 32 characters in length. Nonprintable characters are translated to spaces. You must enclose the string in double quotation marks (") if it contains one or more spaces.

**/NODE__NAME
= node-name**

Specifies the name by which the service node is known to the terminal servers. The name is a string of 1 to 6 alphanumeric characters. The default is the RSX system name.

**/RECEIVE__TIMEOUT
= seconds**

Sets the maximum time interval, in seconds, that the service node waits for a reply from a terminal server before declaring to the server that the circuit is "down". The default is 3 and the maximum is 255.

**/RETRANSMIT__TIMER
= seconds**

Specifies, in seconds, the interval between retransmission attempts. The default is 3 and the maximum is 255. For more information about this parameter, see the *Local Area Transport (LAT) Architecture Network Manager's Guide*.

/SERVICE__IDENTIFICATION
= announcement-string

Specifies the announcement string for the service. It can be up to 32 characters in length. Nonprintable characters are translated to spaces. You must enclose the string in double quotation marks (") if it contains one or more spaces.

/SERVICE__NAME
= service-name

Specifies the service name for the service node. Service names allow a service node to be known by more than just the node name. The service name is a string of 1 to 6 alphanumeric characters. The default is the node name.

NOTE

Terminal server users always connect to service names, **not** service node names.

5.3.14 STOP

Use the STOP command to shut down the LAT process. Active connections are broken without warning. You can use the RSX-11M-PLUS BROADCAST command to warn LAT users before this command is used.

Format:

STOP /ALL
/DEVICE = *line-id*

where:

/ALL (Default) Stops the use of all the terminals associated with the LAT process.

/DEVICE = *line-id* Stops all terminals associated with the particular line.

NOTE

To stop the LAT process, use the following procedure:

1. Issue an LCP SET command with the /NODE__IDENTIFICATION set to a message informing users the server is coming down. For example,

LCP> SET/NODE_IDENTIFICATION="LAT shutdown in 10 minutes." (RET)

2. Issue a broadcast command. For example,

MCR> BROADCAST LOG: LAT shutdown in 10 (RET)

3. Issue the LCP STOP command.

LCP> STOP (RET)

5.3.15 ZERO

Use the ZERO command to zero the counters kept by the LAT process. To test the performance of the system over a specified period of time, first zero the counters and then analyze the information that accumulates during the specified period.

Format:

```
ZERO [COUNTERS] /NODE  
                /SERVER[ = server-name]
```

where:

no qualifier	Zeroes all counters.
/NODE	Zeroes the counters kept for the local node.
/SERVER = <i>server-name</i>	Zeroes the counters kept for the specified server. If no server name is specified, the counters for all servers are zeroed.

NOTE

The Ethernet lines that the LAT process uses also have counters. You can show these counters with the NCP SHOW LINE COUNTERS command and zero them with the NCP ZERO LINE COUNTERS command (see Chapter 1 for NCP command descriptions).



Network Crash Dump Analyzer (NDA)

The Network Crash Dump Analyzer (NDA) utility helps you to determine the cause of network crashes. NDA is a nonprivileged task for use only with DECnet-RSX systems, including those with a PSDN capability. If you have selected crash dump analysis support during RSX system generation, then you can also select network crash dump analysis support during DECnet-RSX network generation. Refer to the *RSX-11M System Generation and Installation Guide* for information on obtaining crash dump support for your operating system. Refer to the *DECnet-RSX Network Generation and Installation Guide* for information on obtaining network crash dump support for DECnet-RSX.

NDA performs crash dump analysis for the network data structures in the same way that the RSX crash dump analyzer (CDA) analyzes the operating system data structures. Specifically, NDA compiles and analyzes information from the system's executive symbol table file, the network symbol table file, and the crashed system image. The information is then output in a listing file or at a line printer in a format that is useful to you. Note that an effective use of NDA requires an extensive knowledge of DECnet-RSX internal data structures.

Command switches provide you with the means to control NDA operation. There are two types of switches: analysis control switches and function control switches. Analysis control switches determine which NDA analysis routines are applied to the input file for analysis. These switches provide such options as:

- Dumping the contents of a specified octal address range of memory
- Listing general system data (time of crash, registers in use, and so forth)
- Listing the routing parameters and databases
- Listing the remote node names and alias node names

- Listing RSX-11 PSI data structures (local and remote DTE descriptor blocks, NW: database and window blocks, and so forth)
- Listing the network services protocol (ECL) databases

Function control switches provide a number of NDA control options, such as:

- Identifying the starting block number of the secondary storage device
- Terminating the analysis after a specified number of errors has been encountered
- Limiting the number of pages of analysis output
- Creating a save file and transferring a specified amount of the crash dump to it

You can type NDA commands at a terminal, or you can place them in an indirect command file.

6.1 NDA Operation

NDA operates in the following manner:

1. First, it reads the contents of the memory dump created by the executive crash dump routine.
2. Next, it analyzes the dump in accordance with information contained in a combined executive/network symbol table file.
3. Finally, it formats and outputs the dump to a line printer or a listing file for your evaluation.

6.2 System Requirements

To obtain a crash dump that can be handled by NDA, you must first build the executive crash dump routine into your system during phase 1 of an RSX-11 SYSGEN. This is accomplished by entering B in response to the query:

50. Crash dump analysis: A- PANIC B- Crash dump analysis (CDA)

If you select this option, code is included in your system to dump memory to a secondary storage device following a system crash. Your secondary storage device can be any one of a number of different types of disk units or a magtape unit. You can find complete information on RSX-11 SYSGEN in the *RSX-11M System Generation and Installation Guide*.

6.3 Obtaining a Crash Dump

To obtain a crash dump, control of the processor must be transferred to the executive crash dump routine following a system crash. How this control is transferred depends on the way in which the crash occurred and whether or not you have built the executive debugging tool (XDT) into your system at SYSGEN.

System crashes occur in three ways:

- The processor encounters an unintentional halt instruction (000000).
- An infinite loop condition occurs.
- The processor encounters a program condition causing it to trap.

When a system crash is the result of an unintentional halt instruction or an infinite loop condition, you must restart your processor at location 40.

When a program condition causes a processor trap and XDT is included in your system, control transfers automatically to XDT. When you type X at your terminal, XDT transfers control to the executive crash dump routine. When XDT is not included in your system, a processor trap causes control to be transferred to the crash dump routine. Refer to the *RSX-11M Guide to Writing an I/O Driver* for a description of XDT.

Regardless of the manner in which control is transferred, once the executive crash dump routine is entered, it prints the following message on the crash notification device specified during SYSGEN:

```
CRASH - CONT WITH SCRATCH MEDIA ON xxxx
```

where *xxxx* is the mnemonic for the device that is to receive the crashed system image.

You can then put the secondary crash dump device on line and depress the CONT switch on the CPU console. The executive crash dump routine dumps memory to the crash dump device and halts the processor upon completion.

6.4 Running NDA

You can run NDA as either an installed or an uninstalled task.

6.4.1 Running NDA as an Installed Task

When you run NDA as an installed task, the command format that you use determines where control is returned upon completion of the analysis:

- To return control to the executive:

`>NDA command-string`

- To return control to NDA:

`>NDA`

`NDA> command-string`

6.4.2 Running NDA as an Uninstalled Task

When you run NDA as an uninstalled task, control is always returned to NDA upon completion of the analysis. The commands for running NDA are:

`>RUN $NDA`

`NDA> command-string`

This requires NDA.TSK to be present in the user file directory corresponding to the system UIC on device LB:.

`>RUN NDA`

`NDA> command-string`

This requires NDA.TSK to be present in the user file directory corresponding to the current UIC on device SY:.

6.5 NDA Command Syntax

Use the following format to input commands to NDA:

```
[analysis[/sw1]], [save[/MEMSIZ:n]] = [symbols/STB] [,input[/sw2]]
```

where

<i>analysis</i>	Is the crash dump analysis listing file. If a file extension is not specified, the default extension is .LST. If an analysis file is not specified, no analysis list file is created.
<i>/sw1</i>	Consists of the /EXIT:n, /LIMIT:n, and /-SP function control switches for the analysis file. A description of each switch and its default value are given in Table 6-3.
<i>save</i>	Is the crash dump save file. This file is a copy of the binary data that was written to the dump device by the dump routine. It allows you to create a historical record of crash dumps.
<i>/MEMSIZ:n</i>	Is the number of K words of information to be transferred to the save file. If the memory size of your system is greater than 124 K words (the default value), you should use the /MEMSIZ:n switch to specify the size of your system. A description of this switch and its default value is given in Table 6-3.
<i>symbols/STB</i>	Is the symbol table file for the crashed system. This file must define all executive and network symbols. A description of /STB and its default value is given in Table 6-3.
<i>input</i>	Is the binary input to NDA. This specification can be either a device name (your secondary storage device) or the name of a crash dump save file.
<i>/sw2</i>	Consists of all the analysis control switches and three function control switches — /KMR, /SYM, and /BL:n. A description of the analysis control switches is provided in Section 6.7.1. A description of the /KMR, /SYM, and /BL:n switches and their default values is given in Table 6-3.

Output specifications (to the left of the equals sign) are position dependent. Therefore, when you include both output specifications (*analysis*, *save*), you must place them in the command string in the positions shown. If you do not enter a specification for the analysis file, you must place a comma before the save file specification. The comma can appear only if a save file is specified.

Input specifications (to the right of the equals sign) are position independent and can appear in either order.

Any of the specifications in the command string can appear in the complete FILES-11 format — that is, complete with device, UIC, file name, file type, and version number. When you omit any of the command specifications, NDA uses the defaults shown in Table 6-1.

Table 6-1: NDA File Default Values

File	Device	User File Directory (UFD)	Default File Name	Value Type
Analysis file	SY:	Current	None	.LST
Save file	SY:	Current	None	.CDA
Symbols files:				
11M/S	SY:	Current	CEX	.STB
11M-PLUS and Micro/R SX	SY:	Current	RSX11M	.STB
Input file	SY:	Current	None	.CDA

The following examples illustrate the NDA file default values. Assume that the user in these examples is logged in under UIC [301,356] and that the secondary storage device is DL1:. Also assume that NDA is being operated as an installed task.

Example 1:

```
> NDA (RET)
NDA> 18APR85,18APR85/MEMSIZ:4096=CEX.STB/STB,DL1:/ALL (RET)
```

This command string creates an analysis file, 18APR85.LST, and a save file, 18APR85.CDA. The binary input is read from RK05 disk unit 1. NDA analyzes it in accordance with the information contained in the symbol definition file CEX.STB under UFD [301,356].

Example 2:

```
>NDA (RET)
NDA>,13JAN85=DL1: (RET)
```

This command string creates a save file, 13JAN85.CDA. In this case, NDA performs no analysis, since there is no analysis listing file. The binary input is read from RK05 disk unit 1.

Example 3:

```
>NDA (RET)
NDA> 13JAN85=13JAN85/ALL (RET)
```

This command string produces an analysis output listing using the /ALL analysis switch (see Table 6-2 for a complete description of this switch). The binary input is read from the previously created save file (13JAN85.CDA). NDA analyzes it in accordance with the information contained in the symbol definition file CEX.STB under UFD [301,356].

Example 4:

```
>NDA (RET)
NDA> 13JAN85,13JAN85/MEMSIZE:512=DL1:/ALL (RET)
```

This command string creates an analysis file named 13JAN85.LST and a save file named 13JAN85.CDA. The number of words of information to be transferred is 512K words. The input file is located on RK05 disk unit 1. NDA produces an analysis output listing using the /ALL analysis switch.

6.6 Indirect Command Files

You can enter command strings to NDA directly from the keyboard or indirectly through the use of the indirect command file facility. NDA indirect command files must not contain a reference to another command file.

6.7 NDA Switches

Switches provide you with the means to control NDA operation. There are two types: analysis control switches and function control switches.

Analysis control switches determine which NDA analysis routines are to be applied to the input file. Some switches apply only to the DECnet software, while others apply only to the RSX-11 PSI software running with DECnet on a DECnet-RSX system with a PSDN capability.

Function control switches provide a number of NDA control options. For example, such switches might terminate an analysis after NDA has encountered a specified number of errors. Or, a switch might limit the number of pages of output listing.

6.7.1 Analysis Control Switches

Table 6-2 provides a list of the analysis control switches and a brief description of their use. More than one analysis control switch can be specified. If none are specified, the default is /SYS/CEX.

Table 6-2: NDA Analysis Control Switches

Switch	Description
/ALL	Executes the following switches (each is defined later in this table): /CEX /LDTE /OBJ /PRO /RDTE /SLT /CTB /LIS /PDV /PSV /REM /SYS /CUG /NSP /PHB /PVC /RNW /TSK /DST /NW /PLI /QUE /ROU /XACP

Table 6-2 (Cont.): NDA Analysis Control Switches

Switch	Description
/NSP	Prints the DECnet ECL databases, including the logical link blocks.
/NW	Prints the RSX-11 PSI NW: database and window blocks.
/OBJ /OBJECT	Lists the network task object types.
/PDV	Prints interpreted contents of the process description vectors.
/PHB	Prints the contents of the RSX-11 PSI/X.25 Gateway PLI home block.
/PLI	Prints the RSX-11 PSI PLI database and the X.25 circuit blocks.
/PRO /PROC	Dumps the line tables for all loaded network processes.
/PSV	Prints the X.25 Gateway PSV process databases, circuit databases, and buffer chains.
/PVC	Prints the RSX-11 PSI/X.25 Gateway permanent virtual circuit (PVC) name blocks.
/QUE /QUEUE	Lists the contents of the fork process queue.
/RDTE	Prints the RSX-11 PSI remote DTE descriptor blocks.
/REM /REMOTE	Lists the DECnet remote node names and alias names.
/RNW	Prints the RSX-11 PSI remote network descriptor blocks. (This is printed only on RSX-11M-PLUS systems.)
/ROU /ROUT /ROUTING	Lists the DECnet routing parameters, including the physical link blocks.
/SLT	Prints interpreted contents of the system line tables.
/SYS	Lists general system data. This includes the time of the crash, the current task, and the registers in use.
/TSK /TASK	Prints the network mailbox, window blocks, and I/O packets for each task using the network.
/XACP	Prints the CCBs and I/O packets waiting to be processed by the RSX-11 PSI X25ACP.
/XGA	Prints the RSX-11 PSI XGA database and the X.25 circuit blocks. (This is printed only on RSX-11M-PLUS systems.)

6.7.2 Function Control Switches

Table 6-3 provides a list of the function control switches and a brief description of their use. More than one function control switch can be specified. If switches are not specified, the default values listed in Table 6-3 are assumed. Note that when a switch requires a numeric argument, the argument is considered to be octal unless followed by a decimal point.

Table 6-3: NDA Function Control Switches

Switch	File	Description	Default
/BL: <i>n</i>	Input file	Identifies the starting block number of the secondary storage device. The value of <i>n</i> must be less than 65535. NDA reads the dump from the input device beginning at logical block <i>n</i> . If the crash dump device is not a disk or magnetic tape, NDA ignores this switch.	/BL:1
/EXIT: <i>n</i>	Analysis file	Terminates analysis after encountering <i>n</i> analysis errors. NDA maintains an error count. If you specify the /EXIT: <i>n</i> switch, NDA terminates analysis after <i>n</i> errors. If you specify /EXIT but do not specify <i>n</i> , NDA exits after one error.	/-EXIT
/KMR	Input file	When NDA reads incorrect page address register (PAR) values from the crash stack, it prints an error message on the user's terminal and attempts to continue with the analysis. In this event, you can use the /KMR switch when you restart the analysis. /KMR forces NDA to use standard mapping values to convert kernel virtual addresses to physical memory addresses.	

Table 6-3 (Cont.): NDA Function Control Switches

Switch	File	Description	Default
/LIMIT: <i>n</i>	Analysis file	Limits the number of pages of analysis output. When NDA has generated <i>n</i> pages, it terminates the analysis and prints a message on the user terminal indicating that it has done so.	/LIMIT:50
/MEMSIZ: <i>n</i>	Save file	Creates a save file 4x <i>n</i> blocks long and transfers <i>n</i> K words to it from the input file. The valid range of decimal values for <i>n</i> is from 16 to 4096. This switch is necessary only when saving dumps from secondary storage devices that have no EOFs (disk or magnetic tape). When the crash input resides on magtape, the save file is zero filled if the EOF is read before <i>n</i> K words have been transferred.	/MEMSIZ:124
/-SP	Analysis file	Causes NDA not to spool the analysis output listing file to the line printer.	/SP
/STB	Symbols file	Identifies the file that contains both the executive and the network symbol tables for the crashed system. NDA opens the specified file and extracts the necessary symbol values. If it fails to find any required symbol values, NDA aborts the analysis and prints an error message on the terminal. If no symbol is specified using the /STB switch, CEX.STB under the current UIC is used.	CEX.STB in the current UIC for RSX-11M; RSX-11M. STB in the current UIC for RSX-11M-PLUS.
/SYM	Input file	If any required symbols are not found in the symbol table file, set their values to zero and proceed with the analysis. Normally, this condition would cause NDA to abort the analysis.	/-SYM

6.8 NDA Error Messages

NDA prints an error message on your terminal when it detects an error condition. NDA error messages are summarized in Chapter 11. Do not confuse these messages with the diagnostic analysis messages that NDA generates during the analysis and prints in the analysis listing.

Network Display Program (NTD)

The Network Display Program (NTD) can provide three types of displays:

- A **resource display** of the current status of the host node or any specified remote RSX/IAS DECnet node in the network. There are two formats for this display:

Default resource display for current DECnet-RSX systems (see Example 7-1)

Old resource display for connections to DECnet-RSX systems having previous versions of the software (see Example 7-2)

- A **node summary display** of all reachable nodes or a user-specified range of nodes in the network (available on routing nodes only — see Example 7-3)
- An **area summary display** of all reachable areas in the network (available on level 2 routing nodes only — see Example 7-4)

You can review a continuously updated screen display on any VT100, VT52, VT220, or VT240 terminal, or you can use NTD with a hard-copy terminal to obtain a listing of the display information. The displayed information is collected by NTDEMO, a task that runs on the system for which you are displaying information.

This chapter describes the displays and outlines the commands required to invoke and customize the displays.

7.1 Invoking NTD

Use the following command to invoke NTD:

NTD [*node-name*][/*PAGE = s*]

where

node-name Is a name consisting of 1 to 6 numeric or alphabetic characters, including at least 1 alphabetic character. If you do not specify *node-name*, NTD displays the status of the local node.

/*PAGE = s* Is a switch that specifies the display type, where *s* is one of the following:

- R Default resource display
- O Old resource display
- N Node summary display
- A Area summary display

This switch is most useful when running NTD from a hard-copy terminal. Without this switch, you will always get a resource display. NTD automatically checks the version of the specified node to determine whether to display the default resource display or the old resource display. From a VT100 or a VT52, you can switch to a node summary display simply by entering (ESC).

Error messages that can be generated when you invoke NTD are listed in Chapter 11.

7.2 NTD Commands

NTD commands control various aspects of the real-time NTD displays. There are two modes of operation for NTD commands:

- **Immediate mode.** With the NTD display on your screen, you enter commands to manipulate the display directly — for example, to control scrolling of display information or to change to a different display.

- **Command mode.** When you switch from immediate mode to command mode, NTD displays the commands that you can enter to customize the display — for example, to change the frequency of display updates or the range of nodes for which NTD is to display information. In this mode, NTD prompts for commands. You must return to immediate mode to view the displays.

The use of each mode and its commands is defined in the following sections.

7.2.1 Immediate Mode Commands

When you invoke NTD, you automatically enter immediate mode. Enter any of the commands described in Table 7-1 to manipulate the screen display directly. The terminal's bell will ring if you enter an unrecognized command.

Table 7-1: Immediate Mode Commands

Character Key	Function
R	Changes to default resource display
O	Changes to old resource display
N	Changes to node summary display
A	Changes to area summary display
(SPACE BAR)	Refreshes the currently selected display
D	Selects scrolling of node/circuit information only (default)
T	Selects scrolling of task information only
B	Selects simultaneous scrolling of node and task information
+	Scrolls currently selected information forward 5 items at a time for resource displays or 10 nodes at a time for node summary displays *
-	Scrolls currently selected information backward 5 items at a time for resource displays or 10 nodes at a time for node summary displays *
S	Sorts selected information in ascending order by node address instead of alphabetically by node name
H	Displays help information for immediate mode commands for 5 seconds, then redisplay the currently selected NTD status information

(continued on next page)

Table 7-1 (Cont.): Immediate Mode Commands

Character Key	Function
ESC	Enters command mode
CTRL/Z or CTRL/C	Exits NTD
* Scrolling causes information to be displayed for a range of nodes, beginning with the next available node that is five reachable addresses ahead of (or behind) the currently specified starting node. On the node summary display, a maximum of 84 nodes can be displayed on the screen at once. Unless you enter the S command, nodes are displayed in alphabetic order by name. Therefore, scrolling by node address will cause the order to change.	

7.2.2 Command Mode Commands

When you press **ESC** to switch from immediate mode to command mode, the possible commands you can enter are displayed on your screen, followed by a command prompt. Valid commands are described in Table 7-2. Enter one command for each prompt.

Table 7-2: Command Mode Commands

Command	Function
NTIME = n	Sets the time (in seconds) between display updates for remote nodes (default: 10 seconds)
TTIME = n	Sets the time (in seconds) between display updates for network tasks and circuits (default: 5 seconds)
ADDRESS = n	Sets the lowest node address for which information is to be displayed (range: 1 to 1023; default: node 1) *
MAXIMUM = n	Sets the highest node address for which information is to be displayed (range: 1 to 1023; default: node 1023) *
HOPS = n	Sets the maximum number of hops allowed to a remote node to be displayed (default: 31) *
COST = n	Sets the maximum cost allowed for a remote node to be displayed (default: 1023) *
RET	Reverts to the currently selected display and immediate mode
CTRL/Z	Exits NTD
* If you specify 0 for n, the value will revert to the specified default.	

When entering these commands, you need only use a single character to designate the command. For example, the commands ADDRESS = 4 and A = 4 both set 4 as the lowest node address for which information is to be displayed.

7.3 NTD Resource Display Format

Examples 7-1 and 7-2 are examples of the default resource display and the old resource display, respectively. The display information fields are described in the following sections.

Top of the screen

- The current date and time at the node where NTDEMO runs. This is updated approximately every second.
- The name and identification of the node being displayed. For VT100 terminals, NTD uses the VT100 graphics capability to highlight the name of the node.
- Bar graphs for the following resources:

Logical links (LNKS)

Communication control buffers (CCBs)

NOTE

Because CCBs can be allocated dynamically, the total number of CCBs available can vary.

Small data buffers (SDBs)

Large data buffers (LDBs)

The first set of numbers for each resource indicates the number of that resource currently in use and the total number generated into the system. For example, 12/50 in the LDB line in Example 7-1 indicates that 12 out of 50 generated large data buffers are currently being used.

The actual graphs represented by Xs in the examples illustrate the percentage of each resource currently in use. The vertical bars on the graph (represented by ! in the examples) illustrate the highest percentage of each resource used during the current invocation of NTD. For example, in Example 7-1, roughly 25 percent of the LDBs are currently in use, but the position of the ! shows that approximately 50 percent of the generated buffers have been in use at once during the current invocation of NTD. Bar graphs

for each resource are scaled independently; for example, an X on one graph may represent usage of one of that resource, while an X on another graph may represent usage of five of that resource. Actual graphic representations can differ depending on terminal type.

At the end of the line, NTD displays the number of allocation failures for each resource type since network startup. On the LDB line, the second allocation failure field refers to receive data buffers.

The bar graph display is updated approximately every second.

Lower left of the screen

This data differs with the two resource display types, as described in the following list. For either type, this information is updated at the interval specified by the NTIME command (default: every 10 seconds).

- **Default resource display (see Example 7-1).** NTD displays the following information for all known circuits:

The circuit name.

The cost to reach the adjacent node.

The maximum buffer size of network messages to the adjacent node (not applicable for Ethernet circuits, since each node on the Ethernet may have a different size).

For point-to-point circuits, the name and address of the adjacent node on the circuit, if it is reachable; otherwise, the status of the circuit.

- **Old resource display (see Example 7-2).** NTD displays the following information for any node that is currently reachable:

The remote node name and its node address.

The name of the circuit over which packets are sent to the node.

The minimum number of hops required to reach the node and the minimum cost to reach the node. These numbers may correspond to different routes, as the least costly route may not necessarily have the fewest hops.

The number of active logical links to that node and the current round trip delay in seconds. If the number of logical links is shown as 0, it indicates that a link has been active to that node since the network was loaded.

Lower right of the screen

NTD displays the following information for currently active network tasks (that is, those tasks that have issued an OPN\$ to the network):

- The task name.
- The TI: device associated with the task. Tasks requested through the network normally run with a TI: of CO0: for RSX-11M and M-PLUS.
- The number of logical links that are active on the task, including any outgoing connect request that has not yet completed.
- The number of entries on the task's mailbox. Entries can include:

Incoming connect requests

Interrupt messages

Disconnect notifications

Link abort notifications

Network abort notifications

Network events

Refer to the *DECnet-RSX Programmer's Reference Manual* for more information about mailboxes.

- The number of outstanding logical link transmit requests.
- The number of outstanding logical link receive requests.

This information is updated at the interval specified by the TTIME command (default: every 5 seconds).

Example 7-1: Sample Default Resource Display

6-MAR-86 17:20:25 Node: BIGBOY(4.8) FINANCE SYSTEMS ROUTER
RSX-11M-Plus, Area Routing Node, DECnet V2.0

LNKS	3 / 10	XXXXXXXXXXXX!	-----	Alloc Fails:	
CCB	30 / 100	XXXXXXXXXXXX!	-----		0
SDB	6 / 22	XXXXXXXXXXXX!	-----		0
LDB	23 / 130	XXXXXXX!	-----	0 :	0

Circuit	Known Circuits:			Network Tasks:					
	Cost	Size	Adj Node/Status	Task	TI	Links	MBX	XMT	RCV
UNA-0	3		ACCNTS(4.126)	NTD...	COO:	2	0	1	0
UNA-1	3		Off	NTDT1	TTi:	1	0	0	1
DMC-0	11		On-starting						
DMC-1	11		On-starting						
DMC-2	11		On-starting						
DMC-3	11		On-starting						
DMC-4	4		On-starting						
DMC-5	4		On-starting						

Example 7-2: Sample Old Resource Display

6-MAR-86 17:20:43 Node: BIGBOY(4.8) FINANCE SYSTEMS ROUTER
RSX-11M-Plus, Area Routing Node, DECnet V2.0

LNKS	3 / 10	XXXXXXXXXXXX!	-----	Alloc Fails:	
CCB	29 / 100	XXXXXXXXXXXX!	-----		0
SDB	6 / 22	XXXXXXXXXXXX!	-----		0
LDB	22 / 130	XXXXXXX!	-----	0 :	0

Remote Nodes:				Network Tasks:					
Node	Circuit	Hop/Cst	Lnk/Dly	Task	TI	Links	MBX	XMT	RCV
TULSA (4.6)	UNA-0	2/6	0/10	NTD...	COO:	2	0	1	0
MIAMI (4.10)	UNA-0	1/3	0/10	NTDT1	TTi:	1	0	0	1
BOSTON(4.11)	UNA-0	2/6							
HARTFD(4.17)	UNA-0	1/3	0/5						
NEWYRK(4.18)	UNA-0	3/15	0/4						
SEATTL(4.19)	UNA-0	1/3	1/4						
CHICAG(4.21)	UNA-0	1/3							
DENVER(4.22)	UNA-0	2/7							
SANFRN(4.17)	UNA-0	2/6							

7.4 NTD Node Summary Display Format

Example 7-3 is an example of a node summary display. The display information fields are described in the following sections.

Top of the screen

- The current date and time at the node where NTDEMO runs. This is updated approximately every second.
- The name and identification of the node being displayed. For VT100 terminals, NTD uses the VT100 graphics capability to highlight the name of the node.

Node entries

- Node name or address. By default, named nodes are listed alphabetically, followed by nodes that are identified by address only (in ascending order). You can use the immediate mode S command to order all nodes by ascending node address (see Table 7-1).
- The minimum number of hops required to reach the node and the minimum cost to reach the node. These numbers may correspond to different routes, as the least costly route may not necessarily have the fewest hops.
- The number of active logical links to the node. If the number of logical links is shown as 0, this indicates that a link has been active to that node since the network was loaded.
- The total number of nodes actually displayed. Since the screen cannot display more than 84 nodes at once, this number may not necessarily reflect the total number of nodes in a large network. You will have to use scrolling to display additional nodes. This number also does not include any nodes that have been excluded because of filtering commands (see ADDRESS, MAXIMUM, HOPS, and COST in Table 7-2).

Example 7-3: Sample Node Summary Display

```
6-MAR-86 17:20:43 Node: BIGBOY(4.8) FINANCE SYSTEMS ROUTER
                  RSX-11M-Plus, Area Routing Node, DECnet V2.0
Node Hop/Cst Lnk Node Hop/Cst Lnk Node Hop/Cst Lnk Node Hop/Cst Lnk
ATLANT 4/20      DENVER 4/20  0  OMAHA  1/3   [ 21] 2/6
ALBERQ 5/24      FRISCO 2/6   QUEBEC 4/20  1  [ 25] 4/20
BOSTON 2/6       1  HARTFD 5/22   RICHMN 1/3   [ 16] 3/15
CHICAG 5/23      JACKVL 1/3   SEATTL 4/20  0  -Total Nodes: 19
DALLAS 5/23      2  NEWYRK 4/20  3  TULSA  4/20
```

7.5 NTD Area Summary Display Format

Example 7-4 is an example of an area summary display. The display information fields are described in the following sections.

Top of the screen

- The current date and time at the node where NTDEMO runs. This is updated approximately every second.
- The name and identification of the node being displayed. For VT100 terminals, NTD uses the VT100 graphics capability to highlight the name of the node.

Area entries

- Area ID. The ID of the area.
- The circuit name of the circuit being used to communicate with the area.
- The minimum number of hops required to reach the area and the minimum cost to reach the area. These numbers may correspond to different routes, as the least costly route may not necessarily have the fewest hops.
- The next node on the path to the area. This node may be another level 2 router within the local area or a level 2 router in another area. In either case, it should always be a level 2 router if the network was configured properly.
- The total number of areas actually displayed.

Example 7-4: Sample Area Summary Display

6-MAR-86 17:20:43 Node: BIGBOY(4.8) FINANCE SYSTEMS ROUTER
RSX-11M-Plus, Area Routing Node, DECnet V2.0

Area	Circuit	Hop/Cst	Next Node	Area	Circuit	Hop/Cst	Next Node
2	UNA-0	4/20	DALLAS(4.12)	20	DMC-0	2/6	OMAHA (4.18)
3	UNA-0	3/15	DALLAS(4.12)	21	UNA-0	1/5	DALLAS(4.12)
5	DMC-1	2/9	HARTFD(4.8)	25	UNA-0	2/9	DALLAS(4.12)

10



Queue Manager (QUE)

The Queue Manager (QUE) utility is the interface to the RSX-11M V4.3, RSX-11M-PLUS V4.0, and Micro/R SX V4.0 queue manager. Any privileged user can employ QUE to initialize the File Transfer Spooler (FTS) queue and processor and to manipulate user-queued FTS requests. FTS is a DECnet-RSX utility that allows you to transfer files in much the same way as the Network File Transfer (NFT) utility, with the additional queue feature.

This chapter outlines components required by FTS and QUE and describes how to invoke and use QUE. For more information on both utilities, including error messages, see the following manuals:

- *DECnet-RSX Guide to User Utilities*. Contains a complete description of FTS.
- *RSX-11M/M-PLUS Batch and Queue Operations Manual*. Contains a description of QUE user commands and error messages.
- *RSX-11M/M-PLUS System Management Guide*. Contains a description of QUE system manager commands.

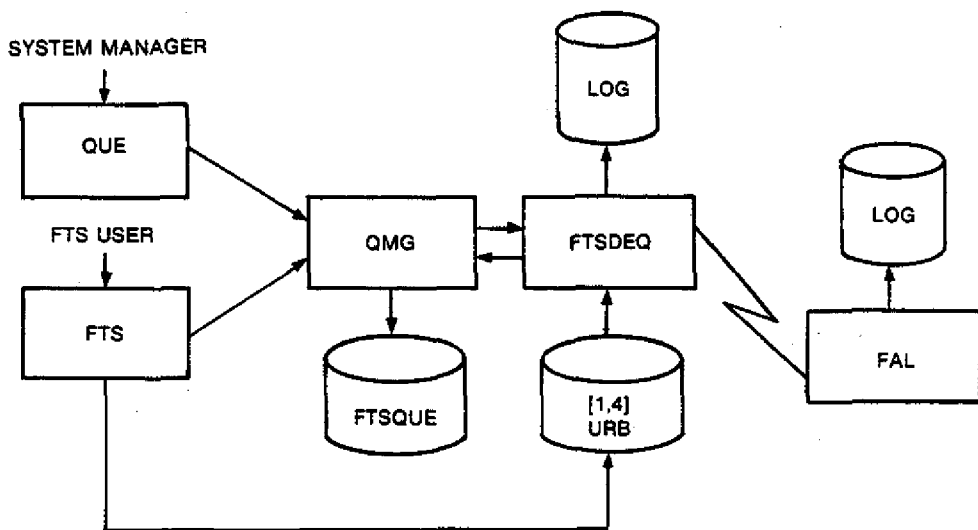
8.1 FTS and QUE Components

Table 8-1 lists the components required by FTS and QUE and describes their relationship to queue management. Figure 8-1 diagrams the relationships among these components.

Table 8-1: FTS and QUE Components

Component	Description
FTS	The user interface that spools requests and places them on a queue.
QUE	The system manager interface that processes queue management commands.
QMG	The RSX-11 queue manager task.
FTSDEQ	The processor task that services the queue.
FAL	The File Access Listener that handles file access and transfer requests over a line at the remote node.
FTSQUE	The queue of FTS jobs that the queue manager stores in a disk area.
URBs	User request block files that contain details of the FTS requests corresponding to FTS jobs on the queue. This information contains names that FTSDEQ needs to process the requests. FTS prints this information in response to the /LIST command.
FTSSYS.LOG	The log file that contains a record of both completed and uncompleted FTS jobs.
FAL.LOG	The log file that contains a record of completed FAL jobs.

Figure 8-1: FTS and QUE Components



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8.2 Invoking QUE

To invoke QUE, enter the following command in response to an MCR> prompt:

QUE *command*

where *command* is any valid QUE command (as described in the following sections). After the QUE command executes, you are returned to MCR.

8.3 QUE Command Syntax

QUE supports three command formats. Each format allows you to perform various queue management functions. These functions include:

- Initializing/deleting and starting/stopping the queue and the processor
- Assigning/deassigning the processor to/from the queue
- Holding, releasing, or deleting FTS user jobs on the queue

The following sections describe the three command formats and their functions and give examples of their use.

8.3.1 Initializing/Deleting and Starting/Stopping the Queue and the Processor

Use the following QUE command syntax and the appropriate switch to cause the queue or the processor to be initialized, deleted, started, or stopped:

QUE *name/switch*

where

name is either the queue name (FTSQUE) or the processor's installed name (FTSDEQ).

switch is one of the following switch options:

CR	creates, names, and starts the FTS queue
SP/EX	creates, names, and starts the FTS processor
STA	starts the FTS queue or processor
STO:QUE	stops the FTS queue
STO	stops the FTS processor
DEL:Q	deletes the FTS queue
UNSP	deletes the FTS processor

In an emergency situation, delete either the queue or the processor. Users can delete their jobs from the queue using FTS.

NOTE

If FTS was selected during NETGEN, the FTS queue and processor will already be set up when the network is loaded. If they were not set up by commands in file NETINS.CMD, you must create the queue and start the processor to make the FTS queue available for users.

Example:

```
MCR>QUE FTSQUE/CR (RET)
MCR>QUE FTSDEQ/SP/EX (RET)
```

The first command creates the FTS queue. The second command starts the FTS processor task.

8.3.2 Assigning and Deassigning the Processor

Use the following QUE command syntax to assign and deassign the processor to and from the queue:

QUE FTSDEQ:*switch*:FTSQUE

where

FTSDEQ Is the processor name.

FTSQUE Is the queue name.

switch Is one of the following switch options:

AS assigns the processor to the queue. You must assign the processor upon initializing it in order to enable FTS operations.

DEA deassigns the processor from the queue. Deassigning the processor prevents it from performing any functions (for example, transferring files, despooling). However, jobs can be added to the queue when the processor is deassigned. You may need to deassign the processor in special situations (for example, to prevent jobs from being completed). To reactivate the processor, use the assign switch (/AS).

There are cases where a queue must be inspected, but you do not want any of the jobs processed before listing the queue's contents. In this case, deassign the processor before listing the queue. Refer to Section 8.4 for information on related queue management functions.

8.3.3 Holding, Releasing, and Deleting FTS User Jobs

Use the following **QUE** command syntax to hold, release, or delete FTS user jobs on the queue:

QUE /ENT:entry-number/switch

where

entry-number Is the number assigned to the queue entry by the queue manager. The entry number is obtained by listing the contents of FTSQUE (see Section 8.3.2).

switch Is one of the following switch options:

HO	holds the specified job
REL	releases the specified job from the hold state
DEL	deletes the specified job

Ordinarily, you do not delete or hold jobs. FTS users can delete their own jobs. You need to use these commands only in special situations (for example, when you want to delay a job that is about to begin).

Example:

```
MCR> QUE /ENT:857/DEL (RET)
```

This command deletes the job with entry number 857 from the queue.

8.4 Related Queue Management Functions

In addition to using **QUE** for queue management, you should periodically perform other related queue management functions. These functions include:

- Purging the FTS system log file (FTSSYS.LOG) and the FAL system log file (FAL.LOG)
- Listing the contents of FTSQUE and of FTS jobs
- Listing and purging the user request block (URB) files

The following sections describe procedures for performing these functions.

NOTE

FTS will retry requested file operations if they fail due to network problems. After a number of unsuccessful retries (default = 5), the FTS job will be put into the hold state in FTSQUE. The user must decide whether to release the job for one more retry or to delete (abort) it.

8.4.1 Purging FTSSYS.LOG and FAL.LOG

Periodically, you should purge the FTS system log file (FTSSYS.LOG) and the FAL system log file (FAL.LOG). FTSSYS.LOG contains a record of every job FTS has received, along with coded status information, time of receipt, and time of completion. The file is useful for statistical purposes. FAL.LOG records network file transfer information for each file copied over the network.

FTSDEQ automatically deletes URB file entries as jobs complete. However, it does not delete FTS system log file entries. Use the Peripheral Interchange Program (PIP) to purge these files when necessary. (See the *RSX-11M/M-PLUS Utilities Manual* for more information.) The following PIP command displays the FTS system log file:

```
>PIP TI:=[1,4]FTSSYS.LOG (RET)
```

Refer to the *DECnet-RSX Guide to User Utilities* for a description of the system log file display.

During network generation, you can choose to create the system log file in UFD [1,4] with no file protection. Optionally, log entries are copied to a log file in the UFD of the user who queued the request. The user is expected to maintain this file.

8.4.2 Listing FTSQUE and FTS Jobs

Periodically, or when necessary, list the contents of FTSQUE and of FTS jobs. The following example shows the command that you would use and a sample system display. FTSQUE:

```
MCR> QUE FTSQUE:/LI:P (RET)
```

```
  ** PRINT QUEUES **
  FTSQUE =>FTSDEQ
[1,1]      223771 ENTRY:857      PRINT AFTER 2-FEB-86 11:37
          1 DBO:[1,4]FTS4166.URB;1
```

The FTSQUE contains one job, number 223771. Note that FTSDEQ is the processor for FTSQUE. This field appears only when the processor has been assigned to the queue. If this field does not appear, the processor is deassigned, but there can still be entries in the queue. The job was originally queued from the UIC [4,166]. After it failed, the job was requeued by the FTSDEQ task from UIC [1,1]. The queue manager entry number is 857. The job is to be printed (in this case retried) at 11:37.

Note the format of the URB file specification:

device:[ufd]FTSnnnnnnn.URB;xx

where

nnnnnnn Is the user's current UIC (with leading zeroes suppressed).

xx Is the request number. If multiple jobs are queued from a single UIC, this number is greater than 1.

If, after inspecting the FTS queue, you want more information on a user's job on the queue, use the SET /UIC command. The following example shows a sample command and subsequent display.

```
>SET /UIC=[4,122] (RET)
>FTS /LI (RET)
```

```

FTS USER REQUEST LISTING                                2-FEB-86 11:45
223553  TLR/50                                           /IM/LO
    Queued 2-FEB-86 11:45                                Retrieved 0 times
    Source File -- DB0:[4,122]NODES.SYS;4
    Destination File -- XYZ::[4,131]NODES.SYS

223573  TLR/50                                           /IM/LO
    Queued 2-FEB-86 11:45                                Retrieved 0 times
    Source File -- DB0:[4,122]NODFIL.MAC;10
    Destination File -- XYZ::[4,131]NODFIL.MAC

223507  TLR/50                                           /IM/LO
    Queued 2-FEB-86 11:45                                Retrieved 0 times
    Source File -- DB0:[4,122]PRMFIL.MAC;1
    Destination File -- XYZ::[4,131]PRMFIL.MAC
```

The job numbers at the beginning of each entry are the only cross-reference you have to the system queue list. For more information on the FTS /LI switch, see the *DECnet-RSX Guide to User Utilities*.

8.4.3 Listing and Purging URB Files

Periodically, or when necessary, list and purge the URB files. The following PIP command produces a display of the URB directory:

```
>PIP [1,4]*.URB;*/LI (RET)
```

If you have deleted a job with QUE, you must also delete its associated URB file or files. QUE does not do this automatically. However, when an FTS user deletes a job, it also is deleted automatically from its URB file.

Trace Interpreter Task (TRI)

The X.25 trace interpreter task (TRI) is part of the trace facility provided for RSX-11 PSI users. This facility enables you to diagnose software problems on a RSX-11 PSI line connected to a device. The facility traces message frames passing between the X.25 level 2 protocol and the device driver and copies the traced frames to a disk file. The contents of this file can then be analyzed and printed.

Use NCP TRACE commands to control the tracing of frames and to create the file (see the CLEAR TRACE, SET TRACE, and SHOW TRACE commands in Chapter 1). Then use TRI to analyze the contents of the trace disk file.

9.1 Invoking TRI

There are three methods of invoking TRI:

1. MCR>TRI (RET)

TRI then prompts

TRI>

Enter your TRI command immediately following the prompt. If the command executes, the utility prompt is displayed on the next line. If the command is unsuccessful, an error message is displayed on the next line indicating the reason for the error followed by the utility prompt.

2. MCR>TRI *command* (RET)

where *command* is any valid TRI command. With this method, you return to MCR after the TRI command is executed.

3. MCR>TRI *command-file* **RET**

where *command-file* is the name of an indirect command file containing TRI commands. You can nest command files.

9.2 Exiting TRI

To exit TRI, enter **CTRL/Z** or **RET**.

9.3 TRI Command Format

The TRI command line has the following format:

[outfile[/switches] =][infile[/switches]]

where

- | | |
|-----------------|---|
| <i>outfile</i> | Is the listing file. If not specified, this defaults to the input file name with file type .LST. |
| <i>infile</i> | Is the name of the file containing the tracing data. If this name is not specified, this file defaults to LB:[1,6]PSITRACE.SYS. |
| <i>switches</i> | Are the options available for controlling the form and contents of the listing produced by TRI. Any compatible combination of the switches shown in Table 9-1 can be specified on either the input file or the output file. |

Table 9-1: Trace Interpreter Switches

Switch	Meaning	Comments
/SP	Spool the output file.	Default switch. Output is spooled unless /-SP is specified.
/-SP	Do not spool the output file.	
/OC *	Output user data in octal.	Cannot be specified with /-IN.
/AS *	Output user data in ASCII.	Cannot be specified with /-IN.
/IN	Interpret trace data.	Default switch. (Data is interpreted unless /-IN is specified.)
/-IN	Do not interpret trace data.	Only /SP or /-SP can be specified with this switch.
/LI: <i>n</i>	Output trace data for system line <i>n</i> only.	The <i>n</i> is octal. If you want to specify a decimal number, use <i>n</i> . instead. The default for <i>n</i> is 0. Cannot be specified with /-IN.
/CH: <i>n</i>	Output trace data for channel number <i>n</i> only.	The <i>n</i> is octal. If you want to specify a decimal number use <i>n</i> . instead. The default for <i>n</i> is 0. Cannot be specified with /-IN.

* If you specify both /OC and /AS, trace data is printed in octal bytes with the corresponding ASCII characters beneath.

Examples:

```
MCR>TRI =/OC/AS (RET)
```

This command uses the /OC and /AS switches to output user data in octal and ASCII characters.

```
MCR>TRI =/LI:1/OC (RET)
```

This command uses the /OC switch to output octal user data for system line 1 only.

9.4 Contents of Trace Output

TRI reads the trace file created by the tracing facility and lists the following information (depending upon the frame type) for each traced frame:

- Any error status from the CCB
- The system line number
- The direction of transfer (Rx or Tx)
- The frame address byte
- Setting of the P/F bit
- N(S) and/or N(R) numbers
- The frame type as text (for example, SABM)
- The logical channel identifier
- Settings of the Q, D, and M bits
- The packet type as text (for example, Call Req.)
- P(S) and/or P(R) numbers
- Cause and diagnostic fields
- The first few bytes of user data

9.5 TRI Error Messages

TRI prints an error message on your terminal when it detects an operating error. All TRI error messages are listed in Chapter 11.

Proxy Access

Proxy access is a feature on DECnet-11M-PLUS and DECnet-Micro/RSX systems that provides a user on one node in a network with access to an account on another node in the network without knowing either the account name or the access control of the target account. This access is accomplished on the target node by setting up a mapping between the remote user and a local, or proxy, account. When the target node receives a connect request from a remote user, indicating that proxy access is desired, the local proxy account is used.

Proxy access is a useful feature because remote users can access the node without needing an account of their own or needing the password to an account. In addition, network users who already have an account can access that account from a remote node without having to send the password across the network. Proxy access is used when access control (user name/password) is not supplied.

10.1 Managing Proxy Access

Managing proxy access involves controlling your system's ability to receive incoming proxy requests and controlling your system's ability to send proxy requests to other nodes on the network. The two operations are described in the following paragraphs.

Receiving proxy requests — To enable your system to receive proxy requests, ensure that: your proxy database is set up, the INCOMING PROXY parameter of the CFE DEFINE EXECUTOR (or NCP SET EXECUTOR) command is set to ENABLE. The remote, or source node must also have its OUTGOING PROXY parameter set to ENABLE.

Sending proxy requests — To enable your system to send proxy requests to other systems on the network, ensure that: your system's OUTGOING PROXY parameter of the CFE DEFINE EXECUTOR (or NCP SET EXECUTOR) command is set to ENABLE, and the remote, or target, node has its INCOMING PROXY parameter set to ENABLE.

10.2 Invoking, Quitting, and Exiting the PROXY Utility

The PROXY utility is a privileged utility that enables you to manipulate your node's proxy database. The PROXY utility is provided in the NETUIC.

Invoke the PROXY utility from the NETUIC by typing the following:

```
>RUN PROXY (RET)
```

The following prompt appears on your screen:

```
PROXY>
```

To exit the PROXY utility and update the proxy database with the changes you have made, either type EXIT or press (CTRL/Z).

To quit the PROXY utility, type QUIT (any changes that you have made to the proxy database are not kept).

10.3 Proxy Commands and Format

The following sections describe the format and syntax of each PROXY command, and provide examples of the commands.

PROXY commands have the following format (shown in continuation format):

```
COMMAND [PROXY ACCESS] [FROM] source-node-name::source-user -  
[TO] local-account [/DEFAULT]
```

where:

COMMAND Is the command you want to invoke. Proxy commands are shown in the following list and described in later sections of this chapter:

- **DEFINE**—Creates a proxy record that defines the mapping from a network user to a local account.

- **DELETE**—Removes a proxy record from the database.
- **EXIT**—Updates the proxy database and exits the PROXY utility (**CTRLZ** also exits the utility).
- **HELP**—Displays on-line HELP information about the PROXY utility.
- **LIST**—Lists the proxy accounts in the database.
- **QUIT**—Exits the PROXY utility without updating the database.

source-node-name Is the 6-character, alphanumeric name of the remote node that has proxy access to your node. The wildcard (*) character can be used to denote all remote nodes only if the *source-user* is also a wild card. If the *source-node-name* is wild, the account that is defined is called the "wildcard" account. (Proxy requests that do not map to any other accounts in the database will map to the wildcard account.)

source-user Is the user who has proxy access to your node. The *source-user* can be either the 12-character name or the UIC. (The UIC is in the form, [group,member], and can be either an octal or a decimal number). The wildcard (*) character can be used to specify all users on the source node. If the *source-user* contains special characters (such as the underscore), you must use double quotation marks around the entry. (You should keep in mind that the PROXY utility looks for the exact match of the information inside the double quotation marks. For example, if you have a lowercase entry, the system does not match the entry to the corresponding uppercase entry.)

local-account Is the local account (14-character name or the UIC) on your node to which the *source-user* is mapped. The wildcard character (*) can be used only when a wildcard character is also used in the *source-user* entry. When a wildcard character is used, the system attempts to match the *source-user* to an identical *local-account* name when the connect comes in (this is called the "matching" account).

NOTE

If the 14-character account name is not unique, you must use the user's UIC to ensure correct mapping.

/DEFAULT

Is used in the DEFINE command to specify that the local account to which proxy access is being granted by this definition is the default local account. If the remote user has proxy access to more than one local account, the default account is accessed when no account is specified. If /DEFAULT is not used, and a user has proxy access to multiple local accounts, the first account that is defined for the user in the database is the default.

10.3.1 DEFINE

Use the DEFINE command to add new proxy access records to the proxy database. The format (shown in continuation form) for DEFINE is:

```
DEFINE [PROXY ACCESS] [FROM] source-node-name::source-user -  
[TO] local-account[/DEFAULT]
```

NOTE

Ensure that the *local-account* that you are mapping to exists in your system account file.

The following examples show sample DEFINE commands and provide a brief description of the commands.

Example 1:

```
PROXY> DEFINE FROM BOSTON::SMITH TO NETUSR
```

Description: Gives user SMITH on node BOSTON access to account NETUSR.

Example 2:

```
PROXY> DEFINE FROM DALLAS::"B_JONES" TO ORANGE
```

Description: Gives user B_JONES on node DALLAS access to account ORANGE.

Example 3:

```
PROXY> DEFINE FROM TEMPE::[7,74] TO [1,54]
```

Description: Gives user [7,74] on node TEMPE access to account [1,54].

Example 4:

```
PROXY> DEFINE FROM RSTS::[7,10.] TO NETUSR
```

Description: Gives the user with the decimal UIC [7,10.] (decimal is specified by a period after the UIC) on node RSTS access to account NETUSR.

Example 5:

```
PROXY> DEFINE FROM *::* TO GREEN
```

Description: Specifies that account GREEN is the wildcard account and that all proxy requests that do not map to any other accounts in the database will map to GREEN.

Example 6:

```
PROXY>DEFINE FROM TEMPE::* TO MAINT
```

Description: Gives all users on node TEMPE access to account MAINT.

Example 7:

```
PROXY>DEFINE FROM BOSTON::* TO *
```

Description: Gives all users on BOSTON access to the local account that matches their *source-user* entry. This definition maps only to the matching account and is not a wildcard account. For example, user DAVIS would be mapped only to local account DAVIS. If there is no local account DAVIS, the proxy access fails.

Example 8:

```
PROXY>DEFINE BOSTON::SMITH ORANGE/DEFAULT
```

Description: Specifies that local account ORANGE is the default account for user SMITH on remote node BOSTON.

Sample Proxy Database

The previous eight DEFINE specifications would result in a proxy database that appears as follows:

Remote User	Local Account
-----	-----
::*	GREEN
BOSTON::SMITH	NETUSR
BOSTON::SMITH	ORANGE (DEFAULT)
BOSTON::*	*
DALLAS::"B_JONES"	ORANGE
RSTS::[7,10.]	NETUSR
TEMPE::[7,74]	[001,054]
TEMPE::*	MAINT

10.3.2 DELETE

Use the DELETE command to specify and delete proxy access to a local account in the the proxy database. The formats for DELETE are:

DELETE [TO] *local-account*

DELETE [FROM] *source-node-name::source-user* [TO] [*local-account*]

NOTE

If you use wildcard characters to specify both the remote node and remote user names in a DELETE command and then EXIT from the utility, the entire proxy database will be deleted.

The following table shows a proxy database. For the purpose of this example, each record is numbered. Following the table is a list of DELETE commands and an explanation showing which records are deleted by each command.

	Remote User	Local Account
	-----	-----
(1)	*::*	GREEN
(2)	BOSTON::SMITH	NETUSR
(3)	BOSTON::SMITH	ORANGE (DEFAULT)
(4)	BOSTON::*	*
(5)	DALLAS::JONES	ORANGE
(6)	RSTS::[7,10.]	NETUSR
(7)	TEMPE::[7,74]	[001,054]
(8)	TEMPE::*	MAINT

The following examples show DELETE commands and list the records that the commands delete from the previous proxy database.

Example 1:

PROXY>DELETE TO NETUSR

Description: Deletes all records that map to local account NETUSR (records 2 and 6).

Example 2:

PROXY>DELETE FROM BOSTON::SMITH

Description: Deletes all records that map from user SMITH on node BOSTON (records 2 and 3).

Example 3:

PROXY>DELETE FROM BOSTON::SMITH TO NETUSR

Description: Deletes the specific record that maps from user SMITH on node BOSTON to account NETUSR (record 2).

Example 4:

PROXY>DELETE FROM TEMPE::*

Description: Deletes all records that map from node TEMPE (records 7 and 8).

Example 5:

PROXY>DELETE FROM BOSTON::* TO *

Description: Deletes the record that specifies the "exact match" mapping from node BOSTON (record 4). This record grants users access to the local account with the same name as their *source-user*.

Example 6:

PROXY>DELETE FROM *::*

Description: Deletes the entire proxy database.

Example 7:

PROXY>DELETE FROM *::* TO GREEN

Description: Deletes the record that specifies GREEN as the wildcard account (record 1). The wildcard account is used for proxy requests that do not map to any other accounts in the database.

10.3.3 LIST

Use the **LIST** command to display entries in your proxy database. The formats for **LIST** are:

LIST [FROM] *source-node-name::source-user* [TO] [*local-account*]

LIST [TO] *local-account*

LIST ALL

The following table shows a sample proxy database. Following the table is a series of **LIST** commands and the displays that result from each command.

Remote User	Local Account
-----	-----
::	GREEN
BOSTON::SMITH	NETUSR
BOSTON::SMITH	ORANGE (DEFAULT)
BOSTON::*	*
DALLAS::JONES	ORANGE
RSTS::[7,10.]	NETUSR
TEMPE::[7,74]	[001,054]
TEMPE::*	MAINT

The following examples show sample **LIST** commands and their output.

Example 1:

PROXY>LIST TO NETUSR

Remote User	Local Account
-----	-----
BOSTON::SMITH	NETUSR
RSTS::[7,10.]	NETUSR

Example 2:

PROXY>LIST FROM BOSTON::SMITH

Remote User	Local Account
-----	-----
::	GREEN
BOSTON::SMITH	NETUSR
BOSTON::SMITH	ORANGE (DEFAULT)
BOSTON::*	*

Example 3:

PROXY>LIST FROM BOSTON:**

Remote User	Local Account
***	GREEN
BOSTON::SMITH	NETUSR
BOSTON::SMITH	ORANGE (DEFAULT)
BOSTON:**	*

Example 4:

PROXY>LIST FROM ***

Remote User	Local Account
***	GREEN
BOSTON::SMITH	NETUSR
BOSTON::SMITH	ORANGE (DEFAULT)
BOSTON:**	*
DALLAS::JONES	ORANGE
RSTS::[7,10.]	NETUSR
TEMPE::[7,74]	[001,054]
TEMPE:**	MAINT

10.4 Enabling Proxy Access

After you define proxy access in your proxy database, you use the **DEFINE EXECUTOR** and **SET EXECUTOR** commands to allow incoming proxy access to your local accounts and to permit connect requests to go out from your node to accounts on remote nodes. The following sections discuss enabling and disabling proxy access.

10.4.1 Enabling or Disabling Incoming Proxy

Use the **INCOMING PROXY** parameter of the **DEFINE EXECUTOR** and **SET EXECUTOR** commands to control proxy access to your node. You can turn off proxy access to your node by setting this parameter to **DISABLE** (**ENABLE** is the default). For example:

CPE> DEFINE EXECUTOR INCOMING PROXY DISABLE

NCP> SET EXECUTOR INCOMING PROXY DISABLE

See the **DEFINE EXECUTOR** and **SET EXECUTOR** commands in Chapter 1 for more information.

10.4.2 Enabling or Disabling Outgoing Proxy

As the network manager you can prevent any connect requests from leaving your node by setting the **OUTGOING PROXY** parameter of the **DEFINE EXECUTOR** and **SET EXECUTOR** commands to **DISABLE** (**ENABLE** is the default). For example:

```
CPE> DEFINE EXECUTOR OUTGOING PROXY DISABLE
```

```
NCP> SET EXECUTOR OUTGOING PROXY DISABLE
```

See the **DEFINE EXECUTOR** and **SET EXECUTOR** commands in Chapter 1 for more information.

10.5 Requirements for Successful Proxy Access

In order for incoming proxy access to your system to be successful, there is a series of conditions that must exist. The following list describes these requirements:

NOTE

The network manager of the remote system must have the **OUTGOING PROXY** parameter of the **DEFINE EXECUTOR** (or **SET EXECUTOR**) command set to **ENABLE**.

- **INCOMING PROXY ENABLED** — Your system's **INCOMING PROXY** parameter of the **DEFINE EXECUTOR** (or **SET EXECUTOR**) command must be set to **ENABLE**.
- **Local account** — The local account that the remote user wants to access must exist on your system.
- **Proxy record** — A proxy record for the remote user must exist (that is, the *source-node-name*, *source-user*, and *local-account* entries must be correct).

The following examples show a sample proxy database on your local node **TACOMA** and commands that map to records in your proxy database.

Remote User	Local Account
::	GREEN
BOSTON::SMITH	NETUSR
BOSTON::SMITH	ORANGE (DEFAULT)
BOSTON::*	*
DALLAS::JONES	ORANGE
RSTS::[7,10.]	NETUSR
TEMPE::[7,74]	[001,054]
TEMPE::*	MAINT

Example 1:

User SMITH on remote node BOSTON sends the following request to your local node TACOMA:

```
>NFT TACOMA/NETUSR::/LI
```

This request gives SMITH access to account NETUSR on your node and lists the directory of NETUSR.

Example 2:

User SMITH on remote node BOSTON sends the following request to your local node TACOMA:

```
>NFT TACOMA::/LI
```

This request gives SMITH access to account ORANGE (SMITH's default account) on your node, and lists the directory of ORANGE.

Example 3:

User SMITH on remote node BOSTON sends the following request to your local node TACOMA:

```
>NFT TACOMA::[100,54]/LI
```

If account ORANGE (user SMITH's default account) has privilege to [100,54], this request will give user SMITH access to account [100,54] (through ORANGE) and list the directory of the account.

Example 4:

User SMITH on remote node BOSTON sends the following request to your local node TACOMA:

```
>NFT TACOMA/GREEN::/LI
```

For this request, there is no match in the proxy database, so access verification is performed on account GREEN. The request is successful only if the corresponding password is null.



Utility Error Messages

This chapter lists the error messages sent by the following utility programs:

- Console carrier requester (CCR)
- Configuration File Editor (CFE)
- Event File Interpreter program (EVF)
- Host Task Loader (HLD)
- LAT Control Program (LCP)
- Network Control Program (NCP)
- Network Crash Dump Analyzer (NDA)
- Network Display Program (NTD)
- Network initializer (NTINIT)
- Network loader (NTL)
- X.25 trace interpreter task (TRI)
- Virtual Network Processor (VNP)

Each error message has a prefix that identifies the utility that sent it. When an error condition is encountered, the utility in which the error occurred sends an error message. Because NCP, VNP, and CFE use the NTINIT and NTL utilities to process your commands, it is possible that you will receive an error message from one of those utilities instead of from the one that you invoked.

In this chapter, error messages are arranged in alphabetical order by utility and message text. Variable fields within messages are ignored for purposes of alphabetizing.

11.1 CCR Error Messages

CCR — Component in wrong state, xxx

The specified component was not in the correct state to proceed with the operation of the console carrier (xxx = circuit or system).

CCR — File I/O error, xxx

An I/O error occurred while trying to read the specified file (xxx = secondary loader or load file).

CCR — File open error, xxx

CCR was unable to open the specified file (xxx = secondary loader or load file).

CCR — Invalid file contents, xxx

The contents of the specified file are not in the required format (xxx = secondary loader or load file).

CCR — Invalid identification format, xxx

The format for the specified parameter is invalid (xxx = node, service circuit, hardware address, or service password).

CCR — Line communication error

The operation failed due to a communication error on the line.

CCR — Line protocol error

The operation failed due to a protocol error.

CCR — Management programming error

An internal programming error has been detected.

CCR — Message format error

The format of a received protocol message was invalid.

CCR — Parameter missing, xxx

The required parameter was not defined in the command line and the down-line load database (xxx = node, service circuit, hardware address, or service password).

CCR — Privilege violation

The user does not have sufficient privileges to run CCR.

CCR — Protocol/address pair in use

The protocol/address pair used to communicate with the target system is already in use.

CCR — Remote console already in use

Another user on another node has already reserved the remote console on the target system.

11.2 CFE Error Messages

All CFE error messages documented in this chapter are classified according to severity and cause. Both classifications are described in the following list and are noted at the beginning of each error description.

Severity classifications

Informational	There is a minor problem, but it does not affect the task's exit status.
Warning	Minor error. Processing continues.
Error	Major error. The command was accepted, but failed to execute completely. The system waits for a new command.
Severe Error	The command was not accepted. Processing stops and control returns to the monitor.

Cause classifications

CETAB Parse	These errors occur during the parsing of CETAB.MAC. They usually occur when someone has edited CETAB using a text editor. Restore CETAB to its original content.
CETAB	These errors are generated in response to valid commands. They usually occur when someone has edited CETAB using a text editor. Restore CETAB to its original content.
Configuration	These errors are generated by valid commands that refer to features or components that are not in the CETAB file being edited. Check the CETAB file and enter the correct command.
Command	These errors usually are caused by a mistyped command or by an incorrect or inapplicable parameter. Correct the command and reenter it.
General	These errors usually indicate a problem with the CFE installation or with the HELP or CETAB files. The cause is probably an invalid UIC or something similar.

CFE — Access verification not supported

(Error/Configuration) You do not have access verification supported in your system, so you cannot change the verification state.

CFE — Bad port value

(Severe Error/CETAB Parse) The number of ports on the PSN\$DF macro is out of range or contains nonnumeric characters.

CFE — Bad transport subaddress value

(Severe Error/CETAB Parse) The transport subaddress values on the PSN\$DF macro are out of range or contain invalid characters.

CFE — Buffer allocation failure

(Error/Command) CFE tried to allocate an internal buffer to complete the command but failed. If you must make a new entry in CETAB, then remove CFE and reinstall it with an increment.

CFE — Call mask and call value are different lengths

(Error/Command) The call mask and call value of a destination must be of the same length.

CFE — Circuit not in configuration

(Error/Configuration) The circuit in the command is not in the database.

CFE — Command line error

(Error/Command) The command has a bad character or equivalent.

CFE — Consistency error

(Severe Error/General) There is an internal consistency error in CFE. Please contact your software specialist to determine the cause of this error.

CFE — Destination not in configuration

(Error/Configuration) The destination in the command is not in the database.

CFE — DTE not in configuration

(Error/Configuration) The DTE in the command is not in the database.

CFE — DTE number missing from outgoing SVC: DLM-u.t

(Severe Error/CETAB Parse) The DTE number is required for outgoing SVCs. Reenter the command with the DTE number.

CFE — DTE with DLM circuits not purged: dte-address

(Error/Command) The indicated DTE was not purged because some of its circuits are data-link-mapping circuits. Data-link-mapping circuits may not be purged.

CFE — Duplicate PSN\$DF in CETAB

(Severe Error/CETAB Parse) There is more than one PSN\$DF macro in the CETAB.MAC file. Remove one of the PSN\$DF macros.

CFE — Error in call mask or call value

(Error/Command) The format of the call mask or call value in the command is invalid.

CFE — Error in channel list

(Error/Command) The format of the channel list in the command is invalid.

CFE — Error in channel number

(Severe Error/CETAB Parse) The channel number on a CHN\$DF macro is out of range or contains nonnumeric characters.

CFE — Error in controller number

(Severe Error/CETAB Parse) The controller number on an SLT\$DF macro is invalid.

CFE — Error in DDM name

(Severe Error/CETAB Parse) The DDM name on an SLT\$DF macro is too long.

CFE — Error in DLC name

(Severe Error/CETAB Parse) The DLC name on an SLT\$DF macro is too long.

CFE — Error in DTE address

(Severe Error/CETAB Parse) The DTE address field on an SVC\$DF macro is out of range.

CFE — Error in flags

(Severe Error/CETAB Parse) The flags field on a CUG\$DF, PSN\$DF, PVC\$DF, SLT\$DF, or SVC\$DF macro is unrecognized or invalid.

CFE — Error in line ID

(Severe Error/CETAB Parse) The line identification on a DTE\$DF macro has an invalid format.

CFE — Error in line type

(Severe Error/CETAB Parse) The line type on an SLT\$DF macro is unrecognized.

CFE — Error in LLC name

(Severe Error/CETAB Parse) The LLC name on an SLT\$DF macro is too long.

CFE — Error in maximum circuits

(Severe Error/CETAB Parse) The maximum circuits value on an X2P\$DF macro is out of range or has an invalid format.

CFE — Error in maximum recalls

(Severe Error/CETAB Parse) The maximum recall field on an SVC\$DF macro is out of range.

CFE — Error in network name

(Severe Error/CETAB Parse) The network name on a DTE\$DF or PSN\$DF macro is too long or contains invalid characters.

CFE — Error in opening file

(Severe Error/General) CFE could not open the specified CETAB source file. Make sure that the file is where you specified, that the file is not locked, and that you have write privileges to the file.

CFE — Error in owner

(Severe Error/CETAB Parse) The owner process field on an SLT\$DF macro is unrecognized.

CFE — Error in packet size

(Severe Error/CETAB Parse) The packet size field on an SVC\$DF or X3P\$DF macro is out of range.

CFE — Error in recall timer

(Severe Error/CETAB Parse) The recall timer value field on an SVC\$DF macro is out of range.

CFE — Error in SVC name

(Severe Error/CETAB Parse) The SVC circuit ID on an SVC\$DF macro has an invalid format.

CFE — Error in unit number

(Severe Error/CETAB Parse) The unit number on an SLT\$DF is invalid.

CFE — Error in window size

(Severe Error/CETAB Parse) The window size on an SVC\$DF or X3P\$DF macro is out of range.

CFE — Error writing file

(Severe Error/General) CFE was unable to write a record to the output file; therefore the CETAB source file was not updated. Check to make sure that the disk is not full.

CFE — Executor node not allowed

(Error/Command) An attempt has been made to define the executor node as a remote node.

CFE — Executor node not allowed with command

(Error/Command) The command parameters specified in the command are not permitted on the executor node.

CFE — Group not in configuration

(Error/Configuration) The closed user group in the command is not in the database.

CFE — Illegal baud rate

(Error/Command) The baud rate specified in the command is out of range or not in the table of valid baud rates. Reenter the command with a legal baud rate.

CFE — Illegal call mask

(Severe Error/CETAB Parse) The call mask on a DSC\$DF macro is too long or contains invalid characters.

CFE — Illegal call value

(Severe Error/CETAB Parse) The call value on a DSC\$DF macro is too long or contains invalid characters.

CFE — Illegal circuit type

(Error/Command) The circuit type in the command is illegal for the requested operation. For example, it is illegal to purge a DDCMP circuit.

CFE — Illegal command

(Error/Command) The command you gave to CFE is incorrect.

CFE — Illegal CUG name

(Severe Error/CETAB Parse) The user group name on a CUG\$DF or DSA\$DF macro is too long or contains invalid characters.

CFE — Illegal destination address

(Severe Error/CETAB Parse) The destination address on a DSA\$DF macro is not a valid DTE address.

CFE — Illegal destination name

(Severe Error/CETAB Parse) The destination name on a DST\$DF macro is too long or contains invalid characters.

CFE — Illegal destination priority

(Severe Error/CETAB Parse) The list insertion priority on a DST\$DF macro is out of range or contains nonnumeric characters.

CFE — Illegal destination type

(Severe Error/CETAB Parse) The destination type on a DST\$DF macro is not legal for RSX-11 PSI.

CFE — Illegal device priority

(Error/Command) The device priority specified in the command is out of range.

CFE — Illegal DTE name

(Severe Error/CETAB Parse) The DTE name on an RDT\$DF macro is too long or contains invalid characters.

CFE — Illegal executor node address

(Error/Command) An attempt was made to define the executor node address to greater than the maximum address for the network.

CFE — Illegal group number

(Severe Error/CETAB Parse) The group number on a CUG\$DF macro is out of range or contains nonnumeric characters.

CFE — Illegal logical channel number

(Severe Error/CETAB Parse) The logical channel number on a PVC\$DF macro is out of range or contains nonnumeric characters.

CFE — Illegal maximum data size

(Severe Error/CETAB Parse) The maximum data size on a PVC\$DF macro is out of range or contains nonnumeric characters.

CFE — Illegal object number

(Severe Error/CETAB Parse) The object number on a DST\$DF macro is out of range or contains nonnumeric characters.

CFE — Illegal owner process

(Severe Error/CETAB Parse) The owner process identification field on a PVC\$DF macro is not a recognized owner.

CFE — Illegal PVC name

(Severe Error/CETAB Parse) The circuit identification on a PVC\$DF macro is too long or contains invalid characters.

CFE — Illegal state

(Severe Error/CETAB Parse) The state on a PVC\$DF macro is not a recognized state.

CFE — Illegal subaddress high range

(Severe Error/CETAB Parse) The indicated subaddress on a DSA\$DF macro is out of range or contains nonnumeric characters.

CFE — Illegal subaddress low range

(Severe Error/CETAB Parse) The indicated subaddress on a DSA\$DF macro is out of range or contains nonnumeric characters.

CFE — Illegal task name

(Severe Error/CETAB Parse) The task name on a DST\$DF macro is too long or contains invalid characters. This message is also generated if a task name is included and the destination object number is not zero.

CFE — Illegal window size

(Severe Error/CETAB Parse) The window size on a PVC\$DF macro is out of range or contains nonnumeric characters.

CFE — Insufficient buffer space

(Severe Error/General) CFE was not built with enough buffer space to accommodate the CETAB source file information. Remove CFE and reinstall it with an increment.

CFE — Invalid block size

(Severe Error/CETAB Parse) The block size on an X2P\$DF macro is out of range or has an invalid format.

CFE — Invalid call timer value

(Severe Error/CETAB Parse) The call timer field on the X3P\$DF macro is out of range or has an invalid format.

CFE — Invalid circuit identification

(Error/Command) The format of the circuit ID in the command is invalid.

CFE — Invalid clear timer value

(Severe Error/CETAB Parse) The clear timer field on the X3P\$DF macro is out of range or has an invalid format.

CFE — Invalid counter timer value

(Severe Error/CETAB Parse) The counter timer value on a DTE\$DF, PVC\$DF, or SLT\$DF macro is out of range or contains invalid characters.

CFE — Invalid default block size

(Severe Error/CETAB Parse) The default block size on the X3P\$DF macro is out of range or has an invalid format.

CFE — Invalid default window size

(Severe Error/CETAB Parse) The default window size field on the X3P\$DF macro is out of range or has an invalid format.

CFE — Invalid destination sequence

(Error/CETAB) An invalid destination sequence has been detected. This usually indicates a corrupt CETAB.MAC file.

CFE — Invalid DTE address

(Severe Error/CETAB Parse) The DTE address on a DTE\$DF or RDT\$DF macro is too long or contains invalid characters.

CFE — Invalid DTE state

(Severe Error/CETAB Parse) The state on a DTE\$DF macro is not a recognized DTE state.

CFE — Invalid hash table size

(Severe Error/CETAB Parse) The hash table size on a DTE\$DF macro is out of range, is not a power of 2, or contains invalid characters.

CFE — Invalid holdback timer value

(Severe Error/CETAB Parse) The holdback timer value on an X2P\$DF macro is out of range or has an invalid format.

CFE — Invalid line identification

Two error conditions can display this message:

- (Severe Error/CETAB Parse) CFE found an X2P\$DF macro containing an error in the line identification. This error occurs during the initial scan of the CETAB file when CFE is invoked.
- (Error/Command) The line ID specified in the command is incorrect.

CFE — invalid maximum block size

(Severe Error/CETAB Parse) The default block size on the X3P\$DF macro is out of range or has an invalid format.

CFE — Invalid maximum clears value

(Severe Error/CETAB Parse) The maximum clears field on the X3P\$DF macro is out of range or has an invalid format.

CFE — Invalid maximum resets value

(Severe Error/CETAB Parse) The maximum resets field on the X3P\$DF macro is out of range or has an invalid format.

CFE — Invalid maximum restarts value

(Severe Error/CETAB Parse) The maximum restarts field on the X3P\$DF macro is out of range or has an invalid format.

CFE — Invalid maximum window size

(Severe Error/CETAB Parse) The maximum window size field on the X3P\$DF macro is out of range or has an invalid format.

CFE — Invalid multicopy task name

(Error/Command) The task name of a multicopy object must have the format *xxx\$\$\$*, where *xxx* is 1 to 3 alphanumeric characters. This message is generated when an attempt is made to define a multicopy object without a multicopy name or a single copy object with a multicopy name.

CFE — Invalid number

(Error/Command) The command has a number out of range.

CFE — Invalid process identification

(Error/Command) The process name specified in the command is too long.

CFE — Invalid reset timer value

(Severe Error/CETAB Parse) The reset timer field on the X3P\$DF macro is out of range or has an invalid format.

CFE — Invalid restart timer value

(Severe Error/CETAB Parse) The restart timer field on the X3P\$DF macro is out of range or has an invalid format.

CFE — Invalid retransmit count

(Severe Error/CETAB Parse) The retransmit count on an X2P\$DF macro is out of range or has an invalid format.

CFE — Invalid retransmit timer value

(Severe Error/CETAB Parse) The retransmit timer value on an X2P\$DF macro is out of range or has an invalid format.

CFE — Invalid wildcard syntax

(Error/Command) The wildcard line or circuit ID in the command has an invalid format.

CFE — Line not in configuration

(Error/Configuration) The line specified in the command is not in the CETAB source file.

CFE — Logging monitor not supported

(Error/Configuration) The logging monitor is not supported in your system configuration.

CFE — Missing LLC\$DF for NW

(Error/CETAB) The LLC\$DF macro for NW is missing from the database. This usually indicates a corrupt CETAB.MAC file.

CFE — Missing parameter: *parameter*

(Error/Command) The indicated parameter is required for the type of operation requested and is missing from the command. Correct the command and reenter it.

CFE — Missing RNA\$DF

(Error/CETAB) An RNA\$DF macro is missing from a remote network. This usually indicates a corrupt CETAB.MAC file.

CFE — Missing X2P\$DF for line *line-id*

(Error/CETAB) There is no X2P\$DF macro for the indicated line. This usually indicates a corrupt CETAB.MAC file.

CFE — Network not in configuration

(Error/Configuration) The remote network specified in the command is not in the CETAB source file.

CFE — No buffer definition

(Error/CETAB) The CETAB source file does not contain a BUF\$DF macro defining your buffers.

CFE — No HELP available

(Informational/General) CFE could not find the help file.

CFE — No node definition

(Error/CETAB) The CETAB source file does not contain an NOD\$DF macro defining the local node.

CFE — No partition definition

(Error/CETAB) The CETAB source file does not contain a PAR\$DF macro defining the network pool.

CFE — No RSX-11 PSI support in system

(Error/Configuration) The CETAB being processed does not include support for RSX-11 PSI.

CFE — No routing definition

(Error/CETAB) The CETAB source file does not contain an ROU\$DF macro defining the routing parameters.

CFE — No station template for *line-id*

(Error/CETAB) There are no station templates for the indicated line. This usually indicates a corrupt CETAB.MAC file.

CFE — No unit CSR on this line

(Error/Command) An attempt was made to change the unit CSR for a line that does not have a unit CSR. This part of the command was ignored.

CFE — No XPT features macro

(Error/CETAB) The CETAB source file does not contain an FEA\$DF macro defining the XPT features. You will not be able to modify any of the states defined by this macro.

CFE — No XPT process macro

(Error/CETAB) The CETAB source file does not contain an LLC\$DF macro defining the XPT process.

CFE — No X.29 support in configuration

(Error/Configuration) The CETAB.MAC file being processed does not contain the X29\$DF macro.

CFE — No X3P\$DF in database

(Error/CETAB) The X3P\$DF macro is not in the database. This usually indicates a corrupt CETAB.MAC file.

CFE — Node address already in use

(Error/Command) The address you want to give this node is already in use.

CFE — Node name already in use

(Error/Command) The name you want to give this node is already in use.

CFE — Node not in configuration

(Error/Configuration) The node specified in the command is not in the CETAB source file.

CFE — Number of SDBs exceeds number of CCBs

(Warning/CETAB) The maximum number of SDBs specified in the BUF\$DF macro exceeds the number of CCBs specified in the BUF\$DF macro.

CFE — Object not in configuration

(Error/Configuration) The object specified in the command is not in the CETAB source file.

CFE — Object task name must be specified

(Error/Command) An attempt was made to create an object type entry without an associated task name. Reenter the command with the task name supplied.

CFE — Operation invalid for line type

(Error/Command) The requested operation is not applicable to the line type indicated in the command.

CFE — Parameter applicable to PSI systems only

(Error/Configuration) One or more of the parameters in the command is inapplicable to systems without RSX-11 PSI, and the CETAB being processed is for a non-RSX-11 PSI system.

CFE — Parameter illegal for circuit type

(Error/Command) One or more of the parameters in the command cannot be set for the type of circuit indicated.

CFE — Parameter illegal for wildcard operation

(Error/Command) One or more of the parameters in the command is not allowed for wildcard or KNOWN operations.

CFE — Parameter not applicable

(Error/Configuration) One or more of the parameters in the command are not applicable to the CETAB configuration (for example, routing parameters for an end node).

**CFE — Pool byte extension less than minimum
Defaulting to *nnn*.**

(Warning/Command) The pool byte extension on the command is less than the minimum required for structures defined in the CETAB. The minimum value *nnn*. is being used instead.

CFE — Process not in configuration

(Error/Configuration) The process name specified in the command is not in the CETAB source file.

CFE — Routing parameters not applicable

(Error/Command) The routing parameters in the command are not applicable to an end node.

CFE — Syntax error

(Severe Error/CETAB Parse) The indicated macro contains an invalid or unrecognized value.

CFE — Task name not allowed with object type zero

(Error/Command) An attempt was made to force a single task to be associated with the general task connect (type zero). This part of the command was ignored.

CFE — Too many stations

(Severe Error/CETAB) There are more stations on a particular line than CFE is prepared to handle. This message is followed by the syntax error message and the entry read from CETAB that caused the station number overflow.

CFE — Unknown HELP qualifier

(Informational/General) CFE has no help on the qualifier requested.

CFE — Usage cannot be permanent

(Error/Command) The usage of an SVC must be either incoming or outgoing.

CFE — XPT not allowed to load line tables in process space

(Error/Configuration) The command included an extension for line tables for XPT. Since XPT cannot have line tables in process space, this part of the command was ignored.

CFE — X25-SERVER not in configuration

(Error/Configuration) There is no support for the X.25 server module in the system.

CFE — X29-SERVER not in configuration

(Error/Configuration) There is no support for the X.29 server module in the system.

11.3 EVF Error Messages

EVF — Argument specified multiple times - xxx

An /ENTITY argument (*xxx*) is used more than once.

EVF — Command line syntax error

You have entered an invalid command.

EVF — Error in get command line - *reason*

An error occurred in getting the command line. The variable *reason* is either a text string or a decimal error number.

EVF — Failed to close input file - *reason*

The input file could not be closed. The variable *reason* is either a text string or a decimal error number.

EVF — Failed to close output file - *reason*

The output file could not be closed. The variable *reason* is either a text string or a decimal error number.

EVF — Failed to delete input file - *reason*

The input file could not be deleted. The variable *reason* is either a text string or a decimal error number. A possible text string is "Privilege violation."

EVF — Failed to open input file - *reason*

The input file could not be opened. The variable *reason* is either a text string or a decimal error number. Possible text strings include:

1. Accessed for write
2. Bad version number
3. Bad file name
4. Bad device name
5. Invalid device or unit
6. No such file
7. Privilege violation

EVF — Failed to open output file — reason

The output file could not be opened. The variable *reason* is either a text string or a decimal error number. Possible text strings include:

1. Bad file name
2. Bad device name
3. Device full
4. Invalid device or unit
5. Privilege violation

EVF — Failed to spool output file — reason

The output file could not be spooled. The variable *reason* is either a text string or a decimal error number.

EVF — Illegal argument combination

You have used the ALL argument in the /ENTITY option along with another entity argument.

EVF — Illegal data range

You have entered a start date that is greater than the end date in the /DATE:RANGE or /SINCE and /THROUGH option.

EVF — Illegal switch combination

You have used the ALL option along with another option.

EVF — Input file format error

The input file you specified is not a binary event log file.

EVF — Invalid area number

You have specified an area number in the /ENTITY:AREA option that is not in the allowed range or is not a number.

EVF — Invalid circuit-id

You have specified a circuit ID in the /ENTITY:CIRCUIT option that is not a valid circuit identifier. If the error occurred because of an incorrect use of the wildcard character (*), the error is qualified with “- illegal use of wildcard”

EVF — Invalid date format

You have specified a date and time in the /DATE:RANGE or /SINCE and /THROUGH options in the wrong format.

EVF — Invalid event-id

You have specified an event ID in the /EVENT option that is not a valid event identifier. If the error involved the incorrect use of wildcards, this error is qualified with “- illegal use of wildcard”. If too many events were specified (more than 6), this error is qualified with “- too many event IDs declared”.

EVF — Invalid line-id

You have specified a line ID in the /ENTITY:LINE option that is not a valid line identifier. If the error occurred because of an incorrect use of the wildcard character (*), the error is qualified with “- illegal use of wildcard”.

EVF — Invalid module-id

You have specified a module ID in the /ENTITY:MODULE option that is not a valid module identifier. The module identifier is not alphanumeric.

EVF — Invalid node-id

You have specified a node ID in the /ENTITY:NODE or /SOURCE option that is not a valid node identifier. The node ID was not in the correct format, the address is out of range, or the node name is greater than 6 characters.

EVF — Switch specified multiple times - xxx

You have used the option xxx more than once in the command.

EVF — Too few arguments - xxx

The option that you specified (xxx) requires an argument.

EVF — Unknown argument - xxx

The argument that you used (xxx) after the DATE, ENTITY or FORMAT option was not recognized.

EVF — Unknown switch - xxx

You have used an unrecognized switch. If you abbreviate options to one letter you will receive this error message. xxx is the option that was in error.

11.4 HLD Error Messages

Some of the HLD error messages include strings that are replaced with run-time variables. These strings and the type of information they contain are shown in the following list.

<i>(-nnn.)</i>	A DSW or IOSB error code (always negative).
<i>(nnn.)</i>	A network code (always positive).
<i>node</i>	The name of the remote RSX-11S node.
<i>task</i>	The installed task name received from SLD.
<i>file-spec</i>	A copy of the file specification from the HTASK\$ macro. This is followed by (File) to indicate that HLD found a match from the external mapping tables, or by (G-P) to indicate that the task was found on the general purpose list, or by (File, G-P) to indicate that both conditions were satisfied.

Variable fields are ignored in the alphabetizing of error messages in this chapter.

HLD — *node/task* — Base address not a multiple of 4K

HLD — *file-spec*

The file was not built with the /MM switch. Rebuild the file.

HLD — *node/task* — Connect accept failure (-nnn.)

HLD — *file-spec*

The attempt to accept a connection from a remote SLD has failed. The remote node may have become unreachable.

HLD — *node/task* — Disk read failure (-nnn.)

HLD — *file-spec*

This error message indicates a disk error while reading the file (initial load or checkpoint read). Validate the integrity of the file and the disk. The second error message line may or may not appear.

HLD — *node/task* — Disk write failure (-nnn.)

This error message indicates a disk error while writing to the file (checkpoint write). Validate the integrity of the file and the disk.

HLD — *node/task* – File has never been installed

The task file has not been installed (using VMR) into the RSX-11S system. This error message appears if you rebuild the task file but neglect to install it. Use VMR to install the task into the RSX-11S system.

HLD — *node/task* – File has no task header

HLD — *file-spec*

The file was built with the /-HD switch. It is not a valid RSX-11S task image. Rebuild the file.

HLD — *node/task* – File is larger than partition

HLD — *file-spec*

The initial load size of the file is larger than the partition size in the RSX-11S system. Either make the partition larger or rebuild the file to use a smaller partition size.

HLD — *node/task* – File is not contiguous

HLD — *file-spec*

The file is not contiguous. Either rebuild the file or use PIP to make the file contiguous (see the following example).

```
>PIP /NV/CO=file-spec (RET)
```

```
>PIP file-spec /PU (RET)
```

HLD — *node/task* – File spec parse error

HLD — *file-spec*

The file specification for the file has an invalid format. Rebuild the HLD database.

HLD — *node/task* – G-P tasks may not be checkpointed

HLD — *file-spec*

A checkpoint operation was attempted for an HTASK\$ macro from the general purpose list. Edit and rebuild the appropriate mapping table to move the HTASK\$ macro from the general purpose list into a node-specific list.

HLD — Invalid connect request from *node-id*

A task attempted to connect to HLD but did not supply a valid optional connect data message. Refer to your object type tables within NETACP. HLD is connected to by the object NO.RTL and not by the installed task name. NO.RTL is defined in the NSSYM\$ macro. Its object type number is 18.

HLD — node/task — Invalid data type in mailbox (nnn.)

A network data type was found in the mailbox that is not used by HLD/SLD. If the data type is a connect, NSP has tried to place more connects onto the mailbox than HLD can handle.

HLD — node/task — Label block read failure (-nnn.)

HLD — file-spec

The label block (TKB information) could not be accessed successfully. Rebuild the file.

HLD — node/task — LUN fixing not supported

HLD — file-spec

The remote SLD was not built with the LUN-fixing module. Either rebuild the remote SLD, or edit and rebuild the appropriate mapping table to move the HTASK\$ macro from general purpose list into a node-specific list. This error also occurs if the HTASK\$ macro is already in a node-specific list but uses the LUN control argument.

HLD — Mailbox LUN assignment failure (-nnn.)

HLD could not successfully assign the network mailbox LUN to the NS: device. Check to see if the local node's state is ON.

HLD — node/task — Mapping file base address not zero

This error is caused by an incorrect TKB command file. Edit the TKB command file, add the /-MM switch to the output file specifier, and then add or modify the PAR statement to read PAR = ANY:0:20000. Then rebuild the file.

HLD — node/task — Mapping file contains a task header

This error is caused by an incorrect TKB command file. Edit the TKB command file and add the /-HD switch to the output file specifier. Then rebuild the file.

HLD — node/task — Mapping file contains garbage

HLD can successfully read the external file, but the file is internally inconsistent. Rebuild the file.

HLD — node/task — Mapping file is larger than HLDFIL buffer space

The external mapping file is larger than the buffer space available. Merge the external table into the internal table. Discontinue use of the external table.

HLD — *node/task* – Mapping file is not contiguous

The file is not contiguous. Either rebuild the file or use PIP to make the file contiguous (see the following example).

```
>PIP /NV/CO=HLDTAB.TSK (RET)  
>PIP HLDTAB.TSK/PU (RET)
```

HLD — *node/task* – Mapping file label block read failure (-nnn.)

HLD could not read the file's label block (which contains TKB descriptive information). Rebuild the file.

HLD — *node/task* – Mapping file open failure (-nnn.)

HLD could not open the file. Rebuild the file.

HLD — *node/task* – Mapping file read failure (-nnn.)

HLD could not read the external mapping file. Rebuild the file.

HLD — Network data queue empty

HLD found nothing in the network data queue. This error occurs if you issue MCR>RUN HLD... or if the connection times out before HLD can remove the connect request from the network data queue. Increase the connect timeout period.

HLD — *node/task* – Network disconnect (nnn.)

NSP has broken the logical link before the transfer has been completed.

HLD — Network open failure (-nnn.)

HLD could not successfully issue the OPN\$ macro. Check to see if the local node's state is ON.

HLD — *node/task* – Network read failure (-nnn.)

A communication error has occurred at the remote SLD. The logical link is broken.

HLD — Network SPA failure (-nnn.)

HLD could not successfully issue the SPA\$ macro.

HLD — *node/task* – Network write failure (-nnn.)

A communication error has occurred at the remote SLD. The logical link is broken.

HLD — *node/task* – No entry in *node/task* tables

Your mapping tables do not contain an HTASK\$ macro that corresponds to the task name from the error message.

HLD — NS: Work LUN assignment failure (-nnn.)

HLD could not successfully assign one of its nonmailbox LUNs to the NS: device.

HLD — *node/task* – Open failure (-nnn.)

HLD — *file-spec*

The file named by the HTASK\$ macro could not be opened successfully. If there is an FCS problem, you must rebuild the file. If not, change either the file or the mapping table. If you change the file name, make it match the mapping table. If you change the mapping table, make it match the file name.

HLD — *node/task* – Partition is larger than CHKPT space

HLD — *file-spec*

The partition size in the RSX-11S system is larger than the checkpoint space inside the file. Typically, this indicates that the partition size in your PAR = statement is smaller than the partition's real size in the RSX-11S system. Although the load size of a task can be much smaller than its partition, the entire partition is transferred during checkpoint operations. Rebuild the file with the same partition size as the RSX-11S system.

HLD — *node/task* – SLD abort/disconnect

This error message indicates that SLD detected a file error during an initial load or checkpoint read. Reinstall the task into the RSX-11S system.

HLD — *node/task* – SLD premature disconnect

SLD has disconnected during a checkpoint write before the transfer is complete.

11.5 LCP Error Messages

LCP — Command not accepted, privilege violation

The user does not have sufficient privilege to perform the requested command.

LCP — FATAL Comm Exec not loaded

The Comm Exec must be loaded before the LAT process can be started.

LCP — FATAL error allocating resources

There are not enough system resources to allocate the data structures necessary to add the LAT terminals to the system.

LCP — FATAL error in system data structures

While linking the LAT terminal data structures into the system data structures, LCP detected an error. A detailed error message can be acquired by running HRC.

LCP — FATAL error loading LAT process

NTL not installed or NTL could not load the LAT process.

LCP — FATAL error reading permanent database

This message indicates an error while accessing the permanent database. Check the LAT.DAT file in the network UIC and ensure that the network UIC is set properly.

NOTE

If this error results from using the CREATE command, you can use the /**TERMINAL = n** switch because the permanent database does not need to be accessed.

LCP — FATAL error starting LAT process

The LAT process returned an error when initializing.

LCP — FATAL error stopping process

The LAT process returned an error when stopping.

LCP — FATAL error updating permanent database – no update

The error occurred while creating a new file for the updated permanent database. The original database is unaffected.

LCP — FATAL HRC error

HRC detected an error in the system data structure while configuring the LAT terminals on line. A detailed error message can be acquired by running HRC.

LCP — FATAL LAT process not in system

The LAT process is not in the network configuration.

LCP — FATAL LDB too small to start LAT

The LAT process requires a minimum buffer size of 576 to start a circuit.

LCP — FATAL parameters missing from permanent database

There is an error in the permanent database. The permanent database LAT.DAT in the network UIC must be restored to its original context.

LCP — FATAL syntax error in permanent database

The error occurred while parsing the permanent database. The permanent database, LAT.DAT, in the network UIC must be restored to its original context.

LCP — FATAL terminal driver does not support LAT

The terminal driver does not contain support for LAT.

LCP — LAT process already started

The LAT process has already been started.

LCP — LAT process not active – issue START command

The LAT process is not active.

LCP — LAT terminals already created

The LAT terminals have already been added to the system.

LCP — LAT terminals not in system – issue CREATE command

The LAT process cannot be started until the LAT terminals have been created.

LCP — Line error, line in wrong state

The line specified in the /DEVICE switch or in the permanent database is in the wrong state to execute the command.

LCP — Line error, line not ready

The line specified in the /DEVICE switch or the permanent database is not ready to START.

LCP — Line error, no such line

The line specified in the permanent database was not found in the system.

LCP — Process not started

The LAT process has not been started.

LCP — Set Failed, I/O Error code = *nnn*

LCP is unable to set the specified terminal or port. The octal error code is displayed in *nnn*. (The error codes are listed in the *RSX-11M/M-PLUS I/O Driver Reference Manual* and the *RSX-11M Mini Reference*.)

LCP — Set Failed — Port Busy

The terminal or port that is specified in the LCP SET PORT command either is busy with a session (application or interactive) or has a connect request outstanding.

LCP — Syntax error

An invalid command has been issued.

LCP — Terminal specified is not a valid LAT terminal

The terminal or port specified in the LCP SET PORT command is not a LAT terminal. (The device may be off line or may be a non-existent device.)

11.6 NCP Error Messages

There are two sets of error messages for NCP: a full set for RSX-11M and RSX-11M-PLUS systems and a subset for RSX-11S systems. There are two groups of messages within the full set: one group is RSX system-specific, and the other is standard for all DECnet systems. The following error message descriptions identify each message as being RSX-specific, RSX-11S, or standard DECnet.

11.6.1 RSX-11M/M-PLUS Error Message Format

The general format for an RSX-11M/M-PLUS NCP error message is:

NCP — [*<component>* ,] *<command>* *<diagnostic>* , *<error-message>*
[, *<error-detail>*] [*<extra-text>*]

where

component Is the affected component (for example, LINE *line-id*).
Appears only in a command affecting multiple components.

command Is the command that caused the error.

diagnostic Is one of the following values:
FAILED

This command was accepted by NCP, but execution failed.

NOT ACCEPTED

NCP would not accept the command, and execution was not attempted. When NCP rejects a command, it displays the command line with two right angle brackets at the point where NCP stopped parsing. If NCP was parsing a pair of words, it points to the first word of the pair even if the second word was incorrect — for example,

SET EXECUTOR >>ROUTING RIMER 50

NCP does not recognize ROUTING RIMER. Since both words make up one parameter, NCP rejects the parameter and places brackets in front of it.

error-message Is the major reason for the failure. In most cases, these reasons are identical for all DECnet implementations (see the *DNA Network Management Functional Specification*).

If NCP cannot interpret an internal error code, the error message field contains one of the following:

Management return #*n*

An error code of *n* (decimal) was returned by network management software.

System return #*n*

An error code of *n* (decimal) was returned by the RSX operating system software.

error-detail

Is a detailed explanation of the failure (for certain error messages). All DECnet implementations have the same definitions for these messages. See the *DNA Network Management Functional Specification* for details.

If NCP cannot interpret an error detail code, the error detail field contains *detail #n*, meaning that an error detail of *n* (decimal) was returned by network management software.

extra-text

Is an additional system-specific explanation of the error condition. For a description of the contents of this field in an error from a non-DECnet-RSX implementation, consult the documentation for that system.

11.6.2 RSX-11S Error Message Format

The general format for an RSX-11S NCP error message is:

NCP — <error-message>

where

error-message See previous description given for RSX-11M/M-PLUS.

11.6.3 NCP Error Messages

NCP — Bad loopback response

(Standard DECnet) The message that was returned in a loopback test did not match the message that was sent. This can be due to a loopback protocol violation, bad data returned, or bad message length returned.

NCP — Bad management response

(Standard DECnet) The information returned to NCP either from its internal network management functions or from the network management listener was improperly formatted or contained an invalid value. This error condition implies a programming error in the module that responded to NCP.

NCP — Circuit in wrong state

(Standard DECnet) The current operational state of the circuit precludes the requested operation. When this message is received on an end node, it usually means that a circuit is already active. There can be only one circuit active on an end node at a given time.

NCP — Component in wrong state

(Standard DECnet) The current operational state of the component precludes the requested operation (for example, you cannot down-line load a line that is off). The error detail included with this message identifies the component (for example, circuit, line, node, and so on).

When a LOOP CIRCUIT command is given on an RSX system, one of the following RSX system-specific extra text messages may be included:

Circuit is loopback node

The circuit is currently associated with a loop node name, and its state cannot be changed to do the circuit test.

Circuit not restarted

An attempt was made to return the circuit to normal use before the circuit had been restarted.

Device off line

The circuit is no longer on the I/O bus. This message is specific to RSX-11M-PLUS.

Other management circuit service active

The circuit is currently being used to perform some other network management circuit service function, such as an up-line dump or a down-line load.

Reassign circuit to former owner failed

At the completion of the test, the owner attempted to return the circuit to normal use. The attempt failed because the circuit could not be given back to the owner.

NCP — Error reading command

(RSX-specific) NCP could not read a command from either the terminal or a command file because of a hardware error or an unrecognized command read error.

NCP — Exceeded command file nesting depth

(RSX-specific) A command file attempted to start another command file when there were already six command files nested.

NCP — File I/O error

(Standard DECnet) A hardware error was encountered while reading or writing one of the files necessary to the requested operation. The error detail included with this message identifies the type of file:

Dump file	Output file for an up-line dump
Load file	Input file for a down-line load
Permanent database	File containing default parameters
Secondary dumper	Input file for the secondary dumper program that runs in the target node
Secondary loader	Input file for the secondary loader program that runs in the target node
Tertiary loader	Input file for the tertiary loader program that runs in the target node

NCP — File open error

(Standard DECnet) One of the files necessary for the requested operation could not be reserved for use. The error detail is the same as that described previously for the File I/O error message.

NCP — File privilege violation

(RSX-specific) The file specified with the TO option in a SHOW command is not available to the user of NCP.

NCP — Hardware failure

(Standard DECnet) The requested operation could not be performed because a related hardware component failed to function as needed.

NCP — Incompatible management version

(Standard DECnet) The network management listener version is incompatible with NCP.

NCP — Invalid device name syntax

(RSX-specific) The device name in a command file or TO specification did not have legal syntax.

NCP — Invalid directory syntax

(RSX-specific) The directory identification (UIC) in a command file or a TO specification did not have legal syntax.

NCP — Invalid file contents

(Standard DECnet) The requested operation could not be performed because the files contained data of an invalid form or value. The error detail is the same as that described previously for the File I/O error message.

NCP — Invalid file name syntax

(RSX-specific) The file name in a command file or a TO file specification did not have legal syntax.

NCP — Invalid identification format

(Standard DECnet) The identification of the component involved in the requested operation did not have proper syntax (for example, a numeric character in a node name). The error detail included with this message identifies the type of component (for example, line, node, circuit, and so on).

NCP — Invalid length value, maximum loop length = 128

(RSX-11S) The value of the length parameter in a LOOP NODE command exceeds the buffering capability of subset XPT. Use a smaller value for the length parameter.

NCP — Invalid message format

(Standard DECnet) The information sent by NCP either to its internal network management functions or to a network management listener was improperly formatted or contained an invalid value. This error condition implies a programming error in NCP.

NOTE

This error message is also used to indicate standard DECnet options not supported by DECnet-RSX.

NCP — Invalid parameter grouping

(Standard DECnet) The parameters furnished by the user for the requested operation cannot be included in a single command.

NCP — Invalid parameter value

(Standard DECnet) The value of a parameter furnished by the user for the requested operation was not acceptable (for example, a numeric parameter out of range). The error detail included with this message identifies the type of parameter.

In the case of the events parameter for the LOGGING command, the following RSX system-specific extra text message may be provided:

Event cannot be filtered

The ability to enable or disable one of the specified events is not implemented.

In the case of the length parameter for a LOOP command, one of the following RSX system-specific extra text messages may be included. In each of these cases, the length was more than could be handled, and the maximum length will be included with the error message.

Active loop size exceeded

The requested length exceeds the buffering capability of the active loop task. Reduce the loop's size or reinstall the loop with a memory increment.

Mirror size exceeded

The requested length exceeds the buffering capability of the network management loopback mirror. Either use a smaller length or (on an RSX system) reinstall the mirror with a memory increment.

NCP — Line communication error

(Standard DECnet) The requested operation failed because of communication errors on the involved line. This error condition applies only to functions that involve direct use of a line, such as down-line load and line loop tests.

In the case of a LOOP LINE command, one of the following RSX system-specific extra text messages may be included:

Receiver

The loop failed to receive a message that should have been looped back on the line.

Transmitter

The loopet failed to transmit a message on the line. This is specifically a failure of the transmit function.

NCP — Line protocol error

(Standard DECnet) The requested operation failed because of protocol errors on the involved line. This usually implies either incompatible line protocols or protocol-programming errors. There is a possibility that the condition is caused by a line hardware error that was not detected by the line protocol.

Line protocol can mean either the Data Link Protocol or the service operation protocol.

This error condition applies only to functions involving direct use of a line, such as down-line load and line loop tests.

NCP — Listener connect failed

(Standard DECnet) The logical link from NCP to the network management listener could not be connected. This error message generally has one of the following error details:

Access control rejected

The remote node or the network management listener could not understand or would not accept the access control information.

Invalid node name format

The executor rejected the format of the remote node name (for example, the name contained illegal characters or was too long).

Invalid object name format

The remote node did not understand the object name format used by NCP to identify the network management listener.

Local node shut down

The executor node is in the process of shutting down and will not accept logical link connections.

Network resources

Either the local or the remote network management listener had insufficient network resources to handle the connect request.

No response from object

The network management listener did not respond. This could be, for example, due to its responding too slowly or terminating abnormally.

Node unreachable

No path exists to the remote node.

Object too busy

The remote node had insufficient resources available to forward the connect request to the network management listener.

Remote node shut down

The remote node is in the process of shutting down and will not accept logical link connections.

Unrecognized node name

The destination node name does not correspond to any known node address.

Unrecognized object

The remote node does not have a network management listener.

NCP — Listener link disconnected

(Standard DECnet) The logical link from NCP to the network management listener was unexpectedly disconnected. This error message will have one of the following error details:

Abort by management

An operator or program used network management to abort the logical link. NCP recognizes this condition, although DECnet-RSX does not support the ability to cause it.

Abort by object

The network management listener aborted the logical link. This indicates a programming error in the network management listener.

Disconnect by object

The network management listener disconnected the logical link. This indicates a programming error in the network management listener.

Node or object failed

The network aborted the logical link for one of the following reasons: The remote node terminated abnormally, or the network management listener terminated abnormally.

Node unreachable

The network aborted the logical link because it could no longer find a path to the remote node.

NCP — Management program error

(Standard DECnet) The network management software has detected an internal programming error.

NCP — Mirror connect failed

(Standard DECnet) The logical link to the network management loopback mirror could not be connected. This error message generally has one of the following error details:

Access control rejected

The remote node or the network management loopback mirror either could not understand or would not accept the access control information.

Invalid node name format

The executor rejected the format of the remote node name (for example, the name contained illegal characters or was too long).

Invalid object name format

The remote node did not understand the object name format used to identify the network management loopback mirror.

Local node shut down

The executor node is in the process of shutting down and is accepting no more logical link connections.

Network resources

Either the local or the remote node had insufficient network resources to connect the logical link.

No response from object

The network management loopback mirror did not respond. This could be, for example, due to its responding too slowly or terminating abnormally.

Node unreachable

No path exists to the remote node.

Object too busy

The remote node had insufficient resources available to forward the connect request to the network management loopback mirror.

Rejected by object

The logical link could not be connected because the network management loopback mirror rejected the connection. This most likely implies that the loopback mirror is too busy to accept another logical link.

Remote node shut down

The remote node is in the process of shutting down and will accept no more logical link connections.

Unrecognized node name

The destination node name does not correspond to any known node address.

Unrecognized object

The remote node does not have a network management loopback mirror.

NCP — Mirror link disconnected

(Standard DECnet) The logical link from NCP to the network management listener was unexpectedly disconnected. This error message generally has one of the following error details:

Abort by management

An operator or program used network management to abort the logical link. NCP recognizes this condition, although DECnet-RSX does not support the ability to cause it.

Abort by object

The network management loopback mirror aborted the logical link. This indicates a programming error in the network management loopback mirror.

Disconnect by object

The network management loopback mirror disconnected the logical link. This indicates a programming error in the network management loopback mirror.

Node or object failed

The network aborted the logical link because either the remote node or the network management loopback mirror terminated abnormally.

Node unreachable

The network aborted the logical link because it could no longer find a path to the remote node.

NCP — NCP program error

(RSX-specific) NCP detected an internal programming error.

NCP — No room for new entry

(Standard DECnet) The requested operation could not be performed because it required the addition of a new entry in some database and that database was full.

NCP — Not remotely executable

(Standard DECnet) The requested operation cannot be sent to a remote node.

NCP — Operation failure

The requested operation failed for one of the following reasons: a circuit was not owned by XPT or could not be turned off, a node was not in the XPT database, or XPT was not loaded.

NCP — Operation failure

(Standard DECnet) The requested operation failed. For some RSX system-specific failures, one of the following extra text messages may be included:

DLX error #*n*

A direct line control (DLX) function failed with decimal error code *n*. Consult DLX documentation for an explanation of the error code.

Insufficient buffer space for additional aliases

The network management software could not internally buffer all the aliases that could have been displayed.

Insufficient buffer space for additional nodes

The network management software could not internally buffer all the nodes that could have been displayed.

Insufficient buffer space for additional objects

The network management software could not internally buffer all the objects that could have been displayed.

Network initializer function failed

The network initializer (NTINIT) failed to perform its part of the requested operation. The network initializer will write an error message to the requesting terminal or, in the case of a remotely executed command, to the system console.

Network initializer not installed

The network initializer could not run because it is not properly installed.

Network loader function failed

The network loader (NTL) failed to perform its part of the requested operation. The network loader will write an error message to the requesting terminal or, in the case of a remotely executed command, to the system console.

Network loader not installed

The network loader could not run because it is not properly installed.

Node in wrong state

The requesting operation could not be performed because the executor node is in the wrong state.

PSI not generated

An attempt was made to perform a RSX-11 PSI operation on a system that does not support RSX-11 PSI.

Server task not installed

The separate task needed to perform the requested operation is not properly installed. This could be the active loopier for a loop test, the down-line loader for a down-line load or trigger, or the up-line dumper for an up-line dump.

NCP — Oversized management command response

(Standard DECnet) The command message sent by NCP was too big for the network management listener.

NCP — Oversized management response

(Standard DECnet) The response message returned by the network management listener was too big for NCP.

NCP — Parameter missing

(Standard DECnet) The user did not supply a parameter that is necessary for the requested operation. The error detail included with this message identifies the type of the parameter.

NCP — Parameter not applicable

(Standard DECnet) The user supplied a parameter that is not applicable to the requested operation on the specified component. The error detail included with this message identifies the type of parameter.

NCP — Parameter value too long

(Standard DECnet) The user supplied a parameter value that was too long to be accepted by the network management listener. The error detail included with this message identifies the type of the parameter.

NCP — Privilege violation

(Standard DECnet) The user does not have sufficient privilege to perform the requested operation.

In the case of a LOOP LINE or LOOP CIRCUIT command, the following RSX system-specific extra text message may print out:

Service access denied

The line or circuit is not in SERVICE state and the nonprivileged user cannot perform a line or circuit test.

NCP — Resource error

(Standard DECnet) Network management had insufficient internal resources to perform the requested operation.

NCP — System in wrong state

(RSX-specific) NCP cannot perform the requested function because the DECnet system (the Communications Executive) has not been properly initialized.

NCP — System-specific management function not supported

(Standard DECnet) The requested operation is system specific to some DEC systems and is not supported by the network management listener.

NCP — Unrecognized circuit identification

(RSX-11S) The circuit specified by the user does not exist or did not contain necessary information (such as a tributary number).

NCP — Unrecognized command

(Standard DECnet) NCP does not have the command the user entered.

NCP — Unrecognized command

(RSX-11S) NCP does not have the command that the user entered, or the command contained an unrecognized keyword or an invalid parameter value (for example, a node name contained 7 characters instead of the allowed 6-character name).

NCP — Unrecognized component

(Standard DECnet) The component specified by the user does not exist. The error detail included with this message identifies the type of component (for example, line, node, circuit, and so forth).

In the case of the LOOP LINE command, the following RSX system-specific extra text message may be displayed:

Or line cleared

The line may be defined in the system configuration, but it is in the CLEARED state.

NCP — Unrecognized device or unit

(RSX-specific) The device name or unit number in a command file or a TO file specification could not be found by the RSX operating system.

NCP — Unrecognized file, device, or directory

(RSX-specific) The file name, device name, or directory (UIC) in a command file or a TO file specification could not be found by the RSX operating system.

NCP — Unrecognized function or option

(Standard DECnet) The requested operation is not implemented by the executor.

NCP — Unrecognized keyword

(Standard DECnet) One of the keywords in a command is unknown to NCP.

NCP — Unrecognized line identification

(RSX-11S) The line specified by the user does not exist or did not contain necessary information (such as a tributary number).

NCP — Unrecognized node identification

(RSX-11S) The node specified by the user does not exist.

NCP — Unrecognized parameter type

(Standard DECnet) One of the parameters given by the user is not implemented by the executor. The error detail included with this message identifies the type of parameter.

NCP — Unrecognized value

(Standard DECnet) A parameter value given by the user was unknown to NCP.

NCP — Value out of range

(Standard DECnet) A parameter value given by the user is out of the range implemented in NCP.

11.7 NDA Error Messages

NDA prints an error message on your terminal when it detects one of the error conditions described in this section. These error messages reflect operational conditions and must not be confused with the diagnostic analysis messages that NDA generates during the analysis and prints in the analysis listing.

Note that a few of the messages listed are informational in nature, while most are fatal errors resulting in termination of the analysis.

NDA — Address out of range

(Fatal) NDA created a binary output file that does not contain all the crash dump data. Create a new binary save file, using the /MEMSIZ:*n* switch to specify the size of your system in *n* K words.

NDA — Analysis output must be directed to an explicit device or file

(Fatal) NDA requires an explicit output file specification. There are no default output file names.

NDA — Analysis terminated after *n* pages

(Informational) NDA terminated the analysis after generating *n* pages of analysis output.

NDA — Command I/O error

(Fatal) The system returned an error when NDA attempted to read a command line.

NDA — Command line syntax error

(Fatal) NDA detected an error in the syntax of an NDA command line. NDA points to the error within the command line.

NDA — Crash dump must be input from an explicit device or file

(Fatal) The crash dump input file specification must be explicit. There is no default file specification for the crash dump input.

NDA — Device driver missing

(Fatal) You have not loaded the driver for the crash dump input device.

NDA — Error reading crash dump

(Fatal) NDA either could not read or could not access the crash dump input device. The device may not be properly allocated or may contain bad blocks.

NDA — Error reading file *file-name*

(Fatal) The system returned an error when NDA attempted to read the crash dump file. This could be caused by a device error or a bad block on the volume.

NDA — Error reading symbol file *file-name*

(Fatal) The system returned an error when NDA attempted to read the symbol table definition file.

NDA — Error writing analysis file

(Fatal) The system returned an error when NDA attempted to write a line into the analysis listing file. This could be caused by a problem with the device, a full volume, or a bad block on the volume.

NDA — Error writing dump file *file-name* Error = *n* DSW = *n*

(Fatal) The system returned an error when NDA attempted to write into the binary output file. This condition could be caused by a problem with the device, a full volume, or a bad block on the volume.

NDA — Errors detected: *n*

(Informational) NDA detected *n* analysis errors during the run.

NDA — Failed to assign LUN to input device *ddu*

(Fatal) A directive to assign a LUN failed when NDA attempted to use it to attach the specified input device before reading the crash dump from the device. The directive to assign a LUN fails if the device name in the NDA command line is invalid.

NDA — Failed to extend page buffer – *n* pages available

(Informational) A directive to extend the task failed when NDA attempted to use it to expand the page buffer. This problem causes the analysis to take longer, but the analysis continues with a buffer of *n* pages, each 266 words long.

NDA — Failed to open input file *file-name*

(Fatal) One of the following conditions exists:

- The specified device does not exist.
- The volume is not mounted.
- A problem exists with the device.
- The specified UFD does not exist.
- The specified file does not exist.
- You do not have read access privileges.

NDA — Failed to open output file *file-name*

(Fatal) One of the following conditions exists:

- The specified device does not exist.
- The volume is not mounted.
- A problem exists with the device.
- The specified UFD does not exist.
- The volume is full or the device is write protected.
- You do not have write access privileges to UFD.

NDA — Illegal switch

(Fatal) You have specified an unknown switch or have used a valid switch after the wrong file specification.

NDA — Illegal trap – snapshot dump being attempted

(Fatal) NDA has aborted after detecting an odd address or some other type of fault. This message indicates a software problem.

NDA — Indirect command syntax error

(Fatal) The name of the indirect command file (*@file-name*) is syntactically incorrect.

NDA — Indirect file open failure

(Fatal) NDA could not open an indirect command file specified as *@file-name* in the NDA command line.

NDA — Maximum indirect file depth exceeded

(Fatal) You have exceeded the maximum allowable number of nested indirect command files (only one level of indirection is permitted in NDA). The rest of the top level command file is executed.

NDA — No input file specified

(Fatal) You did not supply an input file specification for the crash dump.

NDA — No output file specified

(Fatal) You have not specified an output file.

NDA — Output dump file name must be explicit

(Fatal) You have not specified an output dump file.

NDA — Premature end of dump input - *file-name* being zero filled

(Informational) NDA reached the end of the medium (or end-of-file mark, if a magnetic tape) before the crash dump output file had been completely filled. If you expected the file to be completely filled by the dump, this condition could indicate a problem.

NDA — Symbol file *file-name* has illegal format

(Fatal) The specified executive symbol table file has an improper format, probably caused by entry of the wrong file name. However, this message could also indicate a problem with the device or medium on which the file is located.

NDA — Symbol *symbol-name* not defined in symbol file

(Fatal) NDA did not find a symbol it required for the analysis in the specified executive symbol table file. The analysis may be restarted specifying the /SYM switch, forcing NDA to continue with the analysis, using a zero value for all undefined symbols.

NDA — Transfer complete - *ddu* may be unloaded

(Informational) The transfer of the crash dump to the output file is finished; you may unload the crash dump device. This message occurs only when you have specified a binary save file in the command string to NDA.

NDA — Unknown get command line error

(Fatal) An error that is not described in other NDA error messages has occurred when NDA attempted to read a command line.

NDA — Warning kernel PARs do not contain proper values

(Informational) This message indicates that the values contained in the page address registers are invalid. NDA attempts to finish the analysis using the indicated values. When restarting the analysis, you must specify the /KMR switch (Section 6.7.2). This switch forces NDA to use standard mapping values when converting kernel virtual addresses to physical memory addresses.

11.8 NTD Error Messages

NTDEMO prints an error message on your terminal if it detects one of the conditions described in this section when you invoke the NTD utility.

NTDEMO — Network not loaded

The network at the node is not loaded (that is, no network software is running at the local node).

NTDEMO — Unable to connect to remote server

NTD is unable to communicate with NTDEMO on the node you requested (that is, the host node if you typed >NTD, or the node you specified if you typed >NTD *node-id*). This could be due to any one of the following conditions:

- The node is unreachable.
- The node does not support the NTDEMO server. (This software runs only on DECnet-RSX/IAS nodes.)
- The node does not have NTDEMO installed.
- The maximum number of links to NTDEMO are busy. (This value is defined during network generation.)

NTDEMO — Unable to open network

The network at the node is loaded, but not currently available for network operations.

11.9 NTINIT Error Messages

The network initializer (NTINIT) is used with either NCP or VNP to initialize the network software. All NTINIT errors are fatal. The attempted operation cannot succeed unless the problem identified in the message is corrected.

When an NCP or a VNP command executes locally, error messages are displayed at the requesting terminal. When the command executes remotely, error messages are displayed on the remote system console.

Some of the error messages include words printed in italics. The italicized words are variables. NTINIT replaces them with a specific term. For example, in the message "NTINIT — Failed to load line *line-id*", the initializer replaces *line-id* with the actual line identification.

NTINIT — Clearing system

NTINIT is removing the network software from the system because of a failure on the marked-for-load scan. To recover, use CFE to correct the condition that caused the failure. Then execute another SET SYSTEM command and try to load again. If the failure recurs, shut down more lines and circuits before loading again. Repeat this procedure until the load is successful or until all lines and circuits are shut down.

If the error continues after all lines and circuits are shut down, one of the processes is at fault. Set one process to the CLEAR state and try the SET SYSTEM command again. Repeat this action using a different process until the SET SYSTEM command is successful. The last process to be cleared is the faulty one. Then use CFE DEFINE commands to reload the lines, circuits, and processes (except the erring one).

NTINIT — Comm Exec not loaded

The Communications Executive is not loaded in main memory. Use the NCP SET SYSTEM command to load the network software.

NTINIT — Device controller-id offline

The CSR address for the device does not exist on the bus. Use CFE to change the CSR value in the configuration file or use the CSR keyword when issuing the NCP SET LINE command. If the line is set to ON during NETGEN, you must use the following NCP commands to clear the line and reload it:

```
NCP> CLEAR LINE line-id ALL (RET)
NCP> SET LINE line-id CSR device-id STATE ON (RET)
```

NTINIT — Failed to load line *line-id*

A SET LINE request failed. You will also receive an NTL error message that gives a more detailed description of the cause of the error (for example, "NTL — Device off line").

NTINIT — Failed to load process *process-id*

A SET PROCESS request failed. You will also receive an NTL error message that gives a more detailed description of the cause of the error (for example, "NTL — Process not in system").

NTINIT — Illegal function

An attempt to reprogram the network software resulted in a programming error.

NTINIT — Incompatible with RSX-11M system

The initializer was built with the wrong RSX11M.STB file. Rebuild the network software with the correct RSX11M.STB file.

NTINIT — Incompatible with RSX-11S system

The initializer was built with the wrong RSX11S.STB file. Rebuild the network software with the correct RSX11S.STB file.

NTINIT — Network ACP (NETACP) not installed

NETACP must be installed to perform the SET EXECUTOR STATE ON operation. To clear the problem, use the MCR INSTALL NETACP command to install the network ACP.

NTINIT — Network loader (NTL...) not installed

NTL must be installed to perform the NCP SET SYSTEM operation. To clear the problem, use the MCR INSTALL NTL command to install the network loader.

NTINIT — NS: assignment failure

The initializer could not assign one of its LUNs to the network device. There is no recovery procedure from this failure.

NTINIT — NW: assignment failure

The initializer could not assign one of its LUNs to the RSX-11 PSI network device. There is no recovery procedure from this failure.

NTINIT — PLB allocation failure

There is not enough free space in the dynamic storage region (DSR) to allocate the XPT physical link block database. You must run a system generation again, allocating enough free space in the DSR.

NTINIT — Router priority database allocation failure

There is not enough free space in the dynamic storage region (DSR) to allocate the router priority database.

NTINIT — Routing control task not installed

The routing control task must be installed to perform the SET EXECUTOR STATE ON command. Use the MCR INSTALL *<netuic>* RCP1 command to install the task.

NTINIT — X25 ACP (X25ACP) not installed

The X25ACP must be installed to set module X25-SERVER to ON. Use the MCR INSTALL X25ACP command to install the X25ACP.

11.10 NTL Error Messages

The network loader (NTL) loads and unloads network software in response to NCP commands. When an NCP command executes locally, NTL error messages are displayed on the requesting terminal. When the command executes remotely, NTL error messages are displayed on the remote console terminal.

There are ten types of NTL error messages. The format of each is outlined in the following list. The term *message-text* used in these sample formats is replaced with the actual message in the error message descriptions that follow. The italicized word *var* is replaced with a run-time variable in the actual message. Some of the variables are network processes, device driver names, controller names, line names, partition names, file names, vector values, and RSX device names. Variable fields are ignored in the alphabetizing of error messages in this chapter.

NTL — *message-text*

NTL — *var message-text*

NTL — Config File — *message-text*

NTL — *var* Device Tables — *message-text*

NTL — *var* Image File — *message-text*

NTL — *var* Microcode File — *message-text*

NTL — *var* Process File — *message-text*

NTL — *var* Symbol Name — *message-text*

NTL — *var* Template — *message-text*

NTL — *var* Template File — *message-text*

NOTE

Only recoverable NTL errors are listed in this guide. Any unlisted error message that you receive reflects an unrecoverable error. Call your Digital representative for assistance.

NTL — *dev-id*: allocation failure

There is not enough space to allocate the RSX-11M device data structures (DCB, UCB, and SCB) for one of the network "devices." In this case, device does not refer to hardware. It refers to a software structure to which the user program assigns its LUNs and directs its QIOs.

NTL — CCB allocation failure

There is not enough space for all the CCBs. It is not known how many were successfully allocated.

NTL — CETAB allocation failure

There is not enough dynamic memory to allocate the CETAB database.

NTL — Channel *var* still active

An attempt was made to issue a CLEAR PROCESS command for an LLC before all its lines were set to OFF. Set all the lines to OFF and repeat the command.

NTL — Circuit not in system

An attempt was made to load a circuit that is not in the system.

NTL — Comm Exec has been deallocated

The space for the Communications Executive has been deallocated.

NTL — Comm Exec incompatible with RSX-11M system

The Communications Executive was built with the wrong RSX11M.STB file.

NTL — Comm Exec not loaded

An attempt was made to perform an operation that requires the Communications Executive (CEX) to be loaded and it is not. Load the CEX with the NCP SET SYSTEM command.

NTL — Config File — Binary buffer overflow

The NTL end-of-task buffers are not large enough to hold the input. Install NTL with an INC option.

NTL — Config File — Device *var* UNIBUS run mask missing

The UNIBUS run mask is missing for the specified device.

NTL — Config File — Event filter control block allocation failure

There is not enough network pool and DSR to allocate an event filter block.

NTL — Config File — Illegal CSR address

The specified CSR address is not a legal value. Use the correct CSR address.

NTL — Config File — LLC\$DF process extension too big

One system process has an extension that makes it larger than the allowed 4K maximum.

NTL — Config File — Non-UMR-mapped area is too large

The non-UMR-mapped area specified in the PAR\$DF macro is too large for the network pool partition.

NTL — Config File — Not enough contiguous UMRs

Contiguous UMRs are needed to map the network buffer pool. Issue the SET SYSTEM command before you begin fragmenting the UMRs by running other jobs. If this fails, you can use VNP to load the network software into the operating system file instead of using NCP on the in-core image. VNP is not available on RSX-11M-PLUS systems.

NTL — Config File — Object or remote block allocation failure

There is not enough network pool or DSR to allocate the object or remote block. The line from CETAB where the failure occurred is displayed so that you can determine which object or remote block was not allocated.

NTL — Config File — Open failure (-error-code.)

The system was unable to open the CETAB.MAC file. See the RSX system documentation for the meaning of the RSX I/O error code.

NTL — Config File — Partition var busy

The partition name specified for the network pool is busy.

NTL — Config File — Partition var not common

The partition specified for the network pool is not a common partition. Remove that partition and re-create it with the system-controlled attribute:

```
MCR> SET/NOMAIN=partition-name
MCR> SET/MAIN=partition-name:aaaa:bbcom
```


NTL — Config File — Partition var not in system

The partition specified for the network pool is not in the system.

NTL — Config File — Partition var not system controlled

NTL requires the partition to be system controlled. This error indicates that the partition was created as a task or common partition. Remove that partition and re-create it with the system-controlled attribute:

```
MCR> SET/NOMAIN=partition-name  
MCR> SET/MAIN=partition-name:aaaa:bbSYS
```

NTL — Config File — Partition var too fragmented

There is not enough contiguous space in the partition to load a process.

NTL — Config File — Partition var too small for RDBs/SDBs

This error pertains only to the network buffer pool partition. The network buffer pool is not large enough for the large and small data buffers. Use CFE to reduce the buffer counts and/or sizes or to re-create a larger partition.

NTL — Config File — Read failure (-error-code.)

The system was unable to read the CETAB.MAC file. See the RSX system documentation for the meaning of the RSX I/O error code.

NTL — Config File — Secondary CSR off line

The specified secondary CSR (from CETAB.MAC) is off line.

NTL — Config File — Sub-PCB allocation failure

There is not enough space for a partition control block for the network buffer pool.

NTL — Config File — SVC descriptor allocation failure

There was not enough DSR or network pool to allocate the SVC descriptor.

NTL — Config File — UMR block allocation failure

There is not enough space for a UMR assignment block.

NTL — Config File — Vector not in system

The controller's vector address specified in the configuration file does not exist in your system's vector space.

NTL — var Device I/O error, CSR = var, RAM address = var was written, var was read

An attempt to load microcode for a KMC device failed due to an input/output failure. One possible cause could be a hardware failure.

NTL — Device off line

An attempt was made to load a device that is off line.

NTL — Device var off line

An attempt was made to load a device that is off line.

NTL — Device dev-id: still active

An attempt was made to clear an LLC process when the associated device is still active.

NTL — Device dev-id: still mounted

An attempt was made to clear an LLC process when the device associated with it is still mounted.

NTL — dev-id: driver already resident

The executive data structure for the driver associated with the LLC process being loaded already exists.

NTL — var ICB allocation failure

There is not enough space in the dynamic storage region (DSR) to allocate an interrupt control block (ICB).

NTL — var Image File — Label block read failure (-error-code.)

The system is unable to read a label block. See the RSX system documentation for the meaning of the RSX I/O error code.

NTL — var Image File — Open failure (-error-code.)

The attempt to open the specified file failed. See the RSX system documentation for the meaning of the RSX I/O error code.

NTL — var Image File — Read failure (-error-code.)

The attempt to read a record from a specified file failed. See the RSX system documentation for the meaning of the RSX I/O error code.

NTL — Incompatible with Comm Exec

NTL has been built with the wrong CEX.STB file. Rebuild NTL with the correct CEX.STB file.

NTL — Incompatible with RSX-11M system

NTL has been built with the wrong RSX11M.STB file. Rebuild NTL with the correct RSX11M.STB file.

NTL — var KRB allocation failure

There is not enough space in the dynamic storage region for the controller request block (KRB).

NTL — Line not in system

An attempt was made to set a line that does not exist.

NTL — Line still active

An attempt was made to clear a line that was still ON. Set the line to OFF and reenter the command.

NTL — Line var still ready

An attempt was made to perform a CLEAR PROCESS on a DLC or a DDM controller before all of its circuits were turned off and unloaded. Set the circuits to OFF and reenter the command.

NTL — var Line table allocation failure

There is not enough space in DSR for either a device line table or an LLC process database.

NTL — MUX update only

This is a reminder that the vector and the CSR for the device specified in the command line have not been changed. All lines on a multiplexer device are loaded when any line on the device is loaded. Therefore, all subsequent loads for other lines on this device do not change the vector or the CSR.

NTL — var Process File — Incompatible with Comm Exec

The process has been built with the wrong CEX.STB file.

NTL — var Process File — Label block read failure (-error-code.)

An attempt to read a label block for a process task image file failed due to an input/output error. See the RSX system documentation for the meaning of the RSX I/O error code.

NTL — var Process File — Open failure (-error-code.)

An attempt to open the task image file for the specified process failed due to an input/output error. See the RSX system documentation for the meaning of the RSX I/O error code.

NTL — var Process File — Partition var busy

The partition is occupied by either another network process or an RSX-11M resident library. The current occupant must be unloaded.

NTL — var Process File — Partition var not common

NTL requires the partition to be common. The partition has been created as either task or system controlled. Remove the partition and re-create it with the common attribute:

```
MCR> SET/NOMAIN=partition-name  
MCR> SET/MAIN=partition-name:aaaa:bbb:COM
```

NTL — var Process File — Partition var not in Exec space

The Communications Executive (CEX) partition must be contained completely in the first 20K words of physical memory. This error indicates that the ending address of the CEX partition is larger than this limit. The CEX contains an end-of-partition buffer pool. If you exceed the limit by a small amount (100 or 200 octal), you can try to reduce the CEX's partition size. Otherwise, you should repeat the NETGEN.

NTL — var Process File — Partition var not in system

The partition specified in your command does not exist. Either create the partition that NTL is seeking, or rebuild the component to change the partition assignment.

NTL — var Process File — Partition var sub-PCB allocation failure

There is not enough space for a partition control block (PCB) for the named process.

NTL — var Process File — Partition var too fragmented

This error pertains to system-controlled partitions only. The size of the largest free space in the partition is smaller than the size of the process being loaded. The current occupants of the partition must be rearranged to make a free space of the size needed. NTL does not activate the RSX-11M shuffler task. Manual recovery is necessary.

NTL — var Process File — Partition var too small

This error pertains to the common partition only. The partition is smaller than the size of the process being loaded. The partition must be created with a larger size. Refer to the TKB map for the process to determine the size needed.

NTL — var Process File — Read failure (-error-code.)

An attempt to read a record from the process task image file failed due to an input/output error. See the RSX system documentation for the meaning of the RSX I/O error code.

NTL — Process may not be unloaded

An attempt was made to unload a process that is required for network operation and cannot be unloaded.

NTL — Process not in system

An attempt was made to set a nonexistent process.

NTL — Reconfiguration device not in system

The reconfiguration device for the network devices is not loaded. Load the device with the DECnet process called DLX.

NTL — var Symbol Table File — Open failure (-error-code.)

An attempt to open the system table file for the specified process failed due to an input/output error. See the RSX system documentation for the meaning of the RSX I/O error code.

NTL — var Symbol Table File — Read failure (-error-code.)

An attempt to read a record from the specified system table file failed due to an input/output error. See the RSX system documentation for the meaning of the RSX I/O error code.

NTL — System not built with network support

Network support was not selected during SYSGEN.

NTL — var Template — Library block allocation failure

There is no space in the network buffer pool.

NTL — var Template — Resource allocation failure

There is not enough space for the allocation size needed. (Another error message follows that contains the allocation type being attempted.)

NTL — var Template — Vector var not available

The indicated vector is assigned to another user. The vector must be deassigned from the current user.

NTL — var Template — Vector var not in system

The vector specified in the command exceeds the maximum value assigned at NETGEN.

NTL — var Template File — Open failure (-error-code.)

An attempt to open the template file for the specified process failed due to an input/output error. See the RSX system documentation for the meaning of the RSX I/O error code.

NTL — var Template File — Read failure (-error-code.)

An attempt to read a record from the specified template file failed due to an input/output error. See the RSX system documentation for the meaning of the RSX I/O error code.

NTL — Timer cells not found

NTL could not find the process timer cells in the AUX process.

NTL — Vector not in system

The vector specified in the command line does not exist in your system's vector space. The upper limit of the vector space is determined during SYSGEN. Repeat both SYSGEN and NETGEN.

NTL — var Vector set-up error

Some other user has stolen one or more of the interrupt vectors. This occurred after NTL first verified that the interrupt vectors were available, but before NTL built the line table and pointed the vector at the table. The vector must be deassigned from the other user.

NTL — * WARNING * — Failed to reinitialize HRC

The network loader was unable to reinitialize HRC successfully after loading a network device. This could affect the use of the system utility ...CON.

NTL — System name changed to "*name*"

The system name specified during SYSGEN does not match the node name specified during NETGEN. The system name has been changed to the node name in NETGEN and will remain so until the system is rebooted.

11.11 TRI Error Messages

TRI displays an error message on your terminal when it detects one of the errors described in this section. These messages reflect operational conditions. While most result in termination of the trace interpreter task, a few are for information only.

TRI — All frames were excluded by /LI or /CH

(Informational) There were no frames traced on the lines or channels that you specified with the /LI or /CH switch.

TRI — Cannot open input file

(Fatal) One of the following conditions exists:

- The specified device does not exist.
- The volume is not mounted.
- A problem exists with the device.
- The specified UIC does not exist.
- The specified file does not exist.
- You do not have read access privileges.

TRI — Cannot open output file

(Fatal) One of the following conditions exists:

- The specified device does not exist.
- The volume is not mounted.
- A problem exists with the device.
- The specified UIC does not exist.
- The volume is full or the device is write protected.
- You do not have write access privileges to the UIC.

TRI — Command I/O error

(Fatal) The system returned an error when TRI attempted to read a command line.

TRI — Error closing output file

(Fatal) TRI failed to close the trace-listing file.

TRI — Error reading input file

(Fatal) The system returned an error when TRI tried to read the trace input file. This could be caused by a device error or a bad block on the volume.

TRI — Error writing output file

(Fatal) The system returned an error when TRI attempted to write a line into the trace-listing file. This could be caused by a problem with the device, a full volume, or a bad block on the volume.

TRI — Failed to spool output file

(Fatal) The system failed to spool the trace-listing file.

TRI — Illegal character in *file-spec*

(Fatal) One of your file specifications is incorrect.

TRI — Illegal command string

(Fatal) TRI detected an error in the syntax of the TRI command string.

TRI — Illegal switch or switch value

(Fatal) You have specified an invalid switch in the TRI command string, or you have given an invalid value to a switch.

TRI — Incompatible switches

(Fatal) You have specified an illegal combination of switches. Check that you have not specified any switches other than /SP or /-SP with the /-IN switch.

TRI — Input file is not a trace dump file

(Fatal) The input file you have specified is not a trace dump file produced as output from an NCP SET TRACE command.

TRI — Trace file is empty

(Informational) The trace file specified as the input file is empty.

11.12 VNP Error Messages

VNP — Account field too long

The account field is limited to 16 characters.

VNP — Alias block allocation failure

Increase the size of the network extended byte pool.

VNP — Alias not in system

An attempt was made to reference an alias that is not in the system.

VNP — Attempt to reference block number that is not within the system image file *block-number* BIAS:*n* ADDRESS:*m*

An attempt was made to reference the specified block number, which is not in the system image file. This error is often caused by building a system image file that is smaller than the real memory size while top-down loading. Use CFE to disable top-down loading.

VNP — CETAB data structures are inconsistent

The data structures in the Communications Executive configuration file (CETAB) are inconsistent. Possibly the CETAB.TSK file is corrupt. Perform another NETGEN to obtain an uncorrupt CETAB.TSK file.

VNP — Channel block allocation failure

Increase the size of the network extended byte pool.

VNP — Circuit not in system

The specified circuit is not in the system.

VNP — COMEXEC symbol missing from symbol table *symbol-id*

The specified symbol is not in the Communications Executive symbol table.

VNP — Communications Executive load failed

VNP could not successfully load the Communications Executive.

**VNP — Communications Executive symbol table file open failure error-code
*file-name***

The Communications Executive symbol table file (*file-name*) failed to open. The error code is returned by the operating system's file services. All the network files must reside in the UIC defined by the NETUIC command in the system image file. Check the *net-uic* in the system image file by using the VMR SET /NETUIC command.

VNP — Configuration file read error

VNP could not read a record from the CETAB source file.

VNP — Controller number too large

The controller number on the line identification is illegal.

VNP — CUG name block allocation failure

Increase the size of the network extended byte pool.

VNP — Destination block allocation failure

Increase the size of the network extended byte pool.

VNP — DTE descriptor allocation failure

Increase the size of the network extended byte pool.

VNP — Error parsing file name — *file-name*

The file name of the operating system disk image file is invalid.

VNP — Event cannot be filtered

This message indicates that the ability to enable or disable one of the specified events is not implemented.

VNP — Event filter block allocation failure

Increase the size of the network extended byte pool.

VNP — Executive symbol missing from symbol table *symbol-id*

The specified symbol is not in the Communications Executive symbol table.

VNP — Executive symbol table file open failure *error-code file-name*

The RSX executive symbol table file (*file-name*) failed to open. The error code is returned by the operating system's file services. The system image file, its symbol table, and all network files must reside under the same UIC.

VNP — Failed to close system image file *error-code*

The system image file failed to close. The error code is returned by the operating system's file services.

VNP — Failed to get command line

VNP could not read a command line.

VNP — Failed to load a process

VNP did not successfully load a process that was marked for load. You can list all processes to find out which process did not load.

VNP — Failed to load a system line

VNP did not successfully load a line that was marked for load. You can list all lines to find out which line did not load.

VNP — Filename block allocation failure

Increase the size of the network extended byte pool.

VNP — Filter block allocation failure

Increase the size of the network extended byte pool.

VNP — Function not implemented

An attempt was made to execute an unimplemented VNP function.

VNP — Illegal event code

The event code given is invalid.

VNP — Illegal executive size *nnn*

The executive size (*nnn*) is illegal. This is probably caused by a corrupt system image file.

VNP — Illegal line cost

The line cost must be in the range of 1 to 1022.

VNP — Illegal multipoint active ratio

The multipoint active ratio must be in the range of 1 to 255.

VNP — Illegal multipoint dead ratio

The multipoint dead ratio must be in the range of 1 to 255.

VNP — Illegal node address

The node address must be in the range of 1 to 1023.

VNP — Illegal object type

The object type numbers must be in the range of 1 to 255.

VNP — Illegal tributary address

The tributary addresses must be in the range of 1 to 255.

VNP — Illegal unit CSR address

The unit CSR address is invalid.

**VNP — Insufficient space in template-processing buffer (TMP\$\$A psect)
Current size is n bytes, but it should be expanded to at least m bytes**

VNP's processing buffer is n bytes long, but it requires m bytes for the configuration. Edit VNPGEN.CMD and extend the buffer size. Then perform another task build on VNP and try again.

VNP — Invalid hello timer value

The value specified for the hello timer is invalid. The value must be within the range of 1 to 65,535.

VNP — Invalid line identification

The line identification is not in the proper format.

VNP — Invalid node option

Certain node options are valid only on the executor node, while others are not allowed. You must verify that all options selected are valid for the node specified.

VNP — Invalid parameter grouping

The combination of parameters specified is invalid. For example,

```
VNP>SET LOGGING CONSOLE EVENTS 2.0 CIRCUIT DMC-0 NODE A
```

is invalid because you cannot specify two entities to qualify events that are to be logged. You can specify the circuit or the node, but not both. If you want two entities to be logged, you must enter two separate commands.

VNP — I/O error accessing system image file *error-code*

A disk I/O error occurred when VNP accessed the system image file. The error code is returned by the operating system's file services.

VNP — KMC microcode load failed

VNP failed to load the KMC microcode.

VNP — Library block allocation failure

Increase the size of the network block pool.

VNP — Line name too long

Line names must be 1 to 3 Radix-50 characters.

VNP — Line not assigned to XPT or DLX

An attempt was made to access a line that is not on a network communications device assigned to XPT or DLX.

VNP — Line not in system

The specified line is not in the system.

VNP — Line parameter not applicable

The line option is valid on SET NODE requests only if the node identification is a name.

VNP — Maximum controllers limited to 64

The maximum controller count for the SET PROCESS request is limited to 64.

VNP — Maximum lines limited to 64

The maximum line count for the SET PROCESS request is limited to 64.

VNP — NETACP must be “fixed” in RSX-11S systems

NETACP is not fixed in an RSX-11S System. Fix NETACP using VMR before starting VNP.

VNP — NETACP not installed

NETACP is not installed. Install NETACP using VMR before restarting VNP.

VNP — Network buffer pool is too small

The network buffer pool is not large enough to load the system software. You will have to use VMR on your system image to change the size of the network pool partition.

VNP — Network initializer not installed

The network initializer (NTINIT) is not installed. Install NTINIT with VMR before restarting VNP.

VNP — Network pool partition not in the system

VNP could not find the network pool partition as specified during NETGEN.

VNP — Node in wrong state

The node is not in the proper state to perform the requested function.

VNP — Node name too long

Node names are limited to a maximum of 6 characters.

VNP — Node not in system

An attempt was made to reference a node that is not in the system.

VNP — Non-UMR-mapped area is too large

The non-UMR-mapped portion of the network pool is larger than the entire network pool.

VNP — Not enough contiguous UMRs to map network pool

The network pool needs too many UMRs to be loaded. You should try to reduce the size of the network pool.

VNP — NTINIT must be “fixed” in RSX-11S systems

NTINIT is not fixed in an RSX-11S system. Fix NTINIT using VMR before restarting VNP.

VNP — Object not in system

An attempt was made to reference an object that is not contained in the system.

VNP — Object/remote block allocation failure

There is not enough network pool or dynamic storage space to allocate a remote name block or an object block.

VNP — Object task name too long

Object task names must be 1 to 6 Radix-50 characters.

VNP — Open failure on configuration file

VNP could not open the CETAB source file.

VNP — Open failure on system image file *error-code file-name*

The system image file (*file-name*) cannot be opened. The error code is returned by the operating system's file services.

VNP — Owner process name too long

Process names must be 1 to 3 Radix-50 characters.

VNP — Partition name too long

The partition name must be 1 to 6 Radix-50 characters.

VNP — Password field too long

The password field is limited to 8 characters.

VNP — PLB allocation failure

VNP was not able to allocate enough space for the XPT databases.

VNP — Process name too long

Process names must be 1 to 3 Radix-50 characters.

VNP — Remote block allocation failure

Increase the size of the network extended byte pool.

VNP — Remote dte block allocation failure

Increase the size of the network extended byte pool.

VNP — Remote Network Block allocation failure

Increase the size of the network extended byte pool.

VNP — Resource error trying to allocate CCBs

There is not enough dynamic storage space in your system to allocate the control buffers.

VNP — Reverse mapping table inconsistent

The reverse mapping table has been corrupted.

VNP — RSX-11M system pool allocation failure

The system pool is empty. Use VMR to increase the size of the system pool.

VNP — Service block allocation failure

Increase the size of the network extended byte pool.

VNP — Supposed system image file not actually a system image *file-name*

The indicated file is not a system image file.

VNP — SVC descriptor allocation failure

Increase the size of the network extended byte pool.

VNP — Syntax error

The command line is not correct.

VNP — System image does not contain a GEN partition

The default partition for network software is GEN. The system image file does not contain a GEN partition.

VNP — System image file corrupted because VNP was terminated abnormally *file-name*

A previous execution of VNP terminated abnormally and may have corrupted the system image file (*file-name*). Recopy the system image file before restarting VNP.

VNP — System image must be extended to n blocks if the GEN partition is to be contained within the image

The default partition GEN is not within the system image. Use the PIP command for copying files with the /BL: n . switch to enlarge the output file.

VNP — The Communications Executive data structures are too large for VNP's internal buffer. The buffer (CET\$SA psect) can be expanded to 2776 bytes maximum (from the current n bytes), but this configuration needs m bytes. This error is not recoverable without source modifications.

VNP's internal buffers cannot accommodate the Communications Executive configuration file (CETAB). Reduce the size of the configuration.

VNP — Too many object task copies

A maximum of 63 object task copies is allowed.

VNP — Tributary number too large

Tributary numbers must be in the range of 1 to 255.

VNP — UMR block allocation failure

There is not enough dynamic storage space to allocate a UMR block.

VNP — Unable to dynamically allocate network buffer pool

VNP could not allocate enough partition space to load the network pool.

VNP — Unit number too large

The unit number on the line identification is illegal.

VNP — Unspecified error during CONFIG file scan

VNP could not successfully parse all the definitions in the CETAB source file.

VNP — User identification field too long

The user identification field is limited to a maximum of 16 characters.

VNP — XPT channel table inconsistent

The XPT channel table has been corrupted.

VNP — XPT database not allocated

The XPT process is loaded but the data structures are not.

VNP — XPT process not loaded

The XPT process is not loaded.

VNP — X.29 data block allocation failure

Increase the size of the network extended byte pool.



Appendixes

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Process Names

Table A-1 lists processes alphabetically by type, including device driver processes and software protocol-related processes for DECnet and RSX-11 PSI.

Table A-1: DECnet-RSX Processes

Process Name	Function
Communications Executive processes	
AUX	Auxiliary process
DLX	Direct Line Access Controller
EVL	Event Logger process
DECnet device drivers	
DH	DHU-11 driver
DHV	DHV-11 and DHQ-11 driver
DL	DL-11 driver
DLV	DLV-11 driver
DMC	DMC-11/DMR-11 driver
DMP	DMP-11 driver
DMV	DMV-11 driver
DPV	DPV-11 driver
DU	DU-11 driver
DUP	DUP-11 driver
DUV	DUV-11 driver
DV	DV-11 driver
DZ	DZ-11 driver
DZV	DZV-11/DZQ-11 driver
KDP (KMC/DUP)	KDP-11 driver
KDZ (KMC/DZ)	KDZ-11 driver
PCL	PCL driver
UNA	DEUNA and DELUA driver
QNA	DEQNA and DELQA driver

(continued on next page)

Table A-1 (Cont.): DECnet-RSX Processes

Process Name	Function
DECnet processes	
DCP	Implements DDCMP; included for all systems with devices other than DMC-11, DMP-11, DMR-11, DMV-11, PCL-11B, DEUNA, DELUA, DELQA, and DEQNA
EPM	Ethernet Protocol Manager; included for all systems with Ethernet devices
ECL	End Communication layer process
XPT	Routing layer process
NCT	Network Command Terminal process
RTH	Remote Terminal Host process
LAT	LAT device driver process
RSX-11 PSI device drivers	
KMX	KMX-11 driver
KMY	KMY-11 driver
SDP	DUP-11 driver
SDV	DPV-11 driver
RSX-11 PSI processes	
DLM	Data-link-mapping process
LAB	X.25 level 2 LAPB protocol process
NW	RSX-11 PSI user interface process
PLI	X.25 level 3 (packet level) process

Object Type Codes

Table B-1 defines valid object type code values and describes their process type for network management. The values are expressed as decimal byte values. Digital reserves the right to add object types or to make changes to the descriptor formats used by the object types.

Table B-1: Object Type Codes

Object Type Code	Process Type
0	General task, user program
1	File Access Listener — FAL/DAP, Version 1
2-4	Reserved for DECnet use
5	RSX-11M Task Control — Version 1
6-14	Reserved for DECnet use
15	RSX-11M Task Control — Version 2
16	TLK utility
17	File Access Listener — FAL/DAP, Version 4
18	Host Task Loader
19	Network Information and Control Exchange
20	RSTS/E media transfer program
21-22	Reserved for DECnet use
23	Network terminal handler
24	Reserved for DECnet use
25	Network management loopback mirror
26	Network management event receiver
27-28	Reserved for DECnet use
29	PHONE utility
30-28	Reserved for DECnet use
42	Heterogeneous terminal host
43-62	Reserved for DECnet use
63	RSX DECnet test tool
64-127	Reserved for DECnet use
128-255	Reserved for customer extensions



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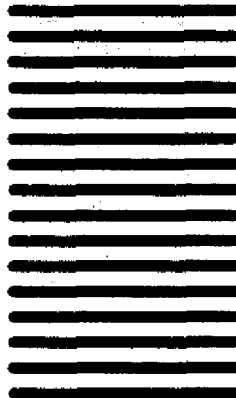
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