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Preface

Manual Objectives

The *RSX-11M-PLUS MCR Operations Manual* provides the information you need to operate and control RSX-11M-PLUS systems. The Monitor Console Routine (MCR) serves as a terminal interface between you and your RSX-11M-PLUS operating system. This manual describes the basic concepts of MCR operation and shows you how to use MCR commands.

This manual identifies two basic types of users: privileged and nonprivileged. MCR provides privileged users with functions that control and modify system operation and permit program development and system maintenance. MCR provides nonprivileged users with functions that permit program development and private device and terminal maintenance.

Intended Audience

The *RSX-11M-PLUS MCR Operations Manual* does not attempt to train users. The manual assumes that the reader is familiar with both real-time and batch computer operating procedures. It also assumes that the reader has experience working with computer terminals and other hardware devices.

A user is broadly defined as anyone who interfaces directly with RSX-11M-PLUS to perform a task. This broad definition is assumed because of the many and varied settings in which RSX-11M-PLUS operating systems are applied.

Structure of This Document

Chapter 1 describes MCR and provides a summary of MCR commands.

Chapter 2 discusses basic concepts of the RSX-11M-PLUS file system (Files-11 file structure) and describes system conventions such as device and task naming conventions.

Chapter 3 provides a detailed description of each MCR command. The command descriptions are alphabetized according to the abbreviated forms of the command names.

Appendix A lists messages that are common to MCR commands, as well as messages from the Task Termination Notification Program (TKTN). The messages are listed in alphabetical order. Messages that are command-specific are described in the individual command descriptions.

Associated Documents

Although the *RSX-11M-PLUS MCR Operations Manual* is primarily self-contained, the reader should be familiar with system generation options and features in order to fully understand this manual. For detailed descriptions of system generation, refer to the *RSX-11M-PLUS System Generation and Installation Guide*.

Conventions Used in This Document

This manual observes the following conventions:

Convention	Meaning
SET	Uppercase letters and words indicate that you should enter the letter or word exactly as shown.
file name	Lowercase letters and words indicate that you are to substitute a word or value. In command descriptions, lowercase letters indicate a variable whose actual value is determined when the command is entered or the message is issued. For example, the value of the variable <i>taskname</i> depends on the name of the task associated with the command or message.
n_8 or # n n_{10} or n .	In general, the base of a number is indicated as a subscript to the number. For example: 77777_8 or 255_{10}. However, in command descriptions and examples, decimal values may be indicated by a trailing period (.). Octal values may be indicated either by the absence of a period or by a number sign character (#) preceding the number. For example, the following three values are equal: 255. 377 #377 Unless specified otherwise, all numeric values required in a command can be entered as decimal or octal.
[. . .]	Square brackets around a comma and an ellipsis indicate that you can use a series of optional elements separated by commas. For example, (argument,[. . .]) means that you can specify a series of optional arguments by enclosing the arguments in parentheses and by separating them with commas.
{ }	Braces indicate a choice of required options. You are to choose from one of the options listed.
:argument	Some parameters and qualifiers can be altered by the inclusion of arguments preceded by a colon. An argument can be either numerical (COPIES:3) or alphabetical (NAME:QIX).
()	Parentheses are used to enclose more than one argument in a command line. For example: SET /CACHE=DUO: (DEFER_WRITES, DIRECTORY, LOGICAL)

Convention	Meaning
@	The at sign invokes an indirect command file. The at sign immediately precedes the file specification for the indirect command file, as follows: @filename[.filetype;version]
...	A horizontal ellipsis indicates the following: • Additional, optional arguments in a statement have been omitted. • The preceding item or items can be repeated one or more times. • Additional parameters, values, or other information can be entered.
.	A vertical ellipsis shows where elements of command input or statements in an example or figure have been omitted because they are irrelevant to the point being discussed.
boldface	Boldface type indicates that the term is being defined; for example, command parameters and keywords.
<i>italics</i>	Italic type indicates emphasis, a book title, or that a new term is being used in the text.
KEYNAME	This typeface denotes one of the keys on the terminal keyboard. For example, the RETURN key.
black ink	In examples, what the system prints or displays is printed in black.
red ink	In interactive examples, what the user types is printed in red. System responses appear in black.
blue ink	Text in blue ink indicates that the information pertains to RSX-11M-PLUS multiprocessor systems only.
xxx	A symbol with a 1- to 3-character abbreviation indicates that you press a key on the terminal. For example, RET indicates the RETURN key, LF indicates the LINE FEED key, and DEL indicates the DELETE key.
CTRL/a	The symbol CTRL/a means that you are to press the key marked CTRL while pressing another key. Thus, CTRL/Z indicates that you are to press the CTRL key and the Z key simultaneously. CTRL/Z is echoed on some terminals as ^Z. However, not all control characters echo. Examples of terminal display in this manual show control key sequences as they are displayed on the terminal screen.

Summary of Technical Changes

The following sections list features, keywords, and options that are new to the Monitor Console Routine (MCR) for the RSX-11M-PLUS operating system. These new features are documented in this revision of the *RSX-11M-PLUS MCR Operations Manual*.

New Features

MCR has the following new features:

- INSTALL command search sequence
- LOAD command search sequence
- Deferred Disk Write Requests (DFR)
- Larger extent sizes

INSTALL Command Search Sequence

If you precede a file name with a dollar sign (\$) in the INSTALL command line, INSTALL searches for the file in the default library directory [3,54] and then the system directory [1,54]. Thus, the vectored version of a task residing in the library directory is installed.

In addition, when you enter an INS \$xxx command (where xxx represents a 1- to 6-character task name), INSTALL searches for the supervisor-mode version (xxxFSL.TSK), the memory-resident version (xxxRES.TSK), and then the "plain" version of the task image file (xxx.TSK). For each type of task, the library directory is searched first, then the system directory. Consequently, the most efficient version of the task is installed.

LOAD Command Search Sequence

The LOAD command searches for device drivers in the default library directory [3,54] and then the system directory [1,54]. Thus, by default, the vectored version of the driver is loaded.

Deferred Disk Write Requests (DFR)

Deferred disk write requests are now a data caching option. If data caching is selected at system generation, you can enable deferred disk write requests (DFRs) when you mount a disk or when you set device characteristics. DFRs are a useful way of speeding up I/O operations on your system disk or on disks that are relatively slow writing data.

You can select the option by using one of the following commands:

```
SET /CACHE=ddnn:(DEFER)
```

```
MOU ddnn:volumelabel /CACHE:(DEFER)
```

Larger Extent Sizes

The maximum size of an I/O request for data caching has been increased from 15 blocks to 127 blocks. The following options support the larger extent size:

- [NO]DIRECTORY
- [NO]LOGICAL
- [NO]OVERLAY
- [NO]READ_AHEAD
- [NO]VIRTUAL

Note that extent sizes can be modified for cached devices using the SET or MOUNT command.

New and Modified Keywords

MCR has the following new or modified keywords:

- /CACHE=DEFER_WRITES
- /CHAR_LENGTH=ttnn:{7 or 8}
- /DFB=option
- /FLAGS=word
- /[NO]VTLOGON

In addition, the SET /CACHE command now sets the default values for the data caching options at the time the cache is activated for a device. Subsequent commands change only the options specified in the command line; all other options retain the values established when the cache was activated.

SET or MOUNT /CACHE=[NO]DEFER_WRITES

The SET /CACHE and MOUNT /CACHE keywords have been modified to include the DEFER_WRITES option. The DEFER_WRITES option enables data caching of deferred disk write requests. This is the system default when a disk is associated with a cache partition. It applies only to temporary files that are insensitive to a system crash.

The NODEFER_WRITES option disables data caching of deferred disk write requests.

SET /CHAR_LENGTH

The SET command keyword /CHAR_LENGTH establishes the length of characters transmitted and received by terminals attached to the system through variable-speed multiplexers. You can specify the character length as either 7 or 8. If you do not specify a length, the system displays the current setting. The default value for transmission is 8-bit characters.

INSTALL /DFB

The INSTALL command keyword /DFB=YES allows the binding of Executive data structures to be deferred until a task is loaded into memory. The /DFB=NO keyword allows binding to occur only at the time the task is installed.

LOAD /FLAGS

The LOAD command keyword /FLAGS specifies a value (in octal) for the flags word to be passed to an extended Executive partition (EXP) if the EXP supports a flags word. (The Executive Debugging Tool (XDT) is an example of an EXP that supports a flags word. For a description of how XDT interprets the word, see the *RSX-11M-PLUS and Micro/RSX XDT Reference Manual*.)

The /FLAGS keyword is valid only when used with the /EXP keyword.

SET /[NO]VTLOGON

The SET command keyword /[NO]VTLOGON enables or disables logging in to the system on a virtual terminal without affecting physical terminals. Thus, you can use virtual terminals while logins to physical terminals are disabled.

Changes to the Document

A change in the organization of MCR and TKTN error messages is included in this revision of the *RSX-11M-PLUS MCR Operations Manual*.

Previously, Chapter 3 included error messages specific to a command as part of that command's description. Error messages that were common to more than one command were listed in Appendix A. Now, a complete list of all the error messages returned by MCR and TKTN appears in Appendix A.

Chapter 1

Introduction to MCR

The Monitor Console Routine (MCR) serves as an interface between you and the RSX-11M-PLUS system. This chapter introduces you to MCR and provides a summary of the MCR commands.

Before using MCR commands, be sure your terminal command line interpreter is set to MCR. A terminal set to MCR displays the explicit MCR prompt (MCR>) when you press CTRL/C. (For more information on input prompts, see Chapter 2 of this manual.) If you want MCR to be the default command line interpreter for your terminal, have your system manager set the default in your account file to MCR.

If your terminal is set to the DIGITAL Command Language (DCL) command line interpreter, it displays the dollar sign (\$) prompt. To use MCR, change the terminal characteristic by entering the DCL command SET TERMINAL, as follows:

```
DCL>SET TERMINAL/MCR
```

For more information on DCL, see the *RSX-11M-PLUS Command Language Manual*.

1.1 MCR Command Lines

To enter an MCR command, type a command line in response to a default prompt (>) or the explicit MCR prompt (MCR>). A command line consists of three components: a command name, command parameters, and a line terminator.

1.1.1 Specifying a Command Name

If you want to make the intent of a command clear to someone else, enter the command name in full. For example:

```
>CANCEL taskname [RET]
```

However, note that MCR uses only the first three letters of a command, so you can abbreviate the command names. For example, you can enter the CANCEL command as follows:

```
>CAN taskname [RET]
```

Exceptions to this are the HELP command, which must be entered in full, and commands that have 3-letter acronyms as command names. For example, the names for the ASSIGN and USER FILE DIRECTORY commands are ASN and UFD, respectively.

A space or a tab signals the end of the command name; therefore, no spaces or tabs are allowed within the command name itself. For example, you cannot specify the command OPENREGISTER as two words (OPEN REGISTER). However, note that a space or tab is required between a command and the first qualifier in the command line.

1.1.2 Specifying Command Parameters and Keywords

Typically, a command parameter is a task name, the name of a file, a logical name, or a physical device specification. (For information on file and device specifications, see Chapter 2.) In the following example, the variable *taskname* is a parameter for the CANCEL command:

```
>CANCEL taskname 
```

Some MCR commands use keywords that modify the action of a command. You can apply a keyword directly to the command or to a command parameter, depending on the command. If the keyword follows the command name, it modifies the action of the command. If the keyword follows a parameter, it modifies the action of the parameter.

For example, the INSTALL command requires a filename parameter that specifies the task to be installed. You can append keywords to this file name. One such keyword, /TASK, specifies the name under which the task is to be installed. The following command line installs the task image file BOB.TSK with the name AMBER:

```
INS BOB.TSK/TASK=AMBER 
```

To specify multiple keywords with a command, enter the keywords in any order. Each keyword can be in one of three forms:

/keyword

Sets the keyword.

/-keyword

Negates the keyword.

/NOkeyword

Negates the keyword.

In addition, a keyword may be followed by an optional equal sign (=) and value. The value can consist of ASCII strings, octal numbers, or decimal numbers. When you specify a value, the following rules apply:

- Numbers terminated by a decimal point (.) are decimal.
- Numbers preceded by a number sign (#) are octal.
- Whether the default for a numeric value is octal or decimal depends on the command or task to which the keyword is directed and on the keyword itself.
- You can precede any numeric value by a plus (+) or minus (-) sign; plus is the default.

The number of values permitted and the interpretation of a keyword depend on the task to which the keyword is directed. Because keywords are command-specific, each command description in this manual includes definitions of associated keywords (see Chapter 3).

1.1.3 Terminating a Command Line

To terminate an MCR command line, press the RETURN key, the ALT key, or the ESCAPE key. After processing a command line terminated by the RETURN key, MCR returns the default prompt. After processing a command line terminated by the ESCAPE or ALT key, MCR suppresses the default prompt. Although the default prompt does not appear, MCR accepts subsequent unsolicited input.

Note

The ESCAPE key has special significance as a terminator for the RUN and OPENREGISTER commands. For more information, see the descriptions of these commands in Chapter 3.

1.1.4 Extending a Command Line

You can extend a command line by using a hyphen (-) immediately before the line terminator. Then, after you press RETURN, MCR returns the prompt (->) on the next display line. At the prompt, enter the remainder of your command line.

Extra command lines are called *continuation command lines*. You can enter any number of these continuation lines, but the total command line cannot exceed 255₁₀ characters. Command line continuation is useful when selected keywords or options cause a command line to exceed 80 characters.

For example, an RSX-11M-PLUS system would respond to the following command line (typed over three lines) in the same way as if the entire command had been typed on one line:

```
>INI DK1:ICTSVOL2/UIC=[2,5]- [RET]
->/INDX=BEG- [RET]
->/FPRO=[RWED,RWE,RW,R] [RET]
```

Regardless of how many display lines you use to type a command, if the total number of characters in the command line exceeds 255₁₀, MCR returns an error message and your command is not processed. MCR does not display the error message until after you press the RETURN key to end the final line of the command.

1.1.5 Including Comments

MCR treats a line of text as a comment if the first character in the line is a semicolon (;). In addition, you can delimit comments within a command line by using an exclamation point (!). The first exclamation point starts the comment and the second point or line terminator ends the comment. MCR ignores all text between the two exclamation points. For example:

```
>; THIS LINE IS A COMMENT
>INS !THIS IS A COMMENT STRING! BOB.TSK/TASK=AMBER [RET]
```

Comments are especially useful to clarify commands in indirect command files.

1.1.6 Using Special Characters

When MCR parses a command line, it converts tabs to spaces, compresses any multiple spaces and tabs, and treats character strings beginning with a semicolon (;) or an exclamation point (!) as comments (see Section 1.1.5).

If you use a semicolon or an exclamation point as part of a command line, you must place these characters within quotation marks. When you use quotation marks (") in the command line, MCR parses the portion within the quotes exactly as you typed it; no compression occurs. This allows you to use special nonalphanumeric characters in your command line as well as American National Standard (ANSI) X.327-1978 file specifications, which permit embedded spaces.

If you use only one quotation mark in the command line, MCR assumes an ANSI file specification and does not compress the line past the quotation mark.

For more information on command line processing, see the *RSX-11M-PLUS and Micro/R SX I/O Operations Reference Manual*.

1.2 Executing MCR Commands—The MCR Interface

MCR parses your typed input to determine what the command line is requesting and then responds accordingly. To service a request, MCR activates an independent task (for example, INI or BOO), or it uses an MCR overlay.

The required three letters of the command name are the most significant part of a command line. MCR uses the command name to determine the necessary task or overlay. The following procedures describe how MCR activates the appropriate task or overlay to service each command:

1. MCR searches a table containing the names of commands that MCR services. If the table contains a command that matches the one you have typed, MCR either loads the corresponding overlay or starts the secondary task (... MCR), which then invokes the correct overlay. Then, the overlay processes the command line.
2. If the table does not contain a matching command, MCR prefixes three dots (...) to the command name and searches the System Task Directory (STD) for a task by that name (that is, ... tsk). MCR returns an error if the STD does not contain the specified task.

First, MCR looks for an installed version of tskTnn and requests the Executive to run it. If one does not exist, MCR creates a temporary STD entry, names the task tskTnn, and requests the Executive to run the task. When tskTnn exits, the Executive automatically deletes its STD entry.

RSX-11M-PLUS operating systems also include a Catchall Task (TDX), which "catches" commands that are not recognized by MCR. If MCR receives an unrecognized command, it searches for a task with that name and passes the command line to TDX. TDX commands are a shorter way of specifying MCR commands and qualifiers. In addition, they allow you to run uninstalled tasks.

For information on installing and using TDX, see the *RSX-11M-PLUS and Micro/R SX System Management Guide*.

1.3 MCR Command Summary

Table 1-1 summarizes, by category, the MCR commands described in Chapter 3. The command summary provides a compact overview of the facilities available at your terminal. Commands followed by (NP) are available to all users. Commands followed by (P) are available only to privileged users. Commands followed by (NP,P) are nonprivileged commands with privileged options. Commands followed by (P,NP) are privileged commands with nonprivileged options.

Table 1-1: MCR Command Summary

Command	Description
Initialization Commands	
ACD (P,NP)	Loads and unloads character translation routines.
ACS (P)	Allocates or discontinues the use of a checkpoint file on disk.
ASN (NP,P)	Defines or deletes a logical device assignment. Displays current assignments on your terminal. Defines, deletes, or displays logical name assignments in addition to logical device assignments on systems that support extended logical name support.
BOOT (P)	Bootstraps a new system into memory and transfers control to it.
DFL (NP,P)	Defines or deletes a logical name assignment. Displays current assignments on your terminal. (Executes only on systems that select extended logical name support during system generation.)
DMOUNT (NP,P)	Dismounts a volume by marking the volume for dismount and releasing its control blocks (complement of MOUNT).
FLAGS (NP,P)	Creates, displays, or eliminates group global event flags.
HOME (NP,P)	Alters the values contained in various fields of the home block of a Files-11 disk volume.
INITVOLUME (NP)	Initializes a disk, DECtape, or magnetic tape to produce a Files-11 volume.
INSTALL (P)	Installs a task in the system.
LOAD (P)	Loads a nonresident device driver into memory.
MOUNT (NP,P)	Mounts a volume by creating its control blocks and making the volume accessible to the file system.
REDIRECT (P)	Redirects all I/O requests from one physical device to another.
SET (NP,P)	Alters or displays system, device, or task characteristics.
TIME (NP,P)	Enters the time and date into the system. Displays the time and date on your terminal.
UFD (NP,P)	Creates a User File Directory (UFD) in a Master File Directory (MFD) on a Files-11 volume.

Table 1-1 (Cont.): MCR Command Summary

Command	Description
Informational Commands	
ACT (NP)	Displays the names of active tasks that you request from your terminal.
ATL (NP)	Displays the names and status information for active tasks.
CBD (NP)	Displays the names and status information for entries in the Common Block Directory.
CLQUEUE (NP)	Displays information about tasks in the clock queue.
DEVICES (NP)	Displays information about peripheral devices recognized by the system.
LUN (NP)	Displays the list of static logical unit number (LUN) assignments for a specific task.
PARTITIONS (NP)	Displays a description of each partition in memory.
TAL (NP)	Displays the names and status of all tasks in the system or the name and status of a specific task.
TASKLIST (NP)	Displays a description of each installed task.
Task Control Commands	
ABORT (NP,P)	Terminates execution of a running task.
ALTER (P)	Alters the priority of a task.
BLK (NP,P)	Blocks a task from execution.
CANCEL (NP,P)	Cancels time-based initiation requests for a task (no effect on current execution).
DEBUG (NP,P)	Forces a task to trap to a debugging aid.
FIX (P)	Fixes a task in a partition in memory (the task becomes memory-resident).
REASSIGN (P)	Changes logical unit number (LUN) assignments for a task.
REMOVE (P)	Removes a task from the system (complement of INSTALL).
RESUME (NP,P)	Resumes execution of a task that had suspended itself.
RUN (NP,P)	Initiates the execution of a task. The task may run immediately, after a time delay, or in synchronization with the system clock. Periodic rescheduling is optional.
UNBLK (NP,P)	Unblocks a previously blocked task (complement of BLOCK).
UNFIX (P)	Makes a memory-resident task nonresident (complement of FIX).
UNLOAD (P)	Removes a loadable device driver from memory (complement of LOAD).

Table 1–1 (Cont.): MCR Command Summary

Command	Description
Task Control Commands	
UNSTOP (NP,P)	Resumes execution of a task that has been stopped internally by the Executive.
System Maintenance Commands	
BRK (P)	Passes control to the Executive Debugging Tool (XDT). Valid only for systems that have included XDT support during system generation or that have loaded XDT with the LOA /EXP command.
OPEN (P)	Displays the contents of a memory location for examination or modification.
SAVE (P)	Copies the current system image into the system image file from which the system was booted.
SSM (P)	Inserts text into the error log file.
SWR (P)	Displays the current value of, or sets, or clears a bit in the switch register.
Multiuser Protection Commands	
ALLOCATE (NP,P)	Allocates a device to a user (reserves the device as the user's private device).
BRO (NP,P)	Broadcasts a message to a terminal or terminals.
BYE (NP)	Logs out of the system.
DEALLOCATE (NP,P)	Deallocates a private (allocated) device (complement of ALLOCATE).
HELLO or LOGIN (NP)	Logs in to the system.
HELP (NP)	Displays the contents of a help file.
Command Line Interpreter Commands	
CLI (P,NP)	Allows usage of a command line interpreter (CLI) other than MCR.
DCL (NP)	Permits a DIGITAL Command Language (DCL) command to be entered from a terminal set to MCR.

Chapter 2

System Conventions

This chapter discusses RSX-11M-PLUS operating system conventions including information on the Files-11 file system, system devices (including terminals), and tasks. The last section of this chapter briefly describes the Account File Maintenance Program (ACNT).

2.1 Files-11

RSX-11M-PLUS includes a volume-structure system called Files-11 to oversee the storage and handling of files. In RSX-11M-PLUS, a file is an owner-named area on a volume, and a volume is a medium such as a disk, a DECtape, or a magnetic tape. Two utilities and three MCR commands help you to prepare volumes for use with Files-11:

- Disk Volume Formatter Utility (FMT)
- Bad Block Locator Utility (BAD)
- INITIALIZE VOLUME (INI) Command
- MOUNT (MOU) Command
- USER FILE DIRECTORY (UFD) Command

The utilities are described in the *RSX-11M-PLUS Utilities Manual*. The commands are described in Chapter 3 of this manual.

The Files-11 file structure supports three types of specially formatted volumes: disks, DECtapes, and magnetic tapes. (Files-11 magnetic tapes conform to the American National Standard X3.27-1978.) For a volume to become a Files-11 volume, you must initialize it with the INITIALIZE VOLUME (INI) command. A volume that has not been initialized by INI is a "foreign" volume. To mount foreign volumes, use the MOUNT /FOREIGN command.

The File Transfer Utility Program (FLX) allows you to access foreign volumes in the DIGITAL DOS-11 or RT-11 format. FLX translates files on such volumes into Files-11 format. In most cases, a DECtape has a foreign format and, therefore, requires the use of the FLX utility. See the *RSX-11M-PLUS Utilities Manual* for a full description of FLX.

Before Files-11 can access a file, the volume that contains the file must be known to the system. To make a Files-11 volume known to the system, issue the MOUNT command for the device on which the volume is loaded.

2.1.1 File Ownership and Directories

When you create a file, the system places the file name in a User File Directory (UFD). The UFD is on a default system device (SY), which is specified by the system manager when your account is created. Your default UFD corresponds to your User Identification Code (UIC). To indicate that you are the owner of the file, the system stores your current UIC in the file header. For more information on UICs, see Section 2.1.2.

A UFD is itself a file, which you create explicitly with the MCR command UFD (see Chapter 3). You specify a UFD in the format [g,m] where *g* and *m* are octal numbers between 1 and 377 (0 is reserved). These numbers represent your group and member numbers, respectively. The actual name of the UFD is a concatenation of the group and member numbers, terminated by .DIR. For example, the name of the directory that corresponds to the UFD [203,65] is 203065.DIR. (Note that leading zeros are added to the UFD so that *g* and *m* are each three digits long.)

All UFDs on a volume are listed in the volume's Master File Directory (MFD), which corresponds to UFD [0,0] and is therefore named 000000.DIR. These directories (the UFDs and the MFD) list the names of files and contain pointers to each file header. The file header contains information about the file's owner and the physical location of the file segments; the header occupies one or more blocks of the volume's index file ([0,0]INDEXF.SYS).

To delete a UFD, use the Peripheral Interchange Program (PIP). First, delete all of the files contained in the UFD (thereby freeing the space for future use) by entering the following command line:

```
>PIP [g,m]*.*;*/DE RET
```

After you delete all the files, use PIP to delete the UFD by typing:

```
>PIP [0,0]gggmmm.DIR;*/DE RET
```

The variable *gggmmm* is the concatenation of the group and member number components of the appropriate UFD.

For a detailed description of PIP, refer to the *RSX-11M-PLUS Utilities Manual*.

2.1.2 User Identification Codes (UICs)

A terminal has two UICs: a protection UIC and a default UIC. The system checks the protection UIC against a file's protection mask to determine your access rights to the file. When you are in nonamed mode, the default (or login) UIC determines the UFD of the file to be accessed whenever you omit the UIC field in a file specification. (For more information on file protection, see Section 2.1.3.)

How the system sets these two UICs depends on your privilege status. If you are a nonprivileged user and you log in to the system, the protection UIC and login UIC for your terminal are the same. Also, your login UIC becomes the initial default UIC for the terminal. If you enter the SET /UIC command to alter the default UIC, the protection (login) UIC remains unchanged.

However, if you log in to the system under a privileged account, the login UIC becomes the protection UIC as well as the default UIC. Then, if you enter the SET /UIC command, the system alters not only the default UIC but also the protection UIC. Because the protection UIC is also changed, the system is no longer able to recognize your login UIC. (This does not apply to systems on which Resource Accounting is active, because the accounting system keeps a record of every user's login UIC.)

2.1.3 File Protection

To access a file, you must know the UFD in which it is located. However, knowing the location of a file does not guarantee access to it. You must also satisfy the conditions specified in a protection mask associated with the file you wish to access. In addition, the volume that contains the file must be mounted before the file system can access the file.

Every file has a protection mask that describes the types of access allowed to each of four user classes. Users are categorized by UIC into each class as follows:

Class	Members
System	The operating system itself and privileged users (those having group numbers of 10 ₈ or less).
Owner	The user having the same UIC as the one the file was created under.
Group	All users having the same group number as the one the file was created under.
World	All users.

For each class, the protection mask describes four types of access rights: Read, Write, Extend, and Delete.

Access Type	Access Rights
Read	You (or your task) can read, copy, print, or type the file. If the access refers to a task, you can also run the task.
Write	You (or your task) can add, delete, or modify data in the file by writing to space already allocated to the file.
Extend	You (or your task) can change the amount of disk space allocated to the file.
Delete	You (or your task) can delete the file.

To gain access to a file, you must satisfy the protection mask of both the file to be accessed and the UFD in which the file is listed. For example, to write to an existing file, you need at least read access to the UFD and write access to the file. To create a new file, you need both write and extend access to the UFD.

As a file owner, you can assign access rights by any one of the following means:

- The INITIALIZE VOLUME (INI) command allows you to specify a default file protection code for all files subsequently created on the initialized volume.

- The USER FILE DIRECTORY (UFD) command establishes access rights to a UFD file only. A user often allows read access to a UFD but denies write, extend, or delete access to the files listed within it.
- The MOUNT (MOU) command allows you to specify, while mounting a volume, the default file protection to be assigned to files created on the volume. This protection overrides the protection established with the INI command.
- The SET /DPRO command allows you to specify a default protection code for all files that you subsequently create under your UIC.
- The Peripheral Interchange Program (PIP) has an option that enables you to alter access rights to your files.

For more information on the INI, UFD, MOU, and SET commands, see Chapter 3 of this manual. For information on PIP, see the *RSX-11M-PLUS Utilities Manual*.

2.2 File Specifications

MCR uses a standard format for specifying files in a command line. The format is a string that includes one or more input and output file specifications, separated by commas. An equal sign (=) identifies the output file specifications.

Command Line Format

```
commandname outfile1...,outfilen=infile1...,infilen
```

commandname

The name of the command or task.

...

The ellipsis mark (...) indicates that you may include any number of file specifications in the string. The number of file specifications is determined by the receiving command or task.

outfile1 ... ,outfilen=

One or more output file specifications.

If a command or task does not require an output file specification, you can omit the equal sign (=). Then, if you specify a file in the command line, the receiving command assumes that the specification refers to an input file.

infile1 ... ,infilen

One or more input file specifications.

The length of a display line cannot exceed 80 characters. However, you can extend a command line (the line of file specifications plus the task or command name) by including a hyphen (-) immediately before the line terminator. You can continue a command line over an unlimited number of display lines, but the total number of characters in a command line cannot exceed 255₁₀ characters. (For more information on extending command lines, see Chapter 1.)

File Specification Format

ddnn:[g,m]filename.typ;version

ddnn:

Specifies the physical or logical device unit on which the volume containing the file resides. The device unit is expressed as: a 2-character alphabetic device name; an optional 1-, 2-, or 3-digit octal unit number; and a colon (for example, TT104: or LP1:). If you do not specify a unit number, the default number is 0. The default device is your system device (SY:).

[g,m]

[directory]

The directory in which the file is located. Square brackets are a required part of the directory syntax.

[g,m] specifies a numbered directory. The variables g and m are octal numbers between 1 and 377 that represent the file owner's group and member numbers, respectively.

[directory] specifies a named directory that consists of a 1- to 9-character alphanumeric string (for example, [MYDIR] or [DIRECTNO2]). You can also use the 6-digit equivalent for a numbered directory. For example, [303024] is the same as [303,24].

On a privately allocated device, the operating system may assign different UICs to your files, depending on whether you create them in a named or numbered directory. If you set your default to a named directory, such as [ADDRESS], any file that you create in that directory is owned by your own UIC. However, if you set your default to a numbered directory, such as [7,20], any file that you create in that directory is owned by UIC [7,20]. This difference in file ownership, and therefore in file protection, does not affect you adversely. You always have full access to all files on a privately allocated device.

If your default on a privately allocated device is a named directory, you have the option of changing the UIC that owns the files created there. If you are a privileged user, you may use the SET /UIC command, which is a privileged command in named directory mode.

filename

Specifies the name of the file, a 0- to 9-character alphanumeric string. You must specify the file name; no default is applied. A period separates the file name from the file type.

For information on including special characters in a file name, see Chapter 1.

typ

A 1- to 3-character alphanumeric mnemonic that identifies the file's contents (the file type can also be null). For example, .FTN indicates that the file contains a FORTRAN source program and .OBJ indicates that the contents are object (compiled) code. If you do not specify a file type, MCR may assign a default file type. A semicolon (;) separates the file type from the version number.

Conventional and default RSX-11M-PLUS file types are listed in Table 2-2.

version

If the system manager selects support for decimal version numbers during system generation, the version number is a decimal number between 1 and 32,767. Conversely, if the system manager did not select support for decimal version numbers, the version number is an octal

number between 1 and 77777. The system increments decimal version numbers in the same way as octal version numbers.

The numbers -1 and 0 have special significance: -1 implies the lowest existing version of a file and 0 implies the highest existing version. If you omit the version number when you enter a file specification, the default is the highest version number.

2.2.1 Wildcards

A wildcard character is an asterisk (*) or a percent sign (%) that you can use in the place of all or part of a file specification in a command line. A wildcard causes the system to ignore the contents of the wild field and to select all the files that satisfy the remaining explicitly specified fields.

Asterisk wildcards (*) can be used in any part of the file specification except the device-unit field, which must be explicitly supplied or defaulted to SY (see Section 2.2.2).

Examples

```
MCR>PIP PROG.*;1/LI RET
```

Invokes the Peripheral Interchange Program (PIP) and lists (/LI) all files with the file name PROG and version number 1. The files listed are in the default directory on the default device.

```
MCR>PIP PROG.MAC;1,PROG.OBJ;1,PROG.TSK;1/DE RET
```

Invokes PIP and deletes (/DE) the files PROG.MAC;1, PROG.OBJ;1, and PROG.TSK;1.

```
MCR>PIP PROG.*;1/DE RET
```

Deletes any files (on the default device in the default UFD) named PROG with a version number of 1.

For information on PIP, see the *RSX-11M-PLUS Utilities Manual*.

2.2.2 File Specification Defaults

You can omit any field in a command line file specification except the file name (the BOOT command, which is described in Chapter 3, is the only exception to this rule). When you omit one or more fields in a file specification, the system assumes the defaults listed in Table 2-1.

Table 2-1: System Default Values for File Specifications

Field	Default
ddnn:	The pseudo device unit SY. There are two exceptions to this default: • The BOOT command defaults to device LB. • The specification of a dollar sign (\$) in the INSTALL and RUN command lines defaults to device LB (see Chapter 3).

Table 2–1 (Cont.): System Default Values for File Specifications

Field	Default
[g,m]	The default directory specified for each terminal in one of the following ways: • At system generation (see the <i>RSX-11M-PLUS System Generation and Installation Guide</i>) • By the SET command (see Chapter 3) • By the HELLO command (see Chapter 3)
filename	No default (except for the BOOT command). A file specification must include either a file name or a wildcard in the filename field.
type	A 1- to 3-character alphanumeric mnemonic, one of the file types listed in Table 2–2, or null. Default types depend on the task to which the specification is directed and whether the specification refers to an input or an output file. For example, the FORTRAN compiler defaults the type of an input file to .FTN and the type of an output file to .OBJ.
version	For input files, the highest existing version number. For output files, the highest existing version number plus 1.

2.2.3 Conventional and Default File Types

Table 2–2 lists the conventional and default file types used to reflect the contents of a file. (The defaults used by the software supplied by DIGITAL are described in the manuals that pertain to the individual programs.) You can assign your own 3-character file types, but it is convenient to use the default values.

Table 2–2: RSX-11M-PLUS System File Types

Type	File Contents
BAS	BASIC-11 language source program (default)
BAT	Batch file (default)
B2S	BASIC-PLUS-2 language source file (default)
CBL	COBOL language source file (default)
CDA	Crash dump binary file
CFS	Error Logging control file string
CLB	Indirect Command Processor (Indirect) command file library (default)
CMD	Indirect command file (default)
CMF	Preprocessed Indirect command file (default)
COR	SLP correction file (convention; must be specified)
CRF	Cross-Reference Processor symbol table file

Table 2-2 (Cont.): RSX-11M-PLUS System File Types

Type	File Contents
DAT	Data (as opposed to a task image or readable text; convention)
DIR	Directory (for example, a User File Directory; default)
ERR	Error Logging system output file
FTN	FORTTRAN IV, FORTRAN IV-PLUS, or FORTRAN-77 language source file (default)
HLP	Help file
JOU	EDT editor journal file
LOG	Batch or console log file (default)
LST	Listing file (default)
MAC	MACRO-11 source file (default)
MAP	Task Builder memory allocation map (default)
MLB	Macro library file (default)
OBJ	Object module (output from the MACRO-11 Assembler or a compiler; default)
ODL	Task Builder overlay descriptor file (default)
OLB	Object module library file (default)
PAS	PASCAL-11 language source file
PAT	PAT utility correction file used by assembler to create a patched object module (convention; must be specified)
PMD	Postmortem Dump file
POB	Patched object module input file used by the PAT utility (convention; must be specified)
SML	System macro library file (default)
STB	Task symbol table file (default)
SYS	Bootable system image or other system file (default)
TMP	Temporary file (convention; must be specified)
TSK	Task image file (default)
TXT	Text file (convention; must be specified)
ULB	Universal library file (default)

2.2.4 Examples of File Specifications

In the following examples, the three letters that identify the task, followed by a right-angle bracket, are the standard task prompts for the respective system programs (for example, PIP>).

Examples

```
MAC>DM0:[200,200]CRGPT.OBJ=DM0:[200,200]CRGPT.MAC [RET]
```

Assembles the MACRO-11 source file CRGPT.MAC and creates the object output file CRGPT.OBJ. Specifies the UFD [200,200] on device DM0 for both files.

```
PIP>[200,200]SBG.OBJ;5/DE [RET]
```

Deletes the file SBG.OBJ;5. The output file specification is not applicable and therefore is omitted. The input device defaults to SY.

```
TKB>CRGPT=CRGPT [RET]
```

Task builds the object file CRGPT.OBJ. (.OBJ is the default file type for object files.) The output file will be named CRGPT.TSK because .TSK is the default file type for the Task Builder's output file. Also, the device and UFD receive the default values.

```
PIP>TESTDAT.*;*/DE [RET]
```

Deletes all files with the name TESTDAT, regardless of type or version. The system uses default values for the device and UFD.

2.3 Devices

A primary function of the operating system is to manage all connected peripheral devices and thereby maintain efficient system performance. Peripheral devices are the actual hardware elements that make up the computer system. During system generation, the system manager explicitly describes all peripheral devices attached to the system.

Each device has a unique identifier. The identifier consists of two alphabetic characters that form a logical device name (see Section 2.3.4) and an optional unit number of up to three octal digits followed by a colon (:). If you omit the optional octal unit number, the system defaults to unit number 0.

See the *RSX-11M-PLUS System Generation and Installation Guide* for a list of the peripheral devices supported by your RSX operating system.

2.3.1 Logical Unit Number (LUN)

A task performs I/O operations using logical units identified by numbers, called logical unit numbers (LUNs), rather than using specific device units. Before a task actively uses the LUN, assign the LUN to a specific device at one of the following times:

- At task-build time using the Task Builder option ASG.
- From within the task at run time using the Executive Assign Logical Unit Number (ALUN\$) directive.
- With the REASSIGN command after the task has been installed, but before you run it (that is, while the task is "dormant").

For more information about logical unit numbers, refer to the *RSX-11M-PLUS and Micro/RSX I/O Drivers Reference Manual*.

2.3.2 Pseudo Devices

A pseudo device is a device unit name that corresponds to a physical device. You can modify this association with the MCR command REDIRECT (RED). Pseudo devices provide a shorthand method for referencing the physical devices (for example, the pseudo device name CO refers to the console output device). Table 2-3 lists some of the RSX-11M-PLUS pseudo devices.

Table 2-3: RSX-11M-PLUS Pseudo Devices

Pseudo Device	Name
Console listing device	CL:
Console output device	CO:
System library device	LB:
Terminal input/output device	TI:
User's system device	SY:
Spooling device	SP:
Null device	NL:

In a given task, LUN 1 may be assigned to CL, the console listing device. When the task references LUN 1, the data is sent to whatever device CL has been redirected to. You can redirect CL to any appropriate device (a line printer or a terminal, for example) without affecting the task's execution.

A pseudo device redirected to a terminal assumes the privilege status of the terminal to which it is redirected. For example, if a terminal is privileged and CL is redirected to it, CL becomes privileged. Then, if CL is subsequently redirected to a nonprivileged terminal, it returns to a nonprivileged status.

Unless you have a system configuration that requires special assignments, redirect the console output device (CO) to the main operator's terminal and CL to a line printer. Depending on how a task is activated, the system automatically redirects TI in the following ways:

- When you activate a task by issuing the RUN command, the system redirects the TI for that task to your terminal.
- When one task activates another task (using the Executive Request Task (RQST\$) or Spawn (SPWN\$) directives), the TI for the activated task defaults to the TI of the task that issued the directive. However, a privileged task can specify an alternate TI for the activated task.
- If the Executive enters a task into the clock queue for activation after a specified interval, the TI for the task defaults to CO. (Both the RUN command and the Executive directive Run Task (RUN\$) allow a task to be activated at a specified interval from the time you issued the command or directive.)

2.3.3 The Null Device

Program testing often requires an available input or output device. The null device (NL) can be used for either of these purposes.

When a task reads from NL:, NL: returns the code for end-of-file (IE.EOF). When a task writes to NL:, NL: returns the code for success (IS.SUC) but discards the output. As an example, if you are testing a program that normally generates large amounts of printout, assign the appropriate LUN to NL: so that you can save paper or disk space.

2.3.4 Logical Device and Logical Name Assignments

Tasks can use logical device names to maintain device independence. The syntax for a logical device name is the same as the syntax for a physical device name; it consists of a 2-letter ASCII name and an optional unit number of one or two octal digits followed by a colon (:). The name can be equivalent to a standard RSX-11M-PLUS device name (for example, DM), or it can consist of two letters picked at random (for example, ZZ).

Before you run a task that refers to a logical device (instead of a physical device), enter the ASSIGN (ASN) command to associate the logical device name the task uses with a physical device unit. (For more information on the ASN command, see Chapter 3.)

Note

The names II and RD are used by DIGITAL software. Using these names as logical device names could produce undesirable results.

Also, if your system manager selects extended logical name support during system generation, you can create and delete extended logical name assignments. You can assign logical names to file specifications and to other logical names. You can have as many as ten levels of iterative logical assignments. The ASSIGN and DEFINE LOGICALS command descriptions in Chapter 3 provide detailed explanations of logical name assignments.

The term “logical assignments” can apply to either logical device or logical name assignments. There are five levels of logical assignments: task assignments, local assignments, login assignments, group assignments, and global assignments.

- *Task assignments* apply to an individual task and are deleted when the task has completed executing.
- *Local assignments* apply only to tasks initiated from the terminal used to make the assignments. Any terminal can define or delete its own set of local assignments.
- *Login assignments* automatically establish one or more login logical device assignments. The login assignments apply only to tasks initiated from the terminal while the current user is logged in. Only privileged users can define or delete login assignments.
- *Group assignments* apply to tasks run by users who have a common group number in their User Identification Code (UIC).
- *Global assignments* apply to all tasks running in the system.

The system uses logical assignments in the following order: task, local, login, group, and global. If you make a local assignment using a logical name that is already used in a login assignment, the system uses the local assignment. When you delete the local assignment, the system resumes using the login assignment.

Also, the Executive sets up a logical device table that records all logical device assignments and notes whether each assignment is local, login, group, or global. The Executive then searches the logical device table before the physical device table every time a task refers to a device. Thus, a logical name found in the logical device table receives precedence over a physical device unit that has the same identifier.

2.3.5 Public, Private, and Unowned Devices

Devices can be public, private, or unowned. These characteristics are defined as follows:

- A *public device* is a device that anyone logged in to the system can use. A privileged user can make a device public by issuing the SET /PUB command. If a privileged user mounts a volume on a public device, all system users can access files on the volume without having to mount the volume themselves (depending on the volume and file protection specified for the volume). A public device cannot be allocated and can only be dismounted by a privileged user with the DISMOUNT /DEV command. (See Chapter 3 for descriptions of the MOUNT, DISMOUNT, and SET commands.)
- A *private device* is a device that you have allocated using the ALLOCATE command. Only privileged users and the owner of a private device can access the device for use within the Files-11 file system. If a nonprivileged user allocates a device and mounts a volume on the device, other nonprivileged users cannot access the volume; privileged users can access the volume by issuing a MOUNT command.
- An *unowned device* is a device that is neither public nor private. If a user, either privileged or nonprivileged, mounts a volume on an unowned device, all other users can enter subsequent MOUNT commands and access the volume.

Nonprivileged users can allocate and mount a volume on an unowned device, and privileged users can also make an unowned device public.

A privileged user can designate any device in the system as a public device. The devices most commonly made public are the system disk (by default) and the system library device.

The ALLOCATE command (see Chapter 3) makes an unowned device private to the user issuing the command. Allocating a device prevents any other nonprivileged user from accessing the device. (Privileged users can override a nonprivileged allocation.) When a user accesses a device without allocating it, other users can then access that device.

The DEALLOCATE command (see Chapter 3) changes a private device back to an unowned device, thereby allowing other users to gain access to it. Privileged users can deallocate any private device regardless of who owns it. Nonprivileged users can deallocate only their own private devices. When a user logs out, the system automatically dismounts and deallocates any private devices belonging to that user. For efficient use of system resources, however, users should deallocate devices as soon as the devices are no longer needed.

RSX-11M-PLUS does not permit any type of access to unmounted volumes. To access a volume on a physical device in an RSX-11M-PLUS system, you must first issue the MOUNT command. If a volume is not formatted or is in a format other than Files-11, you must mount the volume as foreign with the /FOR keyword.

2.4 Terminals

The terminal is the primary means of communication between you and the computer system. Each terminal in a system has a number associated with it, which is displayed when you log in. You can also refer to any terminal that you use as the issuing terminal (TI), and you can work from more than one terminal at the same time.

In RSX-11M-PLUS operating systems, several terminals can operate concurrently. Each terminal operates independently of others in the system so that each can run tasks at the same time. For example, the PIP utility and the MACRO-11 Assembler can run concurrently from different terminals. (The same task can also run concurrently from different terminals, although each copy of the task running has its own unique identifier. See Section 2.5.4 for more information.)

2.4.1 Input Prompts

When you use MCR, there are three prompts that indicate a terminal is waiting for input from you:

- The default prompt (`>`)
- The explicit MCR prompt (`MCR>`)
- The task prompt (`tsk>`)

The Default Prompt

The default prompt (`>`) at the beginning of a new line indicates that the terminal is ready to accept unsolicited input. The term *unsolicited* implies that no specific task has requested input from the terminal. Whatever you type in response to the default prompt is directed to MCR. When MCR receives unsolicited input, it identifies, analyzes, and responds appropriately.

Note

If a task either solicits input or attaches to the terminal without displaying a task prompt, a soliciting or attached task might receive input that you intended for MCR. (See Section 2.4.4 for information on attached terminals.)

The Explicit MCR Prompt

A terminal sends MCR any input that you type in response to the explicit MCR prompt (`MCR>`). The following list explains the various ways to invoke the explicit MCR prompt:

1. When a terminal displays the default prompt (`>`), input typed in response to this prompt can be directed to another task that attaches the terminal. To ensure that MCR receives the input, invoke the explicit MCR prompt by pressing the CTRL key and the C key simultaneously (this is written as CTRL/C). After MCR processes the command line, the terminal displays the default prompt again.

In special cases, pressing CTRL/C does not invoke the explicit MCR prompt. The next item in this list describes one such case. The description of CTRL/C in Table 2-4 describes two additional cases.

2. When a terminal displays a task prompt (`tsk>`), you can invoke MCR by pressing CTRL/C. After (or while) MCR processes the command line, the terminal displays the original task prompt.

If you requested MCR to display information (with the TIME command, for example) and it is not displayed before the task prompt appears, press the RETURN key. This will display the information and then the original task prompt. Also, press the RETURN key if you would like to know whether MCR processed the command line or if it returned an error message.

Note

If an attached task specifies an asynchronous system trap (AST) upon receiving unsolicited input, CTRL/C causes an AST to occur. Therefore, pressing CTRL/C notifies the task (instead of MCR), and the MCR prompt does not appear.

3. When any terminal is receiving output from a task, you can interrupt the output by pressing CTRL/C. At the completion of the current I/O operation, the terminal displays the explicit MCR prompt. After MCR processes the command line directed to it, the system resumes the interrupted output.

In all three cases, if the command line invokes a task, the task issues its own prompt. You can respond to this prompt with another CTRL/C, which invokes the MCR prompt. Then, you can request another task that issues its own prompt and so on. (Because CTRL/C does not abort the task that was active when you typed CTRL/C, it is possible to have several tasks active at your terminal concurrently.)

The Task Prompt

When MCR activates a task to service a command, the task normally prompts as follows:

`tsk>`

The variable *tsk* is a 3-character task name. (All DIGITAL system tasks identify themselves by a 3-character prompt and user tasks should do the same.)

As long as a prompting task is attached to a terminal, it receives all solicited input entered at the terminal (see Section 2.4.4); the terminal discards all unsolicited input. However, if the task detaches the terminal before you type a response to the prompt, it may not receive your input. Instead, an intervening task may solicit and receive the input you intended for the unattached task. To avoid this situation, every task that solicits input from a terminal should perform the following sequential procedure:

1. Attach to the terminal
2. Prompt with a properly formatted identifier (that is, `tsk>`)
3. Solicit input (issue the Executive directive Queue I/O Request (QIO\$))

2.4.2 Special Character Keys and Control Characters

You can request the system to control terminal operation by means of special character keys and control characters. The relevant special character keys are TAB, ESCAPE (or ALT), RETURN, and DELETE (or RUBOUT). A control character is produced when you press the CTRL key and simultaneously press a letter key.

When you press CTRL/R, CTRL/U, or CTRL/Z, the Executive and the terminal driver display ^R, ^U, or ^Z at the issuing terminal and perform the related function. When you press CTRL/C, the explicit MCR prompt (MCR>) is displayed. (If the terminal is set to recognize commands from DCL or a user-written command line interpreter, pressing CTRL/C would display that prompt instead.) For the other control characters, the Executive does not return a display.

Table 2-4 lists all the special character keys and control characters, and describes the function of each.

Table 2-4: Special Character Keys and Control Characters

Special Key	Description
RETURN	The RETURN key terminates a line of input and advances the cursor or print head to the beginning of the next line.
ESCAPE	The ESCAPE key terminates a line of input without moving the cursor or print head. When used to terminate an MCR command, it suppresses the default MCR prompt. See the descriptions of the OPEN and RUN commands (in Chapter 3), which have special uses for the ESCAPE key. The ESCAPE key can be the first character in an escape sequence. For more information about escape sequences, refer to the <i>RSX-11M-PLUS and Micro/RSX I/O Drivers Reference Manual</i> or the description of the SET /ESCSEQ command in Chapter 3 of this manual.
DELETE	The DELETE key deletes the last character typed at the terminal as well as additional contiguous characters if the key is pressed repeatedly. On non-CRT terminals, the first time you press DELETE, it deletes a character and prints a backslash (\) followed by the deleted character. Subsequent deletions cause the system to print the deleted characters. Then, when you enter the first character that is not a DELETE character, the system prints a terminating backslash and follows it with that character.

For example:

```

      ---- third DELETE
      | ---- second DELETE
      || ---- first DELETE
      |||      ---- first non-DELETE
      |||      |
MISTKAE\EAK\AKE
```

The result is MISTAKE.

Table 2-4 (Cont.): Special Character Keys and Control Characters

Special Key	Description
	On a terminal that has been declared to be a CRT terminal by the MCR command SET /CRT=ttnn, the DELETE key moves the printing position one space to the left and erases any character displayed in that position. For example, to correct the word MISTKAE, press the DELETE key three times to erase E, A and K. The result is MIST. Then, type AKE to get MISTAKE. Note that when the DELETE key deletes a character in the last character position on the right of the screen, the last character appears to remain and the next-to-last character disappears. However, you can refresh the screen and verify your correction by pressing CTRL/R.
CTRL/C	Pressing CTRL/C either as the first character in a line or when the terminal is sending data causes MCR to prompt for command input with the explicit MCR prompt (MCR>). If the terminal is set to a command line interpreter (CLI) other than MCR, pressing CTRL/C displays the explicit prompt for the CLI. See Section 2.4.1 for more information on using CTRL/C to invoke the explicit MCR prompt. If a task is prompting for input when you press CTRL/C, MCR displays its explicit prompt, then returns control to the interrupted task after receiving a single line of input. (An exception occurs when an attached task specifies an asynchronous system trap (AST) for unrequested characters. In this case, CTRL/C causes an AST to occur, thereby gaining the task's attention instead of MCR's.) If a terminal has been set to "hold screen" mode by the SET /HOLD command, CTRL/C has the effect of a SET /NOHOLD command; that is, CTRL/C disables hold screen mode.
CTRL/I (or TAB)	Pressing CTRL/I (or TAB) moves the cursor or print head to the next horizontal tab stop on the line. The system establishes tab stops at every eighth character position in the line (8, 16, 24, and so on).
CTRL/K	Pressing CTRL/K causes a vertical tab by directing the system to output four line feeds (four blank lines).
CTRL/L	Pressing CTRL/L causes a form feed (but the system does not perform paging). A form feed consists of eight line feeds, so CTRL/L appears on the terminal as eight blank lines.
CTRL/O	Pressing CTRL/O alternately suppresses and resumes the display of output at your terminal. It allows you to skip over any unwanted output and then continue the display at a later point. When you press CTRL/O the first time, the system discards the output it is sending to your terminal rather than displaying it. (The system can send the output much faster when it does not have to display it.) When you press CTRL/O the second time, the system resumes displaying the output at the point it has reached in sending it (not from the point where you pressed CTRL/O the first time). If you do not press CTRL/O again, the system continues displaying the output until it reaches the end of the file.

Table 2-4 (Cont.): Special Character Keys and Control Characters

Special Key	Description
	Pressing CTRL/O may cause different system actions depending on the state of your terminal when you press it. If the terminal is attached to a task other than MCR, pressing CTRL/O suppresses the display of the task's output until you press another CTRL/O to resume the display (as described previously). However, if the terminal is not attached to another task, CTRL/O suppresses only the remainder of the line currently being displayed. Subsequent lines of output will still be displayed.
CTRL/Q	Pressing CTRL/Q after pressing CTRL/S resumes output suspended by CTRL/S.
CTRL/R	Pressing CTRL/R before pressing a line terminator (RETURN, ALT, or ESC) causes the system to retype the current line on a new line, omitting any deleted characters. You can then continue typing the remainder of the line. For example: <pre>MISTKAE\EAKE\AKE ^R MISTAKE</pre> If the current line is empty and you press CTRL/R at the explicit MCR prompt (MCR>), CTRL/R directs the system to perform a carriage return and line feed. CTRL/R is echoed as ^R.
CTRL/S	Pressing CTRL/S while the terminal is receiving output suspends additional output until you press CTRL/Q. The suspended output is merely delayed, not discarded as with CTRL/O. The combined functions of CTRL/Q and CTRL/S are convenient when using a CRT terminal.
CTRL/U	Pressing CTRL/U before typing a line terminator (RETURN, ALT, or ESC) deletes the current line. The system responds with a carriage return and line feed and displays a new prompt so that the line can be retyped. The system also displays CTRL/U (echoed as ^U) when you begin to type a command line but do not press the RETURN key before the timeout count expires. (The timeout count is specified at system generation time.) Again, a new prompt is displayed.
CTRL/X	Pressing CTRL/X clears the terminal typeahead buffer. The typeahead buffer temporarily stores input characters until the terminal driver can pass them to the task. When the typeahead buffer is full, input characters are not accepted. Pressing CTRL/X clears the buffer. CTRL/X is echoed as ^X.
CTRL/Z	Pressing CTRL/Z indicates end-of-file. It is used to indicate to system tasks such as MAC, PIP, and TKB that you are finished and the task may exit. CTRL/Z is echoed as ^Z.

2.4.3 Terminal Privilege

You can issue privileged commands from a privileged terminal only. Individual users are either privileged or nonprivileged. When you log in, the terminal assumes your privilege status. However, you can enter the SET /[NO]PRIV command (see Chapter 3) at a privileged terminal to modify the privilege status of your own and any other terminal connected to the system.

CAUTION

Be careful when using any terminal that has privileged status. Privileged commands can disrupt or severely impair system operation.

2.4.4 Attached and Unattached Terminals

A terminal is attached when all input and output are directed to or from a task other than MCR. For example, when you invoke a task (such as the text editor EDT), the task usually attaches to the terminal so that no other task can use the terminal for I/O. When you want to exit (by pressing CTRL/Z, for example), the task is detached from the terminal and subsequent input is usually directed to MCR.

Since an attached terminal directs all input to the dedicated task, you must either exit from the task or press CTRL/C to gain MCR's attention before attempting to communicate with MCR. (See Section 2.4.1 for a description of CTRL/C as a means of temporarily gaining MCR's attention.)

See the *RSX-11M-PLUS and Micro/R SX I/O Drivers Reference Manual* for more information on terminals and terminal drivers.

2.4.5 Slave Terminals

You can dedicate a terminal exclusively to one or more tasks by issuing a SET /SLAVE command that sets the terminal to slave status. (A task can also set a terminal to slave status by issuing the I/O function SF.SMC with the subfunction TC.SLV.) The difference between a slave terminal and an attached terminal is that a slave terminal rejects all unsolicited input, including CTRL/C (however, a slave terminal does accept CTRL/O, CTRL/Q, and CTRL/S). Unlike slaved terminals, attached terminals accept CTRL/C.

Until you enter another MCR command (or a task issues another I/O function) to delete the slave status, the terminal can be used only to communicate with tasks soliciting input from the terminal. Slaved terminals are often dedicated to real-time applications.

See the *RSX-11M-PLUS and Micro/R SX I/O Drivers Reference Manual* for more information on terminals and terminal drivers.

2.5 Tasks

The basic executable unit of an RSX-11M-PLUS system is the *task*. A task is either privileged or nonprivileged. A privileged task has special device and memory access rights that a nonprivileged task does not have. Because of their special access rights, privileged tasks are potentially hazardous to a running system whereas nonprivileged tasks are not.

The following sections provide a brief summary of information about tasks. Consult the *RSX-11M-PLUS and Micro/R SX Task Builder Manual* for a complete description.

2.5.1 Partitions

A task runs in a predetermined contiguous area of memory called a *partition*. A partition has the following characteristics:

- A name
- A defined size
- A fixed starting address
- A defined type

A task can run in any partition that is large enough to contain it. The Executive allocates available space to accommodate as many tasks as possible at any one time. This allocation may involve shuffling resident tasks to arrange available space into a contiguous block large enough to contain a requested task. Also, the Executive can temporarily move or *checkpoint* a resident task to a disk to make space available for another task.

For more information about partitions, shuffling, and checkpointing, see the *RSX-11M-PLUS and Micro/RSX System Management Guide* and the *RSX-11M-PLUS and Micro/RSX Executive Reference Manual*.

2.5.2 Multiprogramming

Tasks compete for system resources (including memory) on the basis of priority and resource availability. The priority of a task is determined by a number assigned when the task is created by the Task Builder, when it is installed, or when it is run. A priority number is between 1 and 250₁₀, where 250 is the highest priority. The highest priority task, which has access to and can use all the resources it needs, has control of the CPU.

A task often becomes blocked when it requests system services. For example, it can block itself as it waits for an I/O transfer to complete. While the task is blocked in this way, the Executive looks for another task to use the CPU. The chosen task will be the one that has the highest priority and whose needed resources are available.

2.5.3 Creating a Task

You perform four steps to create a task and prepare it for execution:

1. Enter a program in a supported source language (for example, FORTRAN or Macro-11) using an editor.
2. Submit the source code to the appropriate translator (assembler or compiler) to produce an object file.
3. Submit the object file to the Task Builder to produce a task image file.
4. Enter the INSTALL command to install the task image file in the system or use the install-run-remove option of the RUN command (see Section 2.5.6).

The output files that result from steps 1, 2, and 3 are each stored on a Files-11 volume.

2.5.4 Task-Naming Convention

On RSX-11M-PLUS systems, unit numbers for terminals range from 0 through 377₈. When you request a task, MCR creates a copy of the requested task and names it tskTnn, where tsk represents the 3-character task name and Tnn represents the octal unit number of the requesting terminal. (If the requesting terminal is a virtual terminal, the task name is tskVnn; if the request is from a serial bus device, the name is tskSnn.) For units 0 through 77₈, nn corresponds to the octal unit number. For units 100 through 377₈, the system defines nn as follows:

Octal Unit Number	nn
100	A0
101	A1
107	A7
110	B0
117	B7
120	C0
127	C7
130	D0
.	
.	
.	
370	X0
377	X7

To refer to the task from the requesting terminal, specify the 3-character task name (tsk).

For example, if you request PIP from TT100, MCR runs a task called PIPTA0. To abort PIPTA0 from TT100, enter the following command:

```
>ABO PIP [RET]
```

MCR aborts the correct copy of PIP. However, to abort TT100's copy of PIP from another terminal, a privileged user must either specify the full task name (tskTnn) or use the ABORT command's /TERM keyword. For example, either of the following command lines entered from a privileged terminal aborts TT100's copy of PIP:

```
>ABO PIPTAO [RET]
```

```
>ABO PIP/TERM=TT100: [RET]
```

Note that the naming convention does not apply to tasks requested by the RUN command.

2.5.5 Installing a Task

When you install a task with the `INSTALL` command or with a form of the `RUN` command, the system records a number of task parameters in a system-resident list called the System Task Directory (STD). These parameters include the name of the task and the address on the volume that contains the task image. An installed task is defined as a task that has an entry in the STD; it need not be resident in memory nor competing for system resources. The system considers a task dormant (not active) until a request is made for it to run.

The concept of dormant and active tasks is important in a real-time system. A dormant task does not use any memory outside of the Executive (it requires only an STD entry and need not be resident), yet when the task is needed to service a real-time event, the Executive introduces it into active competition for system resources. An installed task's STD entry enables this quick response because the STD contains all the parameters the system needs to retrieve the requested task.

You can run an installed dormant task by entering the `RUN` command, or another task can request the task to run by issuing an Executive directive, such as Request Task (RQST\$), Run Task (RUN\$), or Spawn (SPWN\$).

When the Executive receives a request to run a task, it performs a series of actions:

1. Places the task in active competition for system resources (including memory) with other resident tasks.
2. Allocates the necessary resources as they become free.
3. Brings the task into memory when there is space available in its partition. (The Executive will checkpoint a task with a lower priority, if there is one, to make room for the requested task.)

If another task fully occupies the partition in which the new task is to be installed and no resident task can be checkpointed, the system places the task in a queue of other requested tasks, each waiting for space to become available in its partition. Note that the number of installed dormant tasks can, and usually will, far exceed the number of active tasks.

2.5.6 Install-Run-Remove Tasks

Whenever you request a task to run with the install-run-remove option of the `RUN` command, MCR names the task `TTnn`, where `nn` is the unit number of the terminal that requested the task. To refer to task `TTnn` in a command entered from that terminal, you can omit the task name altogether. For example, if you enter the following command from terminal `TT377`:

```
>RUN $CALC [RET]
```

MCR runs the task contained in the file `CALC.TSK` listed in the system library directory and names it `TTX7`. To abort this task from `TT377`, enter the `ABORT` command without specifying a parameter, as follows:

```
>ABO [RET]
```

A privileged user can abort the task either by specifying the task name (TTnn) or by using the ABORT command keyword /TERM. For example, the following commands issued from a privileged terminal abort the task that was run from TT377 and originally referred to as \$CALC:

```
>ABO TTX7 [RET]
```

```
>ABO /TERM=TT377: [RET]
```

Note that RSX-11M-PLUS systems do not require you to perform conversions. Commands that include a task-name parameter (for example, the ABORT, RESUME, BLOCK, UNSTOP, and ALTER commands) accept a keyword that permits the octal representation of task names (/TERM=TTnnn:). For example, if task XYZ is initiated from TT106 and suspends itself, a privileged user can issue the following command line to resume execution of task XYZTA6:

```
>RES XYZ/TERM=TT106: [RET]
```

2.6 Creating and Maintaining an Account File

RSX-11M-PLUS systems provide an Account File Maintenance Program (ACNT) for creating and maintaining an account file. The account file contains entries for all the UICs that have been authorized for use in the system. One UIC can be shared by several users, each user having his or her own password.

A nonprivileged user cannot use the ACNT program to change the password for his or her account. Instead, a nonprivileged user can change his or her password by entering the SET /PASSWORD command. The SET command description in Chapter 3 of this manual tells you how to use the SET /PASSWORD command. If you try to run the ACNT program from a nonprivileged account, you will receive the following message:

```
ACNT -- Cannot be run from a non-privileged terminal
** Use SET PASSWORD to change your password **
```

For more information on ACNT, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.

Chapter 3

MCR Commands

This chapter provides a detailed description of each MCR command. The commands are presented in alphabetical order, rather than by function or privilege status. Note that the commands are alphabetized according to the abbreviated forms of their names.

The command descriptions in this chapter have a standard format consisting of the following parts:

Command Name and Function

Includes the full command name, the minimum acceptable abbreviation, and a brief description of the command function. (The abbreviation also appears in large letters at the top of the page.) Immediately following the command name, the status of the command is indicated in parentheses, using the following symbols:

- (NP) indicates a nonprivileged command.
- (P) indicates a privileged command.
- (NP,P) indicates a nonprivileged command with privileged options.
- (P,NP) indicates a privileged command with nonprivileged options.

Command Format

Describes the format of the command, including defaults, acceptable values for arguments, and the effects of each keyword on command function.

Examples

Illustrate the use of the command.

Notes

Include warnings about side effects, counteracting commands, or restrictions.

Any part that does not apply to a particular command is omitted from that command description.

If you receive a message from MCR or the Task Termination Notification Program (TKTN) after you enter a command, see Appendix A, which lists all command error messages alphabetically by the text of the message.

ABO

3.1 ABORT (NP,P)

The ABORT (ABO) command terminates execution of a specified task. Nonprivileged users can abort a nonprivileged task only if the task was requested at the same terminal from which the ABORT command is entered. Nonprivileged users can also abort privileged tasks requested from the issuing terminal. However, the task must request an exit asynchronous system trap (AST) service routine by issuing the SREX\$ form of the Executive directive Specify Requested Exit AST. Privileged users can abort any task.

When a task that has specified an exit AST service routine is aborted, it enters the routine instead of being aborted immediately. Privileged tasks enter the specified AST routine each time a valid abort request is issued. However, future exit ASTs are not queued until the first exit AST is done. Nonprivileged tasks enter the specified AST routine only once. After that, any valid attempt to abort the task succeeds.

See the *RSX-11M-PLUS and Micro/RSX Executive Reference Manual* for more information on the SREA\$ directive. Note that the issuing terminal receives no indication that the task being aborted was actually aborted or that it received the abort AST instead.

When you abort a task, the system forces an orderly termination of the specified task as follows:

- Performs *I/O rundown*. In other words, the system:
 - Cancels I/O for all non-file-structured devices.
 - Allows I/O for file-structured devices to complete and then deaccesses the files.
 - Detaches all attached devices.
- I/O rundown may take a considerable amount of time for tasks connected to a network node.
- Requests the Task Termination Notification program (TKTN) to display a message on the aborted task's issuing terminal that gives the reason for the termination. (If you specify the /PMD keyword and the task is not checkpointed, TKTN also displays the task's registers.)
 - Releases the task's partition if the task is not fixed.
 - Alters the task's running priority to 247₁₀. A task must be memory-resident to be aborted; this change in running priority returns a checkpointed task to memory quickly.

This step occurs only if the following two conditions are met:

- Support for the Executive directive Alter Priority (ALTP\$) is selected during system generation.
- The task does not request the exit AST service routine.

If you specify the optional keyword /PMD, the ABORT command forces the system to produce a *Postmortem Dump* of the aborted task. A *Postmortem Dump* is the binary representation of the contents of the memory image at the time the task was aborted. It is generated even if the task was not built with the Task Builder /PM switch or installed with the INSTALL keyword /PMD=YES. (For more information on Postmortem Dumps, see the *RSX-11M-PLUS and Micro/RSX Task Builder Manual* and the *RSX-11M-PLUS Guide to Program Development*.)

ABO

Format

ABO[RT] taskname[/PMD] [/TERM=term]

Parameter

taskname

The name of the task to be aborted. If you omit taskname, the command attempts to abort task TTnn. The variable nn is the octal unit number of the issuing terminal.

Likewise, if you specify only the first three characters of taskname, ABORT uses the default task name tskTnn.

Keywords

/PMD

Requests a Postmortem Dump of the aborted task.

/TERM=term

(Privileged keyword.) Aborts a task requested from a terminal other than the one issuing the ABORT command.

The variable term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:).

Examples

```
>ABO [RET]
Task "TT7 " terminated
Aborted via directive or CLI
```

MCR aborted the task TT7 from terminal TT7. You do not need to specify the task name to abort a task from the issuing terminal.

```
>ABO MAC [RET]
Task "MACT3 " terminated
Aborted via directive or CLI
```

MCR aborted a task called MACT3, even though the command issued from TT3 specified only the 3-letter task name.

```
>ABO MACT3 [RET]
>ABO MAC /TERM=TT3: [RET]
```

Either of these command lines aborts a task called MACT3 when issued from a privileged terminal.

```
>ASN TT7:=MYTERM [RET]
>ABO MAC /TERM=MYTERM [RET]
```

Assigns the logical name MYTERM to terminal TT7, then aborts the task MAC from that terminal using the logical name.

ACD

3.2 ANCILLARY CONTROL DRIVER (P,NP)

The ANCILLARY CONTROL DRIVER (ACD) command loads and unloads character translation routines so that the terminal driver can translate between different character sets. Character translation in the terminal driver allows terminals that conform to other standards to use the DIGITAL Multinational Character Set.

The ACD command invokes the ACD interface, which is named ACD.TSK in the system directory. The ACD task links ancillary control drivers to the terminal driver. Each ancillary control driver handles a specific character translation routine. By using the character translation routines, you can select the translation that occurs between the character set used by the system and the one used by your terminal. Also, character translation allows the system and application programs to recognize the same character set, regardless of the type of terminal you are using. Finally, character translation is transparent and is performed for all characters independent of the type of I/O.

Format

ACD function

Functions

INSTALL filename AS NUMBER ident [ASSIGN logical]

(Privileged function.) Loads the translation routine contained in the specified file. Also, assigns an identifying number or name, or both, to the routine.

filename

Specifies the file name that contains the translation routine you want to install. The translation routines are located in the system directory and have the following file names:

File Name	Translation Routine
MCSVTW.TSK	For VT100-Wx model terminals (W-Model VT100 terminals with U.S. keyboard)
MCSV.TSK	For VT100 non-W model terminals that have the DIGITAL multinational character set on an add-on ROM
MCSVTWG.TSK	For VT100-WK/WJ model terminals with German keyboard
MCSVTWF.TSK	For VT100-WF/WE series terminals with French keyboard

AS NUMBER ident

Identifies the ancillary control driver that handles the translation routine in the specified file. The value that you specify for ident overrides the internal number that is built into the ACD.

Ident can be numeric or alphanumeric. If numeric, it must be an even number, and it is a decimal number by default. If alphanumeric, it specifies a logical name that is equivalent to the ACD.

[ASSIGN logical]

Assigns an optional logical name to the ACD that handles the specified translation routine.

ACD

REMOVE NUMBER ident

(Privileged function.) Unloads the ACD that is specified by ident. The ident parameter can be either a number or a logical name. If you specified a logical name for the ACD when you installed it, the name is deleted when you remove the ACD.

LINK term TO NUMBER ident

Links the terminal specified by term to the ACD specified by ident. You can only link one ACD to a terminal at a time. If there is an ACD already linked to your terminal when you specify the LINK function, it will be unlinked so that the new ACD can be linked to the terminal. However, the same ACD can be linked to multiple terminals simultaneously.

The variable term can be a logical name assigned to the terminal or it can be the physical device and unit number for the terminal (ttnn:).

UNLINK term

Unlinks the terminal specified by term from the ACD to which it is linked.

The variable term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:).

Examples

```
>ACD INSTALL LB:[1,54]MCSVTWF.TSK AS NUMBER 18 ASSIGN FRENCH [RET]
>ACD LINK TT64: TO NUMBER 18 [RET]
```

The first command installs the character translation routine in file MCSVTWF.TSK and assigns it the number 18 and the logical name FRENCH. Only privileged users can use this command. The second command links terminal TT64 to the translation routine. Nonprivileged users can use this command. Also, instead of using the link command to connect the terminal to a routine, nonprivileged users can use the following DCL SET command:

```
>SET TERMINAL/TRANSLATION_ROUTINE=FRENCH [RET]
```

```
>ACD [RET]
ACD>UNLINK TT64: [RET]
ACD>REMOVE NUMBER 18 [RET]
```

You can invoke the explicit ACD prompt by typing ACD and a carriage return. Then you can issue ACD commands without having to begin them with ACD. The unlink command unlinks terminal TT64 from the translation routine. The final command in this series removes the translation routine that was installed as number 18. Only privileged users can remove a routine.

ACS

3.3 ALLOCATE CHECKPOINT SPACE (P)

The ALLOCATE CHECKPOINT SPACE (ACS) command allocates or discontinues a checkpoint file on disk for systems that support the dynamic allocation of checkpoint space. The disk containing the checkpoint file must be in Files-11 format. Only one checkpoint file per disk is allowed, but several disks can each contain a checkpoint file. In general, sufficient checkpoint space is twice the total amount of memory that all of the running tasks will use.

When the system needs checkpoint space, it searches the checkpoint files in the order in which they were created. If space is not available in the first file created (the primary file), it searches for space in the second file created (the secondary file), and so on.

An ACS command that discontinues a checkpoint file may not take effect immediately. If the specified file contains one or more checkpointed tasks, the tasks must be returned to memory before the system can discontinue the file. However, once the request to discontinue the file has been made, the system does not use the file for any more checkpointed tasks.

For more information on the dynamic allocation of checkpoint space, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.

Format

ACS dev/BLKS=n

Parameter

dev

Specifies a device unit containing a mounted Files-11 disk. Dev can be a logical name assigned to the device or the physical device name ddnn:. The default unit number nn is zero.

Keyword

/BLKS=n

Specifies the number of blocks on the disk to be allocated for the checkpoint file. (A block is 512 decimal bytes.) For example, the following command allocates 250₁₀ blocks for a checkpoint file on the DB disk:

```
>ACS DB:/BLKS=250. [RET]
```

When n is zero, the system discontinues the use of the checkpoint file; the file is neither deleted nor truncated. However, the use of the file is discontinued only after all of the tasks that are checkpointed to it can be brought into memory and checkpointed elsewhere.

The following command discontinues the checkpoint file on disk DB0, but the space allocated to the checkpoint file is not freed:

```
>ACS DB:/BLKS=0 [RET]
```

The system checkpoint file [0,0]CORIMG.SYS retains the space initially allocated by the ACS command so that the space will be available the next time it is needed. If you want to free

the space allocated to the system checkpoint file after its use has been discontinued, enter the following commands:

```
>ACS ddnn:/BLKS=0   
ACS -- Checkpoint file now inactive  
>PIP [0,0]CORIMG.SYS/TR 
```

To discontinue the file (so that you can truncate it), set the block size of the checkpoint file to zero. Do not issue the PIP command line until the "Checkpoint file now inactive" message has been displayed. PIP cannot determine if the checkpoint file is still in use, so issuing the command line might cause a volume corruption or a system failure.

Examples

```
>ACS DS:/BLKS=250.   
>ACS DB:/BLKS=1024. 
```

This command sequence allocates a primary checkpoint file on DS and a secondary checkpoint file on DB. The primary file is 250₁₀ blocks long and the secondary file is 1024₁₀ blocks long. When the system searches for checkpoint space, it will first look in the file on DS and then in the file on DB.

```
>ACS DS:/BLKS=0 
```

Discontinues use of the checkpoint file on DS.

ACT

3.4 ACTIVE (NP)

The ACTIVE (ACT) command displays the names of all active tasks that have as their TI the terminal from which the command was entered. The display includes the octal unit number of the terminal that initiated each task.

Format

ACT[IVE] [/keyword]

Keywords

/ALL

Displays the names of all active tasks that are currently in the system.

/TERM=term

Displays the names of all of the active tasks for the terminal specified by term. Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttn:).

Examples

```
>ACT   
MCR... (TT17:)  
ACTT17 (TT17:)  
>
```

Displays the active tasks (MCR and ACT) for the issuing terminal, TT17.

```
>ACT /ALL   
LDR... (C00:)  
RMDEMO (TT62:)  
MCR... (TT17:)  
F11ACP (C00:)  
DSOOF1 (C00:)  
DS01F1 (C00:)  
LSTACP (C00:)  
DB03F1 (C00:)  
AT.V6 (VT6:)  
QMG... (C00:)  
HRC... (C00:)  
PIPTA1 (TT101:)  
>
```

Displays all the active tasks currently in the system.

```
>ACT /TERM=TT107:   
LBRTA7 (TT107:)  
>
```

Displays the active task for terminal TT107. Note that ACT is not active for this terminal, because the ACTIVE command was issued from terminal TT17.

ACT

```
>ASN TT107:=MYTERM [RET]  
>ACT /TERM=MYTERM [RET]  
LBRTA7 (TT107:) [RET]  
>
```

Assigns the logical name MYTERM to terminal TT107, then displays the active task for that terminal using the logical name.

ALL

3.5 ALLOCATE (NP,P)

The ALLOCATE (ALL) command establishes a specified device as your private device. Device allocation prevents other nonprivileged users from accessing a device. (For more information on accessing a device, see Chapter 2.) Only the device's owner or a privileged user can access or deallocate a private device. Mounted devices, public devices, or other users' private devices cannot be allocated.

The system automatically deallocates your private devices when you issue the BYE command.

You can also allocate a device to a specific terminal (such as a virtual terminal) rather than to the issuing terminal (TI).

Format

ALL[OCATE] dd[nn:] [=l1nn:] [/keyword]

Keywords (Mutually Exclusive)

/TERM=term

/TYPE=dev

Parameters

dd

The device mnemonic of the device that you want to allocate.

nn:

The optional unit number of the device. If you omit the number and the colon, the system allocates the first available logical unit of the dd-type device.

If you include the number and the colon, you can use a logical name to specify the device you want to allocate.

l1nn:

The optional name of a logical device, which the system creates and assigns to the physical device being allocated. (This is a local assignment created by the ASSIGN command.) Specifying a logical device name is helpful when using the /TYPE keyword in an indirect command file.

Keyword Descriptions

/TERM=term

Specifies the terminal to which the device is to be allocated.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:).

/TYPE=dev

Specifies the type of device that you want when you specify a generic allocation. Instead of allocating a specific device, the command allocates the first available device of the specified type. Dev can be a logical name assigned to the device or the physical device name (ddnn:).

ALL

When you use the /TYPE keyword, specify the device type only. Do not include a unit number or a colon in the specification.

The following devices are supported by the /TYPE keyword:¹

Devices Supported by the ALLOCATE /TYPE Command						
ML11	RD32	RK07	RP02	RX02	TS11	TU80
RA60	RD51	RL01	RP03	RX33	TSV05	TU81
RA80	RD52	RL02	RP05	RX50	TU45	
RA81	RD53	RM02	RP06	TE16	TU56	
RC25	RD54	RM03	RS03	TK50	TU58	
RCF25	RK05	RM05	RS04	TM02	TU60	
RD31	RK06	RM80	RX01	TM03	TU77	

Examples

```
>ALL DK2: [RET]
```

Allocates disk DK2.

```
>ASN DK2:=MYDEV [RET]
```

```
>ALL MYDEV [RET]
```

Assigns the logical name MYDEV to DK2:, then allocates the device using the logical name.

```
>ALL DK1:/TERM=VT1: [RET]
```

Allocates disk DK1 to the virtual terminal VT1.

```
>ASN VT1:=MYTERM [RET]
```

```
>ALL DK1:/TERM=MYTERM [RET]
```

Assigns the logical name MYTERM to the virtual terminal VT1, then allocates disk DK1 to the virtual terminal VT1 using the logical name.

```
>ALL DK=XX0: [RET]
```

```
ALL -- DK3: now allocated
```

Allocates the first available logical unit of DK (in this case, disk DK3, since units 0, 1, and 2 were allocated previously or are public devices) and assigns it the logical name XX0.

```
>ALL DB/TYPE=RP06 [RET]
```

Allocates any available RP06 disk.

¹ The formatter name appears only if the drive is not a TU45/TU77/TE16.

ALT

3.6 ALTER (P)

The ALTER (ALT) command changes the static or running priority of an installed task.

Format

ALT[ER] taskname /keyword[s]

Keywords

/PRI=n

/RPRI=n

/TERM=term

Parameter

taskname

The name of the task whose priority is to be altered.

Keyword Descriptions

/PRI=n

Changes the static and running priority of the task.

/RPRI=n

Changes the task's running priority only. The priority n can be from 1 to 250₁₀. The system assumes that the priority value you specify is an octal number, unless you include a period after the value.

(This keyword is valid only in systems that support the Executive directive Alter Priority. For more information, see the *RSX-11M-PLUS System Generation and Installation Guide*.)

/TERM=term

A privileged keyword that alters the priority of a task not initiated from the issuing terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:).

Examples

```
>ALT TST/PRI=100. [RET]
```

Alters the static and running priority of task TST to 100₁₀.

```
>ALT TST/RPRI=50 [RET]
```

Alters the running priority of task TST to 50₈.

```
>ALT ABC/PRI=100./TERM=TT6: [RET]
```

Alters the static and running priority of task ABCT6 to 100₁₀.

ALT

```
>ASN TT6:=MYTERM [RET]  
>ALT ABC/PRI=100./TERM=MYTERM [RET]
```

Assigns the logical name MYTERM to the terminal TT6. Then, using the logical name, alters the static and running priority of task ABCT6 to 100₁₀.

ASN

3.7 ASSIGN (NP,P)

The ASSIGN (ASN) command assigns, deletes, or displays logical device assignments. A logical device assignment associates a name that you select (a logical device name) with a physical device, a pseudo device, or another logical device. When you assign a logical device name to a pseudo device or to another logical device, the system equates your assignment to the equivalent physical device.

3.7.1 Logical Assignments

On systems without extended logical name support, there are three levels of logical assignments: local assignments, login assignments, and global assignments. On systems with extended logical name support, there are two additional levels of logical assignments: task assignments and group assignments. The following list provides brief descriptions of each level of logical assignments:

- *Task assignments* are created by the system for individual tasks. Task assignments are deleted when the task completes execution.
- *Local assignments* are assignments that you assign or delete for any terminal on which you are logged in. Local assignments apply only to tasks initiated from the terminal used to make the assignments. Also, local assignments last only as long as the login session in which they are made. That is, the system automatically deletes a session's local assignments when you log out. If you want to make the same local assignment whenever you log in, you can enter the assignment in your login command file.

Both privileged and nonprivileged users can assign or delete local assignments.

- *Login assignments* are made automatically by the system each time you log in. An example of a login assignment is the logical name SY. If the device you log in to is different than the default system device, the system assigns the logical name SY to your login device. Likewise, systems with extended logical name support assign the logical name SYS\$LOGIN to your login device and directory.

The system keeps track of login assignments by account, so you can use login assignments regardless of which terminal you use to log in to the system. However, the login assignments for an account apply only to tasks initiated from that account.

Only privileged users can assign and delete login assignments.

- *Group assignments* apply to all users with the same User Identification Code (UIC) group number under which you create the logical name assignment. Only privileged users can assign or delete group assignments.
- *Global assignments* apply to all tasks running in the system. Only privileged users can assign or delete global assignments.

The system uses logical assignments in the following order: task, local, login, group, and global. For example, if you make a local assignment using a logical device name that is already used in a login assignment, the system uses the local assignment. When you delete the local assignment, the system reverts to using the login assignment.

If a logical assignment consists of a 2-letter mnemonic followed by a number less than or equal to 377₈, it is treated as a logical device assignment. If the assignment consists of a 2-letter mnemonic followed by a number greater than 377₈, it is treated as a logical name assignment.

3.7.2 Logical Device Assignments

When you assign logical device names, use the same syntax that you use for physical device names. That is, a logical device name consists of a 2-character alphabetic ASCII name, an optional unit number one or two digits long, and a mandatory colon (:). The two characters in the logical device name can be equivalent to a standard RSX-11M-PLUS physical device name (for example, DK), or they can be two letters picked at random (for example, HI).

When you install a task or when the system processes the Executive directive Assign LUN (ALUN\$), the system searches for a specified device by scanning the logical device name table first and then the physical device name table. The system equates a specified device name to the first matching table entry that it finds. Therefore, if a logical device name is identical to a physical device name, the logical device name has precedence.

3.7.3 Logical Name Assignments

If your system manager selects extended logical name support during system generation, the ASSIGN command can make logical name assignments in addition to logical device assignments. Logical name assignments allow you to choose your own logical names for file specifications as well as for devices.

If your system includes extended logical name support, the ASSIGN command can assign, delete, or display logical name assignments in addition to logical device assignments. Logical name assignments are more flexible than logical device assignments. That is, a logical name assignment can associate a name that you select with any of the following:

- A physical, pseudo, or logical device
- Part of a Files-11 file specification
- All of a Files-11 file specification (including the device name and the directory)
- Another logical name

The name or specification for which you are substituting a logical name is called an *equivalence name*. For example, in the following command line, MY_DIRECTORY is a logical name to which the physical device and directory DB1:[JK] are equivalent:

```
>ASN DB1:[JK]=MY_DIRECTORY
```

3.7.4 Logical Name Tables

The system keeps logical names and their corresponding equivalence names grouped in pairs in four *logical name tables*, as follows:

- The *task logical name table* contains logical name entries that are created for an individual task using the Executive directive Create Logical Name (CLOG\$ or CLON\$). These entries remain in the table only for as long as the task is running. The logical names are removed from the table when either the task has exited or the Executive directive Delete Logical Name (DLOG\$ or DLON\$) has been issued. (See the *RSX-11M-PLUS and Micro/RSX Executive Reference Manual* for information on the CLOG\$, CLON\$, DLOG\$ and DLON\$ directives.)

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- The *session logical name table* contains logical name entries that are local to a particular user (local and login logical names). By default, the ASN and DFL commands place a logical name in the session logical name table.
- The *group logical name table* contains logical name entries that are qualified by a group number. These entries can be accessed only by tasks that execute with the same group number in their protection UICs as the user who assigned the logical name. To make an entry in the group logical name table, use the /GR keyword. You must be a privileged user to make or delete entries in the group logical name table.
- The *system logical name table* contains entries that can be accessed by any task in the system (that is, global assignments). To make an entry into the system logical name table, use the /SYSTEM or /GBL keywords. You must be a privileged user to make or delete entries in the system logical name table.

3.7.5 Logical Name Translation

When the system encounters a logical name, it searches the logical name tables in this order: task, session, group, and system. The system uses the first match it finds as the equivalence name for the logical name. When it finds an equivalence name, the system substitutes the equivalence name for the logical name in the file specification. This is called *logical name translation*.

Logical name translation can be iterative. *Iterative translation* means that the system repeats the process of logical name translation until it resolves a logical name to its original equivalent device or file specification. For example:

```
>ASN DB0:=JK: [RET]
>ASN JK=A [RET]
```

The first ASN command assigns the logical name JK to the device DB0. The second ASN command assigns the logical name A to the equivalence name JK. In subsequent commands or executable programs, you can refer to the logical name A. For example:

```
>PIP A/LI [RET]
```

When the system translates the logical name A, it finds the equivalence name JK. The system then checks to see if the portion of the equivalence name to the left of the colon (if there is a colon) is a logical name. If it is a logical name (as JK is in this example), the system translates that logical name also. When the logical name translation is complete, the translated device specification is DB0.

The system limits logical name translation to ten levels. If you define more than ten levels or if you create a circular definition of a logical name, an error will occur if you try to use the logical name iteratively.

If you are ever in doubt about the equivalence name assigned to a logical name, you can use the ASSIGN command to display the current assignments by typing ASN and then pressing the RETURN key. However, the ASN command does not display task logical assignments.

3.7.6 Syntax Rules for Logical Assignments

When you make logical assignments with the ASSIGN command, the following syntax rules apply:

- To use special characters (such as an asterisk) in an *equivalence name*, enclose the name in quotation marks. The ASSIGN command retains the quotation marks as part of the name. However, if you enclose a *logical name* in quotation marks, the ASSIGN command considers the logical name invalid.
- You cannot use a colon as the first character of a logical name, and you cannot embed a colon within a logical name. With those exceptions, you can use any combination of the following ASCII characters in a logical name:
 - The uppercase letters A through Z
 - The numbers 0 through 9
 - The dollar sign (\$), the colon (:), and the underscore (_)
- If you specify a colon at the end of a logical name, the ASSIGN command removes the colon before it stores the name in the logical name table. When you display a logical name that you terminated with a colon, it is shown with the colon removed. For example:

```
>ASN DB:=JK: [RET]
>ASN [RET]
JK = DB:
```

However, you can include the colon in subsequent commands. For example:

```
>DEV JK: [RET]
DB0: Public Mounted Loaded Online Type=RP06
```

That is, the ASSIGN command treats the terminating colon as a delimiter, and not as part of the logical name. This action contrasts with that of the DEFINE LOGICALS (DFL) command, which retains the colon as part of the logical name (see Section 3.22).

- When you assign a logical name to another logical name, you can substitute the first logical name for a device name in a file specification. When you use the first logical name as the equivalence name in the second ASSIGN command line, terminate the name with a colon.
- The ASSIGN command allows you to substitute logical names for all or part of a proper Files-11 file specification. However, the ASSIGN command checks an equivalence name that is a device or file specification for proper syntax. If you do not correctly specify the device or file specification, the ASSIGN command fails.

When you specify an equivalence name, use the punctuation marks that are required by the syntax of the equivalent directory, device, or file specification. In other words:

- If the equivalence name is a directory specification, include the brackets ([]).
- If the equivalence name is a device name, terminate it with a colon.
- If the equivalence name is a device and directory specification, or a full file specification, do not terminate it with a colon.

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- If you include only part of a file specification in a logical name, the name must be the leftmost component of the specification. You can assign a logical name to a node name, to a device name, or to a node name and device name together. Then, you can use the logical name in a file specification. However, if you assign a logical name to a directory specification and then try to use the name in place of the directory in a file specification along with a device name, you will receive an error message.

For more information on logical names, see the description of the DEFINE LOGICALS (DFL) command.

3.7.7 ASSIGN Command Formats

The ASSIGN (ASN) command has three types of formats:

Format	Function
ASN eenn:=ll[nn]:[/keyword(s)]	Makes logical assignments
ASN =[ll[nn]:[/keyword]	Deletes logical assignments
ASN [/keyword]	Displays logical assignments

When you make a *logical name assignment*, you do not need a colon to terminate an equivalence name or a logical name. However, when you make a *logical device assignment*, the colons are part of the required syntax. If you do not include them, the device assignment will not be translated iteratively to the original physical device.

Making Logical Assignments

Format 1 makes a local logical assignment for the terminal from which it is entered. If you are a privileged user, you can use this format to make login, group, or global assignments. In addition, you can make login assignments for other terminals.

If you terminate both the equivalence name and the logical name with colons, the equivalence name is translated iteratively until it is resolved to the corresponding physical device. This action is automatic and transparent to you.

Format 1

```
ASN eenn:=ll[nn]:[/keyword[s]]
```

Keywords

```
/TERM  
/LOGIN  
/GR  
/GBL  
/SYSTEM  
/FINAL
```

Parameters

eenn:

The equivalence name (the name or specification to which you are assigning a logical name).

ll:

The logical name (the character string that you are assigning to the equivalence name string.)

nn

An optional 1- or 2-digit unit number.

Keyword Descriptions

/TERM=term

Makes a logical assignment for the terminal specified by term. The logical assignment cannot be made to a terminal that is not logged in.

The logical assignment term specifies the physical device and unit number for the terminal (ttnn:). It can also specify the logical name assigned to the terminal, for example:

/TERM=MYTERMINAL

/LOGIN

(Privileged keyword.) Makes a login logical assignment for the terminal from which you enter the command, unless you specify another terminal.

/GR[=gnn]

(Privileged keyword.) Makes a group logical assignment for all users who share the protection UIC group number gnn. If you omit the argument =gnn, /GR makes a group logical assignment for all users who share the group number under which you are entering the ASN command (your current UIC group number).

/GBL

/SYSTEM

(Privileged keyword.) Makes a global (system-wide) logical assignment. A global assignment is entered into the system-level translation table, and it applies to all tasks running in the system.

/FINAL

(Privileged keyword.) Specifies that the equivalence name string should not be translated iteratively; that is, the logical name translation should terminate with the current equivalence string.

Deleting Logical Assignments

Format 2 deletes all local logical assignments for the terminal from which it is entered. When entered with a specific logical assignment, it deletes that specific assignment. When entered with keywords, it deletes all of the logical assignments of the specified type. Nonprivileged users can only delete local logical assignments for their own terminal, but privileged users can delete other types of assignments or assignments for other terminals.

ASN

Note

When you delete logical assignments with the ASN command, the command deletes assignments made by the DFL command as well.

Format 2

ASN =[ll [nn] :] [/keyword]

Keywords

/TERM
/LOGIN
/GR
/GBL
/SYSTEM

Parameters

ll:

The logical name being deleted.

nn

The optional 1- or 2-digit unit number.

Keyword Descriptions

/TERM=term

(Privileged keyword.) When specified with a logical name, deletes a specific local logical name for the terminal term. When specified without a logical name, /TERM deletes all local logical assignments for the specified terminal.

The logical assignment term specifies the physical device and unit number for the terminal (ttnn:). It can also specify the logical name assigned to the terminal, for example:

/TERM=MYTERMINAL

/LOGIN

(Privileged keyword.) Deletes a specific login logical assignment when you specify one. If you specify /LOGIN without the parameters llnn: or term (that is, ASN =/LOGIN), /LOGIN deletes all login logical assignments for the terminal from which you enter the ASN command.

/GR[=gnn]

(Privileged keyword.) Deletes group logical assignments for all users who share the protection UIC group number gnn. If you omit the argument =gnn, /GR deletes group logical assignments for all users who share the group number under which you are entering the command (your current UIC group number). If you specify a logical name, /GR deletes a specific group logical name.

/GBL
/SYSTEM

(Privileged keyword.) Deletes a specific global logical name when specified along with the logical name. When specified without a logical name, /GBL or /SYSTEM deletes all global assignments.

Displaying Logical Assignments

When entered without a keyword, Format 3 displays the local and login logical assignments for the terminal issuing the command. When entered with a keyword, it displays other types of logical assignments. If there are no logical assignments of the specified type, the system returns the CLI prompt instead of a display.

Nonprivileged users can display the logical assignments of their terminal, their group, and the system by entering the /ALL keyword (ASN /ALL). Privileged users can display the logical assignments of other terminals by using the /TERM keyword (ASN /TERM).

Format 3

ASN [/keyword]

Keywords

/ALL
/TERM
/GR
/GBL
/SYSTEM

Keyword Descriptions

/ALL

Displays all of the local, login, and group logical assignments for the terminal from which you enter the command, as well as all system logical assignments.

/TERM=term

(Privileged keyword.) Displays all of the local and login logical assignments of the specified terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttn:).

/GR[=gnn]

(Privileged keyword.) Displays all of the group logical assignments for the group number under which you enter the command, unless you specify another group number. If you specify the group number gnn, /GR displays the group logical assignments for that group.

/GBL
/SYSTEM

(Privileged keyword.) Displays all system-level logical assignments.

ASN

Examples

```
>ASN DB2:=JK: [RET]
```

Assigns the logical device name JK: to device DB2:. This is a local assignment for the issuing terminal during the current login session.

```
>ASN DB3:=JS:/LOGIN/TERM=TT12: [RET]
```

Assigns the logical device name JS: to device DB3:. This is a login assignment for terminal TT12:. Only privileged users can make login assignments. (Note that TT12: must be logged in to the system for this command to succeed.)

```
>ASN RUFUS::DR1:[101,40]=MYDIR [RET]
```

Assigns the logical name MYDIR to the node, device, and directory specification. This is a local assignment for the issuing terminal during the current login session. However, if you want to assign the same logical name to your device and directory each time you log in, you can enter the assignment into your login command file.

```
>ASN DB1:=OUR_DEVICE/GR [RET]
```

Assigns the logical name OUR_DEVICE to device DB1:. This is a group assignment for all users with a UIC group number that matches the number under which the assignment was made. Only privileged users can make group assignments.

```
>ASN DB1:=SY:/GR=7/FINAL [RET]
```

Assigns the logical name SY: (the logical name for the default user disk) to device DB1: for group number 7 and specifies that the first translation of the logical name should be final. Thus, the system will stop translating SY: at DB1: for all users in group 7.

```
>ASN DB2:=JK:/GBL [RET]
```

Assigns the logical device name JK: to device DB2:. This is a global assignment for all system users and all tasks running in the system. Only privileged users can make global assignments.

```
>ASN DB=JK: [RET]
```

ASN -- Invalid logical name

If you specify a colon at the end of a logical name, you must also include a colon in the equivalence string.

```
>ASN [RET]
```

```
JK DB2: Local TI - TT12:
JS DB3: Login TI - TT12:
```

Displays all of the local and login logical assignments for the terminal from which it is entered. Note that the assignments are displayed with the logical name first and the equivalence name second, whereas when you make logical assignments, you specify the equivalence name first.

ASN

If the terminal does not have any local or logical assignments, the command line prompt (>) is returned without a display.

```
>ASN /ALL [RET]
SY  DR5:  Global
JK  DB2:   Local TI - TT12:
JS  DB3:   Login TI - TT12:
```

Displays the following:

- All of the global logical assignments in the system
- The group logical assignments for this user's group
- Local and login assignments for the terminal from which the command was entered

```
>ASN /GR [RET]
SY = DB1: (Group=7, Final, TT12:)
OUR_DEVICE = DB1: (Group=7, Final, TT12:)
```

Displays all of the group logical assignments for the UIC group number under which it is entered.

```
>ASN = [RET]
```

Deletes all local logical assignments for the terminal from which it is entered.

```
>ASN =JK: [RET]
```

Deletes the local logical device name JK:.

```
>ASN =JS:/LOGIN/TERM=TT12: [RET]
```

Deletes the login logical device name JS: for terminal TT12:. Only privileged users can delete login assignments.

```
>ASN =OUR_DEVICE/GR [RET]
```

Deletes the group logical assignment OUR_DEVICE. Only privileged users can delete group logical assignments.

```
>ASN =JK:/GBL [RET]
```

Deletes the global logical assignment JK:. Only privileged users can delete global logical assignments.

```
>ASN =/GBL [RET]
```

Deletes all global logical assignments.

ATL

3.8 ACTIVE TASK LIST (NP)

The ACTIVE TASK LIST (ATL) command displays the name and status of all active tasks in the system or the status of a particular task. The display provides information useful for determining the exact status of each active task. The display contains the following information for each task:

- Task name
- Task control block (TCB) physical address (in octal)
- Partition name
- Partition control block (PCB) physical address (in octal)
- Partition base and limit physical addresses (in octal)
- Task's running priority and default priority
- Task status flags
- TI terminal physical device-unit
- Nonbuffered and buffered I/O counts (in decimal)
- Task local event flags
- Task registers and Processor Status Word (memory-resident tasks only)
- Displays the name of the parent task (if one exists) as well as the task blocking count

The displayed task status flags are from the Task Control Block (TCB) or the Partition Control Block (PCB). The ATL command displays the name of the bit if the bit is set to 1 at the time of the display; bits set to 0 are not displayed. Flag names are three characters long and correspond to the last three characters of the mnemonic defining the status bits. For example, AST represents the bit T2.AST and indicates that the task is processing an Asynchronous System Trap. Names prefixed by a minus sign (-) indicate that the bit represents the complement of the condition. For example, -CHK indicates that the task cannot be checkpointed.

If the task is not in memory (the OUT flag is displayed), the contents of the Program Counter (PC), the Processor Status Word (PSW), and the registers are not displayed.

Table 3-1 provides a brief description of each task status flag.

Table 3-1: Task Status Flags

Status Flag	Description
ABO	Task is being aborted.
ACP	Task is an Ancillary Control Processor (ACP).
AST	Task is processing an AST.
BLK	Task is blocked by a command line interpreter (CLI) command.
CAF	Task cannot be checkpointed due to checkpoint space allocation failure.

Table 3–1 (Cont.): Task Status Flags

Status Flag	Description
CAL	Checkpoint space is allocated in task image.
-CHK	Task cannot be checkpointed.
CIP	Task is blocked for checkpoint in progress.
CKP	Task is blocked for checkpoint in progress.
CKR	Task checkpoint request pending.
CLI	Task is a CLI task.
CMD	Task is executing a CLI command.
DFB	Task was installed with deferred binding enabled. (Binding of the header to the Executive data structures is deferred until the task is loaded.)
DSP	Task was built with separate I- and D-space.
DST	Task ASTs are disabled.
-EXE	Task is not in execution.
FMP	Task uses the fast-mapping feature of the Executive.
FXD	Partition is fixed in memory.
GFL	Task has its group global event flags locked.
HLT	Task is being halted.
LDD	Task's load device has been dismounted.
MCR	Task was activated by MCR.
MPC	Task has mapping change and outstanding I/O.
MSG	Task aborted, waiting for TKTN message.
MUT	Task is a multiuser task.
NET	Network protocol.
NSD	Task cannot receive data (no send data allowed).
-PMD	Suppress Postmortem Dump on SST abort.
OUT	Partition is out of memory.
PRO	Task has prototype TCB.
PRV	Task is privileged.
PRVD	Task was privileged but has been set nonprivileged.
RDN	Task I/O is being run down.
REM	Task is to be removed on exit.

ATL

Table 3–1 (Cont.): Task Status Flags

Status Flag	Description
REX	Task has abort AST effected or in progress.
ROV	Task has resident overlays.
RST	Task is restricted (used by layered software).
RUN	(RSX–11M–PLUS multiprocessor systems only.) Task is executing on another processor.
SEF	Task is stopped for an event flag or flags.
SIO	Task is waiting for terminal I/O.
SLV	Task is slaved.
SNC	Task uses commons for synchronization.
SPM	Task is reserved for Software Performance Monitor (SPM-11).
SPN	Task is being suspended.
SPNA	Task was suspended prior to AST.
STP	Task is stopped for terminal input.
STPA	Task was stopped prior to AST.
WFR	Task is in a “wait-for” state.
WFRA	Task was in a “wait-for” state prior to AST.
XHR	Task has an external header.

Format

ATL [taskname]

Parameter

taskname

The name of the task about which you want to display information. If you do not specify a task name, ATL displays information about all the tasks currently installed in the system.

Example

```

>ATL [RET]
...LDR 112050 SYSPAR 112404 00253100-00255600 Pri - 248. Dpri - 248.
  Status: -CHK STP -PMD PRV NSD FXD
  TI - C00: IOC - 0. BIO - 0. Eflg - 000001 000000 PS - 170000
  PC - 120354 Regs 0-6 120212 010364 177777 107646 074714 107614 120166
RMDTTO 053550 GEN 046020 01036700-01065600 Pri - 225. Dpri - 225.
  Status: -CHK WFR -PMD PRV MCR
  TI - TTO: IOC - 0. BIO - 0. Eflg - 000021 040000 PS - 170010
  PC - 125234 Regs 0-6 000000 136257 132066 000000 136321 134560 121166
F11ACP 111550 GEN 067150 01164600-01230600 Pri - 149. Dpri - 149.
  Status: -CHK STP ACP PRV NSD MVT XHR
  TI - C00: IOC - 0. BIO - 0. Eflg - 000002 000001 PS - 170000
  PC - 135244 Regs 0-6 000010 000066 000016 000000 067420 111550 120244
MCR... 110160 SYSPAR 114514 00202600-00212600 Pri - 160. Dpri - 160.
  Status: -CHK STP -PMD PRV CLI NSD FXD
  TI - TT51: IOC - 0. BIO - 0. Eflg - 000001 040000 PS - 170000
  PC - 122436 Regs 0-6 000000 120476 122032 120432 010554 043552 120366

```

This display contains information about the Loader (. . . LDR), the Resource Monitoring Display (RMD), the Files-11 Ancillary Control Processor (F11ACP), and MCR. The information is summarized in Table 3-2.

ATL

Table 3–2: Active Task List Display Summary

	Task Name			
	... LDR	RMDTT0	F11ACP	MCR ...
Information				
TCB address	112050	053550	111550	110160
Partition name	SYSPAR	GEN	GEN	SYSPAR
PCB address	112404	046020	067150	114514
Partition base	00253100	01036700	01164600	00202600
Partition limit	00255600	01065600	01230600	00212600
Running priority	248.	225.	149.	160.
Default priority	248.	225.	149.	160.
Status flags	-CHK, STP -PMD, PRV NSD, FXD	-CHK, WFR -PMD, PRV MCR	-CHK, STP ACP, PRV NSD, MVT XHR	-CHK, STP -PMD, PRV CLI, NSD FXD
TI device-unit	CO0	TT0	CO0	TT51
Nonbuffered I/O counts (IOC)	0.	0.	0.	0.
Buffered I/O counts (BIOC)	0.	0.	0.	0.
Event flags (EFLG)	000001 000000	000021 040000	000002 000001	000001 040000
Processor Status Word (PS)	170000	170010	170000	170000
Program Counter (PC)	120354	125234	135244	122436
Task registers	(R0 to R6)	(R0 to R6)	(R0 to R6)	(R0 to R6)
Parent task	None	None	None	None
Blocking count	None	None	None	None

3.9 BLOCK (NP,P)

The BLOCK (BLK) command blocks an installed task. It declares to the system that the specified task is not eligible to execute or to compete for memory.

Nonprivileged users can block only active tasks requested from the issuing terminal. Privileged users can block any task. However, the following tasks cannot be blocked: ACP tasks, CLI tasks, tasks that are being aborted, and tasks that are exiting.

Blocking a task sets the block bit in the Task Control Block (TCB). When a task's block bit is set, the task is ineligible to compete for system resources. To clear the block bit, enter the MCR command UNBLOCK or, if the task is active, abort the task. Unblocking or aborting a task are the only ways to cancel the BLOCK command.

A blocked task has an effective priority of zero. If the task can be checkpointed, any task can checkpoint it. Once checkpointed, the blocked task is no longer eligible to compete for space in memory. A blocked task that is subsequently aborted is automatically unblocked by the system. If the task had previously issued the Executive directive Specify Requested Exit AST (SREA\$ or SREX\$), the task is unblocked and the AST is declared for it.

Format

```
BLK [taskname] [/TERM=term]
```

Parameter

taskname

The name of the task to be blocked. If you do not specify the task name, the command attempts to block the task requested from the issuing terminal (task TTnn).

Keyword

/TERM=term

A privileged keyword that specifies that a task initiated from the specified terminal should be blocked.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:).

Examples

```
>BLK TST [RET]
```

Blocks task TSTT36, prohibiting it from further execution. TT36: is the terminal from which the task was initiated.

```
>BLK MAS/TERM=TT23: [RET]
```

Blocks task MAST23.

BOO

3.10 BOOT (P)

The BOOT (BOO) command bootstraps a system that exists as a task image file on a Files-11 volume. It provides a convenient means of terminating one system and initiating another, especially on minimum hardware configurations. For example, BOOT can be used to terminate a real-time system and initiate a program development system.

The BOOT command immediately terminates the system currently in operation.

Bootable systems, such as RSX-11M and RSX-11S, are special task image files that have no task headers.

Format

BOO[T] [filespec]

Parameter

filespec

A standard RSX-11M-PLUS file specification in the following format:

dev:[ufd]filename.type;ver

This specifies the file from which a new system is to be loaded.

Defaults applied to the file specification are as follows:

Field	Default Value
dev:	The system device LB:
[ufd]	The directory under which BOOT is running
filename	RSX11M
type	SYS
version	The latest version

Note that BOOT is the only command that allows you to omit the file name.

The following devices are bootable:

RSX-11M-PLUS Bootable Devices				
ML11	RC25	RK05/06/07	RM80	RX33
RA60	RD31/32	RL01/02	RP02/03	RX50
RA80/81	RD52/53/54	RM02/03/05	RP04/05/06	

System images saved on the following devices are considered to be compatible; that is, a system image saved on one of the devices can be transported with the Backup and Restore Utility (BRU) to any of the other devices. (See the *RSX-11M-PLUS Utilities Manual* for information on BRU.)

Compatible Devices for Saving System Images				
ML11	RC25	RD51/52/53/54	RM80	RP06
RA60	RCF25	RK06/07	RP04	RX33
RA80/81	RD31/32	RM02/03/05	RP05	RX50

Then, the saved images can be booted from the bootable device (for more information, see the description of the SAVE command).

If support for the Executive Debugging Tool (XDT) was included during system generation, XDT displays the following when you boot an RSX-11M-PLUS operating system for the first time:

```
XDT: baselevel
XDT>
```

Baselevel is the base level number for the system.

Pressing the G key in response to the prompt returns control to RSX-11M-PLUS and causes the system to come up normally. After the system has been saved, XDT does not reappear unless a user sets a breakpoint or issues the BRK command, or unless the system crashes. (See the *RSX-11M-PLUS and Micro/RSX XDT Reference Manual* for a description of XDT.)

Example

```
>BOO TEST [RET]
```

Bootstraps from the system device the system contained in the file TEST.SYS.

Restrictions

1. When you boot an unsaved system boot, the boot device physical unit number (unit plug) must equal the logical unit number (LUN) in the unsaved system. Otherwise, the initial SAVE command line will not work.
2. It is not possible to correctly boot a large unsaved Executive under the following circumstances:

Booting an RSX-11M-PLUS system from an unmapped RSX-11M system

If you bootstrap an Executive that has anything fixed in memory above 27.5K words (for example, drivers, tasks, or commons), the Executive is not read into memory. This causes problems when you try to run the system, because BOOT moves the bootstrap code (in an unmapped system) to the top of memory minus 0.5K (that is, 28K minus 0.5K, or 27.5K). BOOT can only read in the unsaved system image up to this location (27.5K); anything above 27.5K is not read.

Booting a 22-bit RSX-11M-PLUS system from an 18-bit RSX-11M system

If you bootstrap a system image that is larger than the running system, part of the image is not read into memory. BOOT only reads in the image up to the beginning of the bootstrap code. If the Executive has anything fixed in memory above this location, BOOT does not read it in and the new system cannot run properly.

BRK

3.11 BREAKPOINT TO EXECUTIVE DEBUGGING TOOL (P)

The BREAKPOINT TO EXECUTIVE DEBUGGING TOOL (BRK) command passes control to the Executive Debugging Tool (XDT) if XDT has been generated or loaded into the system. If XDT is not in the system, the command has no effect. (See the *RSX-11M-PLUS and Micro/RSX XDT Reference Manual* for a description of XDT.) If successful, the BRK command halts all system activity. Proceeding from a breakpoint normally restores the system to the state that existed when you entered the BRK command.

When XDT gains control, it prints the following message on the console terminal:

```
BE:  nnnnnn
XDT>
```

All XDT commands are available for use in debugging the Executive or user-written drivers. To return control to MCR, type the letter P; MCR then prompts with a right-angle bracket (>).

You must issue the BRK command from the console terminal.

Format

BRK

Example

```
>BRK [RET]
BE: 124560
XDT>P
>
```

Halts the system and passes control to XDT. Typing P at the XDT prompt (XDT>) returns control to MCR.

3.12 BROADCAST (NP,P)

The BROADCAST (BRO) command displays a specified message at one or more terminals, as follows:

- A privileged user can display a message at all terminals connected to the system (BRO ALL) or at all terminals logged in to the system (BRO LOG).
- Both privileged and nonprivileged users can display a message at any one terminal.

You can also create an indirect command file to contain one or more lines of input to the command. Each line specifies the target terminal and the message to be broadcast. (Privileged users can broadcast a message simultaneously to all terminals.) To use the command file, enter the command name followed by an at sign (@) and the command file specification.

If the message cannot be broadcast within 20 seconds, the system displays the following message at the issuing terminal:

```
BRO -- Message failed to reach ttnn:
```

If a privileged user specifies multiple terminals (ALL: or LOG:), the system returns one error message for each busy terminal.

If users enter the SET /NOBRO command, they will not receive any messages sent by the BRO command. Instead, the user sending the message receives an error message.

Formats

```
BRO[ADCAST] ttnn:message
```

```
BRO[ADCAST] @filespec
```

```
BRO[ADCAST] ALL:message (Privileged format)
```

```
BRO[ADCAST] LOG:message (Privileged format)
```

```
BRO[ADCAST] username message (Systems with Resource Accounting only)
```

Note

Each format can be entered on two successive lines by pressing the RETURN key immediately after the command name; this invokes the direct task format. For example:

```
>BRO RET
BRO>ttnn:message
```

To exit from the direct task format, press CTRL/Z.

Parameters

ttnn:

The terminal to receive the broadcast message.

message

The message to be broadcast. This is an ASCII character string that cannot exceed the length of one line (80 characters). Note that an exclamation mark (!) cannot be broadcast unless you precede it with quotation marks ("").

BRO

Usually, BRO uses uppercase letters when it displays the message. However, when you use the direct task format, BRO displays the message exactly as you typed it.

filespec

The specification of a file containing message lines in one or more of the following formats:

```
ttnn:message
username message
ALL:message (Privileged users only)
LOG:message (Privileged users only)
```

ALL:

(Privileged option.) Indicates that the message is to be sent to all terminals connected to the system (this does not include slave terminals, virtual terminals, or terminals that have the broadcast option disabled).

LOG:

(Privileged option.) Indicates that the message is to be sent to all logged-in terminals (this does not include slave terminals, virtual terminals, or terminals that have the broadcast option disabled).

username

(Systems with Resource Accounting only.) Specifies the name of the person who is to receive the broadcast message. You can specify username to be the last name of the user (NAME) or the first initial and last name (I.NAME). You must use a blank or tab after username to separate it from the message text.

When you specify this parameter, BRO makes an exact match between the name you enter and a name in the account file. If the user receiving the message is logged in from more than one terminal, the message is sent to all of them.

The BRO command displays the message in one of the following formats:

- Systems without Resource Accounting:

```
dd-mmm-yy hh:mm From node::ttnn: to tttn:
message
```

- Systems with Resource Accounting:

```
dd-mmm-yy hh:mm From node::username (ttnn:) to tttn:
message
dd-mmm-yy hh:mm From node::username (ttnn:) to username
message
```

The variable node is the name that was selected for your system during system generation. It is also your DECnet node name if your system has DECnet installed.

Examples for Systems Without Resource Accounting

>BRO TT51:PRIVILEGED TESTING. PENDING CRASH. [RET]

Displays the following message from node QUACK at terminal TT51:

```
10-AUG-87 13:35      From QUACK::TT52:      to TT51:
PRIVILEGED TESTING. PENDING CRASH.
```

>BRO [RET]

BRO>TT51:More testing. Crash likely. [RET]

Displays the following message from node QUACK at terminal TT51:

```
10-AUG-87 13:37      From QUACK::TT52:      to TT51:
More testing. Crash likely.
```

>BRO LOG:System going down in 5 minutes for reboot. [RET]

Displays the following message from node QUACK at all logged in terminals:

```
10-AUG-87 13:40      From QUACK::TT52:      to TT51:
SYSTEM GOING DOWN IN 5 MINUTES FOR REBOOT.
```

Examples for Systems with Resource Accounting

>BRO TT35:When will the system be ready? [RET]

Displays the following message at terminal TT35:

```
10-AUG-87 13:10      From MYNODE::JONES (TT30:)  to TT35:
WHEN WILL THE SYSTEM BE READY?
```

>BRO JONES SHOULD BE READY FOR YOU TOMORROW. [RET]

Displays the following message at the terminal of the user whose last name is JONES:

```
10-AUG-87 13:10      From QUACK::SMITH (TT35:)  to JONES
SHOULD BE READY FOR YOU TOMORROW.
```

BYE

3.13 BYE (NP)

The BYE command logs you out of the system. The system writes a logout message on the console terminal (CO) and displays a terminating message on the initiating terminal. It also aborts any active nonprivileged tasks and some privileged tasks that belong to you, dismounts volumes mounted by you (unless you are a privileged user and you mounted a public device; mounted public volumes remain mounted), and deallocates any private devices you had previously allocated.

When the BYE command logs out a terminal, it executes the following procedure:

1. Checks to see if the terminal's current command line interpreter (CLI) has requested a silent logout. If it has, BYE does not display any information and does not execute the system logout command file.
2. If silent logout is not requested, resets the default CLI for the terminal to MCR, resets the terminal so that it can receive broadcast messages, and executes the system logout command file `LB:[1,2]SYSLOGOUT.CMD`.

The system logout command file is not executed on a virtual terminal.

3. Informs the full-duplex terminal driver or DECnet that the terminal is logging out by issuing the Executive directive Queue I/O Request (QIO\$). Upon receiving the request, the terminal driver hangs up the remote lines or DECnet breaks the connection.

You can control this action with the `/[NO]HOLD` keyword. If you specify `/HOLD`, BYE logs out the terminal but the line is not hung up. If you specify `/NOHOLD`, BYE logs out the terminal and the line is hung up. The default is `/NOHOLD`.

The way in which BYE aborts (or does not abort) an active task on the terminal being logged out depends on the task and its privilege status, as follows:

- When you enter the BYE command, it aborts all tasks that provide abort asynchronous system trap (AST) routines and all nonprivileged tasks that are active at your terminal.
- If a nonprivileged task issues an Executive directive Specify Requested Exit AST (SREA\$ or SREX\$), BYE allows the task to enter the AST service routine. BYE issues a request for each of these tasks to exit (abort), then the task enters the AST service routine. For nonprivileged tasks, BYE allows you to specify a time interval during which the AST can be executed for the task. (You specify this time interval when you build the BYE task.) The default interval is zero; if you do not specify a value, BYE does not wait for the AST to be executed.

At the end of the time interval, if the task has not exited or entered the AST service routine, BYE aborts the task normally. (You cannot declare a second requested exit AST for a nonprivileged task.) BYE also aborts any other nonprivileged tasks that are still active.

- BYE aborts a privileged task that has requested an AST service routine in the same way as a nonprivileged task. However, any privileged tasks that have not exited by the end of the time interval are not necessarily aborted. The task itself must determine if it will be aborted or not; privileged tasks that do not request the AST service routine remain active.

BYE

Depending on the time of day, the system displays "Have a Good Morning," "Have a Good Afternoon," "Have a Good Evening," or "Have a Nice Day" when you log out. On systems that support Resource Accounting, the BYE command provides additional information (provided that you logged in after Resource Accounting was initiated). The additional information consists of the total time logged in, the amount of CPU time used, and the total number of tasks run.

Note

Some tasks, including BYE, spawn or request other tasks. These other tasks are also included in the task total. For example, when you enter a RUN-immediately command, the Resource Accounting system records three tasks: the MCR task to execute the RUN command, INSTALL to install the task, and the actual execution of the task.

Format

BYE [/[-] [NO]HOLD]

Keyword

/-HOLD
/NOHOLD
/HOLD

If you specify /HOLD, BYE logs out the terminal but the line is not hung up. If you specify /NOHOLD or /-HOLD, BYE logs out the terminal and the line is hung up.

The default is /NOHOLD.

Example for Systems Without Resource Accounting

```
>BYE [RET]
Have a Good Evening
13-May-87 18:47 TT13: is logged off QUACK
```

Logs the user out of the QUACK system from terminal TT13 and displays the logout message.

Example for Systems With Resource Accounting

```
>BYE [RET]
Connect time:  2 hrs 18 mins 53 secs
CPU time used: 0 hrs  5 mins 14 secs
Task total:    48
Have a Good Afternoon
14-MAY-87 17:23 TT30: logged off BANTER
```

Logs the user out of the BANTER system from terminal TT30 and displays the logout message (including Resource Accounting information).

CAN

3.14 CANCEL (NP,P)

The CANCEL (CAN) command cancels time-based initiation requests for a task. These requests result from an Executive directive Run Task (RUN\$) or any of the time-synchronized variations of the MCR command RUN that are placed in the clock queue. (Note that you must be privileged to initiate the RUN command from a clock queue.)

Only a privileged user can enter a CANCEL command for a task not initiated from the entering terminal.

CANCEL does not affect execution of a currently active task. Instead, it removes the time-based schedule requests still in the clock queue.

Format

CAN[CEL] taskname

Parameter

taskname

The name of the task for which you want to cancel a request.

Example

```
>CAN XKE RET
```

Cancels all periodic rescheduling and time-based initiation requests for task XKE.

3.15 COMMON BLOCK DIRECTORY (NP)

The COMMON BLOCK DIRECTORY (CBD) command displays information about all entries, or a specific entry, in the Common Block Directory. The Common Block Directory is a table of all named common regions and libraries installed in the system.

The display contains the following information for each named common region:

- Common region name
- Partition Control Block (PCB) address
- The number of tasks mapped to the common region
- Common region status bits. Table 3-3 lists the status bits and their meanings.

Table 3-3: Common Region Status Bit Summary

Status Bit	Meaning
CAF	Checkpoint allocation failure
-CHK	Cannot be checkpointed
CKP	Checkpoint in progress
CKR	Checkpoint requested
COM	Library or common
DEL	Delete on last detach
DRV	Driver common
FXD	Fixed in memory
LIO	Long I/O
LFR	Last load failed
NSF	Cannot be shuffled
OUT	Out of memory
PER	Parity error
PIC	Position independent
NWB	Common should not be written back
RON	Read-only common

Usually, the status bits indicate that the common region is either fixed in memory (FXD) or out of memory (OUT).

(For more information on the Common Block Directory and common regions, see the *RSX-11M-PLUS and Micro/RSX Task Builder Manual*.)

Format

CBD [common-region-name [/TASKS]]

CBD

Parameter

common-region-name

The name of a specific common region in the Common Block Directory.

Keyword

/TASKS

Displays the names of each task attached to a specific common region and the number of times the task has mapped to the region (that is, the *mapping count*).

Examples

```
>CBD [RET]
BASIC2 050534 0 STATUS: OUT COM
DEPRES 063154 0 STATUS: OUT COM
FCSSUP 052714 0 STATUS: OUT COM
RMSRES 045264 1 STATUS: COM
TTCOM 116570 1 STATUS: FXD COM
```

Displays all named common regions, PCB addresses, the mapping count, and the status.

```
>CBD BASIC2 [RET]
BASIC2 042570 0 STATUS: OUT COM
```

Displays information for the BASIC2 entry.

```
>CBD RMSRES/TASKS [RET]
RMSRES 045264 1 STATUS: COM
        DEVICE 1
```

Displays information for the RMSRES entry as well as all tasks that have attached to the common region.

3.16 COMMAND LINE INTERPRETER (P,NP)

The COMMAND LINE INTERPRETER (CLI) command allows you to use a command line interpreter other than MCR, such as DCL or a user-written CLI. A CLI task receives unsolicited input from a terminal and then attempts to interpret the input as a command.

Before you can use an alternate CLI, you must install it with the INSTALL command option /CLI=YES. (For more information, see the description of the INSTALL command.) Also, note that the total number of alternate CLIs running on your system simultaneously (including MCR) cannot exceed 16.

All of the CLI command keywords and subkeywords can be truncated to three characters.

Formats

CLI /keyword[=cliname]

CLI /INI[T]=cliname[/subkeyword(s)]

Keywords

/DISABLE	/MESSAGE
/ELIM	/SHOW
/ENABLE	/UNOVR
/INIT	

Subkeywords

/CPR	/PRIV
/CTRLC	/PROMPT
/DISABLE	/QUIET
/DPR	/RESTRICT
/LOG	/SNGL
/MESSAGE	/TASK
/NULL	

Parameter

cliname

The name of the alternate CLI. This name can be between one and six characters long.

Keyword Descriptions

/DISABLE=cliname

Disables the specified CLI. The CLI cannot accept any commands. This effectively stops system use by terminals set to this CLI until the CLI is enabled again. The system sends a message to the CLI informing it that it has been disabled if the CLI was initialized with the /MESSAGE subkeyword specified.

/ELIM=cliname or /ELIM=*

Removes all of the data structures for the specified CLI or, if the wildcard (*) is used, for all of the alternate CLIs. After this command executes, you can remove the CLI task (see the description of the REMOVE command).

CLI

Individual CLIs can be eliminated only if no terminals are set to them. When you use the wildcard option, all CLIs except MCR are eliminated. Any terminals set to a non-MCR CLI are disabled. You can enable the terminals again by setting them to any valid CLI (after it has been initialized) or to MCR (which does not need to be initialized). CLIs that were initialized with the /MESSAGE subkeyword receive a message from the system informing them that they have been eliminated.

/ELIM=* is intended to be used during the system shutdown procedure.

/ENABLE=cliname

Enables a previously disabled CLI. The CLI can now accept commands. If the CLI was initialized with the /MESSAGE subkeyword specified, the system sends a message to the CLI informing it that it is now enabled.

While a CLI is disabled, the terminal remains set to it. To set the terminal to an enabled CLI, issue the SET /CLI command from another terminal (privileged users only).

/INIT=cliname[/subkeyword(s)]

Initializes the data structures for the specified CLI so that terminals can be set to it. The CLI task must have been installed with the /CLI=YES option. All CLIs except MCR must be initialized before they can be used.

If you specify the /MESSAGE subkeyword, the system sends a message to the CLI, informing the CLI that it has been initialized.

Subkeyword Descriptions

/CPR="string"

Specifies the CTRL/C prompt string. The string inside the quotation marks has the same syntax as the MACRO-11 .ASCII directive (see the *PDP-11 MACRO-11 Language Reference Manual*). You must supply characters such as RETURN (<15>) and LINE FEED (<12>) because they are not supplied automatically.

The following example sets up the string for MCR's CTRL/C prompt:

```
/CPR="<15><12>/MCR>/"
```

When you press CTRL/C, the system issues a RETURN/LINE FEED sequence and then displays the explicit MCR prompt (MCR>).

The string can be between 0 and 31 characters long. A null string, that is, a string with zero characters (/CPR=""), specifies that no prompt will be issued.

If you want to use double quotation marks or slashes within the string, use different characters as the string delimiters. (The delimiters can be any character that is not used in the string.)

The default is /CPR=" <15> <12> /cli> /" where cli is the name of the CLI.

/CTRLC

Specifies that the CLI is requesting CTRL/C notification packets. These packets are only sent if the terminal has the CTRL/C terminal attribute set.

/DISABLE

Initializes the CLI in disabled mode. The system rejects any commands issued from the terminal until the CLI is enabled.

By default, the CLI is enabled.

/DPR="string"

Specifies the default prompt to be issued when an empty command line is entered. As with /CPR, the string inside the double quotation marks has the same syntax as the MACRO-11 .ASCII directive. You must supply characters such as RETURN (<15>) and LINE FEED (<12>) because they are not supplied automatically.

The string can be between 0 and 31 characters long. A null string (/DPR="") specifies that no prompt should be issued.

If you want to use double quotation marks or slashes within the string, use different characters as the string delimiters. (The delimiters can be any character that is not used in the string.)

The default is /DPR=" <15> <12> /> /".

/LOG

Specifies that the CLI will accept commands from terminals that are not logged in. This allows the CLI to execute the commands without the user having to log in. For example, an application can use the terminal for data entry only and not allow it access to the system. The terminal is under complete control of the CLI task. You can do only what the CLI allows.

It is up to the CLI to do any user validation or security checks. Also, be careful when doing any file I/O from tasks running on a terminal that is not logged in, because the UIC and privileges for the terminal are undefined. Likewise, session and group logical names are undefined on a terminal that is not logged in.

By default, the system rejects commands from terminals that are not logged in and does not pass them to the CLI.

/MESSAGE

Specifies that the CLI wants to receive messages from the system. The system messages inform the CLI of events, such as: if it is being enabled or disabled, if a terminal is being set to the CLI, or if it is being disassociated from the CLI. (See the *RSX-11M-PLUS and Micro/RSX System Management Guide* for a list of the messages and their format.)

By default, the CLI does not receive messages from the system.

/NULL

Specifies that the CLI will accept empty command buffers resulting from a user pressing the RETURN key as the first character in a command line. No prompt is issued.

By default, the system does not pass the command to the CLI. Instead, it issues the default prompt.

CLI

/PRIV

Specifies that a user must be privileged to set the terminal to the CLI. (See the description of the SET command.)

By default, a nonprivileged user can set his or her own terminal to the CLI.

/PROMPT

Specifies that the CLI wants to receive prompt requests if a task exits after starting to execute a command.

By default, the dispatcher issues a prompt and the request is not passed to the CLI.

/QUIET

Specifies that the MCR commands HELLO and BYE do silent logins and logouts, respectively. (For more information on HELLO and BYE, see the individual descriptions of these commands.) The keyword also suppresses messages from the dispatcher.

/RESTRICT

Specifies that only the CLI can issue the Executive directive Set Command Line Interpreter (SCLI\$) to set a terminal to itself. (For more information on the SCLI\$ directive, see the *RSX-11M-PLUS and Micro/RSX Executive Reference Manual*.)

Note that you cannot use /RESTRICT for CLI tasks whose names are in the form . . . xxx (MCR prototype tasks).

/SNGL

Specifies that the dispatcher accept single-line commands only. A hyphen immediately before a RETURN character is not interpreted as a continuation line indicator; it remains part of the text.

/TASK=taskname

Specifies the name of the task that will act as the CLI. Use this keyword if the name of the task is different from the name of the CLI.

/MESSAGE=cliname:"message-text"

Sends an ASCII message to the CLI if it has the message attribute set for it (by the /MESSAGE subkeyword). If the CLI does not have the attribute set, the command issues an error message.

/SHOW

(Nonprivileged keyword.) Displays information about all CLIs on the system. The information includes the name of the CLI, the task that implements the CLI, the number of terminals set to the CLI, several status bits for the CLI, and whether the CLI is active.

CLI

The following list gives the meaning of the displayed status bits:

Status Bit	Meaning
ACT	CLI is active (always shown for MCR).
DSB	CLI is currently disabled.
PRV	CLI was initialized with the /PRIV subkeyword. You must be privileged to set a terminal (including TI:) to this CLI.
RST	CLI was initialized with the /RESTRICT subkeyword. Only the CLI can set a terminal to itself.

/UNOV

Clears the override bit set for the terminal's CLI. When the HELLO command enters the command file LB:[1,2]SYSLOGIN.CMD, the terminal is set to a specific CLI. However, an override bit is also set so that the command file can execute from MCR. Clearing the override bit ensures that commands issued from the terminal go to the correct CLI.

Use /UNOVR with the SYSLOGIN.CMD file, immediately before chaining to a user's LOGIN.CMD file, or when exiting.

Examples

```
>CLI /SHOW [RET]
MCR      MCR... 9 ACT
DCL      ...DCL 0
```

Displays information about the CLIs currently installed in the system.

```
>CLI /INI=TCP/LOG/MES/TASK=PROMPT [RET]
```

Initializes the task PROMPT as a CLI. The command line specifies that the CLI will be called TCP, it will accept commands from unlogged-in terminals, and it will receive messages from the system. (Note that PROMPT must be installed with the /CLI=YES option before it can be initialized as a CLI.)

CLQ

3.17 CLOCK QUEUE (NP)

The CLOCK QUEUE (CLQ) command displays information on the entering terminal about tasks currently in the clock queue. The information consists of the task names, the next time each task is to be run, and each task's reschedule interval (if you specify one). The system places a task in the clock queue if the task is activated by the RUN command with a time-based option or by the Executive directive Run Task (RUN\$).

Format

CLQ [UEVE]

Example

```
>CLQ RET  
TASK1 Scheduled at 22-NOV-87 10:24:30:00  
TASK2 Scheduled at 22-NOV-87 10:30:00:00 Reschedule interval 30M  
>
```

The first task in the queue will run at 10:24:30:00 (hour: minute: second: clock tick); it has not been rescheduled. The second task in the queue will next run at 10:30:00:00 and is scheduled to run every 30 minutes.

3.18 DIGITAL COMMAND LANGUAGE (NP)

The DIGITAL COMMAND LANGUAGE (DCL) command allows you to issue DCL commands from a terminal that is set to MCR. Instead of MCR processing the command line, DCL processes it. The DCL task must be installed before it can do command processing. See the *RSX-11M-PLUS Command Language Manual* for descriptions of the DCL commands.

Format

DCL command-line

Parameter

command-line

The command line to be processed by the DCL task. Note that the command must follow DCL syntax rules.

Examples

```
>DCL SET DEFAULT LB: [RET]
```

Issues the DCL command that sets the default device for the entering terminal to LB: (the system device).

```
>DCL TYPE [303,24]USERS.TXT [RET]
```

Issues the DCL command that displays a file on the entering terminal. The file is USERS.TXT, which is in directory [303,24].

DEA

3.19 DEALLOCATE (NP,P)

The DEALLOCATE (DEA) command releases a private (allocated) device, thereby allowing other users to access it. Nonprivileged users can deallocate only private devices that they themselves have allocated. A privileged user can deallocate any device in the system.

Note that when an owner of a private device logs out (enters the BYE command), the system deallocates all of that user's private devices. However, if the system detects an error while attempting to deallocate a device, it stops and does not deallocate that device or any remaining devices. The related error message does not state which device caused the error.

If an allocated device has been mounted, it must be dismounted before you deallocate the device.

Format

DEA[LLOCATE] [ddnn:]

Parameter

ddnn:

Specifies the private device to be deallocated. If you do not specify the device unit nn, the system deallocates all private devices that are allocated to you at the terminal from which you enter the command.

The parameter ddnn can be a logical name or the name of a physical device.

Examples

```
>DEA DM: 
```

Deallocates disk DM. The deallocated device can now be mounted or allocated by other users.

```
>ASN DM:=MYDEV   
>DEA MYDEV 
```

Assigns the logical name MYDEV to the disk DM, then deallocates the disk using the logical name.

3.20 DEBUG (NP,P)

The DEBUG (DEB) command forces a task to link directly (or *trap*) to a debugging tool by setting the T-bit in the Processor Status Word (PSW) for the task. To debug a task, you must build it with the Task Builder (TKB) switch /DA or issue the Executive directive Specify SST Vector Table For Debugging Aid (SVDB\$). (For more information on TKB, see the *RSX-11M-PLUS and Micro/RSX Task Builder Manual*. For a description of the SVDB\$ directive, see the *RSX-11M-PLUS and Micro/RSX Executive Reference Manual*.)

Nonprivileged users can debug any nonprivileged task that they initiate from their own terminals (TI). Privileged users can debug any task. Tasks for which you might want to use the DEBUG command are those that are in an infinite loop or that are waiting for an incorrect or nonexistent event flag.

If you enter the DEBUG command, but you have not specified a debugging tool for the task, the system returns the following error message:

```
DEB -- Task does not contain a debugging aid.
```

Format

```
DEB [UG] [taskname]
```

Parameter

taskname

The name of the task that you want to debug. If you do not specify a task name, DEBUG looks for the task currently running from your terminal (task TTnn).

Examples

The following examples show how to use the DEBUG command with the Online Debugging Tool (ODT):

```
>DEB VT3 RET
TE:001264
```

Allows the task named VT3 to be debugged with ODT. After you enter the DEBUG command, ODT displays the T-bit exception code and the octal address that follows the location in error. At the ODT underscore prompt (), you can proceed with the debugging. (For more information on ODT, see the *RSX-11M-PLUS and Micro/RSX Debugging Reference Manual*.)

```
>DEB RET
TE:002452
```

Assumes that the task TTnn (depending on the type and unit number of the terminal) is the one to be debugged, again using ODT.

DEV

3.21 DEVICES (NP,P)

The DEVICES (DEV) command displays the symbolic names of all devices, of a particular device type, or of a specific device. The device names appear in one column; second and subsequent columns contain additional information about each device.

Formats

```
DEV[ICES]
DEV[ICES] dd:
DEV[ICES] dev
DEV[ICES] /LOG
```

Parameters

dd:

The type of devices for which you want the information to be displayed. This parameter must be a physical device name.

dev

The specific device for which you want the information to be displayed. This parameter may be either a physical or a logical device name (for example, DB3: or MYDEV).

Keyword

/LOG

Displays all logged-in terminals.

When you specify a terminal or /LOG, the display includes the login and default directories. Also, if Resource Accounting is active, the display includes the date and time of login, the number of tasks currently active, and the first initial and last name of each logged-in user. (For more information on Resource Accounting, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

If a disk device has data caching, seek optimization, or overlapped seeks enabled, DEV displays a second line. This line indicates whether the disk has data caching enabled and displays the status of seek optimization and overlapped seeks for the disk. DEV does not display an option if the option is not enabled. For example, if a device has data caching enabled, but seek optimization and overlapped seeks disabled, DEV displays data cache only. (For information on data caching, seek optimization, and overlapped seeks, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

Examples

```
>DEV DB0: [RET]
DB0:      Public Mounted Loaded Online Type=RP06
          Cached Seek_Optimization=Nearest:10. Overlapped_Seeks
>
```

Displays information about device DB0. The device is mounted and loaded as a public device, it is online, and the device type is an RP06 disk. The second line indicates that data caching, seek optimization, and overlapped seeks are enabled for the device.

```
>DEV DB: [RET]
DB0:      Offline Loaded Type=unknown
DB1:      Offline Loaded Type=unknown
DB2:      Mounted Loaded Label=DEVUTIL Type=RP05
DB3:      Public mounted Loaded Label=USERS1 Type=RP06
>
```

When issued from a privileged terminal, displays information about all DB-type devices. Both DB2 and DB3 are mounted, but only DB3 is mounted as a public device. The device drivers for DB0 and DB1 are loaded, but the devices are currently off line so their device type is unknown.

```
>DEV TT52: [RET]
TT52:  [AKI]      [25,25]      12-MAR-87 12:37  1      K. AKI
        CLI  = DCL      BUF   = 80.      HFILL = 0
        LINES = 24.      TERM  = VT2xx    OWNER = none  NOPARITY
        CHAR_LENGTH = 8  PRINTER_PORT  NOPASTHRU      NOSERIAL
        LOWER PRIV  NOHOLD  NOSLAVE  NOESC   CRT      NOFORM  REMOTE
        ECHO  NOVFill HHT   NOFDX   WRAP   NORPA  NOEBC  TYPEAHEAD
        CTRLC AVO   ANSI   DEC     EDIT   REGIS  SOFT   NOBLKMOD
        HSYNC  BRO    NOABAUD TTSYNC
>
```

Displays information about the terminal TT52:. The last seven lines list all the current settings for the terminal characteristics. (For a description of the available characteristics, see the MCR command SET.)

```
>DEV /LOG [RET]
TT12:      [7,25]      [7,25]      12-MAR-87 08:42  1      M. BROWN
TT13:      [7,201]     [7,201]     12-MAR-87 10:24  1      L. STORM
TT15:      [7,325]     [7,325]     12-MAR-87 08:08  0      P. JONES
TT17:      [007124]    [7,124]     12-MAR-87 09:10  1      S. WHITE
TT20:      [JOYCE]     [7,102]     12-MAR-87 07:43  0      J. LAWRY
TT52:      [AKI]      [25,25]     12-MAR-87 12:37  1      K. AKI
```

Displays all logged-in terminals. The columns contain the following information, reading from left to right:

- Terminal name
- Login directory
- Default directory
- Date and time of login

DEV

- Number of tasks active at the terminal (for example, there is one task active at TT12)
 - First initial and last name of the user logged in to the system
- The DEV command displays the last three columns only if Resource Accounting is active.

Notes

The following notes describe the terms that appear in the DEV displays.

- MOUNTED indicates that the device is mounted. If a privileged user issues the DEV command, the display includes the volume label.
- MARKED FOR DISMOUNT indicates that a mountable device has been requested to be dismounted, but the dismount operation has not yet been completed.
- NOWRITE indicates that the volume is software write-locked (write operations are not allowed on the volume).
- TYPE indicates the device type. If the device is off line, the device type is unknown.
- OFFLINE indicates that, although the system tables contain entries for this device, the host configuration does not contain the related device or the device was powered down at the time of the boot.

OFFLINE also indicates that the device has not been brought on line (using the CON command). To bring a device on line, see the description of the system Reconfiguration Services in the *RSX-11M-PLUS and Micro/RSX System Management Guide*.

- [uic] LOGGED ON indicates that the user identified by [uic] (the protection UIC) has logged in on the terminal.
- LOADED indicates that a loadable device driver is currently loaded.
- UNLOADED indicates that a loadable device driver is not currently loaded.
- A device name in the second column is the device to which the corresponding device in the first column has been redirected. (For information on redirecting I/O requests to different devices, see the description of the MCR command REDIRECT.)
- PUBLIC indicates that the device has been set public.
- PRIVATE indicates that the device named in the first column has been allocated to the user logged in on the terminal in the second column.

3.22 DEFINE LOGICALS

The DEFINE LOGICALS (DFL) command defines, deletes, or displays logical name assignments. You can use the DFL command to equate logical names to explicit ASCII text strings (for example, "\$TESTFILE #6") or to other logical names. However, note that the DFL command requires extended logical name support; before using DFL, be sure that the support was included in your system during system generation.

The DFL command accepts a character string exactly as you specify it without performing any validity checks to test for node names, device names, UFD specifications, or file specifications. **To use a logical name as part of a Files-11 file specification, or to assign a logical name to a physical device, do not use this command.** Instead, use the ASSIGN command. The ASSIGN command performs several validity checks to ensure that the system recognizes the logical name. (For more information on the ASSIGN command, see Section 3.7.)

3.22.1 Logical Name Assignments

The DFL command can process three types of logical name assignments: session, group, and global. (For a description of each type, see Section 3.7.) The character string to which you assign a logical name is called the *equivalence* name. The system keeps logical names and their corresponding equivalence names grouped in pairs in four logical name tables:

- The task logical name table
- The session logical name table
- The group logical name table
- The system logical name table

These tables are described in Section 3.7.

When the system translates logical names, it searches the logical names tables in the following order: task, session, group, and system. The system uses the first match it finds as the equivalence name for the logical name. For example, if you make a local assignment using a logical name that is already being used in a group or global assignment, the system uses the local assignment. Then, when you delete the assignment, the system returns to using the previous group or global assignment.

The system limits logical name translation to ten levels. If you define more than ten levels or if you create a circular definition of a logical name, an error will occur if you try to use the logical name iteratively.

If you are in doubt about the equivalence name assigned to a logical name, you can use the DFL command to display the current assignments. However, note that the DFL command does not display task logical assignments.

DFL

3.22.2 Syntax Rules for Logical Name Assignments

When you make logical assignments with the DFL command, observe the following syntax rules:

- You can use any combination of the following ASCII characters in a logical or equivalence name string:
 - The uppercase letters A through Z
 - The numbers 0 through 9
 - The dollar sign (\$), the colon (:), and the underscore (_)
- To use special characters (such as an asterisk) in an *equivalence name*, enclose the name in quotation marks. The DFL command retains the quotation marks as part of the name. However, if you enclose a *logical name* in quotation marks, the DFL command considers the logical name invalid.
- If you want to use other ASCII characters, enclose the entire string in quotation marks (for example, `"*logical*name"`). In such cases, the DFL command removes the surrounding quotation marks and assigns the remainder of the character string as the logical or equivalence name. When the surrounding quotation marks are removed, embedded quotation marks remain as part of the logical name.
- If you specify a colon at the end of a logical name, the DFL command stores the colon as a part of the logical name. However, the system ignores logical names that terminate with a colon. (This action contrasts with that of the ASSIGN command, which removes the colon before it stores the name in the logical name table.)

For more information on logical name assignments, see the description of the ASSIGN (ASN) command in Section 3.7.

DFL Command Formats

The DFL command has three types of formats:

Format	Function
DFL ens=lns[/keyword(s)]	Makes logical name assignments
DFL =[lns][[/keyword]	Deletes logical name assignments
DFL [/keyword(s)]	Displays logical name assignments

Making Logical Name Assignments

The DFL command assigns a logical name string to an equivalence name string. This format makes a local logical assignment for the terminal from which it is entered. However, when entered with keywords, this format can also make group or global assignments; or it can make assignments for other terminals. Both nonprivileged and privileged users can make local logical assignments, but only privileged users can make other types of assignments, or assignments for other terminals.

Format

DFL ens=lns[/keyword(s)]

Keywords

/GR
/GBL
/SYSTEM
/FINAL

Parameters

ens

The equivalence name string. (The name or specification to which you are assigning a logical name.)

lns

The logical name string. (The character string that you are assigning to the equivalence name string.)

Keyword Descriptions

/GR[=gnn]

(Privileged keyword.) Makes a group logical assignment for all users who share the protection UIC group number gnn. If you omit the argument =gnn, /GR makes a group logical assignment for all users who share the group number under which you are entering the DFL command (your current UIC group number).

/GBL or /SYSTEM

(Privileged keyword.) Makes a global (system-wide) logical assignment. A global assignment is entered into the system logical name table and it applies to all tasks running in the system.

/FINAL

(Privileged keyword.) Specifies that the equivalence name string should not be translated iteratively; that is, the logical name translation terminates with the current equivalence string.

Deleting Logical Name Assignments

When you specify a logical name string (lns), this format deletes a specific logical name. When you specify a keyword without specifying a logical name, it deletes all of the logical names of a specific type. If you specify DFL alone (DFL =), the command deletes all local logical assignments for the terminal from which it is entered. Nonprivileged users can delete only local logical assignments for their own terminal, but privileged users can delete other types of assignments or assignments for other terminals.

Note that when you delete logical assignments with the DFL command, the command deletes assignments that were made with the ASN command as well.

DFL

Format

DFL =[lns] [/keyword]

Keywords

/TERM

/GR

/GBL

/SYSTEM

Parameter

lns

The logical name being deleted.

Keyword Descriptions

/TERM=term

(Privileged keyword.) When specified with the logical name, deletes a specific local logical name for the terminal term. When specified without a logical name, /TERM deletes all local logical assignments for the specified terminal.

The logical assignment term specifies the physical device and unit number for the terminal (ttnn:). It can also specify the logical name assigned to the terminal, for example:

/TERM=MYTERMINAL

/GR[=gnn]

(Privileged keyword.) Deletes group logical assignments for all users who share the protection UIC group number gnn. If you omit the argument =gnn, /GR deletes group logical assignments for all users who share the group number under which you are entering the command (your current UIC group number). If you specify a logical name, /GR deletes a specific group logical name.

/GBL or /SYSTEM

(Privileged keyword.) Deletes a specific global logical name when specified along with the logical name. When specified without a logical name, /GBL or /SYSTEM deletes all global assignments.

Displaying Logical Name Assignments

Format 3 displays the logical assignments for the terminal from which it is entered. When you enter the command without a keyword (DFL), it displays all of the local logical assignments for the terminal. When entered with a keyword, it displays other types of logical assignments or assignments for other terminals.

Nonprivileged users can display the logical assignments of their terminal, their group, and the system by entering the /ALL keyword (DFL /ALL). Privileged users can also display the logical assignments of other terminals. When there are no logical assignments of the specified type, the system returns the CLI prompt instead of a display.

Format

DFL [/keyword]

Keywords

/ALL
/TERM
/GR
/SYSTEM
/GBL

Keyword Descriptions

/ALL

Displays all of the logical assignments for the terminal from which you enter the command, as well as all system logical assignments. Thus, the display can include local, login, group, and system assignments.

/TERM=term

(Privileged keyword.) Displays all local and login logical assignments for the specified terminal.

The logical assignment term specifies the physical device and unit number for the terminal (ttn:). It can also specify the logical name assigned to the terminal, for example:

```
/TERM=MYTERMINAL
```

/GR[=gnn]

(Privileged keyword.) Displays all of the group logical assignments for the group number under which you enter the command, unless you specify another group number. If you specify the group number gnn, /GR displays the group logical assignments for that group.

/SYSTEM or /GBL

(Privileged keyword.) Displays all system-level logical assignments.

Examples

```
>DFL "Good Morning! ***Welcome to BANTER**"=LOGINMSG [RET]
```

Assigns the logical name LOGINMSG to the equivalence string Good Morning! ***Welcome to BANTER***. This is a local assignment for the issuing terminal during the current login session.

```
>DFL "CP/MA/DA"=TKBSTR/FINAL [RET]
```

Assigns the logical name TKBSTR to the equivalence name string CP/MA/DA and specifies that the initial translation of the logical name should be final. This is a local assignment for the issuing terminal during the current login session.

```
>DFL "Nashua, N.H."="HOME*SWEET*HOME"/GR=7 [RET]
```

Assigns the logical name HOME*SWEET*HOME to the equivalence name string Nashua, N.H. This is a group assignment for all users with a UIC group number that matches the number

DFL

under which the assignment was made (group 7, in this example). Only privileged users can make group assignments.

```
>DFL "O.S."="RSX-11M-PLUS"/GBL [RET]
```

Assigns the logical name RSX-11M-PLUS to the equivalence name string O.S.. This is a global (system-wide) logical assignment and it applies to all tasks running in the system.

```
>DFL [RET]
```

```
TKBSTR = CP/MA/DA (Local, Final, TT12:)
```

```
LOGINMSG = Good Morning! ***Welcome to Banter*** (Local, TT12:)
```

Displays all of the local and login logical assignments for the terminal from which it is entered. Note that the assignments are displayed with the logical name first and the equivalence name second, whereas when you define a logical assignment, you specify the equivalence name first. If the terminal does not have any local or logical assignments, the command line prompt (>) is returned without a display.

```
>DFL /GR [RET]
```

```
HOME*SWEET*HOME = Nashua, N.H. (Group=7, TT12:)
```

Displays all of the group logical assignments for the UIC group number under which it is entered (in this example, group number 7).

```
>DFL /ALL [RET]
```

```
RSX-11M-PLUS = O.S. (Global)
```

```
HOME*SWEET*HOME = Nashua, N.H. (Group=7, TT12:)
```

```
TKBSTR = CP/MA/DA (Local, Final, TT12:)
```

```
LOGINMSG = Good Morning! ***Welcome to Banter*** (Local, TT12:)
```

Displays the following:

- All of the global logical assignments in the system
- The group logical assignments for group number 7
- Local and login assignments for the terminal from which the command was entered (TT12)

```
>DFL = [RET]
```

Deletes all local logical assignments for the terminal from which it is entered (including assignments made by the ASN command).

```
>DFL =TKBSTR [RET]
```

Deletes the local logical name TKBSTR.

```
>DFL =HOME*SWEET*HOME/GR [RET]
```

Deletes the group logical assignment HOME*SWEET*HOME. Only privileged users can delete group logical assignments.

DFL

>DFL =/GBL RET

Deletes all global logical assignments.

DMO

3.23 DISMOUNT (NP,P)

The DISMOUNT (DMO) command requests the file system to mark a volume for dismount and to release its control blocks. Marking a volume for dismount prevents programs from opening additional files on the volume. After all files that were open on the volume are closed, the Ancillary Control Processor (ACP) releases the control blocks and dismounts the volume.

If a single user has mounted a volume, the DISMOUNT command declares the volume logically off line. If multiple users have mounted a volume, the volume remains accessible until all users have dismounted it.

When you dismount a volume, the DISMOUNT command displays a message on your terminal about whether or not a final dismount has been initiated. When the dismount operation completes, either through the Files-11 disk system or the ANSI magnetic tape system (ANSI X3.27-1978), the command prints the following message on the console terminal (CO):

```
*** <ddnn:> dismount complete
```

Note

Do not remove the volume until after you have received this message. If you remove the volume before you have received this message, the volume might be corrupted and the next volume placed on the device drive may become corrupted as well.

If many I/O requests are pending or many files are open on the volume, there can be a considerable delay between the time you issue the command and the printing of this message.

Nonprivileged users can only dismount volumes that they have mounted. A privileged user can dismount any mounted volume that is not on a shadow device. To dismount a volume on a shadow device, you must first stop shadow recording (see the *RSX-11M-PLUS and Micro/RSX System Management Guide*).

Formats

```
DMO dev [["]label["]] [/keyword(s)]
```

```
DMO /USER [/keyword(s)]
```

Keywords

```
/DEV  
/USER  
/TERM  
/LOCK
```

Parameters

dev

Specifies the device unit that holds the volume to be dismounted. Dev can be a physical device name and unit number (ddnn:) or a logical name for the device (if your system includes extended logical name support).

label

The Files-11 volume label may be up to 12 characters in length for disk and DECtape, and up to 6 characters for magnetic tape. It is used to verify that the proper volume is being dismounted. A volume label is optional (if the command omits a label, no volume label check is performed).

If a volume label for a magnetic tape contains special characters, it must be enclosed in quotation marks. See the description of the MOUNT command for the list of special characters.

Keyword Descriptions

/DEV

(Privileged keyword.) Dismounts all users from a specific device. You must specify this keyword if you are dismounting a public device.

/USER

Dismounts all volumes that you have mounted.

/TERM=term

(Privileged keyword.) Dismounts all volumes that the terminal (term) has mounted.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:).

/LOCK=option

Allows logical I/O to a volume after it is dismounted. If the drive supports software spin-down, you can also specify whether or not the disk should be left spinning after the dismount. For magnetic tapes, you can use /LOCK to dismount and remount a tape without having to reload the tape.

/LOCK is valid for magnetic tapes and DB-, DM-, and DU-type disks.

The options for the /LOCK keyword are as follows:

N (nounload)

Clears the volume valid bit, but does not spin down the disk or unload the tape. This option inhibits access to the volume.

/LOCK=N is the default value for volumes mounted as foreign with no ACP specified (see the description of the MOUNT command).

U (unload)

Clears the volume valid bit and, if the drive supports the spin-down function, spins down the disk. For tapes, this option rewinds and unloads the tape. (Depending on the hardware, this option may only place the unit off line at load point, or it may completely unload the tape and close the autoloader tape ring.)

/LOCK=U is the default value for all volumes mounted with a standard ACP. The usual procedure after dismounting a volume that uses a standard ACP is to remove the volume from the drive.

DMO

You can spin down the removable unit of a multiunit device (for example, the RC25) only if you are privileged. If you are nonprivileged and you try to dismount the unit or specify /LOCK=U in the command line, you will get a warning message because the volume cannot be spun down.

V (virtual)

(Privileged option.) Does not clear the volume valid bit and does not spin down the disk or unload the tape. The Executive still permits logical I/O to the volume. For example, the task image of an installed task can reside on a disk that has been dismounted with the /LOCK=V option. However, the file system cannot access the volume.

/LOCK=V is the default when dismounting the system disk prior to saving the system.

Examples

```
>DMO DM1:AMBER [RET]
```

Dismounts the volume labeled AMBER on device unit DM1:. If a single user has mounted the volume, the command dismounts the volume. If more than one user has mounted the volume, the volume remains mounted for the other users.

```
>DMO DM1:/DEV [RET]
```

Places the volume on device unit DM1: logically off line and releases all control blocks. Users can no longer access the device.

```
>DMO /USER/TERM=TT17: [RET]
```

Dismounts all volumes mounted by terminal TT17:.

```
>DMO DMO: [RET]
```

```
DMO -- TT60:   dismounted from DMO:   *** Final dismount initiated ***
```

Begins the dismounting process for DMO:. When the "dismount complete" message is printed on the console terminal, the volume can be removed from the drive.

3.24 FIX-IN-MEMORY (P)

The FIX-IN-MEMORY (FIX) command loads and locks a task into its partition. Subsequent requests for running the task are serviced more quickly because the task is resident in memory; it does not have to be loaded from the disk before it can run. The system can fix a task in memory only when the partition in which it is to be fixed becomes available.

Fixed tasks remain physically in memory even after they exit. Therefore, you do not need to reload them before they are run. (Note that reexecuting fixed tasks is not always practical; to reexecute, the task must initialize all impure data and LUN assignments at run time.) Only an UNFIX or REMOVE command can free the occupied memory partition.

The following restrictions apply to the fixing of tasks:

- Checkpointable tasks should not be fixed because fixing a checkpointable task makes the task noncheckpointable.
- Tasks whose names are in the form . . . xxx and xxx\$\$\$ cannot be fixed because that copy of the task is never executed. (The task is a prototype task.)
- Active tasks cannot be fixed.
- A task must be installed before it can be fixed.

Formats

FIX region[/REG]

FIX taskname[/RON]

Parameters

region

The name of the common task region to be fixed in memory.

taskname

The name of the task to be fixed in memory.

Keywords

/REG

Allows you to fix a common task region in a partition.

/RON

Allows you to fix a common, read-only segment of a multiuser task in a partition. To fix the segment, type the full name of the multiuser task.

Examples

```
>FIX XKE RET
```

Fixes task XKE in its partition.

FIX

>FIX FCSRES/REG RET

Fixes the resident library for File Control Services (FCS) in its partition.

>FIX ...MAC/ROM RET

Fixes the read-only segment of the MACRO-11 Assembler in its partition.

3.25 GROUP GLOBAL EVENT FLAGS (NP,P)

The GROUP GLOBAL EVENT FLAGS (FLA) command creates, eliminates, or displays group global event flags. Group global event flags provide each UIC group with 32 event flags, in addition to the 32 common and 32 local event flags. Group global event flags are similar in use to the common event flags (see the *RSX-11M-PLUS and Micro/RSX Executive Reference Manual*). However, only those tasks running under the same group UIC can use the group global event flags for that group.

Nonprivileged users can create or eliminate group global event flags for their login group UIC. Privileged users can create or eliminate group global event flags for any group.

Format

FLA[GS] [[ggg]/keyword]

Parameter

[ggg]

Represents the group for which the group global event flags are to be created. The value for ggg must be a number between 1₈ and 377₈. The default group is the login UIC group.

Keywords

/CRE

Creates group global event flags for the specified UIC group. If the flags already exist but are marked for delete, the delete flag is cleared.

/ELIM

Eliminates group global event flags for the specified UIC group. Event flags are not eliminated until the access count reaches zero. If the access count is greater than zero, the flags are marked for delete.

You cannot specify both keywords in the same command line.

When you omit the group number and keyword specification, the command displays all the group global event flags in the form:

```
ggg      access count      event flags      [DEL]
```

[DEL] indicates group global event flags marked for delete.

Examples

```
>FLA 303/CRE [RET]
```

Creates group global event flags for all tasks running under the UIC group number 303. All flags are initialized to zero when created.

```
>FLA [RET]
303      1      000010 000000
```

Displays the access count (1) and event flags set (in this case, flag 68) for the UIC group 303. The access count is the number of tasks using the event flags.

FLA

The group global event flags are represented by two octal words. The first word contains event flags 65 through 80 (from right to left) and the second word contains event flags 81 through 96 (from right to left).

>FLA 303/ELIM RET

Eliminates group global event flags for UIC group 303.

3.26 HELLO or LOGIN (NP)

The HELLO and LOGIN (HEL and LOG) commands log you in on a terminal to gain access to the system. Before you log in, the system rejects all MCR commands except HELLO, LOGIN, and HELP. Note that if you use the LOGIN command to log in instead of HELLO, the error messages are preceded by LOG.

Parameters to the HELLO command are a last name or User Identification Code (UIC) and a password. The system validates these parameters according to entries in an account file. (For more information on account files, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

If the name or UIC and password match an entry in the account file, the system performs the following procedure:

1. Checks to see if the terminal's current command line interpreter (CLI) has requested a silent login. If not, HELLO displays the login text file or your login command file, executes the system login command file, and sets the default CLI for the terminal.
2. Assigns the login logical device name SY to your system disk unless your logical system device is already the same as physical device SY0:. (The system disk is the disk that contains the user files.)
3. Establishes your login directory, which is the initial default directory.
4. Records in the system file the current time, date, and other information about the terminal session.
5. On a system that has Resource Accounting active, sets up accounting data structures.
6. Displays a system identification, the current date, and the time you logged in at the terminal. However, if the CLI requests silent login, this information is not displayed.
7. If the system supports alternate CLIs, sets the terminal's default CLI to the one specified in your account file.
8. Displays the contents of the file LB:[1,2]LOGIN.TXT. However, if the CLI requests a silent login, LOGIN.TXT is not displayed.

If a batch job is being run from the terminal, HELLO displays the batch text file LB:[1,2]BATCH.TXT. However, if BATCH.TXT does not exist, HELLO displays the login text file LB:[1,2]LOGIN.TXT. However, HELLO does not display a login text file on a virtual terminal unless a batch job is being run from it.

9. If extended logical name support was included in your system during system generation, HELLO creates the logical assignment for SYS\$LOGIN. This logical name represents the default device and directory (UFD) listed in the account file for your account.
10. Executes the system command file LB:[1,2]SYSLOGIN.CMD (if it exists) unless the CLI requests a silent login. Before the file is invoked, HELLO instructs the system to override your default CLI and use MCR to process the file. (This allows the SYSLOGIN.CMD file to use MCR commands.) SYSLOGIN.CMD is invoked with the terminal privileged and slaved.

HEL/LOG

HELLO passes the following information to SYSLOGIN.CMD:

Default system device	(xxn:)
Login UIC	([g,m])
Last name	
First initial	
If terminal is to be privileged	(P or NP)
If terminal is to be slaved	(S or NS)

If the terminal is a TT-, VT-, or batch VT-type (T, V, or B), HELLO also passes the account number and the session ID to SYSLOGIN.CMD.

If SYSLOGIN.CMD exists, it uses the information to determine the terminal settings. After checking the appropriate parameters, it sets the terminal to privileged (or nonprivileged) and then to slaved (or nonslaved). Note that the privilege status is always set before the slave status; this prevents a nonprivileged user from becoming privileged.

If your system supports more than one CLI, enter the CLI /UNOVR command to instruct the system to use your CLI. (The CLI can be MCR, DCL, or a user-written CLI.) If a default CLI is not specified in the account file, the terminal is set to MCR. If the specified CLI is not present in the system, HELLO issues an error message and you cannot log in.

The following code is an example of a system login command file that uses the Indirect Command Processor:

```
.ENABLE SUBSTITUTION
.ENABLE QUIET
.IF P5 = "P" .GOTO SLAV
SET /NOPRIV=TI:
.SLAV: .IF P6 = "S" .GOTO OVER
SET /NOSLAVE=TI:
.;
.;CLEAR OVERRIDE BIT
.;
.OVER: CLI /UNOVR
.DISABLE QUIET
.SETS FILE P1+P2+"LOGIN.CMD"
.TESTFILE 'FILE'
.IF <FILERR> = 1 .CHAIN 'FILE'/LO)
.END:
```

11. If LB:[1,2]SYSLOGIN.CMD does not exist, HELLO executes your login command file (LOGIN.CMD) if it exists. However, before executing the file, HELLO sets your slaved or nonslaved and privileged or nonprivileged status, and clears the CLI override bit.
12. If, after invoking HELLO, you do not enter a name or UIC and password, HELLO prompts for them. If you do not respond to the prompt within a certain time interval, HELLO times out. The time-out interval is specified during system generation when you build the HELLO task. If the interval is zero, HELLO does not time out.

If you disable logins for your system, you can create or edit the file LB:[1,2]NOLOGIN.TXT to include a reason for doing so. Then, if anyone attempts to log in to the system, HELLO displays the message "Logins are disabled" with the reason supplied in NOLOGIN.TXT.

HEL/LOG

Formats

In the following command lines, the braces indicate that you can enter one of the two parameters.

```
>HEL uic/password      }
>HEL username/password }
>HEL                   }
Account or name:uic    }
Password:password      }
>HEL                   }
Account or name:username }
Password:password      }
>HEL uic               }
Password:password      }
>HEL username          }
Password:password      }
```

Parameters

uic

Your User Identification Code (UIC). The command allows the following four UIC representations:

```
g,m
[g,m]
g/m
[g/m]
```

To suppress part of the display of the file LOGIN.TXT, use the slash form (that is, g/m or [g/m]).

The variables g and m can be numbers from 1₈ to 377₈. They represent the UIC group and member numbers, respectively.

username

Your last name, which you can enter in place of a UIC.

password

An alphanumeric password. If you type the password in response to the prompt *Password:*, the system does not display the typed characters.

If you log in to the system successfully, the system displays a message in the following format:

```
system ID
dd-mm-yy hh:mm Logged on Terminal tttn:   as   xxxnnnn
greeting
[login-text]
```

HEL/LOG

system ID

The name and version of the operating system, your login UIC in the form [g,m], the name of the system, and the network node name (if the system is linked to a network). For example:

```
RSX-11M-PLUS V4.0 BL40 [2,54] System BANTER
```

dd-mm-yy

The current date (for example, 8-FEB-87).

hh:mm

The time at which you logged in to the system (for example, 10:34). Note that the time is displayed in 24-hour format. If you logged in at 7:00 p.m., the time would be displayed as 19:00.

xxxxnnnn

A session identifier assigned to your terminal session.

greeting

One of the following, depending on the time of day:

```
Good Morning
Good Afternoon
Good Evening
Good Day
```

login-text

The contents of the LOGIN.TXT or BATCH.TXT files. The system displays the contents of each file as follows:

- If you specify your UIC using the slash form (for example, 303/25 or [303/25]) the first time you log in, the display concludes at the first percent sign (%) in the file. Subsequent logins on any one day (using the slash form) do not display the contents of the text file unless the file has been edited. (The percent sign is used to separate new messages from old ones.)
- If you do not use the slash form, the system displays the entire file. (Note that you can press CTRL/O to end the display after the first percent sign.)

If the login text file does not exist, the system displays the following message:

```
Message file error -26
```

Examples

```
>HEL 303/24/03062 [RET]
RSX-11M-PLUS V4.0 BL40 [2,54] System BANTER
02-OCT-87 17:58 Logged on Terminal TT30: as WRT17
Good Afternoon
>
```

The user enters the group and member numbers of the UIC and the account password,

HEL/LOG

separated by slashes. The system verifies the password and then displays the login message, which includes the name of the account (WRT17).

```
>HEL [RET]
Account or name: JONES
Password:

RSX-11M-PLUS V4.0 BL40 [2,54] System QUACK
2-OCT-87 10:03 Logged on Terminal TT20:

Good Morning
2-OCT-87

*** NEW DISK CONFIGURATION ***
DB0: System and User disk
```

>

The user enters the abbreviation for HELLO, and then the system prompts for the account name and password. After verifying that the account name and password are correct, the system displays the login text. You can halt the output of the login message to the terminal by pressing CTRL/O.

```
>HEL 301/365 [RET]
Password:

RSX-11M-PLUS V4.0 BL40 [2,54] System
3-OCT-87 09:45 Logged on Terminal TT17:

Good Morning
```

>

The user enters the abbreviation for HELLO along with the account UIC, then the system prompts for the password. After verifying that the password (which the terminal does not display) is correct, the system displays the login message.

```
>HEL [301/365] /ARANA [RET]

RSX-11M-PLUS V4.0 BL40 [4,54] System
2-OCT-87 10:06 Logged on Terminal TT20:

Good Morning
```

>

The user enters HELLO, the UIC, and the password. In this case, the UIC is enclosed in brackets and the group and member numbers are separated by a slash.

HELP

3.27 HELP (NP)

The HELP command displays the contents of the general help file for your system. The display usually contains information on how to log in on the terminal, but each installation can change the contents of its help file to suit specific needs. The default help file is LB:[1,2]MCR.HLP.

You can enter the HELP command without logging in.

Formats

HELP % [/OUT:filespec] [qualifier1] [qualifier2] [...qualifier9]

HELP[/keyword] [qualifier1] [qualifier2] [...qualifier9]

Keywords

/CLI:cliname
/DCL
/FIL:[filespec]
/GRO
/LOC
/MCR
/OUT:filespec
/xxx

Parameters

%
Displays the text contained in your default directory in the file HELP.HLP. You must be logged in to request HELP %.

qualifier1 . . . qualifier9
The subject for which you would like help information to be displayed.

Keyword Descriptions

/CLI:cliname
Directs HELP to the help file for a command line interpreter (CLI) in LB:[1,2]cliname.HLP.
If you are in your own CLI and omit the keyword, the default help file is LB:[1,2]MCR.HLP.

/DCL
Specifies that the help text begins in the file LB:[1,2]DCL.HLP. This is the default for terminals set to DCL.

/FIL:[filespec]
Specifies any file where help text is located. If you do not give a complete file specification, the default is LB:[1,2]filename.HLP. If you use /FIL: without any file specification, the default help file is LB:[1,2]MCR.HLP.

/GRO
Instructs HELP to use the file SY:[group,1]HELP.HLP as the root help file, where group is the group number in your protection UIC. Group help files allow users with the same group number to share common help files for that group.

HELP

/LOC

Displays the text contained in HELP.HLP in the default directory on the default volume. This keyword is equivalent to the HELP % command.

/MCR

Specifies that the help text begins in the file LB:[1,2]MCR.HLP. This is the default for terminals set to MCR.

/OUT:filespec

Saves the text of the help file (or files) in the specified file. If you do not use the /OUT keyword, HELP displays the text on your terminal.

/xxx

Specifies that the help text begins in the file LB:[1,2]xxx.HLP, where xxx is the name of a CLI. This keyword produces the same results as specifying /CLI:xxx.

3.27.1 Help File Format

To locate information in your help files, the HELP command requires a specific help file format. When you specify a qualifier in the HELP command line (see the HELP command format), it corresponds to a level number in the help file. The first qualifier corresponds to a level 1 heading in the help file; the second qualifier corresponds to a level 2 heading, and so on. You can specify up to nine qualifiers in a single HELP command line; likewise, you can have up to nine levels of qualifiers in the corresponding help files.

If you are writing your own help files or modifying existing files, observe the following rules:

- Identify each entry in a help file with a *level number* between 1 and 9. *Level numbers* must be the first character of the line they are on, and the *qualifiers* in the help file must be in uppercase letters.
- You can include arbitrary strings of blanks or tabs between level numbers and qualifiers. For clarity, include at least one space or tab.
- If you begin a qualifier with a dollar sign (\$) or a slash (/), the HELP command ignores the dollar sign or slash.

HELP does not distinguish between the commands HELP /QUALIFIER and HELP QUALIFIER; it displays the same text for either command. Therefore, you cannot use the slash (or the dollar sign) within a help file to distinguish between two qualifiers that are otherwise identical. For example, suppose that the following text is part of a help file:

1 FIX

The FIX command loads and locks a task into its partition.

For information on fixing REGIONS, type HELP FIX REGIONS.

For information on the /REGION keyword, type HELP FIX /REGIONS.

2 REGIONS

Regions are contiguous areas of memory in which executable tasks run.

2 /REGIONS

The /REGION keyword allows you to fix a common task region in a partition.

HELP

If you try to access this help file by typing `HELP FIX REGIONS` (for information on regions) or `HELP FIX /REGIONS` (for information on the keyword), `HELP` returns the following error message:

```
HEL -- Ambiguous HELP qualifier
```

In general, when specifying a qualifier in a help file, omit the slash or dollar sign.

- Lines of text in a help file cannot begin with the digits 1 to 9 since these are interpreted as level numbers. In addition, lines beginning with an at sign (@), a number sign (#), or an equal sign (=) are reserved for indirect references and synonyms (see Sections 3.27.3 and 3.27.4).
- If there are level $n+1$ qualifiers, mention the qualifiers in the text so that they are known to exist. Similarly, add level 1 qualifiers to the text displayed when only `HELP` is typed; that is, add them to the beginning of the root help file (for example, `LB:[1,2]MCR.HLP`).

Example 3-1 is an annotated example of the help file format.

HELP

Example 3-1: Help File Format

Help is available on the following MCR commands: ❶

INSTALL	SAVE	UNBLOCK
SET	TIME	UNFIX

For information on a command, type HELP commandname.

1 INSTALL ❷

The INSTALL command makes a specified task known to the system. ❸
The general form of the INSTALL command is:

INS[TALL] [\$]filespec[/keyword(s)]

Help is available on the following INSTALL keywords:

/CKP	/INC	/PRI	/SEC	/TIME
/DFB	/PMD	/PAR	/TASK	

For information on a keyword, type HELP INSTALL keyword.

2 CKP ❹

The /CKP keyword specifies whether or not a task is checkpointable. ❺

2 DFB ❹

The /DFB keyword specifies whether or not a task's data structures are bound to the Executive when the task is installed. ❺

1 SET ❻

The SET command dynamically changes characteristics of and displays information about the system, tasks, and devices. ❼

Help is available on the following SET keywords:

/BRO	/DEF	/HOLD	/INQUIRE
/CACHE	/DPRO	/HOST	/SPEED
/CHAR_LENGTH	/DCL	/HSYNC	/TERM

For information on a keyword, type HELP SET keyword.

2 BRO ❸

The /BRO keyword enables the broadcast option for the specified terminal. ❹

2 CACHE ❸

The /CACHE keyword enables or modifies disk data caching for the specified device. ❹

- ❶ The first part of a help file contains the text that HELP displays if you type HELP without specifying any qualifiers. It includes a list of level 1 qualifiers (such as INSTALL and SET).
- ❷ Next in the file is a level 1 qualifier (INSTALL). Note that the number 1 appears in the first column and that the qualifier name is in uppercase letters.

HELP

- ③ The text following the line "1 INSTALL" contains the information that HELP displays if you type HELP INSTALL. The information includes a list of level 2 qualifiers (such as /CKP or /DFB) that are related to the level 1 qualifier (INSTALL).
- ④ Following the text for the level 1 qualifier are the corresponding level 2 qualifiers. HELP treats the level 2 qualifiers as subentries to the level 1 qualifier, which must precede them in the help file. In this example, CKP and DFB are level 2 qualifiers related to (and preceded by) the level 1 qualifier INSTALL. (The other level 2 qualifiers are not shown in this example.)

Also, note that the level number (2) appears in the first column and that the qualifier name is in uppercase letters.

- ⑤ The text following each level 2 qualifier contains the information that HELP displays if you type HELP followed by the level 1 qualifier and a level 2 qualifier (for example, HELP INSTALL DFB). The information could also include a list of level 3 qualifiers related to the level 2 qualifier; however, this example is limited to two levels for clarity.
- ⑥ Next, the help file contains a second level 1 qualifier (SET). As with the first level 1 qualifier, INSTALL, the number 1 appears in the first column and the qualifier name is in uppercase letters.
- ⑦ The text following the line "1 SET" contains the information that HELP displays if you type HELP SET. The information includes a list of level 2 qualifiers (such as /BRO or /CACHE) that are related to the level 1 qualifier (SET).
- ⑧ Following the text for the level 1 qualifier are the corresponding level 2 qualifiers. In this example, BRO and CACHE are level 2 qualifiers related to (and preceded by) the level 1 qualifier SET. (The other level 2 qualifiers are not shown.)
- ⑨ The text following each level 2 qualifier contains the information that HELP displays if you type HELP followed by the level 1 qualifier and a level 2 qualifier (for example, HELP SET BRO). The information could also include a list of level 3 qualifiers related to the level 2 qualifier; however, this example is limited to two levels for clarity.

Note that this is an abbreviated example of a help file. Actual help files may include indirect references to other help files, synonyms, and nesting to a depth of 9 levels (only 2 levels are shown here). For a description of indirect references and synonyms, see Sections 3.27.3 and 3.27.4, respectively.

3.27.2 Help File Translation

The HELP task interprets a command line in a strictly nested fashion. When searching for qualifiers in a help file, HELP begins by looking for a line containing level number 1, followed by the first qualifier you specified in the HELP command line. If HELP is successful and you specified no other qualifiers, HELP displays the text in the help file that follows level number 1.

For example, if you enter the command HELP INSTALL, HELP searches for a line containing level number 1 followed by the qualifier INSTALL. Thus, if you have a help file containing the following lines:

HELP

1 INSTALL

The INSTALL command makes a specified task known to the system.

For information on installing tasks, type HELP INSTALL TASKS.

2 TASKS

There are several ways to install tasks.

.

HELP displays the text between level number 1 and level number 2, as follows:

The INSTALL command makes a specified task known to the system.

For information on installing tasks, type HELP INSTALL TASKS.

If you specify a second qualifier in the HELP command line, the HELP task searches for a line containing level number 2 followed by that qualifier. Then, unless you specify additional qualifiers, HELP displays the text that follows level number 2.

In the previous example, if you enter the command HELP INSTALL TASKS, HELP searches for a line containing level number 1 followed by the qualifier INSTALL, then searches for a line containing level number 2 followed by the qualifier TASKS. After HELP finds the qualifier, it displays the text between level number 2 and the next level number, as follows:

There are several ways to install tasks.

This correspondence of qualifier position in the HELP command line with level numbers in the help file continues until HELP finds the last qualifier (up to a maximum of nine).

3.27.3 Indirect References in Help Files

Within a help file, you can include references to other help files. The help files to which you refer can contain additional level numbers, help qualifiers, and blocks of text. Indirect references to other files decrease search time and also allow more flexible use of the root help file.

To reference another file from within the help file, specify an at sign (@) as the first nonblank character on a line followed by a file specification. For example:

@filespec

The variable filespec can be any valid file specification. The default file type is HLP. If you specify a file type other than HLP, HELP uses the specified file type as the default in succeeding indirect references. For example, if you specify @filename.TXT, HELP uses the file type TXT as the default file type in future indirect references. The file version number always defaults to the highest existing version.

A help file referenced by an at sign has the same format as the help file that referenced it. However, if the indirect file contains level numbers, the level numbers must be greater than the level number in the help file that precedes the call to the indirect file. For example, if the help file contains the following lines, the file HELPEXAM.HLP must contain level numbers greater than 1.

1 EXAMPLE
@HELPEXAM

HELP

3.27.4 Help File Synonyms

HELP allows you to share text between two or more similar or synonymous qualifiers in the help file. To do this, specify a number sign (#) followed by the similar qualifier as the first nonblank character on a line. For example, to use the text following the HELLO qualifier for the LOGIN qualifier, include the following lines in the help file:

```
1 LOGIN
#HELLO
1 HELLO
```

See Ben Jones for an account and password.

Note that the qualifier containing the displayed text must be preceded by the same level number as all the qualifiers that refer to it. In the previous example, both HELLO and LOGIN are preceded by level number 1. Also, since HELP searches the help file sequentially, the qualifier to which you are referring must appear after all the qualifiers that refer to it (HELLO appears after LOGIN).

In addition to one-word synonyms, you can also use string synonyms. In the following example, HELP displays the text following the qualifier EXECUTING when you enter the command HELP UTILITIES RUNNING:

```
1 UTILITIES
2 RUNNING
=TASKS EXECUTING
1 TASKS
2 EXECUTING
  This text also describes the synonym RUNNING.
```

Always begin the string synonym with a level 1 qualifier.

3.28 HOME (NP,P)

The HOME (HOM) command allows you to modify certain fields in the home block of a Files-11 disk volume. After you make the changes, HOME performs extensive checks to ensure that a good home block is written back onto the volume. If any of these checks fail, HOME attempts to place an alternate home block on the first free block of the home block search path. If this is completed successfully, HOME issues a message about the new home block. However, you should copy the volume as soon as possible, because the alternate home block could be destroyed while the volume is mounted.

To use the HOME command, first install the INI task with the task name . . . HOM as follows:

```
>INS $INI/TASK=...HOM [RET]
```

The difference between INI and HOME is that INI writes the home block onto the volume, whereas HOME modifies the information already contained in the home block (without changing anything else).

Note

If you use the HOME command on an RSX-11M-PLUS Version 1.0 operating system, the results are not the same.

The keywords specify the fields you want to modify in the home block. Each keyword defaults to the value specified for the particular field when the volume was initialized. The keywords do not change the files created by the INI command.

Format

HOM[E] ddnn:volume-label/keyword(s)

Keywords

/DENS=density
 /EXT=block-count
 /FPRO=protection-spec
 /LRU=directory-count
 /MXF=file-count
 /NAME=new-volume-label
 /OVR
 /OWNER=[group,member]
 /PRO=protection-spec
 /UIC=[group,member]
 /VI
 /WIN=retrieval-pointer-count

Parameters

ddnn:

The volume whose home block you want to modify. The volume must be allocated and mounted as foreign (using the MOU /FOR command).

For more information on mounting foreign volumes, see Section 3.33.

HOM

volume-label

The current label for the volume.

Keyword Descriptions

/DENS=density

Checks the density of a diskette. If you specify a value for density, the drive density is compared to the keyword value for consistency. Acceptable values for density are HIGH and LOW.

/EXT=block-count

Specifies the default number of blocks available for extending a file. A file is extended after it uses all of its allocated space. Acceptable values for block-count range from 1 to 255₁₀ blocks.

If you specify /EXT=0, no files (including the system files) can be extended. Therefore, although there may be free space on the disk volume, unless there are also free file headers, new files cannot be created on the volume. (If there are no free headers and the INDEXF.SYS file cannot be extended, no new files can be created.)

/FPRO=protection-spec

Specifies the default protection for files created on a volume. The protection specification (protection-spec) has two formats:

(SYSTEM:RWED,OWNER:RWED,GROUP:RWED,WORLD:RWED)

[RWED,RWED,RWED,RWED]

The user classes (system, owner, group, world) are positional; that is, the location of the word in the string defines the user class to which the code applies. The square brackets around the protection code are required syntax.

For each user class, the system recognizes four types of file protection access codes:

Code	Type of Access
R	Read
W	Write
E	Extend
D	Delete

To specify the default protection for a user class, enter an asterisk (*) instead of access codes in that class's place in the string. For each user class, the absence of a code means the class is denied that type of access.

/LRU=directory-count

Specifies the approximate number of directories that can be accessed simultaneously. The Files-11 Ancillary Control Processor (F11ACP) maintains a list of the most recently used directories. The directory-count value sets the number of entries in this list. Acceptable values for directory-count range from 1 to 127₁₀.

In general, to increase the speed of directory operations, increase the directory-count. If a directory appears in the list, no device I/O is required for finding it in the Master File Directory (MFD). In addition, directory operations do not require the directory file header to be read. However, note that increasing the directory-count increases the number of File Control Blocks (FCBs) used, thus increasing the use of system pool. (See the *RSX-11M-PLUS System Generation and Installation Guide* for more information.)

If you specify `/LRU=0`, the F11ACP does not keep a list of directories. This is not recommended and could have an adverse effect on system efficiency.

The default for directory-count is the value specified when the volume was initialized.

`/MXF=file-count`

Specifies the maximum number of files allowed on the volume. This number corresponds to the number of file headers in the volume's index file. The value for `/MXF` includes the five system files and cannot be greater than the total number of bits allocated to the index file bitmap. Use the following formula to determine the maximum number of files allowed on your volume:

$$\text{maximum} = (4096.) * (\text{current-number-of-index-file-bitmap-blocks})$$

The number of index file bitmap blocks depends on the maximum number of files currently allowed on the volume. Use the `/VI` keyword to obtain this number. Also, read the description of the `/INF` keyword for the MCR command `INI` to determine how many index file bitmap blocks are on the volume.

Note that you cannot reduce the maximum number of files already specified for the volume; you can only increase them.

`/NAME=new-volume-label`

Specifies a new label for the volume.

`/OVR (P)`

(Privileged keyword.) Instructs the HOME command to override label processing so that a volume can be modified without specifying a volume label.

`/OWNER=[group,member]`

Specifies the owner of the volume. Acceptable group and member numbers range from 1 to 377₈. The square brackets are required syntax. This keyword is identical to the `/UIC` keyword.

`/PRO=protection-spec`

Specifies the default protection for a volume. The protection specification (protection-spec) has two formats:

```
(SYSTEM:RWED,OWNER:RWED,GROUP:RWED,WORLD:RWED)
```

```
[RWED,RWED,RWED,RWED]
```

The user classes (system, owner, group, world) are positional; that is, the location of the word in the string defines the user class to which the code applies. The square brackets around the protection code are required syntax.

HOM

For each user class, the system recognizes four types of protection access codes:

Code	Type of Access
R	Read
W	Write
E	Create access at volume level; extend access at file level
D	Delete

To specify the default protection for a user class, enter an asterisk (*) instead of access codes in that class's place in the string. For each user class, the absence of a code means the class is denied that type of access.

/UIC=[group,member]

Specifies the owner of the volume. Acceptable group and member numbers range from 1 to 377₈. The square brackets are required syntax. This keyword is identical to the /OWNER keyword.

The default is /UIC=[1,1].

/VI

Lists the HOME keywords and their values for the specified volume.

/WIN=retrieval-pointer-count

Specifies the number of mapping pointers to be allocated for file windows. A *file window* consists of a number of mapping pointers and is stored in memory when the file is opened. (See the *RSX-11M-PLUS and Micro/RSX I/O Operations Reference Manual* for a description of mapping pointers.)

The retrieval pointer-count must be between 1 and 127₁₀.

Examples

```
>HOM DK0:TEST/MXF=2357./VI RET
** Volume information for DK0: **

Label   = TEST
/Cha    = []
/Ext    = 100.
/Fpro   = [RWED,RWED,RWED,R]
/Lru    = 3.
/Mxf    = 2357.
/Pro    = [RWED,RWED,RWED,RWED]
/Uic    = [1,1]
/Win    = 7.
```

Maximum possible files = 4096.

The Homeblock revision count is 1. Last revised on 11-JUN-87
Volume created on 11-JUN-87 at 19:47:37

Specifies 2357₁₀ as the maximum number of files allowed on the TEST volume for device DK0.
/VI lists the keywords and their values for the modified volume.

3.29 INITIALIZE VOLUME (NP)

The INITIALIZE VOLUME (INI) command produces a Files-11 volume (see Chapter 2). On disk and DECtape volumes, the command initializes the volume (destroys all existing files), writes a dummy bootstrap and a home block, and builds the directory structures. On magnetic tape volumes, the command writes a volume label according to the ANSI X3.27-1978 standard and writes a dummy file that destroys all existing files.

A magnetic tape volume produced by the INI command is considered to be a null volume. If you are going to transport a newly initialized tape to a non-RSX-11M-PLUS operating system, you might first have to make the null volume comply fully with the ANSI standard. To produce an ANSI-standard volume, write an actual file or a null file on the tape. You can do this by using the following command line:

```
>PIP ddnn:DUMMY=NL: RET
```

(For information on using the Peripheral Interchange Program, PIP, see the *RSX-11M-PLUS Utilities Manual*.)

You can initialize a volume only on allocated, private devices (that is, a device you have allocated). Also, mount the volume as foreign (MOU /FOR).

Selecting appropriate values for the command parameters requires an in-depth knowledge of Files-11. Refer to the *RSX-11M-PLUS and Micro/RSX I/O Operations Reference Manual* for more information on the Files-11 disk and ANSI magnetic tape structures.

Format

```
INI[TVOLUME] ddnn:["]volume-label["] [/keyword(s)]
```

Keywords

```
/ACCESS="character"
/BAD=[option]
/DENS=density
/EXT=block-count
/FPRO=protection-spec
/INDX=index-file-position
/INF=initial-index-file-size
/LRU=directory-count
/MXF=file-count
/OWNER
/POS
/PRO=protection-spec
/SDI
/UIC=[group,member]
/VI
/WIN=retrieval-pointer-count
```

Note that you can use a hyphen (-) as the last character on a line to extend the INI command line when selected keywords cause it to exceed 80 characters (or whatever buffer size has been specified for the terminal). You can use any number of continuation lines, but the total command line cannot exceed 512₁₀ characters. You can begin using continuation lines on the same line in which you invoke INI.

INI

Parameters

ddnn:

The device unit name and number of the volume to be initialized.

[**"**]volume-label[**"**]

The label that identifies the volume. This parameter is required. The volume-label can be up to 12 characters in length for disk and DECtape, and up to 6 characters for magnetic tapes.

For magnetic tapes, the volume label is usually a reel number that uniquely identifies the tape. The number is assigned by the installation and, according to the ANSI standard, cannot be duplicated within an installation.

To specify a volume label for a magnetic tape, use any combination of uppercase letters A through Z, the digits 0 to 9, and the following special characters:

Special Characters		
Ampersand (&)	Equal sign (=)	Plus sign (+)
Asterisk (*)	Exclamation mark (!)	Question mark (?)
Colon (:)	Left angle bracket (<)	Right angle bracket (>)
Comma (,)	Parentheses ()	Semicolon (;)
Dash (-)	Percent sign (%)	Single quotation mark (')
Double quotation mark (")	Period (.)	Slash (/)

In addition, spaces are considered valid characters within a volume label.

To use a label that contains a special character, enclose the label in quotation marks ("label"). To use a quotation mark in a label, you must use two quotation marks within the quoted string. For example, the label T"1%" has to be specified in the command line as "T""1%". Any lowercase letters specified in a volume label are converted to uppercase before operations are performed on the volume.

/keyword(s)

The specifications for various characteristics you want the volume to have upon initialization.

Keyword Descriptions

/ACCESS=character

Allows the owner of a magnetic tape volume to specify the access protection for the volume. INI places character in VOL1 (the accessibility field), which is usually blank. Valid values for character are the same as those allowed for specifying a volume label (see the previous description of the volume-label parameter).

The default value for character is a space. If you specify any other character, only a privileged user can mount the volume.

/BAD=[option]

Indicates that bad block processing is to be included in the volume initialization. Consequently, bad blocks on the volume are marked as being in use and cannot be allocated to files.

If you do not specify the /BAD keyword with the INI command, the default action for the command is /BAD=[AUTO]. That is, INI automatically performs bad block processing. The other options of the /BAD keyword allow you to modify the default action.

The brackets surrounding each option are required syntax. The options are as follows:

[AUTO]

Automatically determines the bad-block information for the volume, as follows:

- On non-last-track devices, the Bad Block Locator Utility (BAD) records the addresses of bad blocks on the last good block of the device. This list of bad block addresses is called the *Bad Block Descriptor File*. INI uses the Bad Block Descriptor File to create the BADBLK.SYS file.
- On last-track devices, the last track contains a *Manufacturer Detected Bad Sector File (MDBSF)* and a *Software Detected Bad Sector File (SDBSF)*. BAD writes a record of bad blocks to the SDBSF. INI then creates BADBLK.SYS by combining the input from the MDBSF and the SDBSF.

This is the default option for the /BAD keyword.

[NOAUTO]

Ignores the bad block descriptor file and does not perform bad block processing. If you do not want bad block processing to occur when you initialize a volume, you must specify the /BAD keyword with the [NOAUTO] option.

[MAN]

Allows you to specify a bad block list from the terminal. INI prompts for bad blocks, as follows:

INI>LBN(S)=

Enter bad blocks in the following format:

blocknum:number

Blocknum specifies the bad block number and number specifies the number of sequential bad blocks beginning at blocknum. Both arguments default to decimal unless you precede them with a number sign (#).

To specify a single block, enter the block number and omit the colon. INI requires the colon when you specify a sequence of bad blocks. In addition, separate each series of blocks with a space, tab, or comma. For example, to enter blocks 100, 101, 3, 200 through 299, and 45 as bad blocks, use the following command line:

INI>LBN(S)=100:2,3,200:100,45:1

INI

If you respond to the `INI> LBN(S)=` prompt with a null line (that is, by pressing the RETURN key), INI displays the bad blocks in decimal. The first number in the display represents the beginning block of the sequence; the second number is the number of bad blocks in the sequence.

To terminate bad block input, press CTRL/Z or the ESCAPE key.

[AUTO,MAN]

Automatically determines the bad-block information for the volume and, when done, allows you to specify additional blocks from the terminal.

[OVR]

Ignores the MDBSF and SDBSF written on the last track of the volume; reads the Bad Block Descriptor File created by the BAD utility on the last good block before the last track; and automatically determines the bad-block information for the volume. In effect, this option tells INI to perform bad-block processing for a last-track device as if it were a non-last-track device.

The [OVR] option is valid only for last-track devices; that is, DL-, DM-, and DR-type devices that contain manufacturer-recorded bad block data in the last track.

Note

If you want to use the [OVR] option, run the BAD utility and specify the `/OVERRIDE` switch in the BAD command line. In response to the `/OVERRIDE` switch, BAD writes a Bad Block Descriptor File on the last good block before the last track. Then, when you initialize the volume with the [OVR] option (`INI /BAD=[OVR]`), INI can locate the Bad Block Descriptor File and use it to create `BADBLK.SYS`.

[OVR,MAN]

Performs bad-block processing for a last-track device as if it were a non-last-track device and, when done, allows you to specify additional blocks from the terminal. (See the description of the [OVR] option.)

The [OVR,MAN] option is valid only for last-track devices; that is, DL-, DM-, and DR-type devices that contain manufacturer-recorded bad block data in the last track.

Notes

1. To prevent bad blocks from being allocated to files in a volume, first run the BAD utility. BAD tests volumes for the number and location of bad blocks. In this way, known bad blocks are not allocated to any other file.
2. The way in which INI creates the `BADBLK.SYS` file depends upon the input it receives from the BAD utility. In turn, the data generated by BAD differs according to the type of device it is testing. The description of the [AUTO] option summarizes these interactions.

For more information on the BAD utility, see the *RSX-11M-PLUS Utilities Manual*.

/DENS=density

Sets the bit density (bits per inch or bpi) of a magnetic tape loaded on a TE16, TU16, TU45, TU77, or TU81 tape drive. Acceptable values for density depend on the device type, as follows:

Device Type	Density Values	Default Value
TE16	800 bpi (or LOW) or 1600 bpi (or HIGH)	/DENS=800
TU16	800 bpi (or LOW) or 1600 bpi (or HIGH)	/DENS=800 (or LOW)
TU45	800 bpi (or LOW) or 1600 bpi (or HIGH)	/DENS=800 (or LOW)
TU77	800 bpi (or LOW) or 1600 bpi (or HIGH)	/DENS=800 (or LOW)
TU81	1600 bpi or 6250 bpi	/DENS=6250

The /DENS keyword also checks the density of a diskette in an RX02 drive. If you specify a value for /DENS, the drive density is compared to the density value for consistency. If you do not specify a value, INI initializes the volume at its current density without performing a consistency check.

/EXT=block-count

Specifies the number of blocks available for extending a file. A file is extended after it uses all of its allocated space. Acceptable values for block-count range from 1 to 255₁₀ blocks.

If you specify /EXT=0, no files (including the system files) can be extended. Therefore, although there may be free space on the disk volume, unless there are also free file headers, new files cannot be created on the volume. (If there are no free headers and the INDEXF.SYS file cannot be extended, no new files can be created.)

The default is /EXT=5.

/FPRO=protection-spec

Specifies the default protection for files created on the volume being initialized. The protection specification (protection-spec) has two formats:

(SYSTEM:RWED,OWNER:RWED,GROUP:RWED,WORLD:RWED)

[RWED,RWED,RWED,RWED]

The user classes (system, owner, group, world) are positional; that is, the location of the word in the string defines the user class to which the code applies. The square brackets around the protection code are required syntax.

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For each user class, the system recognizes four types of file protection access codes:

Code	Type of Access
R	Read
W	Write
E	Extend
D	Delete

To specify the default protection for a user class, enter an asterisk (*) instead of access codes in that class's place in the string. For each user class, the absence of a code means the class is denied that type of access.

The default file protection is /FPRO=[RWED,RWED,RWED,R]. That is, all types of access are allowed for all user classes except the world, which is allowed read access only.

/INDX=position

Specifies the logical block number for the index file. Use the /INDX keyword to force the index file (INDEXF.SYS), the Master File Directory (MFD), and the storage allocation file to a specific volume position, thus minimizing access time.

Specify one of the following positions:

Position	Function
BEG	Places the index file at the beginning of the volume. This is the default for DECTape, DECTape II, and ML11.
MID	Places the index file at the middle of the volume. This is the default for disk devices.
END	Places the index file at the end of the volume.
BLK:nnn	Places the index file at the specified block number (nnn).

/INF=initial-index-file-size

Specifies the number of file headers to allocate initially in the index file. The five system files (INDEXF.SYS, BITMAP.SYS, BADBLK.SYS, CORIMG.SYS, and 000000.DIR) are not included in the value for /INF.

The maximum number of file headers that can be allocated to a volume is determined either by the value specified with the /MXF keyword or by default. The default number is based on the size of the volume (see the description of /MXF for the calculation). The maximum number of file headers determines if the volume will have a 1-, 2-, or 3-header index file.

Before you calculate the number of headers that will be preallocated initially, determine the maximum number of file headers allowed on the volume. The number of preallocated file headers is determined either by the value you specify with /INF or by a formula that uses the value you specify with /MXF. The three formulas (one for each type of index file) are as follows:

Index File Type	Formula
1-header	headers = maximum/2
2-header	headers = maximum/2 or 25593, whichever is larger
3-header	headers = maximum/2 or 51699, whichever is larger

In each of these formulas, headers is the initial number of preallocated file headers, and maximum is the maximum number of files specified with /MXF. If headers is less than 100₁₀, INI preallocates 16₁₀ file headers for your volume.

See the description of the /MXF keyword for more information on multiheader index files.

/LRU=directory-count

Specifies the approximate number of directories that can be accessed simultaneously. The Files-11 Ancillary Control Processor (F11ACP) maintains a list of the most recently used directories. The directory-count value sets the number of entries in this list. Acceptable values for directory-count range from 1 to 127₁₀.

In general, to increase the speed of directory operations, increase the directory-count. If a directory appears in the list, no device I/O is required for finding it in the Master File Directory (MFD). In addition, directory operations do not require the directory file header to be read. However, note that increasing the directory-count increases the number of File Control Blocks (FCBs) used, thus increasing the use of system pool. (See the *RSX-11M-PLUS System Generation and Installation Guide* for more information.)

If you specify /LRU=0, the F11ACP does not keep a list of directories. This is not recommended and could have an adverse effect on system efficiency.

The default is /LRU=3.

/MXF=file-count

Specifies the maximum number of files allowed on the volume. The value for file-count corresponds to the number of file headers in the volume's index file and includes the five system files. (For more information on allocating file headers to the index file, see the description of the /INF keyword.)

For a disk of size N blocks, calculate the theoretical maximum number of files as follows:

$$\text{MXF} = ((N - ((N + 4095) / 4096) + 9) * 127) / 258.$$

If you do not specify a maximum value, INI calculates the default value using the following formula:

$$\text{default MXF} = (\text{theoretical maximum MXF}) / 8$$

If you initialize a disk with the /VI keyword, the value for the maximum number of files is displayed along with the other volume information (see the command examples).

For a disk, the maximum value for file-count also decides if the volume will be a Files-11 level 401 or 402 volume. Level 402 volumes have a multiheader index file and allow up to 65,500₁₀ files on them. INI creates the multiheader index file and modifies the volume's home block automatically if the value specified is greater than 25,593. (If 65K index file

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support is not specified for the INI task, the largest value allowed for /MXF is 25,593. With 65K support, the largest value is 65,500.)

Note

Level 402 volumes are not backwards compatible from RSX-11M Version 4.0 or from RSX-11M-PLUS Version 2.0. INI issues a warning message about the incompatibility when it creates a structure level 402 volume.

To create the Files-11 disk structure, a Files-11 volume requires the five system files: INDEXF.SYS, BITMAP.SYS, BADBLK.SYS, CORIMG.SYS, and 000000.DIR (see the *RSX-11M-PLUS and Micro/R SX I/O Operations Reference Manual*). Thus, to compute the value for file-count, you must add the maximum number of user UFDs and files to the five files required for the Files-11 structure.

/OWNER=[g,m] (disks, DECtapes, and magnetic tapes)

/OWNER="owner" (magnetic tapes only)

Specifies the owner of the volume. It is similar to /UIC, but for magnetic tapes allows you to use a syntax other than [g,m]. /OWNER="owner" allows you to change the entire owner identifier field in the volume label block. This may be necessary for making a volume interchangeable with other systems.

/POS

Applies different default values to a volume when the volume is initialized. This keyword assumes that the volume is an RX50.

/POS cannot be used in combination with any other keywords except /VI. When you use /VI and /POS together, the system displays the following message:

Volume initialized with /POS

All information except the volume label is suppressed. HOME displays the label only if you specify a label in the command line. If you do not specify a label, /POS generates its own label for the volume, which consists of the first 12 characters of the date and time (the day, month, year; hour, minute, and second fields). The label does not include punctuation marks. For example:

20MAR8710453

When you specify the /POS keyword, the system files (INDEXF.SYS, BITMAP.SYS, BADBLK.SYS, CORIMG.SYS, and 000000.DIR) are located at the beginning of the volume instead of in the middle.

Although /VI is the only keyword you can use in combination with /POS, the /POS keyword affects other keywords in the following ways:

Keyword	Effect
/FPRO	The access for all classes (including World) is RWED.
/MAX	The number of files allowed on the volume is 200.
/OWNER	The volume owner UIC is [200,200] instead of [1,1].
/UIC	

These defaults cannot be changed.

/PRO=protection-spec

Specifies the default protection for a volume. The protection specification (protection-spec) has two formats:

(SYSTEM:RWED, OWNER:RWED, GROUP:RWED, WORLD:RWED)

[RWED, RWED, RWED, RWED]

The user classes (system, owner, group, world) are positional; that is, the location of the word in the string defines the user class to which the code applies. The square brackets around the protection code are required syntax.

For each user class, the system recognizes four types of protection access codes:

Code	Type of Access
R	Read
W	Write
E	Create access at volume level; extend access at file level
D	Delete

To specify the default protection for a user class, enter an asterisk (*) instead of access codes in that class's place in the string. For each user class, the absence of a code means the class is denied that type of access.

The default volume protection is /PRO=[RWED,RWED,RWED,RWED]. That is, all types of access are allowed to all four user classes.

/SDI

Initializes the disk to be a single-directory device.

/UIC=[group,member]

Specifies the owner of the volume. Acceptable group and member numbers range from 1 through 377₈. The square brackets are required syntax.

The default is /UIC=[1,1].

/VI

Lists all of the INI keywords and their values for the specified volume.

INI

/WIN=retrieval-pointer-count

Specifies the number of mapping pointers to be allocated for file windows. A *file window* consists of a number of mapping pointers and is stored in memory when the file is opened. (See the *RSX-11M-PLUS and Micro/RSX I/O Operations Reference Manual* for a description of mapping pointers.)

The retrieval pointer-count must be in the range of 1 to 127₁₀.

The default is /WIN=7.

Examples

```
>INI DK1:ICTSVOL2/UIC=[[2,5]]/INDX=BEG/FPRO=[[RWED,RWE,RW,R]]RET
```

The INITVOLUME parameters used in the example are as follows:

Parameter	Definition
DK1:	Device unit
ICTSVOL2	Volume label
/UIC	User Identification Code of the volume owner: group=2, member=5
/INDX=BEG	Index file location, forced to beginning of volume
/FPRO	Default file protection, specified by user class

To specify the default file protection, the following types of user classes are defined for each type of file access:

User Class	Type of File Access
system	Read,Write,Extend,Delete
owner	Read,Write,Extend
group	Read,Write
world	Read-only

```
>INI DK0:TEST/EXT=100./VI RET
** Volume information for DK0: **

Label= TEST
/Bad= [Auto]
/Cha= []
/Ext= 100.
/Fpro= [RWED,RWED,RWED,R]
/Indx= Mid
/Inf= 147.
/Lru= 3.
/Mxf= 294.
/Pro= [RWED,RWED,RWED,RWED]
/Uic= [1,1]
/Win= 7.
```

INI

Theoretical maximum files = 2357.

Displays all of the INI keywords and their values for the volume DK0.

INS

3.30 INSTALL (P)

The INSTALL (INS) command makes a specified task executable by the system. An installed task is dormant (not active) until the Executive receives a request to run the task. INSTALL accepts optional keywords that provide parameters not specified when the task was built or that override previously specified parameters.

When you install a task, the system creates a Task Control Block (TCB) for the task in a memory-resident table called the System Task Directory (STD). The task parameters contained in the TCB enable the system to run the task when requested to do so by an MCR command or by a system directive. You cannot run a task until it has been installed (see Chapter 2).

Note

The RUN command has an option that automatically installs and removes a task before and after running it.

A TCB contains both the address of the load-device Unit Control Block (UCB) and the Logical Block Number (LBN) of the task image file. Because task image files are contiguous, the Executive can load the task image in one transfer when an MCR command or system directive requests an installed task. However, if the task is greater than 32K words, loading requires more than one transfer. For example, if a task is built with user instruction and data space (I- and D-space, respectively), the Executive loads the D-space first, then the I-space.

When you install a task in an unsaved system, the system stores the file identification (file ID) for the task image file in the task's header. In addition, it stores the LBN of the task image in the TCB. However, note that the saved system does not retain the LBN of an installed task. When you save the system, the SAVE task uses the file ID located in the task's header to replace the LBN contained in the TCB. Then, when you reboot the system, the system opens the task file and replaces the file ID (stored in the TCB) with the current LBN. If you delete a task before rebooting the system, the system cannot open the task file; so, it automatically removes the task's TCB from the STD.

The Disk Save and Compress (DSC) and Backup and Restore (BRU) utilities compress and copy a disk containing a saved system. They move the task files to different locations while retaining the file identifications. Because the TCB entries contain task file identifications instead of LBNs, the system can function normally when it is rebooted. (For more information on DSC and BRU, see the *RSX-11M-PLUS Utilities Manual*.)

If you use the INSTALL command to install a resident library, INSTALL makes an entry for the resident library in the Common Block Directory (CBD). When a task maps to the library, the system loads the library into memory. You can remove the library only when tasks are no longer mapped to it.

Format

INS[TALL] [\$]filespec[/keyword(s)]

Keywords

/AFF=[CPx,UBy]	/RON=option
/CKP=option	/ROPAR=parname
/CLI=option	/SEC=option
/DFB=option	/SLV=option
/FMAP=option	/SYNC=option

/INC=size	/TASK=taskname
/IOP=option	/TIME=nn
/PAR=option	/UIC={group,member}
/PMD=option	/WB=option
/PRI=number	/XHR=option
/PRO=protection-spec	

Parameters

filespec

The file specification in the form:

`ddnn:[g,m]filename.type;version`

The type defaults to TSK; standard defaults apply to the remaining fields.

\$

When you specify \$ in the command line, ddnn defaults to LB:, and [g,m] defaults to the current library UIC (usually, [3,54]). If the file cannot be found under the library UIC, INSTALL searches the system directory UIC on device LB: (usually, [1,54]).

When you enter an INS \$xxx command (where xxx represents a 1- to 6-character task name), INSTALL searches for the supervisor-mode version (xxxFSL.TSK), the memory-resident version (xxxRES.TSK), and then the "plain" version of the task image file (xxx.TSK). For each type of task, the library directory is searched first, then the system directory.

Note

If LB: has been reassigned to another device with a system UIC that contains privileged tasks built for another system, your system may fail.

/keyword[s]

The specifications for various characteristics you want the task to have upon installation. A list of the keyword options follows the keyword descriptions.

Keyword Descriptions

/AFF=[CPx,UBy]

(RSX-11M-PLUS multiprocessor operating systems only.) Allows you to specify the specific resources (affinity) required for task execution. The square brackets are required syntax. Correct values for the processor specification (x) are A, B, C, and D. Acceptable values for UNIBUS run specifications (y) are E, F, H, J, K, L, M, N, P, R, S, and T.

When you specify the /AFF keyword, the installed task runs only on the processor to which the specified URMs are connected.

/CKP=option

Specifies whether or not a task will be checkpointable. The options are YES and NO. If you specify /CKP=YES (the default for tasks that can be checkpointed), checkpointing is allowed. If you specify /CKP=NO, checkpointing is disabled for the task.

The /CKP keyword overrides the /CP switch specified at task build.

INS

On systems that support the dynamic allocation of checkpoint space, the task image file does not need to contain allocated checkpoint space. The presence of the `/CKP=YES` keyword instructs the system to allocate checkpoint space from a checkpoint file, when required. (See the ACS command description in Section 3.3 for more information on allocating checkpoint space.)

`/CLI=option`

Specifies that the task being installed is a command line interpreter (CLI). The options are YES and NO. You must install a CLI with the YES option before you can set a terminal to that CLI (`SET /CLI`) or work with the CLI by means of the CLI command. However, if the task was built with the `/CL` option, you do not need to install the task with `CLI=YES`.

For more information on the `/CL` option of the Task Builder, refer to the *RSX-11M-PLUS and Micro/RSX Task Builder Manual*.

`/DFB=option`

Specifies whether or not the task's header is bound to Executive data structures when the task is installed. The options are YES and NO. `DFB=YES` specifies that binding to the Executive will be deferred until the task is loaded into memory. If you specify `/DFB=NO`, binding occurs at the time the task is installed.

Specifying `/DFB=YES` avoids problems that occur when a task is installed in more than one system (running or disk resident) at the same time.

The default is `/DFB=YES`.

`/FMAP=option`

Specifies whether or not the task uses the fast-mapping feature of the Executive. The options are YES and NO. If you specify `/FMAP=YES`, fast-mapping is enabled for the task. (For more information on fast mapping, see the *RSX-11M-PLUS and Micro/RSX Executive Reference Manual*.)

This keyword can be used only with tasks that have headers external to system pool. See the description of the `/XHR` keyword for more information about external headers.

`/INC=size`

Increments the address space allocated to a task that runs in a partition. The variable size is the number of additional words of address space to allocate. The increment is usually expressed in octal but may also be expressed in decimal by appending a period.

This keyword overrides the `EXTTSK` or `PAR` option used at task-build time. Tasks that specify the size of the partition in which they are running use this keyword to identify how much dynamic space they may allocate to symbol tables or buffers. Tasks such as MAC, TKB, PIP, and VFY use the space from the end of the task image to the end of their address space as dynamic memory. In effect, the `/INC` keyword defines the number of words in this dynamic region.

You cannot extend a task that uses memory-resident overlays. (See the *RSX-11M-PLUS and Micro/RSX Task Builder Manual*.) Also, you cannot extend a task if you want it to be checkpointed to its original task image file. Therefore, you cannot specify the `/INC` keyword with the `/WB=YES` keyword.

The default is either the size specified at task-build time or zero.

/IOP=option

Specifies that a privileged task can map the I/O page. The options are YES and NO. If you specify /IOP=YES, INSTALL assumes that the task will map the I/O page (APR 7) and, if the task is larger than 8K words, issues a warning message. If you specify /IOP=NO, INSTALL assumes that the task does not need to use the I/O page, and it does not issue a warning message.

Note

If you install a privileged task that is built with separate instruction and data space (I- and D-space, respectively), only the D-space portion of the task is checked for mapping to the I/O page.

/IOP complements the Task Builder /IP switch. Specifying /IP informs INSTALL that the task is intentionally overmapping the I/O page.

The default is /IOP=YES.

/PAR=pname

Overrides the partition name specified at task-build time. By default, the Task Builder (TKB) uses the partition name GEN.

If the keyword specifies a nonexistent partition, the system issues a warning message and attempts to install the task in the GEN partition.

/PMD=option

Requests a Postmortem Dump if the task aborts. The options are YES and NO. If you specify /PMD=YES, a Postmortem Dump occurs if the task aborts because of an SST error condition. If you specify /PMD=NO, no dump is requested at SST abort time.

To generate a dump, the Postmortem Dump task PMD . . . must be installed in the system. This keyword overrides the /PM switch specified at task-build time. (For more information on Postmortem Dumps, see the *RSX-11M-PLUS and Micro/RSX Task Builder Manual* and the *RSX-11M-PLUS Guide to Program Development*.)

The default is specified at task-build time.

/PRI=number

Specifies the priority for the task. The value of number can be between 1 and 250₁₀, where 250 is the highest priority. The standard numbering conventions apply; that is, the default is octal, and the value is a decimal number if it is followed by a period.

The default is /PRI=50₁₀.

/PRO=protection-spec

Specifies the protection for an installed common region. The protection specification (protection-spec) has two formats:

(SYSTEM:RWED, OWNER:RWED, GROUP:RWED, WORLD:RWED)

[RWED, RWED, RWED, RWED]

The user classes (system, owner, group, world) are positional; that is, the location of the word in the string defines the user class to which the code applies. The square brackets around the protection code are required syntax.

INS

For each user class, the system recognizes four types of protection access codes:

Code	Type of Access
R	Read
W	Write
E	Extend
D	Delete

To specify the default protection for a user class, enter an asterisk (*) instead of access codes in that class's place in the string. For each user class, the absence of a code means the class is denied that type of access.

The default is /PRO=[RWED,RWED,RWED,RWED].

Note that you cannot specify protection options for a read-only common region or for the read-only portion of a multiuser task.

/RON=option

Specifies read/write access for a common region. The options are YES and NO. If you specify /RON=YES, the region is installed as read-only. If you specify /RON=NO, the region is installed with read/write access. This keyword overrides the effect of the /PRO keyword.

The default is /RON=NO (the region is installed with read/write access).

/ROPAR=parname

Installs the read-only portion of a multiuser task into the specified system partition parname.

The partition you specify overrides the partition name supplied at task build. If the named partition does not exist, MCR issues a warning message and attempts to install the read-only portion of the task into the partition containing the read/write portion of the task.

/SEC=option

The options are YES and NO. /SEC=YES places into secondary pool the Task Control Block (TCB) for the task that is being installed. This keyword is valid only for tasks with names in the form . . . xxx or xxx\$\$\$ (MCR prototype tasks). If you specify /SEC=NO, the TCB for the task is placed in primary pool instead of secondary pool.

The default is /SEC=YES; the TCB is placed in secondary pool. (For more information on secondary pool, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

/SLV=option

Specifies slave status for the task. The options are YES and NO. If you specify /SLV=YES, data sent to the installed task is marked with the terminal number of the task sending it. When the installed task receives the data, the system sets the task's TI: to that associated with the data. This keyword overrides the Task Builder switch /SL specified at task build time.

If you specify /SLV=NO, the TI: of the task does not change when the task receives data.

The `/SLV` keyword cannot be used with tasks whose names are in the form . . . xxx. These tasks are prototype tasks and cannot be installed as slaved tasks.

The default is specified at task-build time.

`/SYNC=option`

(RSX-11M-PLUS multiprocessor operating systems only.) Allows several tasks to share a common and use the common for synchronization. The options are YES and NO. If you specify `/SYNC=YES` for two or more tasks, only one of the tasks can execute at one time. Note that, if one of the tasks becomes blocked, the others compete to execute.

The `/SYNC` keyword prevents inconsistent data that occurs as the result of *race conditions*. *Race conditions* exist when two or more tasks, running on separate processors, compete for memory. For example, if two tasks access a common, the `/SYNC` keyword ensures that only one task executes at a time. This prevents the second task from reading or writing the common while the first task is executing.

The default is `/SYNC=NO`.

`/TASK=taskname`

Specifies the name by which the system refers to the task.

The default taskname is the name specified at task-build time or the first six characters of the file name.

`/TIME=nM` or `/TIME=nS`

Sets a time limit for the task being installed when it uses the CPU. When the time limit expires, the task is aborted and a message is displayed.

You can specify the time limit in minutes (M) or seconds (S); the default is minutes. The number of time units *n* can be octal (the default) or decimal (if followed by a period). The maximum value allowed is 65,536₁₀ minutes.

If the task is privileged, this keyword is ignored.

`/UIC=[group,member]`

Specifies the UIC for the task. The square brackets are required syntax. You can override the UIC with the RUN command.

The task UIC determines the file-protection class (system, owner, group, world) to which a task belongs and, thus, directly influences file access. Note that file protection may differ from file to file.

The default is specified at task-build time. This default applies only to tasks started by the Executive directive Run Task (RUN\$) or by a RUN command that specifies a time delay before run time. Tasks started by typing the name as a command (for example, PIP and TKB) run under the default UIC of the terminal from which the command was issued.

`/WB=option`

Specifies the file to which a read/write common will be checkpointed. The options are YES and NO. By default, a common is checkpointed to a system checkpoint file.

INS

If you specify `/WB=YES`, the common is checkpointed to its original task image file; also, when the common is removed, it is written back to its original task image file. However, if a common is installed with an increment, it will no longer fit into its original task image file. Therefore, when installing a common, you cannot specify `/WB=YES` with `/INC=size`.

If you specify `/WB=NO`, the common is checkpointed to a system checkpoint file, and it is not written back to the original task image file when it is removed.

If a common is read-only, there is no need to checkpoint it. Thus, `INSTALL` ignores the `/WB` switch if a common is installed with `/RON=YES`.

The default is `/WB=NO`.

`/XHR=option`

Specifies that the Executive's copy of the task's header will be in an area external to the system's dynamic storage region (pool).

The options are YES and NO. If you specify `/XHR=YES`, the task is installed with an external header. If you specify `/XHR=NO`, the task is installed with a resident header.

When you specify `/XHR=YES`, the task's header is not kept in pool. Instead, a copy of the header is placed in a reserved area immediately below the task image. The Executive uses the copy of the header rather than the actual header. When the task is checkpointed, the system writes the entire task image and the copy of the header into the checkpoint file. The header in the task image is left unchanged.

`/XHR` correlates with the `/XH` option for the Task Builder. The default for `/XHR` and the ability to override the option specified at task-build time depend on how the `INSTALL` task was built during system generation.

You can change the effect of the `/XHR` keyword by selecting one of the options described in the remainder of this section. The options determine the default action the system takes when a task is installed. To select an option, your system manager must modify the build command file for the `INSTALL` task (`INSBLD.CMD`). To do this, `INSBLD.CMD` must include the following command line (where `n` is the number of the desired option):

```
GBLPAT = INSROT:$HDEF:n
```

If you do not specify an option number in the command line, option 1 is the default.

After the command file has been modified, the `INSTALL` task must be rebuilt and then reinstalled in the system with VMR (see the *RSX-11M-PLUS and Micro/RSX System Management Guide*).

Note that the options do not apply to tasks that were built with the `/-XH` switch specified. The headers for these tasks are always in pool when the tasks are installed, regardless of the option selected, because the `/XHR` keyword cannot override the `/-XH` switch.

All of the following options are available with the `/XHR` keyword:

Option 1

By default, installs every task with an external header. This option prevents you from unnecessarily or accidentally using headers in pool. Also, it allows you to use external headers without having to rebuild the nonprivileged application system.

You can override this option by specifying `/XHR=NO`.

Option 2

By default, places the headers for privileged tasks in pool and makes the headers for nonprivileged tasks external. This option is provided for users who have user-written privileged code that needs to be converted before it can execute with an external header. As with Option 1, you can use external headers without having to rebuild the nonprivileged application system.

You can override this option when you task build or install a task.

Option 3

By default, places the headers for all tasks in pool. This option is provided for users who have user-written Ancillary Control Processors (ACPs) or privileged code that examines the header of another task. Unlike Options 1 and 2, this option does not allow tasks to use external headers unless they are either rebuilt using the Task Builder (TKB) switch `/XH` or installed with the `/XHR=YES` keyword.

You can override this option when you build the task (using the TKB switch `/XH`) or when you install it (`/XHR=YES`).

Option 4

By default, places the headers for all tasks in pool. This option is similar to option 3, but it cannot be overridden by the TKB switch `/XH`. Instead, it gives the system manager more control over the environment. It is intended to be for systems that cannot allow any code, including nonprivileged code, to execute with external headers.

If you are a privileged user, you can override this option by specifying `/XHR=YES` when you install the task.

Option 5

By default, places the headers for all tasks in pool. This option is similar to Options 3 and 4, but it cannot be overridden.

Selecting this option is not recommended. The effect of this option is similar to choosing a nonstandard Executive during system generation, so that support for external headers is not included. (For information on selecting an RSX-11M-PLUS Executive, see the *RSX-11M-PLUS System Generation and Installation Guide*.)

For a detailed description of the Task Builder `/XH` switch, refer to the *RSX-11M-PLUS and Micro/RSX Task Builder Manual*.

INS

Examples

```
>INSTALL SCAN [RET]
```

Installs task SCAN with the default priority and directory.

```
>INSTALL DM1:[1,111]SCAN.TSK;4/PRI=103 [RET]
```

Installs task SCAN, with file type TSK and version number 4, on device DM1. The group number is 1, the member number is 111, and the priority is 103₈.

```
>INS MAC/INC=4096./PAR=SYSCTL [RET]
```

Installs task MAC in the partition SYSCTL and increases the task size by 4096 words.

Notes

1. Changes made in a common are made only in the memory image of the common. If the common is removed and then reinstalled, there is a fresh image of the common in memory and the previously made changes are no longer present.

Changes made in the memory image of a common can be preserved when the common is checkpointed or removed. If you install the common with the WB=YES option, the REMOVE command writes the common (including the changes) into its original task image file. The previous version of the common is lost. Then, when you reinstall the common, the new version (the common as it was upon removal from memory) is returned to memory.

If you do not specify WB=YES (the default system action is WB=NO), changes to the common are not preserved. The original image file is returned to memory when the common is reinstalled.

2. You cannot use the INSTALL command to install device commons that have been created with the SET /PAR command. (A device common is a special type of common that occupies physical addresses in the I/O page.) When you use the SET command to create a partition, the following operations occur:
 - If the device partition being created is the first device partition in the system, the system automatically creates a main partition called IO PAR. The partition being created then becomes a subpartition of IO PAR.
 - The system creates an entry for the new device partition in the Common Block Directory (CBD) and inserts the partition into the directory. The device partition is now a device common. Because the system creates a common block for the device partition automatically, there is no need to install it as a common. If you attempt to do so, you will receive an error message.

3.31 LOAD (P)

The LOAD (LOA) command reads a nonresident (loadable) device driver into memory. If necessary, it also relocates the device data base and creates the interrupt control blocks (ICBs) that allow access to the device. Then, when you place a device on line, the CON task constructs the interrupt-vector linkages between the device and the driver.

The LOAD command eliminates the need to link infrequently used device drivers permanently into the Executive. The result is the potential for an increase in the amount of system dynamic memory (pool).

You can load drivers that are up to 8K words in length. However, note that the loadable device driver itself must map to locations above 4K.

Note

The driver for a device, for example ZY:, can indicate association with a partition by allocating one word in the driver and labeling it with the global symbol \$ZYCOM. If \$ZYCOM is defined in a driver, you cannot load the driver until you create ZYCOM (LOA writes the PCB address of ZYCOM into \$ZYCOM).

For more information on loadable device drivers, see the *RSX-11M-PLUS and Micro/RSX I/O Drivers Reference Manual*.

Format

LOA[D] dd: [/keyword(s)]

Keywords

/CTB=cca[,b . . .]
 /EXP=expname
 /FLAGS=word
 /HIGH
 /PAR=parname
 /SIZE=parsize
 /VEC

Parameter

dd:

A 2-character ASCII loadable device driver name.

Keyword Descriptions

/CTB=cca[,b . . .]

Specifies that the multidriver controller Controller Table Block (CTB) in the resident data base be modified instead of the symbol \$ddCTB in the loadable data base. Note that the keyword is necessary only if the driver contains a loadable data base; to load most drivers, this keyword is not required. (See the *RSX-11M-PLUS and Micro/RSX Guide to Writing an I/O Driver* for more information.)

LOA

Specify the following arguments:

cc

The name of the multidriver controller (CTB) that should be used in the loadable data base instead of \$ddCTB.

[a,b, . . .]

Slots in the CTB's Controller Request Block (KRB) table pointing to the KRBs in the loadable data base. The slots are named a, b, c, d, e, f, h, j, k, l, m, n, p, r, s, and t.

For example, if a system contains a DB-type device on RHA, you can issue the following command to load a DR-type device with a loadable data base for RHB:

```
>LOA DR:/CTB=RHB
```

/EXP=expname

Specifies the name or file specification of an extended Executive partition to be loaded into memory. To load additional secondary pool into memory, specify SEC as the external partition expname. (For more information on extending secondary pool, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

/FLAGS=word

Specifies a value (in octal) for the flags word to be passed to an extended Executive partition (EXP) if the EXP supports a flags word. The word can be any value from 0 to 177777₈. (The Executive Debugging Tool (XDT) is an example of an EXP that supports a flags word. For a description of how XDT interprets the word, see the *RSX-11M-PLUS and Micro/RSX XDT Reference Manual*.)

This keyword is valid only when used with the /EXP keyword.

/HIGH

Causes the driver to be loaded as high in the partition as possible; absence of /HIGH loads the driver as low in the partition as possible.

/PAR=parname

Specifies the partition parname into which the driver is to be loaded.

To prevent fragmentation of the GEN partition, place all loadable drivers in the same partition (DRVPAR, by convention). When you omit this keyword, the system loads the driver into the partition specified when the driver was built.

/SIZE=parsize

Specifies the minimum size (in words) of the partition into which the driver is to be loaded. A subpartition or *region* is also created at this size. (For more information on regions, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

The value of parsize is rounded up to the next highest unit of 100₈ words and must be less than 100000₈.

/VEC

Specifies that the driver to be loaded is *vectored*.

LOA

Vectoring is a technique for building a portable device driver. You can load a vectored driver into any RSX-11M-PLUS or Micro/R SX operating system that has the same version number as the system on which the driver was built. However, you must specify the /VEC keyword to suppress the validation of the Executive symbol table files used in the driver. /VEC avoids the comparison of the driver symbol table file and the Executive symbol table file.

For more information on vectored device drivers, see the *RSX-11M-PLUS and Micro/R SX Guide to Writing an I/O Driver*.

Examples

```
>LOAD MM: [RET] !LOAD TU16 DRIVER (MMDRV)
```

Loads the MMDRV driver into the partition that was specified when the driver was built.

```
>LOA LP:/PAR=DRVPAR [RET] !LOAD LP11 DRIVER (LPDRV) INTO DRVPAR
```

Loads the LPDRV driver into the DRVPAR partition.

```
>LOAD /EXP=LB:[1,54]XDT/PAR=GEN [RET]
```

Loads the Executive Debugging Tool (XDT) into the GEN partition.

```
>LOAD /EXP=LB:[1,54]XDT/PAR=GEN/FLAGS=1 [RET]
```

Loads the Executive Debugging Tool (XDT) into the GEN partition and enables the extended format of the XDT display.

Notes

- Instructions for building loadable device-driver tasks are defined in the *RSX-11M-PLUS and Micro/R SX Guide to Writing an I/O Driver*. Note that the system generation procedures include provisions to simplify the task building of drivers.
- It is not possible to make all device drivers loadable. Also, not all loadable drivers can have loadable data bases.
- The LOAD command requires that a driver's task (TSK) and symbol table (STB) files reside under the system or library UIC on the system disk (LB). For example, the following command requires that the files DTDRV.TSK and DTDRV.STB reside on LB under the appropriate system or library UIC:

LOA DT:

The command SET /SYSUIC displays and defines the system UIC; the command SET /LIBUIC displays and defines the library UIC. Unless you redefine the directories, the system UIC is set to [1,54] and the library UIC is set to [3,54]. Use the library UIC for vectored drivers only.

- The LOAD command does not initiate checkpointing to free a space in a partition.

LOA

- The LOAD command requires pool space as follows:
 - If the driver data base is being loaded, the data base needs contiguous pool space equal to its size.
 - Each interrupt entry in the driver needs pool space for an Interrupt Control Block (ICB).
 - The Partition Control Block (PCB) needs pool space.

3.32 LOGICAL UNIT NUMBERS (NP)

The LOGICAL UNIT NUMBERS (LUN) command displays the static logical unit number (LUN) assignments for a specified task. (Static assignments are those recorded in the task's disk image file.) The display consists of a list of physical device units in one column and their corresponding LUNs in an adjoining column.

When the specified task is running, the display does not necessarily reflect the running task's assignments. For example, the Executive directive Assign LUN (ALUN\$) issued from within the task can alter the LUN assignments.

If the specified task was initiated by the install-run-remove option of the RUN command, the task has no static LUN assignments. In this case, LUN displays the message:

```
LUN -- Task not in system
```

Format

```
LUN[S] taskname
```

Parameter

taskname

The name of the task for which you want to display static LUN assignments.

Example

```
>LUN XKE   
TIO:  1.  
SY0:  2.  
SY0:  3.  
SY0:  4.  
LB0:  5.
```

The display shows static assignments for LUNs 1, 2, 3, 4, and 5, which are recorded in the task image file header; no other LUNs are statically assigned to the task XKE.

MOU

3.33 MOUNT (NP,P)

The MOUNT (MOU) command allows the file system software access to physical devices. For all volumes on these devices, MOUNT creates the file system control blocks that the Ancillary Control Processors (ACPs) use to support data access on the device. If an online access path exists, MOUNT declares that the volume is logically on line for access. The command then requests the ACP to mount the volume or volume set. (For more information on access paths and placing a device on line, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

RSX-11M-PLUS operating systems deny access to unmounted volumes. The /FOR (FOREIGN) keyword allows you to issue MOUNT commands for unformatted or nonstandard volumes. For example, to initialize a disk as a Files-11 volume, first mount the volume as foreign and then issue the INI command (see Section 3.29). When mounting a foreign volume, do not specify an ACP.

Mounting a volume resets the Queue I/O (QIO) and Error Logging counts to zero. (For information on Error Logging, see the *RSX-11M-PLUS and Micro/RSX Error Logging Manual*.) When a volume is dismounted, outstanding I/O is allowed to complete, but you cannot access additional files on that volume (see the description of the DISMOUNT command in Section 3.23).

The MOUNT command supports the following three types of devices:

- *File-structured devices.* Disks and DECtapes are examples of file-structured devices.
- *Sequential devices.* Magnetic tapes are an example of sequential devices.
- *Non-file-structured devices.* Devices with unformatted or nonstandard file structures are examples of non-file-structured devices.

File-structured devices are usually controlled by the Files-11 Ancillary Control Processor (F11ACP), which supports Files-11 Structure Level 1. Magnetic tapes are usually controlled by the Magnetic Tape Ancillary Control Processor (MTAACP), which supports both ANSI (X3.27-1978) and unlabeled tape formats. Non-file-structured devices must be mounted as foreign devices.

MOUNT also classifies devices and volumes into three groups, as follows:

- A *public volume* is one that all system users can access.
- A *shared volume* is one that can be mounted multiple times by multiple users.
- A *nonshared volume* is one allocated to a single user; the volume is "private."

A nonprivileged user can mount a volume on the following types of devices only:

- The user's private device. No other user can access or mount the volume until the volume is dismounted and deallocated.
- Any other device that has not been allocated or set public. If another user mounts the volume, that user can also access it.

For more information on device types and access rights, see Chapter 2.

If the device is not ready when you attempt to mount the volume, MOUNT waits from 30 to 60 seconds for the device to become ready. If the device is still not ready after the waiting period has elapsed, MOUNT issues an error message.

3.33.1 Using Magnetic Tapes

Magnetic tapes, unlike disks and DECtapes, can be mounted by the set as well as individually. When you mount a single magnetic tape, you are mounting a set consisting of only one tape. A tape set consists of logically related records or files written on one or more reels of tape. Only the first tape in the set has to be loaded on a device when you enter the MOUNT command, but all tapes in the set can be loaded on different devices.

The tape set is identified by a *File Set Identifier*. A *File Set Identifier* is a name that you select to refer to your own tape. In addition, each tape in the file set is identified by a Volume Identifier. By default, the File Set ID is the same as the Volume ID of the first reel of tape in the set, and the Volume ID is usually the reel number of the physical tape. Volume IDs should be assigned by the system manager and should be unique within the installation.

If your tape set processing uses more volumes than you specified with the /VOL keyword, you can use any expired or newly initialized tape for the output volume. For input, use the next volume in the tape set. To determine if the new input tape is the correct one, the system checks the tape's File Set ID, file sequence number, and file section number. If specified, the system also checks the Volume ID.

Only one user can mount a magnetic tape volume (or volume set) at one time. However, if you use the Magnetic Tape Control Task (MAG), you can supply some file attributes and positioning information after the volume is mounted. For more information on MAG, see the *RSX-11M-PLUS and Micro/RSX I/O Operations Reference Manual*.

3.33.2 Using Multiple File Systems

For RSX-11M-PLUS systems with several high-performance disks, you can increase file system throughput by mounting each volume with a separate F11ACP. When you mount a Files-11 or magnetic tape volume, there are several default ACPs that MOUNT can use. MOUNT first defaults the ACP name to ddnnF1. This allows you to tailor the ACP that controls a specific device and then to name that ACP after the device. For example, if you tailor F11ACP for an RK06 disk and install it as DM01F1, then when you enter a MOUNT command for DM1, MOUNT searches for the ACP DM01F1.

For disks, if MOUNT cannot find an ACP whose name is in the form ddnnF1, it searches for an ACP whose name is in the form ddAACP and then F11ACP. For magnetic tapes, the default ACPs are ddnnF1, ddAACP, and then MTAACP. Privileged users can override these defaults by using the /ACP keyword.

Using a separate ACP is also recommended for slow disk devices such as DECtape. Install a copy of F11ACP as DTAACP for DECtape and a copy as DDAACP for DECtape II.

MOU

3.33.3 MOUNT Command Formats

The following descriptions of the MOUNT command formats illustrate the parameters and keywords associated with Files-11 volumes and ANSI magnetic tapes. All the keywords are collectively described following the format descriptions.

You can use a hyphen (-) as a continuation indicator to extend the MOUNT command line when selected keywords cause the command to exceed 80 characters (or whatever buffer size has been specified for the entering terminal). You can use any number of continuation lines, but the total command line cannot exceed 255₁₀ characters.

Note that, since the override volume label keyword (/OVR) is a privileged option of the MOUNT command, a nonprivileged user must always specify a volume label.

Files-11 Disk or DEctape Format

MOU[NT] dev:[label] [/keyword(s)]

Keywords

/ACP=option	/PRO=protection-spec
/CACHE=option	/PUB
/DENS=density	/[NO]SHARE
/EXT=block-count	/UIC=[uic]
/FOR	/UNL
/FPRO=protection-spec	/VI
/LOCK=option	/[NO]WAIT
/LRU=directory-count	/WIN=option
/OVR	/[NO]WRITE
/PARM="user parameters"	

Parameters

dev

Device unit on which the volume is to be mounted. Specify either a physical device name and unit number (ddnn:) or a logical name (if your system includes extended logical name support).

label

The Files-11 volume label that identifies the volume being mounted. The label can be a null argument or up to 12 characters in length. If you are a nonprivileged user, this is a required parameter. If you are a privileged user, you can override this requirement by specifying the /OVR keyword in the MOUNT command line.

/keyword[s]:

MOUNT keywords for Files-11 devices override corresponding values in the volume's home block. Note that for the syntax of the keywords, you can use either an equal sign (=) or a colon (:).

Keyword Descriptions

/ACP=option (P)

(Privileged keyword.) Specifies the name of the ACP to be used as the file processor for the volume being mounted. The option can be the name of a task that is installed as an ACP or it can be **UNIQUE**, which specifies that a dedicated ACP is to be used for the volume.

You need to specify an ACP only in special cases. If an ACP has been written for a customer application in your installation, you will need to use that ACP for volumes used by that application.

When you specify the **UNIQUE** option, **MOUNT** creates a copy of the **F11ACP**. This unique ACP is given a name in the form **ddnnF1** or **ddnnAP**. When the volume is dismounted and the file processor exits, the ACP is automatically removed.

The default depends on the device type.

/[NO]CACHE=option

Specifies whether disk data caching is to be enabled for the specified device, mounts the device with disk data caching enabled, or modifies the caching behavior for the device. Enabling data caching is recommended for the system disk and for disks that are relatively slow in finding data. (For more information on disk data caching, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

You can specify the following options with the **/CACHE** keyword:

CREATE[=[region]][:[mainpar]][:[size]]]

Creates a cache region in memory and associates caching for the specified device with that region. You can specify the name of the region to be created, the main partition the region is to be created in, and the size of the region. Specify the size of the region in decimal number of disk blocks. By default, the **/CACHE** keyword uses a region called **CACHE** in the **GEN** partition with a size of 100₁₀ disk blocks.

REGION=name

Associates caching for the specified device with an existing cache region. The default region is **CACHE**.

[NO]DEFER_WRITES

Enables or disables data caching of deferred virtual I/O write requests for temporary files. By default, the **DEFER_WRITES** option is enabled.

[NO]DIRECTORY[=extent_size]

Enables or disables caching of directory and other volume-structure I/O; that is, logical I/O from an ACP (for example, **F11ACP**). By default, the **DIRECTORY** option is enabled. The default extent size for the **DIRECTORY** option is 1 block.

[NO]LOGICAL[=extent_size]

Enables or disables caching of logical I/O. By default, the **LOGICAL** option is disabled. The default extent size for the **LOGICAL** option is 1 block.

MOU

[NO]OVERLAY[=extent_size]

Enables or disables caching of overlay I/O. By default, the OVERLAY option is enabled. The default extent size for the OVERLAY option is 4 blocks.

[NO]READ_AHEAD[=extent_size]

Enables or disables reading of the next extent before reading is explicitly requested. By default, the READ_AHEAD option is disabled. The default extent size for the READ_AHEAD option is 5 blocks.

[NO]VIRTUAL[=extent_size]

Enables or disables caching of virtual I/O. By default, the VIRTUAL option is enabled. The default extent size for the VIRTUAL option is 5 blocks.

In the /CACHE keyword options, the value of extent_size specifies the maximum size (in decimal disk blocks) of an I/O request that is considered for caching. The minimum acceptable value is 1 block; the maximum is 127 blocks. Extent sizes can be modified for cached devices using the SET command (see the description of the /CACHE keyword in Section 3.42).

If you specify more than one option for /CACHE= in the command line, enclose the options within parentheses and separate them with commas.

/DENS=density

Specifies the density (bits per inch or bpi) of the media loaded on the drive. Acceptable values for density depend on the device type, as follows:

Device Type	Density Values	Default Value
TE16	800 bpi (or LOW) or 1600 bpi (or HIGH)	/DENS=800
TU16	800 bpi (or LOW) or 1600 bpi (or HIGH)	/DENS=800 (or LOW)
TU45	800 bpi (or LOW) or 1600 bpi (or HIGH)	/DENS=800 (or LOW)
TU77	800 bpi (or LOW) or 1600 bpi (or HIGH)	/DENS=800 (or LOW)
TU81	1600 bpi or 6250 bpi	/DENS=6250

If you specify more than one device type in the command line but do not specify a density, the default density is the lowest density supported by all of the devices.

/EXT=block-count

Specifies the number of blocks to extend a file. A file is extended after it uses all of its allocated space. Acceptable values for block-count range from 1 to 255₁₀ blocks.

If you specify /EXT=0, no files (including the system files) can be extended. Therefore, although there may be free space on the disk volume, unless there are also free file headers, new files cannot be created on the volume. (If there are no free headers and the INDEXF.SYS file cannot be extended, no new files can be created.)

The default is the value specified when the volume is initialized.

MOU

/FOR

Indicates that the volume is foreign (non-Files-11). This keyword is required to mount a foreign volume.

Note

If you specify the /ACP keyword without an ACP name, a file system (an ACP) cannot access the volume. Absence of an ACP name permits tasks (such as INI, DSC, BAD, or user tasks executing non-file-structured device QIOs) to have access to foreign volumes.

/FPRO=protection-spec

Specifies the default file protection for files created on a Files-11 disk while the disk is mounted. The protection specification (protection-spec) has two formats:

(SYSTEM:RWED,OWNER:RWED,GROUP:RWED,WORLD:RWED)

[RWED,RWED,RWED,RWED]

The user classes (system, owner, group, world) are positional; that is, the location of the word in the string defines the user class to which the code applies. The square brackets around the protection code are required syntax.

For each user class, the system recognizes four types of file protection access codes:

Code	Type of Access
R	Read
W	Write
E	Extend
D	Delete

To specify the default protection for a user class, enter an asterisk (*) instead of access codes in that class's place in the string. For each user class, the absence of a code means the class is denied that type of access.

The default file protection consists of the values taken from the Volume Home Block.

/LOCK=option

Specifies the default value for the DMO /LOCK keyword. This keyword is valid DB-, DM-, and DU-type disks.

The options are as follows:

N (nounload)

Clears the volume valid bit but does not spin down the disk. This is the default option for volumes mounted as foreign with no ACP specified.

For example, to initialize a volume as a Files-11 volume, enter a MOUNT command with the /FOR keyword. After initializing the volume, the usual procedure is to dismount it and then enter another MOUNT command using a standard ACP. However, because the default value for /LOCK is N, the volume remains spinning or loaded; you can immediately enter the MOUNT command that specifies the ACP.

MOU

U (unload)

Clears the volume valid bit. If you specify /LOCK=U and the disk drive supports the spin-down function, the option also spins down the disk. This option is the default value for volumes mounted with a standard ACP.

If you are a privileged user, you can specify /LOCK=U for a multiunit device (for example, an RC25).

See the description of the DMO command in Section 3.23 for more information.

V (virtual)

(Privileged option.) Does not clear the volume valid bit and does not spin down the disk. The Executive still permits logical I/O to the volume.

The task image of an installed task can reside on a disk that has been dismounted with the /LOCK=V option. However, the file system cannot access the volume.

This option is the default when dismounting the system disk prior to saving the system.

/LRU=directory-count

Specifies the approximate number of directories that can be accessed simultaneously. The Files-11 Ancillary Control Processor (F11ACP) maintains a list of the most recently used directories. The directory-count value sets the number of entries in this list. Acceptable values for directory-count range from 1 to 127₁₀.

In general, to increase the speed of directory operations, increase the directory-count. If a directory appears in the list, no device I/O is required for finding it in the Master File Directory (MFD). In addition, directory operations do not require the directory file header to be read. However, note that increasing the directory-count increases the number of File Control Blocks (FCBs) used, thus increasing the use of system or ACP pool. (See the *RSX-11M-PLUS System Generation and Installation Guide* for more information.)

If you specify /LRU=0, the F11ACP does not keep a list of directories. This is not recommended and could have an adverse effect on system efficiency.

The default for directory-count is the value specified when the volume was initialized.

/OVR

(Privileged keyword.) Instructs the MOUNT command to override label processing so that a volume can be mounted without specifying a volume label.

/PARM="user-parameters"

Instructs the MOUNT command to pass nonstandard parameters from the command line to a foreign ACP.

The user-parameter string can consist of up to a maximum of 40₁₀ characters enclosed in quotes ("). The quotation marks are not included when the characters are counted. If the quoted parameter itself includes a quotation mark, the quotation mark must be followed by another quotation mark.

This keyword is valid only with foreign (/FOR) volumes.

/PRO=protection-spec

Specifies the default volume protection for a Files-11 disk. The protection specification (protection-spec) has two formats:

(SYSTEM:RWED,OWNER:RWED,GROUP:RWED,WORLD:RWED)

[RWED,RWED,RWED,RWED]

The user classes (system, owner, group, world) are positional; that is, the location of the word in the string defines the user class to which the code applies. The square brackets around the protection code are required syntax.

For each user class, the system recognizes four types of protection access codes:

Code	Type of Access
R	Read
W	Write
E	Create access at volume level; extend access at file level
D	Delete

To specify the default protection for a user class, enter an asterisk (*) instead of access codes in that class's place in the string. For each user class, the absence of a code means the class is denied that type of access.

/PUB

Specifies that the volume is accessible by all users, depending on the volume and file protection set for the volume. The drive on which the volume is mounted is deallocated and set public if necessary.

The default MOUNT command keywords are as follows:

Default Keyword	Protection
/PUB	Volume is public
/SHARE	Volume is not allocated or set public
/NOSHARE	Volume is allocated to a user

See Chapter 2 for more information on public devices.

/[NO]SHARE

/SHARE specifies that a volume can be mounted multiple times by one or more users. Each user who mounts the volume gains access to it based on the volume and file protection established for the volume when it was first mounted. After all users have issued a DISMOUNT command and all file activity has ceased, the volume is released by the file processor. The volume is deallocated and set nonpublic, if necessary.

/NOSHARE specifies that the volume is reserved for dedicated use by the first user who mounted the volume. No other users can access the volume. The drive on which the volume is mounted is allocated to the user's terminal and set nonpublic, if necessary.

MOU

The default MOUNT command keywords are as follows:

Default Keyword	Protection
/PUB	Volume is public
/SHARE	Volume is not allocated or set public
/NOSHARE	Volume is allocated to a user

/UIC=[uic]

Specifies the User Identification Code (UIC) for the volume owner in the form [group,member]. The square brackets are required syntax. The numbers for group and member range from 1 to 377₈. This UIC overrides the one specified when the volume was initialized.

/UNL

Specifies that the volume index file should be unlocked for write access by a system user. When locked, the index file is read-only; when unlocked, it is read or write. This keyword is required when you are performing certain maintenance functions with the File Structure Verification Utility (VFY). See the *RSX-11M-PLUS Utilities Manual* for more information. Note that this keyword is unrelated to device write-locking.

The default is locked.

/VI

Displays the volume information on the issuing terminal (TI:). The information displayed shows the characteristics with which the volume was mounted.

The display formats are as follows:

- **Format for Files-11 volumes**

```
Volume Information
Class:      Files-11
Device:     ddnn
Volume label:label
Owner:      [uic]
Protection: [system,owner,group,world]
Default:    [system,owner,group,world]
Processor:  ACP name
```

For last-track devices (for example, DL-, DM-, and DR-type) and for DU-type devices, /VI also displays the pack serial number of the volume (in octal).

- **Format for foreign volumes**

```
Volume Information
Class:      Foreign
Device:     ddnn
Volume label:label
```

/[NO]WAIT

Specifies whether you require operator assistance in performing the mount. The main use of this keyword is for batch jobs, indirect command files, or terminals distant from the machine room.

If you specify **/WAIT** in an interactive mount, a message concerning the mount is sent to the operator's console and the mount is not completed until the operator takes action.

If you specify **/NOWAIT** in a batch job or indirect command file, or if the mount is interactive, no message appears. The volume must have been previously placed on the device and readied for access (that is, spun up and brought on line).

The default is **/NOWAIT**.

/WIN=option

Specifies the number of mapping pointers to be allocated for file windows. A file window consists of a number of mapping pointers and is stored in memory when the file is opened. (See the *RSX-11M-PLUS and Micro/RSX I/O Operations Reference Manual* for a description of retrieval pointers.) The number of retrieval pointers must be less than 129.

/WIN accepts the following options:

n

Specifies the default for all files unless it is overridden on access. The value *n* can be 1 to 127₁₀ or the **FULL** option.

USER:n

Specifies the user default value *n* for the volume.

INDEX:n

Specifies the number of pointers *n* to allocate to the index file window.

USER:n,INDEX:n

If *n* is not the same for both of these options, the default values are as follows:

- The user default value for the volume default
- The number specified for the index file

FULL

Creates windows that map as much of the file as possible; you can specify **FULL** in place of *n* for all of these options.

The default is the number of pointers specified in the home block with either the **HOME** or **INITIALIZE VOLUME** commands (see Section 3.28 or 3.29, respectively).

/[NO]WRITE

/WRITE specifies that write operations are allowed on the volume (the volume is software write-enabled) within the limits of volume and file protection. **/NOWRITE** specifies that write operations are not allowed on the volume (the volume is software write-locked).

By default, write operations are allowed.

MOU

ANSI Magnetic Tape Format

MOU[NT] device-list:[file-set-ID] [/keyword(s)]

Keywords

/ACP=option	/OVRFSID
/BS=n	/PARM="user parameters"
/CC=option	/PRO=protection-spec
/DENS=density	/PUB
/FOR	/RS=n
/FPRO=protection-spec	/[NO]SHARE
/[NO]HDR3	/TR=option
/[NO]LABEL	/UIC=[uic]
/LOCK=option	/VI
/OVR	/VOL=(list)
/OVRACC	/[NO]WAIT
/OVREXP	/[NO]WRITE

Parameters

device-list

One or more device names on which the volume or volume set is to be mounted. More than one device name can be specified only for multivolume ANSI magnetic tape sets. If the command specifies more than one device name, the names must be separated by commas and enclosed in parentheses, as follows:

(ddn: ,ddn: ,ddn: ...) .

Note that when you specify more than one device name, you must always access the tapes through the first name given in the device list. (This also applies when you dismount the tape set.) If you attempt to access a tape through another device name, you will get an error message.

file-set-ID

The File Set Identifier (or File Set ID) can be up to six characters long. The File Set ID is the name you choose for the tape set. By default, it is the same as the first Volume Identifier (Volume ID) in the volume set. To create a tape set with a File Set ID that is different from the Volume ID of the first tape in the set, specify both the File Set ID and the first tape's Volume ID.

If you are mounting a newly initialized tape, you can specify your own File Set ID by using a form of the following command line (note that the /VOL keyword is used because the File Set ID and the Volume ID are not the same):

```
>MOU MM:MYSET/VOL=A234 RET
```

See the description of the /VOL keyword for more information about Volume IDs.

To specify a File Set ID, use any combination of uppercase letters A through Z, the digits 0 to 9, and the following special characters:

Special Characters		
Ampersand (&)	Equal sign (=)	Plus sign (+)
Asterisk (*)	Exclamation mark (!)	Question mark (?)
Colon (:)	Left angle bracket (<)	Right angle bracket (>)
Comma (,)	Parentheses ()	Semicolon (;)
Dash (-)	Percent sign (%)	Single quotation mark (')
Double quotation mark (")	Period (.)	Slash (/)

In addition, spaces are considered valid characters within a volume label.

To use a name that contains a special character, enclose the name in quotation marks. To use a quotation mark in the name, you must use two quotation marks within the quoted string. For example, specify the label "T"1% as "T""1%".

Any lowercase letters specified in a File Set ID or Volume ID are converted to uppercase before operations are performed on the tape. Any other invalid character is converted to a question mark (?).

/keyword[s]:

MOUNT keywords for ANSI magnetic tape devices override corresponding values in the volume's home block. For the syntax of the keywords, you can use either an equal sign (=) or a colon (:).

Keyword Descriptions

/ACP=option (P)

(Privileged keyword.) Specifies the name of the ACP to be used as the file processor for the volume being mounted. The option can be the name of a task that is installed as an ACP or it can be UNIQUE, which specifies that a dedicated ACP is to be used for the volume.

You need to specify an ACP only in special cases. If an ACP has been written for a customer application in your installation, you will need to use that ACP for volumes used by that application.

When you specify the UNIQUE option, MOUNT creates a copy of the MTAACP. This unique ACP is given a name in the form ddnnF1 or ddnnAP. When the volume is dismounted and the file processor exits, the ACP is automatically removed.

If you do not specify an ACP name with the /ACP keyword, a file system (an ACP) cannot access the volume. Absence of an ACP name permits tasks (such as INI, DSC, BAD, or user tasks executing non-file-structured device QIOs) access to non-Files-11 volumes.

The default depends on the device type.

/BS=n

Specifies the block size for an unlabeled magnetic tape volume or the block size for files on an ANSI labeled tape that are Level 1 or 2 (do not have an HDR2 record). The value for n can be from 14 (for unlabeled tapes) or 18 (for ANSI tapes) through 8192. /BS also specifies the default block size for newly created files on an ANSI magnetic tape.

MOU

/CC=option

Specifies the record type for an unlabeled magnetic tape volume, or the record type for files on ANSI labeled tapes that are level 1 or 2 (do not have an HDR2 record) or that are Level 3 but do not have a system code (HDR CP 61) beginning with DEC or OS. The options are:

FOR
LIST
NONE

These options correspond to the FORTRAN keywords for the OPEN statement.

/DENS=density

Specifies the density (bits per inch or bpi) of the media loaded on the drive. Acceptable values for density depend on the device type. For a list of valid and default density values for supported device types, see the previous description of the /DENS keyword for Files-11 Disks and DECTapes.

If you specify more than one device type in the command line but do not specify a density, the default density is the lowest density supported by all of the devices.

/FOR

Indicates that the volume is foreign (non-Files-11). This keyword is required to mount a foreign volume.

Note

If you specify the /ACP keyword without an ACP name, a file system (an ACP) cannot access the volume. Absence of an ACP name permits tasks (such as INI, DSC, BAD, or user tasks executing non-file-structured device QIOs) to have access to foreign volumes.

/FPRO=protection-spec

Specifies the default file protection for files created on a magnetic tape while the tape is mounted. For information on the correct syntax for protection-spec, see the previous description of the /FPRO keyword for Files-11 Disks and DECTape.

/[NO]HDR3

Specifies whether an HDR3 label is to be written when creating new files. The /NOHDR3 keyword is needed only when it is known that the target system cannot handle a tape with an HDR3 label. This keyword has no other effect or application.

The default is /HDR3.

/[NO]LABEL

Specifies whether or not a magnetic tape volume is in ANSI format. If the tape volume is not in ANSI format, specify /NOLABEL.

The default is /LABEL.

/LOCK=option

Specifies the default value for the DMO /LOCK keyword.

The options are as follows:

N (nounload)

Clears the volume valid bit, but does not unload the tape. This is the default option for volumes mounted as foreign with no ACP specified.

U (unload)

Clears the volume valid bit, then rewinds and unloads the tape. This option is the default value for volumes mounted with a standard ACP. See the description of the DMO command in Section 3.23 for more information.

V (virtual)

(Privileged option.) Does not clear the volume valid bit and does not unload the tape. The Executive still permits logical I/O to the volume.

/OVR (P)

(Privileged keyword.) Instructs the MOUNT command to override File Set ID processing on the first tape of a tape set so that a volume can be mounted without specifying a File Set ID.

When you specify /OVR, the File Set ID is taken from the first volume in the set. However, MOUNT still checks the IDs for the remaining volumes in the set. This prevents improper tape processing. (Note that Volume IDs for the tape volumes are overridden if they are not specified, whether or not you use /OVR.)

/OVRACC (P)

(Privileged keyword.) Instructs the MOUNT command to override the protection for an ANSI magnetic tape volume.

/OVREXP (P)

(Privileged keyword.) Instructs the MOUNT command to override the expiration date on the tape volume or volumes.

/OVRFSID (P)

(Privileged keyword.) Instructs the MOUNT command to ignore File Set Identifiers on the second and subsequent magnetic tape volumes of a multivolume set. /OVRFSID may cause improper tape processing.

Use this keyword only if the volume does not conform to the ANSI standard.

/PARM="user-parameters"

Instructs the MOUNT command to pass nonstandard parameters from the command line to a foreign ACP.

The user-parameter string can consist of up to a maximum of 40₁₀ characters enclosed in quotes ("). The quotation marks are not included when the characters are counted. If the quoted parameter itself includes a quotation mark, the quotation mark must be followed by another quotation mark.

This keyword is valid only with foreign (/FOR) volumes.

MOU

/PRO=protection-spec

Specifies the default volume protection for a magnetic tape. For information on the correct syntax for protection-spec, see the previous description of the /PRO keyword for Files-11 Disks and DECTape.

/PUB

Specifies that the volume can be accessed by all users, depending on the volume and file protection set for the volume. The drive on which the volume is mounted is deallocated and set public if necessary.

The default MOUNT command keywords are as follows:

Default Keyword	Protection
/PUB	Volume is public
/SHARE	Volume is not allocated or set public
/NOSHARE	Volume is allocated to a user

See Chapter 2 for more information on public devices.

/RS=n

Specifies the number of characters in a record for unlabeled magnetic tape volumes or the number of characters in a record for files on ANSI labeled tapes that are level 1 or 2 (that is, they do not have an HDR2 record). The value for n can be from 1 through the value specified with the /BS keyword.

/[NO]SHARE

/SHARE specifies that a volume can be mounted multiple times by one or more users. Each user who mounts the volume gains access to it based on the volume and file protection established for the volume when it was first mounted. After all users have issued a DISMOUNT command and all file activity has ceased, the volume is released by the file processor. The volume is deallocated and set nonpublic, if necessary.

/NOSHARE specifies that the volume is reserved for dedicated use by the first user who mounted the volume. No other users can access the volume. The drive on which the volume is mounted is allocated to the user's terminal and set nonpublic, if necessary.

The default MOUNT command keywords are as follows:

Default Keyword	Protection
/PUB	Volume is public
/SHARE	Volume is not allocated or set public
/NOSHARE	Volume is allocated to a user

/TR=option

Specifies the kind of character translation used in read and write operations on an unlabeled magnetic tape volume. Specify one of the following options for this keyword:

NONE

No translation takes place. This is the default.

EBCDIC

Translation from EBCDIC to ASCII for read; ASCII to EBCDIC for write. (Note that translations are not completely symmetrical. Some characters in one set do not have equivalent characters in the other set.)

UT1, UT2, UT3

Translation done by user-supplied Translation tables that have been previously linked into MTAACP. Up to three tables may be linked.

For more information on character translation, see the *RSX-11M-PLUS and Micro/R SX I/O Operations Reference Manual*.

/UIC=[uic]

Specifies the User Identification Code (UIC) for the volume owner in the form [group,member]. The square brackets are required syntax. The numbers for group and member range from 1 to 377₈. This UIC overrides the one specified when the volume was initialized.

/VI

Displays the volume information on the issuing terminal (TI:). The information displayed is the characteristics with which the volume was mounted.

If you specify multiple units, the volume information repeats the device and label lines. The information does not include the volume protection and characteristics defaults. (Volume protection and characteristics do not apply to magnetic tapes.)

The display formats are as follows:

- **Format for ANSI magnetic tape volumes**

```
Volume Information
Class:      ANSI labeled tape or Unlabeled tape
Device:     ddnn
Fileset ID: id
Volume ID:  id
Owner:      [uic]
Processor:  ACP name
```

- **Format for foreign volumes**

```
Volume Information
Class:      Foreign
Device:     ddnn
Volume label:label
```

/VOL=(list)

Specifies the Volume Identifier (Volume ID) for an ANSI magnetic tape. If you specify more than one Volume ID (for a multivolume tape set), separate the Volume IDs with commas.

MOU

Initially, the tape with the first Volume-ID must be physically loaded on the first device unit specified in the command line. The remaining tapes may or may not be loaded on other units specified in the command line. You must specify Volume IDs in the order in which the volumes make up the volume set because the system searches for or requests each successive volume in the specified Volume-ID order.

Mount the second and succeeding volumes on the additional units as follows:

- In the order in which you specified them in the command line
- As requested by console messages from MTAACP

If more tapes are required than were specified at mount time, MTAACP automatically adds volumes to the set.

When you enter the MOUNT command line, the system checks the tape on the first drive to ensure that it is the first volume of the file-set-ID (see the MOUNT command line format for magnetic tapes). If you do not specify the /VOL keyword, the system does not check the Volume ID for the tape.

For compatibility with previous RSX-11M-PLUS releases, the following two command lines are equivalent:

```
>MOU MM: (A,B,C)
```

```
>MOU MM:A /VOL=(A,B,C)
```

/[NO]WAIT

Specifies whether you require operator assistance in performing the mount. The main use of this keyword is for batch jobs, indirect command files, or terminals distant from the machine room.

If you specify /WAIT in an interactive mount, a message concerning the mount is sent to the operator's console and the mount is not completed until the operator takes action.

If you specify /NOWAIT in a batch job or indirect command file, or if the mount is interactive, no message appears. The volume must have been previously placed on the device and readied for access (that is, loaded and brought on line).

The default is /NOWAIT.

/[NO]WRITE

/WRITE specifies that write operations are allowed on the volume (the volume is software write-enabled) within the limits of volume and file protection. /NOWRITE specifies that write operations are not allowed on the volume (the volume is software write-locked).

By default, write operations are allowed.

Examples

```
>MOU DM1:AMBER [RET]
```

Mounts the volume on device unit DM1. (In this example, the optional parameters have not been specified; therefore, MOUNT uses the parameter values in the volume's home block.) No volume information is displayed.

```
>MOU (MT0:,MT1:,MT2:)MYSET /VOL=(VOL1,VOL2,VOL3) [RET]
```

Mounts the volume set MYSET on units MT0, MT1, and MT2. Initially, VOL1 must be physically loaded on MT0; the first volume in a set must always be loaded on the first unit specified in the command. VOL2 and VOL3 may or may not be loaded when the command line is issued. If they are loaded, they can reside on the remaining units in any order (for example, VOL3 could be loaded on MT1).

The system searches for the next volume in a set by Volume ID rather than by unit number; the order in which volumes are listed in the command line is the order in which the system searches for or requests the volumes. If VOL2 and VOL3 are not loaded, the system requests each in turn. The volumes can be loaded on either MT0, MT1, or MT2.

```
>MOU DM1:SYS004/LRU=9/VI/WIN=20 [RET]
```

Mounts the volume labeled SYS004 on DM1. The command line reserves space for nine directory File Control Blocks (FCBs) to remain in the ACP's pool or system pool. Also, it displays the volume information and changes the default window block size to 20₁₀ for files opened on this volume.

```
>MOU DB3: /CACHE=(CREATE=:100,DEFER_WRITES, READ_AHEAD=10) [RET]
```

Mounts DB3 with data caching enabled and a partition called CACHE in the GEN partition with a size of 100₁₀ disk blocks. Also, enables deferred write requests and reading ahead of the next extent with an extent size of 10 blocks.

Note the proper /CACHE keyword syntax: if you specify multiple options for the keyword, you must separate the options with commas and enclose them in parentheses. Also, unless you specify a main partition, double colons are necessary to delimit the partition size.

OPE

3.34 OPENREGISTER (P)

The OPENREGISTER (OPE) command allows examination and optional modification of a word of memory. To open a location within a task, the task must be fixed in memory.

By default, OPE displays a location and its contents in octal. By using special control characters, you can also have the information displayed in ASCII, Radix-50, double-byte, or decimal format. To specify a different format, type the desired control character followed by the ESC key. You can do multiple conversions for the same location on one line. The display remains on the same line until you open the next location.

Use the same control characters to insert new values into a location in ASCII, Radix-50, double-byte, or decimal format. To insert a new value and open the next location, type the control character followed by the new value and then press the RETURN key.

Format

OPE[N] memory-address [+ or - n] [/keyword]

memory-address /contents [control-character] [value] line-terminator

The first line is the OPE command line. The second line is the general format in which OPE displays the contents of the location. After that line, you can display and change the contents in various formats.

Keywords

/AFF=[CPx, UBy]

/CPU=CPx

/DRV=dd:

/KNL

/KNLD

/KNLI

/REG=region-name

/TASK=taskname

/TASKD

/TASKI

Parameters

memory-address

A 1- to 8-digit octal memory address (location).

+ or - n

One or more optional octal numbers to be added to or subtracted from the memory address.

control-character

One or more optional special characters used to display values or insert new values. The special characters and their related formats are as follows:

Special Character	Format
/	Octal (default format)
"	ASCII word (two characters)
'	Single-character ASCII
%	Radix-50
\	Double-byte
.	Decimal

line-terminator

The line terminator directs the subsequent action of OPEN. Any value that is entered replaces the contents of the word whose address and current value are shown in the first part of the display line. The slash (/) is part of the display line.

Use any one of the following terminators:

Line Terminator	Function
ESC ALT	ESCAPE (ESC) or ALTMODE (ALT) terminates acceptance of further input and is the only exit from the OPE command. If used after a special control character, it converts the contents of a location from octal to the desired format.
RET	RETURN opens the next sequential location. If you press RETURN after a special control character and new value sequence, it inserts the new value in the specified format into a location.
^ RET	Circumflex (^), or up-arrow on some terminals, and RETURN opens the previous location.
* RET @ RET	Asterisk (*) and RETURN, or at sign (@) and RETURN, opens the location pointed to by the contents of the opened location.
> RET	Right angle bracket (>) and RETURN treats the contents of the open location as a branch instruction. The effective address of the branch is the next opened location. You cannot supply a value (modify the current open location) and close the location with this combination.

Keyword Descriptions

/AFF=[CPx,UBy]

(RSX-11M-PLUS multiprocessor operating systems only.) Accesses an address relative to the specified processor's I/O page. The square brackets are required syntax.

/CPU=CPx

(RSX-11M-PLUS multiprocessor operating systems only.) Accesses an address relative to the specified CPU partition.

OPE

/DRV=dd:

Accesses an address relative to the beginning of the partition that contains the loadable driver for the specified device.

/KNL

Accesses the first 32K of Executive memory.

On a system supporting instruction space (I-space) and data space (D-space), the keyword accesses and prints the contents of addresses in the Executive data space. On systems that do not support I- and D-space, the keyword accesses and prints the contents of addresses in the Executive instruction space.

/KNLD

Accesses and prints the contents of addresses in the Executive data space. (Valid only on systems that support I- and D-space.)

/KNLI

Accesses and prints the contents of addresses in the Executive instruction space. (Valid only on systems that support I- and D-space.)

/REG=region-name

Accesses an address relative to the beginning of the specified region.

/TASK=taskname

Accesses an address relative to the specified task (the task partition). Note that the task must be fixed.

On systems that support user I- and D-space, the keyword accesses and prints the contents of addresses in the user data space.

/TASKD

Accesses and prints the contents of addresses in the data space of an I- and D-space task. Note that the task must be fixed. (Valid only on systems that support user I- and D-space.)

/TASKI

Accesses and prints the contents of addresses in the instruction space of an instruction and data space task. Note that the task must be fixed. (Valid only on systems that support user I- and D-space.)

After accepting the first input line, OPEN finds the memory location to be accessed by using either of the following:

- The keyword
- The specified address as the actual address

When you specify **/DRV**, **/REG**, or **/TASK**, the supplied memory address (a virtual address in the partition) is modified by + or - n. The absolute address thus formed is used to display the second line shown in the command format. In particular, the virtual address (task, partition, or kernel) and its contents are displayed. You can enter an optional replacement value, followed by a line terminator.

OPE

An attempt to specify an invalid location or access beyond the limits of the partition causes an error message. You are limited to the specified memory region (TASK, REG, or PAR). However, if you do not use a keyword in the command line, OPEN can access any address of physical memory. On multiprocessing systems, to access an address in a device page (the processor's I/O page), you must treat the location as absolute and use the /AFF keyword. Likewise, to access an address in a CPU partition, you must treat the location as absolute and use the /CPU keyword.

Examples

```
>OPE 4+10/TASK=CYCLE [RET]
000014 /60014 350 [ESC]
```

In this example, the specified virtual address in the task CYCLE is 4 while n equals 10, yielding the effective task-relative address of 000014. The system responds by printing the virtual address (000014) followed by the slash and the contents of the address (060014). The user responds by entering the new value 350 and the ESC character. The value 350 replaces the previous contents of the task's virtual location 000014.

```
>OPE 0/PAR=TSTPAR [RET]
00000000/50712
```

This command opens the partition TSTPAR at location 0 and displays in octal the current value at the location.

```
>OPE 0/PAR=TSTPAR [RET]
00000000/50712 % [ESC] MCR
```

This command opens location 0 of TSTPAR, displays the current value in octal, and then displays the Radix-50 value in ASCII format.

```
>OPE 0/PAR=TSTPAR [RET]
00000000/50712 % [ESC] MCR %DCL [RET]
00000002/00000 [RET]
00000004/14604
```

This command sequence displays the current value at location 0 in octal and then Radix-50 format, and then changes the value. The new value is also in Radix-50 format. Pressing the RETURN key enters the new value into location 0 and displays it in octal, then opens the next location in memory and displays its contents in octal.

PAR

3.35 PARTITION DEFINITIONS (NP)

The PARTITION DEFINITIONS (PAR) command displays a description of each memory partition in the system. The display consists of six columns that specify the following information:

1. Partition name
2. Address of Partition Control Block (PCB)
3. Starting address of partition (in octal)
4. Size of partition (in octal)
5. One of the following partition types:

Display	Partition Type
MAIN	Main partition
TASK	Partition contains a task
DRIVER	Partition contains a device driver
RO COM	Partition is a read-only common
RW COM	Partition is a read/write common
DEVICE	Partition is a common and is mapped to the I/O page
SEC POOL	Partition is in secondary pool
CPU	Partition is a CPU partition in a multiprocessor system

DEVICE partitions are used to allow tasks to communicate with specific device registers, such as the UDC and ICS/ICR-11 industrial control subsystem.

For a description of subpartitions, see Chapter 2. For a definition of dynamic regions, see the *RSX-11M-PLUS and Micro/RSX Executive Reference Manual* and the *RSX-11M-PLUS and Micro/RSX System Management Guide*. For more information on loadable drivers, see Section 3.31.

6. Description of partition occupant in one of the following forms:

Form	Meaning
[taskname]	An inactive memory-resident task
< taskname >	An active task
(dd:)	The specific device driver
+ xxxx +	The name of the first installed task that is associated with an unnamed common, usually the read-only segment of a multiuser task
! xxxx !	The name of the common

Format

PAR[TITIONS]

PAR

Example

```

>PAR RET
SYSPAR 117734 00174400 00010000 MAIN
        065230 00174400 00010000 TASK <TKTN >
DRVPAR 117624 00216400 00140000 MAIN
        117340 00216400 00003100 DRIVER (DB:)
        117274 00221500 00001300 DRIVER (DK:)
        117164 00226100 00001300 DRIVER (DS:)
        117120 00227400 00004000 DRIVER (DM:)
        036314 00233400 00001600 DRIVER (DX:)
        116744 00236400 00001100 DRIVER (LP:)
        116700 00237500 00003600 DRIVER (MM:)
        116634 00243300 00035300 RW COM !TTCOM !
        116550 00300600 00015600 DRIVER (TT:)
        116504 00316400 00001300 DRIVER (RD:)
        116440 00317700 00001300 DRIVER (VT:)
        116374 00321200 00000100 DRIVER (NL:)
        036044 00321300 00001300 DRIVER (DT:)
        036504 00322600 00003200 DRIVER (DR:)
LDRPAR 117560 00356400 00002600 MAIN
        116054 00356400 00002600 TASK <...LDR>
TSTPAR 117514 00361200 00040000 MAIN
SECPOL 117450 00421200 00022000 SEC POOL
GEN     117404 00443200 04734600 MAIN
        115454 00443200 00070600 TASK <F11ACP>
        073400 00534000 00006000 TASK <TT36 >
        052274 00542600 00003500 RO COM +...EDI+
        060774 00571400 00020100 TASK <QMG...>
        037210 00620100 00036100 TASK <HRC...>
        045104 00656200 00026400 TASK <RMDemo>
        040240 00716200 00070600 TASK <DSOOF1>
        043300 01007000 00070600 TASK <DSO1F1>
        044474 01077600 00070600 TASK <LSTACP>
        062254 01170400 00040000 TASK <SYSLOG>
        061340 01230400 00012100 TASK <LPP0 >
        061674 01242500 00012100 TASK <LPP1 >
        061774 01254600 00037100 TASK <BAP2 >
        063050 01313700 00037100 TASK <BAP1 >
        070100 01401400 00035400 TASK <AT.T36>
        071114 01437000 00035400 TASK <AT.V3 >
        037474 01474400 00074500 TASK <EDTT3 >
        072244 01571100 00026500 TASK <PARV3 >
        042100 01631100 00064500 TASK <TT47 >
        037540 01715600 00102700 TASK <EDIT25>
        064534 02050500 00033500 TASK <TTF6 >
        037724 02143000 00134300 RW COM !RMSRES!
        070574 02340500 00041700 TASK <LOGT17>

```

PAR

Displays a description of the following memory partitions:

Partition	Description
SYSPAR	System partition, used by the Task Termination Notification Program (TKTN) and other system tasks
DRVPAR	Contains the loadable device drivers
LDRPAR	Contains the Loader task, which is always fixed in memory
TSTPAR	Used for running tests ("test" partition)
SECPOL	Secondary pool
GEN	General partition, the default for most tasks in memory

3.36 REASSIGN (P)

The REASSIGN (REA) command reassigns a task's logical unit numbers (LUNs) from one physical device unit to another. The reassignments affect only the static assignments recorded in the task's image file on disk.

The command does not affect a memory-resident task. Hence, REASSIGN has no effect on the assignments of a currently executing task or on the assignments of a task that is fixed in memory.

Format

```
REA[SSIGN] taskname lun dev
```

Parameters

taskname

The name of the task.

lun

The logical unit number of the task.

dev

The new device unit, which can be a physical, logical, or pseudo device name.

Examples

```
>REA TSK1 3 TT0: [RET]
```

Reassigns LUN 3 of task TSK1 to device TT0:.

```
>REA GNRL 2 TT1: [RET]
```

Reassigns LUN 2 of task GNRL to device TT1:.

```
>REA TEST 3 XX: [RET]
```

Reassigns LUN 3 of task TEST to logical device XX:.

```
>REA TSK1 3 MYDISK: [RET]
```

Reassigns LUN 3 of task TSK1 to the logical device MYDISK:.

RED

3.37 REDIRECT (P)

The REDIRECT (RED) command redirects all I/O requests previously directed to one physical device unit to another physical device unit. The REDIRECT command is especially useful if I/O units required for a task are not working. The command does not affect any I/O requests already in the I/O queue.

You cannot redirect the following device units:

- The pseudo device TI (nor can a device be redirected to TI)
- An attached device
- A device unit containing a mounted volume
- A spooled device

In addition, you cannot redirect a pseudo device to itself nor can you redirect a terminal to the null device.

Format

RED[IRECT] newdev=olddev

Parameters

newdev

The new device unit to which subsequent requests will be directed. The device newdev can be the logical name for the device or a physical device name and unit number (ddnn:).

olddev

The old device unit from which requests have been redirected. The device olddev can be a logical name for the device or a physical device name and unit number (ddnn:).

Example

```
>RED TT3:=TT6: [RET]
```

Redirects all I/O requests for terminal TT6 to terminal TT3.

```
>RED TT6:=TT6: [RET]
```

Restores I/O requests for terminal TT6.

```
>RED DISK2:=DISK1: [RET]
```

Redirects all I/O requests for the device assigned the logical name DISK1: to the device assigned the logical name DISK2:.

3.38 REMOVE (P)

The REMOVE (REM) command deletes an entry (a task name) from the System Task Directory (STD) and thereby removes the task from the system. The removal of a task from the system makes the task unrecognizable to the system. This action is the complement of INSTALL. All that remains of the task in the system is the task image file.

REMOVE also checks to see if the task is an initialized CLI. If so, REMOVE issues an error message.

To remove a task that is currently executing, you must first abort the task.

Formats

```
REM[OVE] taskname
REM[OVE] regionname/REG
```

Parameters

taskname

The name of the task to be removed.

regionname/REG

Removes the region regionname from the Common Block Directory (CBD).

Example

```
>REM SCAN [RET]
```

Removes the task named SCAN from the system. The task image file is not deleted.

```
>REM CACHE/REG [RET]
```

Removes the region named CACHE from the Common Block Directory.

Notes

1. If a task that is the object of a REMOVE command is fixed, the command unfixes the task and then removes it.
2. REMOVE cancels all time-based schedule requests for the specified task.
3. REMOVE unlinks a task from all ICS/ICR interrupts.
4. REMOVE deallocates all receive-by-reference and receive-data packets for the task and detaches all attached regions. (See the *RSX-11M-PLUS and Micro/RSX Executive Reference Manual* for more information.)
5. A region cannot be removed if there are tasks installed in the system that reference that region.
6. Changes made in the memory image of a common may be preserved when the common is checkpointed or removed. If the common was installed with the WB=YES option, the REMOVE command writes the common, with its changes, into the common's original task

REM

image file. The previous version of the common is lost. When the common is reinstalled, the new version (the common as it was upon removal from memory) is returned to memory.

3.39 RESUME (NP,P)

The RESUME (RES) command continues execution of a previously suspended task. A nonprivileged user can issue the RESUME command only for tasks initiated from the issuing terminal. A privileged user can direct the RESUME command to any suspended task.

Format

RES[UME] taskname [/TERM=term]

Parameter

taskname

The name of the task to be resumed. If you omit the task name, the command attempts to resume task TTnn (where nn is the octal unit number of the issuing terminal).

Keyword

/TERM=term

A privileged keyword that resumes a task initiated from the specified terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:).

Example

```
>RES RX7 [RET]
```

Resumes task RX7.

```
>RES MAC/TERM=MYTERM [RET]
```

Resumes the task MAC initiated at the terminal assigned to the logical name MYTERM.

Note

A task cannot suspend any task other than itself. The RESUME command allows such a suspended task to proceed.

RUN

3.40 RUN (NP,P)

The RUN command initiates the execution of a task. The command can cause a task to be:

- Run immediately (NP)
- Run at a time increment from now (P)
- Run at a time increment from clock unit synchronization (P)
- Run at an absolute time of day (P)
- Installed, immediately run, and removed on exit (NP)

All of these options, except install-run-and-remove, are available with or without rescheduling.

You cannot run a task using the ... xxx form of the task name; that is, you cannot specify RUN ... xxx. The ... xxx (and xxx\$\$\$) form is used for the prototype copy of the task, which is never executed.

RUN has the following five format variations:

Format	Function
RUN taskname [/UIC=[g,m]]	Runs the task immediately.
RUN taskname dtime [/RSI=magu][UIC=[g,m]]	Runs the task at a time increment from now.
RUN taskname sync [dtime][RSI=magu][UIC=[uic]]	Runs the task at a time unit from clock unit synchronization.
RUN taskname atime [/RSI=magu][UIC=[uic]]	Runs the task at an absolute time of day.
RUN [ddnn:][\$]filename [/keyword(s)]	Installs, runs immediately, and removes the task on exit.

The formats and corresponding command parameters are described in the subsections that follow.

Format 1: Running the Task Immediately (NP)

RUN taskname [/UIC=[g,m]] [/EST=option]

Parameter

taskname

The 1- to 6-character name of an installed task.

RUN

Keywords

/EST=option

Specifies whether exit status is to be returned from the RUN command or from the task being run with the RUN command. The options are YES and NO. If you specify EST=YES, the exit status returned from the RUN command is the status of the task being run. RUN waits for the task to emit status and returns that status. If you specify EST=NO, the exit status returned from the RUN command is the status of the command only. RUN does not wait for the task to emit status. It returns status indicating only whether the task was initiated successfully.

The default is /EST=NO.

/UIC

(Privileged keyword.) The UIC under which the task will be requested to run. This UIC also determines which files the task can access.

The UIC has the format [g,m], where g and m represent the group and member numbers, respectively. Acceptable group and member numbers range from 1 to 377₈. The square brackets are required syntax.

When you specify /UIC, RUN locates the task image file in the specified UIC (on device SY) and runs the task from that UIC. The specified UIC also becomes the default and protection UICs for the task.

When you do not specify /UIC, RUN looks for the task image file in the System Task Directory (STD) to see if the task is already installed. If RUN finds the task, it proceeds to run it. If RUN does not find the task, it looks for the file in the UIC (on device SY) to which the terminal requesting the task is set, and then installs and runs the task. The terminal's UIC becomes the default and protection UICs for the task.

You can also request a task to run that is not in the STD. MCR invokes a catchall task (TDX) to install and run the uninstalled task. For information about TDX, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.

See the description of /UIC under Format 5 for its use by nonprivileged users and tasks. The default is the UIC of the terminal that issued the RUN command (/UIC is not specified).

Format 2: Running a Task After a Specified Time Increment (P)

```
RUN taskname dtime [/RSI=magu] [/UIC=[g,m]]
```

Parameters

taskname

A 1- to 6-character task name.

dtime

The time at which the task will be initiated. Dtime consists of a magnitude field and a units field in the following format:

magu

RUN

The magnitude field *mag* specifies the number of units to be clocked. It cannot exceed 24 hours in the specified unit and is decimal by default. The units field *u* can be one of the following:

T

Ticks. A *tick* is a clock interrupt. The rate at which interrupts occur depends on the type of clock installed in the system. For a line frequency clock, the tick rate is either 50 or 60 per second, depending on the line frequency. For a programmable clock, a maximum of 1000 ticks per second is available. The frequency is selected at system generation.

T can be any positive value from 0 to a maximum length of 15 bits.

S

Seconds. S can be any positive value from 0 to a maximum length of 15 bits.

M

Minutes. M can be any positive value from 0 to 1440₁₀.

H

Hours. H can be any positive value from 0 to 24₁₀.

Keywords

/RSI=*magu*

The reschedule interval. The format is the same as for the parameter *mtime*. The reschedule interval specifies how often the task is to be rerun. Thus, each time the specified interval of time lapses, an initiation request is made for the specified task.

If the magnitude (*mag*) is equal to 0, then the reschedule interval is set to 1. Specifying **/RSI=0H** is the same as specifying **/RSI=1H**.

Note that the CANCEL and REMOVE commands negate the effect of this keyword.

The default is no rescheduling.

/UIC=[*g,m*]

See Format 1.

Format 3: Running a Task Using Clock Unit Synchronization (P)

The system determines the task start-time by waiting for the first specified time unit (hour, minute, second, tick) to increment and then waiting for the specified time to elapse.

RUN taskname sync [*mtime*] [/RSI=*magu*] [UIC=[*uic*]]

Parameters

taskname

A 1- to 6-character task name.

RUN

sync

The time unit by which the system synchronizes the task start-time. Specify one of the following units:

Unit	Synchronization
T	Synchronizes on the next tick
S	Synchronizes on the next second
M	Synchronizes on the next minute
H	Synchronizes on the next hour

dtime

The time at which the task will be initiated. If present, dtime is added to the synchronization unit to produce the actual run time for running the task. See Format 2.

/RSI

The reschedule interval. See Format 2.

/UIC

The UIC under which the task is requested to run. See Format 1.

Format 4: Running a Task at an Absolute Time of Day (P)

RUN taskname atime [/RSI=magu] [/UIC=uic]

Parameters

taskname

A 1- to 6-character task name.

atime

Absolute time of day at which to initiate this task. The format is as follows:

hh:mm:ss

hh

Hours, in decimal

mm

Minutes, in decimal

ss

Seconds, in decimal

RUN

Keywords

/RSI

See Format 2.

/UIC

See Format 1.

Format 5: Running Install-Run-Remove Tasks

RUN [dev][\$]filename [/keyword[s]]

Keywords

/CKP=option

/CMD="command-line"

/EST=option

/INC=size

/IOP=option

/PAR=parname

/PMD=option

/PRI=number

/ROPAR=pname

/SLV=option

/TASK=taskname

/TIME=nn

/UIC=[g,m]

Parameters

dev

The device unit on which the task image file resides. Specify either a physical device name and unit number (ddnn:) or a logical name (if your system includes extended logical name support).

\$

When you specify a dollar sign (\$) in the command line, ddnn defaults to LB:, and [g,m] defaults to the current library UIC (usually, [3,54]). If the task image file cannot be found in the library UIC, INSTALL searches the system directory UIC on device LB: (usually, [1,54]).

If you do not specify a dollar sign (\$), RUN searches for the task image file in the UIC (on device SY) to which the terminal requesting the task is set. (This is similar to Format 1 when the /UIC keyword is not specified.)

Note

If LB has been reassigned to another device and the system UIC for that device contains privileged tasks built for another system, your system will fail.

filename

The name of the task image file to be run.

Keyword Descriptions

/CKP=option

Specifies whether or not a task will be checkpointable. The options are YES and NO. If you specify /CKP=YES (default for checkpointable tasks), checkpointing is allowed. If you specify /CKP=NO, checkpointing is disabled for the task.

The /CKP keyword overrides the /CP switch specified at task build.

On systems that support the dynamic allocation of checkpoint space, the task image file does not need to contain allocated checkpoint space. The presence of the /CKP=YES keyword instructs the system to allocate checkpoint space for the task from a checkpoint file as needed.

/CMD="command-line"

Passes the specified command line to the task for processing. The command line must begin with the task's acronym and must be valid for the task (for example, if the task being installed is MAC, "command-line" must be a valid MACRO-11 command line) or a syntax error will occur. When the task finishes executing the command line, it is removed.

/EST=option

Specifies whether exit status is to be returned from the RUN command or from the task being run with the RUN command. The options are YES and NO. If you specify EST=YES, the exit status returned from the RUN command is the status of the task being run. RUN waits for the task to emit status and returns that status. If you specify EST=NO, the exit status returned from the RUN command is the status of the command only. RUN does not wait for the task to emit status. It returns status indicating only whether the task was initiated successfully.

The default is /EST=YES.

/INC=size

Increments the address space allocated to a task that runs in a partition. The variable size is the number of additional words of address space to allocate. The increment is usually expressed in octal, but can also be expressed in decimal by appending a period.

This keyword overrides the EXTTSK or PAR option used at task-build time. Tasks that specify the size of the partition in which they are running use this keyword to identify how much dynamic space they may allocate to symbol tables or buffers. Tasks such as MAC, TKB, VFY, and AT use the space from the end of the task image to the end of their address space as dynamic memory. In effect, the /INC keyword defines the number of words in this dynamic region.

You cannot extend a task that uses memory-resident overlays. (See the *RSX-11M-PLUS and Micro/RSX Task Builder Manual*.)

The default is the size specified at task-build time.

/IOP=option

Specifies that a privileged task can overmap the I/O page. The options are YES and NO. If you specify /IOP=YES, RUN assumes that the task will overmap the I/O page (APR 7) and, if the task is larger than 8K words, issues a warning message. If you specify /IOP=NO,

RUN

RUN assumes that the task does not need to use the I/O page. No warning message is issued.

`/IOP` complements the Task Builder `/IP` switch. Specifying `/IP` informs RUN that the task is intentionally overmapping the I/O page.

The default is `/IOP=YES`.

`/PAR=parname`

Specifies the partition in which the task is to be installed.

The default is the partition specified at task-build time.

`/PMD=option`

Requests a Postmortem Dump when the task aborts. The options are YES and NO. If you specify `/PMD=YES`, a Postmortem Dump is requested for the task if it aborts because of a Synchronous System Trap (SST) error condition. If you specify `/PMD=NO`, no dump is requested at SST abort time. This keyword overrides the Task Builder (TKB) switch `/PM` specified at task-build time.

To generate a dump, the Postmortem Dump task `PMD . . .` must be installed in the system. (For information on Postmortem Dumps, see the *RSX-11M-PLUS and Micro/RSX Task Builder Manual* and the *RSX-11M-PLUS Guide to Program Development*. Also, see the description of the `ABORT` command in Section 3.1.)

The default is specified at task-build time.

`/PRI=number`

(Privileged keyword.) Specifies the priority of the task. The value range is 1 to 250₁₀, where 250 is the highest priority. Standard number conventions apply: octal by default, decimal if followed by a period.

This keyword is ignored if specified by a nonprivileged user.

The default is `/PRI=50`.

`/ROPAR=pname`

Installs the read-only portion of a multiuser task into a specified partition (`pname`). If the specified partition does not exist, the read-only segment is installed in the same partition as the task.

`/SLV=option`

Specifies the slave status of the task. The two options are YES and NO. If `/SLV=YES`, data sent to the installed task is marked with the TI of the sending task. When the installed task receives the data, the system sets the task's TI to that associated with the data. If `/SLV=NO`, the TI of the task does not change when receiving data.

This keyword overrides the Task Builder (TKB) switch `/SL` specified at task build.

The default is specified at task-build time.

`/TASK=taskname`

Specifies the name the task uses while it is running.

RUN

/TIME=nM or /TIME=nS

(Systems with Resource Accounting only.) Sets a time limit for a task that uses the CPU. When the time limit expires, the task is aborted and a message is displayed.

You can specify the time limit in minutes (M) or seconds (S); M is the default. The number of time units n can be octal (the default) or decimal if followed by a period. The maximum value allowed is 65,536₁₀.

If the task is privileged, the keyword is ignored.

Note

Resource Accounting is a system generation option. (For information on Resource Accounting, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

/UIC=[g,m]

Specifies the UIC under which the task will be requested to run. The square brackets are required syntax.

If you specify a UIC, the UIC becomes the default UIC for the task. However, your protection UIC becomes the protection UIC for the task. If you do not specify a UIC, your default and protection UICs become the default and protection UICs for the task. (See the previous description of /UIC for the effects for privileged users and tasks.)

The default is the UIC of the terminal that issues the RUN command.

Examples

```
>RUN TR7 15M [RET]
```

Runs task TR7 15 minutes from the time the command was issued.

```
>RUN XKE 15M/RSI=90S/UIC=[3,1] [RET]
```

Runs task XKE 15 minutes from the time the command was issued, rescheduling it every 90 seconds, with a UIC of [3,1].

```
>RUN DK2:$MAC [RET]
```

Runs the task in file DK2:MAC.TSK from the system directory. The task is automatically installed, run, and removed on exit.

Notes

- If the command requests the task to run immediately (Format 1), it establishes the terminal from which the task was initiated as the pseudo device TI. For Formats 2, 3, and 4, the system establishes the issuing terminal as the pseudo device CO.
- A run-immediately command (Format 1), if terminated with an ESC character instead of a RETURN, echoes the default prompt when the requested task exits and not when MCR has finished initiating the task. This facility allows you to determine when a task that is not producing output on a terminal has exited.

RUN

- The install-run-remove format (Format 5) also establishes the terminal from which the command was issued as the pseudo device TI: and causes the default prompt to be displayed on TI: when the task exits. This form of the command is especially useful when the space available in the dynamic storage region (pool) is low because the memory necessary for a Task Control Block (TCB) returns to pool when the task exits.

3.41 SAVE (P)

The SAVE (SAV) command copies the current RSX-11M-PLUS operating system image (the contents of main memory) into the system image file from which the current image was booted. (By convention, the system image file is a special task image file named RSX11M.SYS.) The command saves the image so that a hardware bootstrap or the BOOT command can later be used to reload and restart it.

There is no size restriction. The size of the system image file determines the maximum size that can be saved, but there are other restrictions on the system image file: it must be contiguous and it must be large enough to contain all of secondary pool. (SAVE saves secondary pool because prototype Task Control Blocks are contained in it.)

All system images reside on a file-structured volume as a specially formatted task image: the image does not have a task header. There may be more than one system image on a volume (for example, a program development system and a production or test system), and nonprivileged tasks can be installed in several system images at the same time.

To determine the minimum size for a system image file, compute the formula of four times the size plus two ($4 \times \text{SYSIZ} + 2$). For example:

28K requires 114. blocks
 32K requires 130. blocks
 124K requires 498. blocks
 256K requires 1026. blocks

You can save system images on any of the following devices:

Devices for Saving System Images				
ML11	RC25	RK05/06/07	RM80	RX33
RA60	RD31/32	RL01/02	RP02/03	RX50
RA80/81	RD52/53/54	RM02/03/05	RP04/05/06	

System images saved on the following devices are considered to be compatible; that is, a system image saved on one of the devices can be transported with the Backup and Restore Utility (BRU) to any of the other devices. (See the *RSX-11M-PLUS Utilities Manual* for information on BRU.)

Compatible Devices for Saving System Images				
ML11	RC25	RD51/52/53/54	RM80	RP06
RA60	RCF25	RK06/07	RP04	RX33
RA80/81	RD31/32	RM02/03/05	RP05	RX50

To successfully save a system, the SAVE command requires the following conditions:

- Error logging is not active.
- All tasks are installed from pseudo device LB.
- All checkpointable commons must be installed from LB.

SAV

- No checkpoint files are active.
- No volumes, except the load device, are mounted.
- The load device can be successfully dismounted.
- No tasks have outstanding I/O.
- No tasks are connected to interrupts.
- All drivers, active tasks, fixed tasks, loaded commons, and secondary pool, reside within the amount of main memory that SAVE will write to the system image file.
- Resource Accounting must be turned off.
- The load device, the TI of SAVE, any other pseudo devices, and the reconfiguration driver (RD:), can be on line; all other device units and device controllers must be off line.

An unsaved system image satisfies this requirement. For all other systems, take the units and controllers off line with the reconfiguration services (see the *RSX-11M-PLUS and Micro/RSX System Management Guide*).

- On multiprocessor systems, run SAVE on the only active processor.

An error is reported if any of these requirements are not met.

SAVE is active when the memory-resident system image is copied to disk. Because of this, VMR considers SAVE to be an active task in the system image. This is correct because SAVE is the task that starts the system after a boot.

The Executive references the file images of installed tasks by physical addresses (logical block numbers, or LBNs). A saved system does not always retain the physical disk addresses of installed tasks. For example, the Disk Save and Compress Utility Program (DSC) can compress and copy a disk containing a saved system, thus moving the task files to different physical locations. Therefore, SAVE converts the LBNs of all installed tasks into file identifications and stores these in the Task Control Blocks (TCBs). Since the TCB entries contain task file identifications rather than LBNs after a system save, the system can function normally when it is rebooted even if LBNs have changed in the meantime.

Upon system rebooting, SAVE reopens the task file and stores the new LBN of the task in the TCB. If a task has been deleted, the system cannot open the task file when the system is rebooted. In this case, the system automatically removes the task's TCB from the System Task Directory (STD).

Since installed common regions and read-only segments of tasks face a similar problem, SAVE also converts the absolute pointers for these into relative pointers and restores the pointers when the system is booted.

When the bootstrap block is written, the physical disk-block address of the system image file is stored with it. However, the file can be deleted. If there is file system activity, the blocks previously allocated to the system image may be reallocated to another file. A subsequent bootstrap that uses the boot block could possibly cause random data to be loaded.

Upon rebooting a saved system, SAVE does the following:

- Selects the system clock
- Sizes memory and extends the partition so that it uses all available memory

- Validates that the boot device is not allocated and then sets it public
- Sets the context of the console terminal as logged in, privileged, and nonslaved
- Sizes the boot device
- Outputs a system identification message
- Redirects all pseudo devices to the boot device
- Mounts the system disk
- Initiates the file [1,2]STARTUP.CMD on the booted device

Format

SAV[E] [/keyword(s)]

Keywords

/WB

/MOU="string"

/SFILE="filespec"

/CSR=x

Keyword Descriptions

/WB

Indicates that a hardware boot block pointing to the system image is to be written to the system device. The new boot block points to the file that is saved with the SAVE command. Thus, on the next hardware bootstrap, this saved file will be loaded. If the command line omits the /WB keyword, the boot block still points to the prior system image, which may have been overwritten.

/MOU="string"

Automatically issues a MOUNT command at system startup to mount the system disk.

The MOUNT command line ("string") that you specify must be enclosed within quotes and must be in the proper format (that is, including all necessary slashes (/) or equal signs (=)). Note that SAVE does not check the syntax of the string.

/SFILE="filespec"

Automatically initiates an indirect command file ([1,2]STARTUP.CMD) on the boot device at system startup. This keyword allows you to specify another indirect command file.

The command file you specify must be enclosed within quotes. Note that SAVE does not check the syntax of filespec.

/CSR=x

Permits you to specify the control and status register (CSR) address for the boot device. The options for x are: SY or an octal number that is even and greater than 157777₈.

If you do not specify /CSR, SAVE uses the address the bootstrap left in R1 as the CSR address for the boot device. If you specify /CSR=SY, SAVE uses the CSR address that was used to save the system. If x is an octal number, SAVE uses the number as the CSR address.

SAV

If you are transporting the saved system image to a system that has a different CSR address, use the VMR CON command to adjust the data base CSR and vector addresses for the image before you boot the system. (See the *RSX-11M-PLUS and Micro/RSX System Management Guide* for information on VMR.)

You do not have to specify /CSR for compatible devices (see previous list).

Example

>SAV

The current status of the system is saved on the system disk. System changes made by the REDIRECT command or other MCR commands are also saved with the system image that is resident in main memory.

3.42 SET (NP,P)

The SET command dynamically changes characteristics of, and displays information about, the system, tasks, and devices.

Nonprivileged users can change the characteristics of their own terminals (pseudo device TI) and any privately allocated device. Privileged users can change the characteristics of any device and also of any task and of the system. All users can display information about any device or task or about the system.

The following two lists describe most of the available options for nonprivileged and privileged users.

Nonprivileged Options

- Establish characteristics for the issuing terminal (TI) and for private devices
- Set the default UIC for the issuing terminal
- Display the status (determined by the keyword specified) of all terminals and other devices
- Display statistics about system dynamic memory
- Establish disk data caching for a private disk

Privileged Options

- Establish characteristics for any device in the system
- Establish the default UIC for any terminal in the system
- Establish the default directory for DECnet-related tasks
- Establish the system UIC
- Establish the library directory used by the LOAD command and the install-run-remove option of the RUN command
- Establish disk data caching for a public disk
- Set a device to public status so that any system user can access the device
- Create partitions and subpartitions
- Move the top boundary of a partition
- Add space to the dynamic core pool
- Modify the pool limit parameters used by the Pool Monitor Task
- Enable write check on devices that support it
- Specify I/O queue optimization for a device
- Specify the maximum number of I/O packets to be preallocated to optimize I/O performance
- Specify the maximum size to which a task can extend itself
- Enable or disable the ability to log in on terminals

SET

Improper use of the SET command from a privileged terminal can result in a situation in which privileged user input will not be accepted. Avoid the following two situations:

1. All privileged terminals in the system are slaved and cannot enter unsolicited input to MCR, and logins are disabled. Nonprivileged terminals cannot enter privileged commands and therefore cannot reset the privileged terminals to be nonslaved. See the description of the /SLAVE keyword in the Keywords section.
2. The buffer length of all the nonslaved, privileged terminals is shorter than 14₁₀ bytes. In this case, the terminal buffer is then too small for a privileged user to enter many important commands required to continue system operation or to alter the status of other terminals. See the description of the /BUF keyword in the "Keywords" section.

A number of SET command keywords (/MAXEXT, /MAXPKT, /PLCTL, /PUB, and /WCHK) require features that you must include during system generation. If you did not include support during system generation, the specified keyword has no effect.

Note

You can also use any DCL SET command from MCR. Refer to the *RSX-11M-PLUS Command Language Manual* for information about DCL commands.

Format

SET /keyword=values

Only one keyword per command line is permitted. You can prefix most keywords with NO to negate or disable the function of the keyword. (Exceptions are noted in Table 3-4. The system returns a syntax error message whenever NO precedes one of these keywords.)

Table 3-4 briefly summarizes the SET command keywords. They are grouped according to the functions they perform, as follows:

- Setting Device Characteristics
- Establishing Directories
- Controlling I/O Operations
- Modifying Memory Allocation
- Networking
- Using System Tasks and Utilities
- Ensuring System Protection
- Tuning the System

Table 3-4: SET Keyword Summary

Keyword	Description
Setting Device Characteristics	
/[NO]ABAUD[=term]	Enables or disables autobaud detection for a terminal.
/[NO]ANSI[=term]	Specifies support for ANSI standard escape sequences.
/[NO]AVO[=term]	Specifies the advanced video option for a terminal.
/[NO]BLKMOD[=term]	Enables or disables local editing and block-mode transmission.
/[NO]BRO[=term]	Enables or disables the broadcast option.
/BUF=ddnn:[size]	Sets or displays the default buffer size.
/[NO]CACHE=ddnn:(option[,,,])	Enables or disables disk data caching.
/CHAR_LENGTH[=term:[size]]	Establishes the length of characters transmitted and received.
/CLI=term:[cli]	Defines the default command line interpreter (CLI).
/[NO]CRT[=term]	Enables or disables the backwards deletion option.
/DCL[=term]	Enables recognition of DIGITAL Command Language (DCL) commands.
/[NO]DEC[=term]	Indicates compatibility with VT100-series terminals.
/[NO]EBC[=term]	Enables or disables the 8-bit character option.
/[NO]ECHO[=term]	Displays or inhibits the display of input characters on a terminal.
/[NO]EDIT[=term]	Specifies performance of ANSI-defined advanced editing functions.
/[NO]ESCSEQ[=term]	Enables recognition of escape sequences.
/[NO]FDX[=term]	Enables or disables simultaneous processing of input and output (the full-duplex option).
/[NO]FORMFEED[=term]	Indicates whether or not a terminal has a hardware form feed.
/HFILL=term:[value]	Specifies the number of fill characters placed after a carriage return.
/[NO]HHT[=term]	Indicates whether or not a terminal has a hardware horizontal tab.
/[NO]HOLD[=term]	Enables or disables hold-screen mode.

SET

Table 3–4 (Cont.): SET Keyword Summary

Keyword	Description
Setting Device Characteristics	
/[NO]HSYNC[=term]	Enables or disables synchronization between the host system and the specified terminals.
/INQUIRE	Sets all the appropriate attributes for a given terminal type.
/LINES=term:[value]	Establishes the number of lines per page for a terminal.
/[NO]LOWER[=dev]	Enables or disables the conversion of lowercase input characters to uppercase.
/MCR[=term]	Enables MCR command recognition at a terminal.
/[NO]OPT=[ddnn:opttyp:fairness-count]	Enables or disables I/O Queue Optimization.
/[NO]OVLP[=ccn]	Enables or disables overlapped-seek support for the specified device controller.
/[NO]PARITY[=term:[option]]	Enables or disables parity generation and checking for a terminal.
/[NO]PASTHRU[=term]	Enables or disables standard operating system responses to special characters (such as CTRL/C or CTRL/O).
/[NO]PRINTER_PORT[=term]	Indicates that a terminal does or does not have a printer port.
/[NO]PRIV[=term]	Establishes a terminal as privileged or nonprivileged.
/[NO]PUB[=ddnn:]	Establishes a device as public or nonpublic.
/[NO]REGIS[=term]	Indicates that a terminal does or does not support the ReGIS graphics character set.
/[NO]REMOTE[=term:[speed]]	Declares that a terminal line is remote (connected to a modem) or local.
/[NO]RPA[=term]	Enables or disables the read-pass-all option.
/[NO]SERIAL[=term]	Specifies serial or parallel processing of unsolicited input.
/[NO]SLAVE[=term]	Establishes or removes slave status from a terminal.
/[NO]SOFT[=term]	Specifies whether or not a terminal accepts software-defined character sets.
/SPEED=term:[recv:xmit]	Establishes the receive and transmit baud rate.

Table 3-4 (Cont.): SET Keyword Summary

Keyword	Description
Setting Device Characteristics	
/TERM=term:[value]	Establishes the terminal type.
/[NO]TTSYNC[=term]	Enables or disables the terminal synchronization option.
/[NO]TYPEAHEAD[=term:[size]]	Specifies whether or not a terminal driver stores input characters in a buffer to prevent their loss.
/UIC[={uic}[:term]]	Establishes the default UIC.
/[NO]VFILL[=term]	Enables or disables the vertical fill characters option.
/[NO]WCHK[=ddnn:]	Enables or disables write checking.
/[NO]WRAP[=term]	Enables or disables the wrap-around option.
Establishing Directories	
/DEF[={ddnn:}[[directory]]]	Establishes the default UIC (nonamed mode) or establishes the current default device and directory (named mode).
/[NO]DPRO[=protection-spec]	Establishes a default file protection for the current session.
/LIBUIC[={uic}]	Establishes the UIC for nonprivileged system task library files.
/[NO]NAMED	Sets the directory mode to named or nonamed (numeric).
/NETUIC[={uic}]	Specifies the UIC in which all DECnet-related tasks are stored.
/SYSUIC[={uic}]	Establishes the UIC for the system and all system tasks.
Controlling I/O Operations	
/MAXPKT[=n]	Specifies the maximum number of I/O packets retained for use by the Executive directive Queue I/O (QIO\$) request.

SET

Table 3–4 (Cont.): SET Keyword Summary

Keyword	Description
Modifying Memory Allocation	
/MAIN=pname[:base:size:type]	Synonym for /PAR (see /PAR).
/NOMAIN=pname	Eliminates a partition from the system; synonym for /NOPAR.
/MAXEXT[=size]	Establishes the maximum size to which a task can extend itself.
/NOCEX	Deallocates Executive space reserved for use by DECnet on pregenerated kits.
/PAR=pname[:base:size[:type]]	Establishes or displays a partition.
/NOPAR=pname	Eliminates a partition from the system; synonym for /NOMAIN.
/POOL[=top]	Increases the size of the dynamic storage region (pool).
/SECPOL	Displays secondary pool use on the system.
/TOP=pname:value	Modifies the top boundary of a partition.
Networking	
/HOST[=node[:]]	Establishes a node as the host system for a user.
Using System Tasks and Utilities	
/COLOG	Specifies Console Logging Commands
/CRASHDEV	Specifies the Crash Device
/CRASH_DEVICE:ddnn:[CSRaddress]	
/PLCTL[=[high][:low][:frz][:basep]]]	Sets the pool limit parameters used by the Pool Monitor Task (PMT).
Ensuring System Protection	
/[NO]LOGON	Enables or disables logging in on the system.
/[NO]VTLOGON	Enables or disables logging in to the system on a virtual terminal.
/PASSWORD	Changes your password for the system.

Table 3-4 (Cont.): SET Keyword Summary

Keyword	Description
Tuning the System	
/RNDC[=nn]	Defines the length of the Executive round-robin scheduling in ticks.
/RNDH[=nn]	Defines the highest priority considered for Executive round-robin scheduling.
/RNDL[=nn]	Defines the lowest priority considered for Executive round-robin scheduling.
/SWPC[=nn]	Defines the number of clock ticks for a single Executive swapping interval.
/SWPR[=nn]	Defines a priority range for Executive swapping.

Notes on Memory Allocation Keywords

1. If a partition contains an installed task common or loaded driver and a keyword (for example, /NOMAIN or /NOSUB) attempts to eliminate the partition, the system rejects the command.
2. When defining a main partition, the name must not already be defined as a partition. In addition, a main partition cannot overlap any other main partition. An exception is for DEV partitions, which can overlap.
3. Once you allocate space to the dynamic storage region (pool), the space cannot be recovered for use in partitions.
4. Partitions cannot include subpartitions explicitly defined by the SET command. An attempt to define subpartitions in this way will be rejected. The Executive dynamically defines subpartitions as they are needed for regions installed in the partition.

Keyword Descriptions**/ABAUD[=term]**

Enables autobaud detection for the remote “dial-up” line for the specified terminal. The terminal driver samples the line’s first input character, tries to determine the incoming baud rate, and sets the interface speed accordingly.

A nonprivileged user can display all the terminals that have autobaud detection enabled, but only a privileged user can enable the option for a specific terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have autobaud detection enabled.

/NOABAUD[=term]

Disables autobaud detection for the specified terminal. The terminal driver does not attempt to determine the incoming baud rate for the remote (“dial-up”) line.

SET

A nonprivileged user can display all of the terminals that have had autobaud detection disabled, but only a privileged user can disable the option for a specific terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that do not have autobaud detection.

/ANSI[=term]

Informs the system that the specified terminal supports ANSI standard escape sequences.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that support the ANSI standard escape sequences.

/NOANSI[=term]

Informs the system that the specified terminal does not support ANSI standard escape sequences.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that do not support the ANSI standard escape sequences.

/AVO[=term]

Specifies that a VT100-series terminal has the advanced video option. This option enables the terminal to blink, bold, and flash parts of the screen, and to set the screen at 132₁₀ columns. If the word SET-UP blinks in set-up mode, the terminal has the advanced video option. See your system manager for more information.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have the advanced video option.

/NOAVO[=term]

Disables the advanced video option for the specified terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that do not have the advanced video option.

/BLKMOD[=term]

Enables local editing and block-mode transmission for the specified terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have the block-mode option enabled.

/NOBLKMOD[=term]

Disables local editing and block-mode transmission for the specified terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have the block-mode option disabled.

SET

/BRO[=term]

Enables the broadcast option for the specified terminal. The terminal can receive messages sent from other terminals with the BROADCAST command.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that can receive messages.

/NOBRO[=term]

Disables the broadcast option for the specified terminal. The terminal cannot receive messages sent from other terminals. The terminal also cannot receive messages from the SHUTUP program until the last five minutes before system shutdown. It is recommended that you not use the /NOBRO keyword unless you need to, because you could miss important messages.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that cannot receive messages.

/BUF=ddnn:[size]

Sets or displays the default buffer size of the specified device. A nonprivileged user can display the buffer size of any device but can only set the buffer size of TI. A privileged user can set the buffer size for any device.

The value for size must be at least 14₁₀ and less than or equal to 255₁₀. If ddnn is a terminal, the specified size must be greater than 15₁₀ and less than or equal to 255₁₀. /BUF is useful for defining line printer width (80 or 132 decimal columns) and the maximum number of characters allowed in a command line.

When you omit the size argument, the system displays the buffer size of the specified device.

/CACHE[=ddnn:(option[,...])]

Enables disk data caching for the specified device, or modifies the caching behavior for the specified device. Enabling data caching is recommended for the system disk and for disks that are relatively slow in finding data.

When you omit =ddnn: and option, the system displays all of the devices that have disk data caching enabled.

You can specify the following options with the /CACHE keyword:

CREATE[=[region]][:[mainpar]][:[size]]]

Creates a cache region in memory and associates caching for the specified device with that region. You can specify the name of the region to be created, the main partition the region is to be created in, and the size of the region. You specify the size of the region in decimal number of disk blocks. By default, the /CACHE keyword uses a region called CACHE in the GEN partition with a size of 100₁₀ disk blocks.

REGION=name

Associates caching for the specified device with an already existing cache region. The default region is CACHE.

SET

[NO]DEFER_WRITES

Enables or disables data caching of deferred virtual I/O write requests for temporary files. By default, the DEFER option is enabled.

[NO]DIRECTORY[=extent_size]

Enables or disables caching of directory and other volume-structure I/O; that is, logical I/O from an ACP (for example, F11ACP). By default, the DIRECTORY option is enabled. The default extent size for the DIRECTORY option is 1 block.

[NO]LOGICAL[=extent_size]

Enables or disables caching of logical I/O. By default, the LOGICAL option is disabled. The default extent size for the LOGICAL option is 1 block.

[NO]OVERLAY[=extent_size]

Enables or disables caching of overlay I/O. By default, the OVERLAY option is enabled. The default extent size for the OVERLAY option is 4 blocks.

[NO]READ_AHEAD[=extent_size]

Enables or disables reading of the next extent before reading is explicitly requested. By default, the READ_AHEAD option is disabled. The default extent size for the READ_AHEAD option is 5 blocks.

[NO]VIRTUAL[=extent_size]

Enables or disables caching of virtual I/O. By default, the VIRTUAL option is enabled. The default extent size for the VIRTUAL option is 5 blocks.

Note that the SET /CACHE command sets the default values for the options when you *activate* the cache. The cache can be activated when you mount the disk with the MOUNT /CACHE command or set the device attribute with the SET /CACHE command. If you enter subsequent SET commands to modify the cache, only the options specified in the command line are changed. All other options retain their previous values; that is, they retain the values that you set when you mounted the device or issued the original SET /CACHE command.

For the /CACHE keyword options, the value of extent_size specifies the maximum size (in decimal disk blocks) of an I/O request that will be considered for caching. The minimum acceptable value is 1 block; the maximum is 127 blocks.

If you specify more than one option for /CACHE= in the command line, enclose the options within parentheses and separate them with commas.

For more information on disk data caching, see the description of the MOUNT command in this manual, or refer to the *RSX-11M-PLUS and Micro/RSX System Management Guide*.

/NOCACHE[=ddnn:]

Disables disk data caching for the specified device.

When you omit =ddnn:, the system displays all of the devices that do not have disk data caching enabled.

SET

/CHAR_LENGTH=term:{7 or 8}

Establishes the length of characters transmitted and received by terminals attached to the system through variable-speed multiplexers. However, note that the command is not valid for serial-line units.

You can specify the character length as either 7 or 8. If you do not specify a length, the system displays the current setting. The default value for transmission is 8-bit characters.

A nonprivileged user can display the character length setting for any terminal, but can set the length only for TI. A privileged user can set the length for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:).

/CLI=term:[cli]

Defines the default command line interpreter (CLI) for the specified terminal. The CLI can be MCR, DCL, or a user-written CLI. (However, note that before a CLI can be used, it must be installed with the `INSTALL /CLI=YES` command.) Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:).

A nonprivileged user can display the default CLI for any terminal but can only set the CLI for TI. A privileged user can set the default CLI for any terminal.

When you omit cli, the system displays the current default CLI for the specified terminal.

/COLOG

Specifies console logging commands. For more information on this keyword, see the description of the Console Output Task (COT) in the *RSX-11M-PLUS and Micro/RSX System Management Guide*.

/CRASHDEV or /CRASH_DEVICE:ddnn:[CSRaddr]

Loads a specific crash driver into a main memory partition and updates the crash data base. Also, specifies the Crash Device for use by the Crash Dump Analyzer (CDA). To display the current crash dump device unit, omit the device specification ddnn.

Note that these keywords are valid only for pregenerated operating systems. For more information, see the *RSX-11M-PLUS and Micro/RSX Crash Dump Analyzer Reference Manual*.

/CRT[=term]

Defines the specified terminal as a Cathode Ray Tube (CRT) terminal and enables the backwards deletion option. Pressing the RUBOUT or DELETE key moves the printing position one space to the left and erases any character displayed in that position.

A nonprivileged user can display all terminals defined as CRTs but can define only TI as a CRT. A privileged user can define any terminal as a CRT.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that are defined as CRTs.

/NOCRT[=term]

Deletes the CRT status of the specified terminal and disables the backwards deletion option.

SET

A nonprivileged user can display all the terminals not defined as CRTs but can only delete CRT status for TI. A privileged user can delete CRT status for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all terminals that are not defined as CRTs.

/DCL[=term]

Enables the recognition of DIGITAL Command Language (DCL) commands at the specified terminal. Commands entered in response to the default prompt are submitted to DCL.

To return a terminal to MCR command recognition, type the DCL command SET TERMINAL MCR.

A nonprivileged user can display all of the terminals that recognize DCL commands, but can enable DCL recognition for TI only. A privileged user can enable any DCL command recognition for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have DCL command recognition enabled.

/DEC[=term]

Indicates that the specified terminal is upward-compatible with the VT100-series of terminals.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that are upward-compatible.

/NODEC[=term]

Indicates that the specified terminal is not upward-compatible with the VT100-series of terminals.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that are not upward-compatible.

/DEF=[ddnn:][directory]

This command functions in two different ways, depending on whether you are in named or nonnamed directory mode:

- If you are in nonnamed directory mode, /DEF is a synonym for /UIC. Therefore, a device is invalid and the directory must be numeric. Note that for a privileged user in nonnamed mode, SET /DEF changes both the user default directory and the protection UIC. This function is offered for compatibility with previous versions of RSX operating systems. See the descriptions of the /NAMED and /NONAMED keywords for more information.
- If you are in named mode, /DEF changes your default location in the system to the device and directory that you specify. The keyword establishes your default device or directory, or both. When you do not explicitly specify a device or a directory in a file specification or command, the system supplies these defaults.

Note

The /DEF keyword does not change your UIC. The default directory is used for the location of files; the UIC is used to identify the protection of the user.

The protection codes for the directory and its files control your activity in the directory. If you are a nonprivileged user, you have the directory and file access rights of the World category and, depending on your UIC, the Group category. If you are a privileged user, you have the access rights of the System category. If your UIC matches the UFD, you have the privileges of the owner category. (For more information on file protection and access rights, see Chapter 2.)

[ddnn:]

The name and unit number of the device that you want to be your default device.

The device must be a Files-11 device. The device name can be a logical name, such as SY. When you change your default device, the system generates an equivalent assignment of the logical name SY0 and assigns it to the physical device that you named. (For more information on logical device assignments, see Section 3.7.)

[directory]

The name of the directory that you want to be your default directory. You can specify either a named or a numeric (nonamed) directory.

You can specify the device and directory assignment as a logical name. (For more information on logical name assignments, see Section 3.7.)

When you omit =ddnn: and directory, the system displays your current defaults. Even if you specify a logical name for the device, the system displays the name of the actual physical device.

/DPRO=protection-spec

Establishes your personal default protection code for all of the files you create after you issue this command. A protection code specifies the type of access to your files that you want other users to have.

The protection specification (protection-spec) has two formats:

(SYSTEM:RWED,OWNER:RWED,GROUP:RWED,WORLD:RWED)

[RWED,RWED,RWED,RWED]

The user classes (system, owner, group, world) are positional; that is, the location of the word in the string defines the user class to which the code applies. The square brackets around the protection code are required syntax.

SET

For each user class, the system recognizes four types of file protection access codes:

Code	Type of Access
R	Read
W	Write
E	Extend
D	Delete

Specify protection codes as follows:

- Enter the types of access that you want to allow each user class. The absence of a type denies that type of access to the user class.
- Enter commas to separate the entries for each user class.
- Enter a comma instead of any access types if you want to deny all types of access to a user class. The comma tells the system which user class is to be denied access. You must have some entry for each of the four user classes, but you cannot enter a comma for every class (/DPRO=[,,] or /DPRO=[,,,]). If you do, you will receive an error message.
- Enter the asterisk wildcard (*) instead of access types if you want to retain the current default access code for a user class.
- Enter the /DPRO keyword only (without specifying any codes) if you want to see a display of your current default file protection code.

The /DPRO keyword establishes a default file protection for your current session at the terminal. However, whenever the system is rebooted, it resets your file protection to the system default protection (or to the default protection in your account file if one was specified when your account was created). To establish a default protection code for all of your future sessions at the terminal, specify the code as a command in your login command file (LOGIN.CMD).

For a detailed description of file protection codes, refer to Chapter 2.

/NODPRO

Directs the system to create files using the default volume protection rather than a personal default file protection specified by the user. See the description of the /FPRO keyword (HOM, INI, and MOU commands) for further information about default volume protection.

/EBC[=term]

Enables the eight-bit character option. The terminal driver passes all eight bits of the input characters to the specified terminal.

A nonprivileged user can display all terminals that have the option enabled but can only enable the EBC option for TI. A privileged user can enable the EBC option for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have the EBC option enabled.

SET

/NOEBC[=term]

Disables the eight-bit character option. Before passing the input characters to the device, the terminal driver clears the eighth bit.

A nonprivileged user can display all terminals that have the option disabled but can only disable the EBC option for TI. A privileged user can disable EBC for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have the EBC option disabled.

/ECHO[=term]

Instructs the terminal driver to display each character typed on the specified terminal.

A nonprivileged user can display all of the terminals that echo typed characters but can only enable the echo option for TI. A privileged user can enable the echo option for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have the echo option enabled.

/NOECHO[=term]

Instructs the terminal driver to inhibit the display of all input characters typed on the specified terminal.

A nonprivileged user can display all terminals that do not echo typed characters but can only disable the echo option for TI. A privileged user can disable the echo option for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have the echo option disabled.

/EDIT[=term]

Indicates that the specified terminal can perform ANSI-defined advanced editing functions. The VT102 is an example of such a terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that can perform the advanced editing functions.

/NOEDIT[=term]

Indicates that the specified terminal cannot perform ANSI-defined advanced editing functions.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that cannot perform the advanced editing functions.

SET

`/ESCSEQ[=term]`

Enables the recognition of escape sequences from the specified terminal. The terminal driver treats the ESC character as the beginning of an escape sequence (rather than as a line terminator). For more information about escape sequences, see the *RSX-11M-PLUS and Micro/RSX I/O Drivers Reference Manual*.

A nonprivileged user can display all terminals that can send and receive escape sequences but can only enable escape sequence recognition for TI. A privileged user can enable escape sequence recognition for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that can send and receive escape sequences.

`/NOESCSEQ[=term]`

Disables the recognition of escape sequences from the specified terminal.

A nonprivileged user can display all terminals that do not recognize escape sequences but can only disable the option for device TI. A privileged user can disable escape sequence recognition for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have escape-sequence recognition disabled.

`/FDX[=term]`

Instructs the terminal driver to accept input from the specified terminal while simultaneously outputting to it.

A nonprivileged user can display all the full-duplex terminals but can only enable the option for TI. A privileged user can enable the full-duplex option for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the full-duplex terminals.

`/NOFDX[=term]`

Disables the full-duplex option; the terminal driver does not simultaneously process input and output from the specified terminal.

A nonprivileged user can display all terminals that have the full-duplex option disabled but can only disable the option for TI. A privileged user can disable the full-duplex option for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have the full-duplex option disabled.

`/FORMFEED[=term]`

Indicates that the specified terminal has a hardware form feed.

A nonprivileged user can display all terminals that have a hardware form feed, but can only declare it for TI. A privileged user can declare it for any terminal.

SET

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have a hardware form feed.

/NOFORMFEED[=term]

Indicates that the specified terminal will not have a hardware form feed.

A nonprivileged user can display all terminals that do not have a hardware form feed, but can only specify the option for TI. A privileged user can specify the option for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that do not have a hardware form feed.

/HFILL=term:[value]

Specifies the number of fill characters that the terminal driver places after a carriage return when sending output to a terminal.

term

The terminal for which the number of fill characters is being set or displayed. Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:).

[value]

The number of fill characters. The range for the value is 0 to 7. When you omit value, the system displays the fill character value for the specified terminal.

A nonprivileged user can display the number of fill characters for any terminal but can only change the value for TI. A privileged user can specify the number of fill characters for any terminal.

/HHT[=term]

Indicates to the terminal driver that the specified terminal has a hardware horizontal tab.

A nonprivileged user can display all terminals that have a hardware horizontal tab but can only declare it for TI. A privileged user can declare it for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have a hardware horizontal tab.

/NOHHT[=term]

Indicates that the specified terminal does not have a hardware horizontal tab.

A nonprivileged user can display all terminals that do not have a hardware horizontal tab but can only declare it for TI. A privileged user can declare it for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that do not have a hardware horizontal tab.

SET

`/HOLD[=term]`

Enables hold-screen mode at the specified CRT terminal. Hold-screen mode is supported on VT50, VT52, VT55, and VT61 terminals only.

When hold-screen mode is enabled, the terminal displays output one screenful at a time. The screenful of output remains on the screen until you press the **SCROLL** key while pressing the **SHIFT** key. The terminal then refills the screen. You can also advance the screen contents one line at a time by pressing the **SCROLL** key.

Hold-screen mode is useful when copying files to terminals that normally transmit output at high baud rates (9600, for example). However, note that hold-screen mode may not be appropriate for use with certain types of programs (for example, editors or terminals using different speeds for input and output).

Pressing **CTRL/C** clears hold-screen mode.

A nonprivileged user can display all terminals currently in hold-screen mode but can only place **TI** in hold-screen mode. A privileged user can place any terminal in hold-screen mode.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (**ttnn:**). When you omit **=term**, the system displays all of the terminals that are currently in hold-screen mode.

`/NOHOLD[=term]`

Disables hold-screen mode at the specified CRT terminal.

A nonprivileged user can display all terminals not in hold-screen mode but can only disable the option for **TI**. A privileged user can disable hold-screen mode for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (**ttnn:**). When you omit **=term**, the system displays all of the terminals that have hold-screen mode disabled.

`/HOST[=node[:]]`

Establishes the specified node as the host system for the user.

When you use the `/HOST` keyword, the Network Command Terminal (**NCT . . .**) task is activated to establish a DECnet link. If **NCT . . .** is not installed in the system, MCR searches for the task **. . . RMT**. If **. . . RMT** is not installed in the system, an error message is issued. (For a complete description of **NCT . . .** error messages, see the DECnet documentation.)

After issuing the `/HOST` keyword, you may enter terminal management mode by pressing **CTRL\ <CR>** (that is, the **CTRL** key, the backslash key, and the **RETURN** key). Valid commands for terminal management mode are **CONTINUE** and **CLEAR HOST**. Typing **CONTINUE** and then pressing the **RETURN** key exits you from terminal management mode and returns you to the remote session. **CLEAR HOST** followed by **RETURN** terminates the remote session.

When you omit **=node[:]**, the system displays the host system for the terminal.

The `/HOST` keyword executes only on systems that select Network Command Terminal (**NCT**) support during system generation. If DECnet is selected during system generation, support for **NCT** is included.

SET

/HSYNC[=term]

Enables synchronization between the host system and the specified terminal. Synchronization between the host and terminal controls the typeahead buffer to keep it from overflowing.

When the typeahead buffer is nearly full, the terminal temporarily locks the keyboard. This prevents you from typing and entering information that the system is not yet ready to accept. After the terminal driver transmits the characters in the typeahead buffer to the system and there is available space in the buffer again, the terminal driver unlocks the keyboard. You can then resume typing. When you specify /HSYNC, the system generates a CTRL/S character to lock the keyboard and a CTRL/Q character to unlock it.

The /HSYNC keyword is recommended for terminals that transmit information in blocks; for example, the DIGITAL VT132 terminals, or any other terminal that emulates those two models. If you do not have such a terminal, it is unlikely that you will fill the typeahead buffer. (If you would like the typeahead buffer of your terminal to be a different size, you may be able to use the /TYPEAHEAD keyword to change it.)

The default for the VT100-series of terminals is /HSYNC.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttn:). When you omit =term, the system displays all of the terminals that have synchronization between the host and the terminal.

For more information on typeahead buffers, see the *RSX-11M-PLUS and Micro/RSX I/O Drivers Reference Manual*.

/NOHSYNC[=term]

Disables synchronization between the host system and the terminal for the specified terminal. The terminal does not lock the keyboard when the typeahead buffer becomes full. Therefore, any characters that you subsequently enter (until the typeahead buffer is cleared again) are lost.

The default for VT52 terminals is /NOHSYNC.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttn:). When you omit =term, the system displays all of the terminals that do not have host/terminal synchronization.

/INQUIRE[=term]

Sets all appropriate attributes, including a buffer size of 80 for the specified terminal. The keyword sends a query to the terminal to find out what model it is and then issues the SET command for that terminal model. The following DIGITAL terminals are set explicitly:

Terminal Models Supported by SET /INQUIRE	
VT50	LA34
VT52	LA38
	LA50
	LA100

SET

Terminal Models Supported by SET /INQUIRE	
VT55	LA120 LA200-series
VT61	VK100 (set as VT100)
VT100-series	DECmate II (set as VT102)
VT131/2	Rainbow 100-series (set as VT102)
VT200-series	PC300-series

All other terminals are set to /NOCRT and /BUF:TI:80, and are considered to be unknown models. Also, terminals that do not support escape sequences (such as the LA36), display the characters **Z[CC** when queried.

If you include SET /INQUIRE in your login command file, you may not need to set any attributes for the terminal because SET /INQUIRE sets most of them for you.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:).

/LIBUIC=[uic]

Establishes the UIC for the system library files. By default, all nonprivileged system tasks, utilities, and vectored tasks (including device drivers) are kept in the library directory on pseudo device LB.

When you enter an INSTALL or RUN command and precede the task name with a dollar sign (for example, \$taskname), the system first searches for the task under LIBUIC. If the file cannot be found, the system searches SYSUIC.

A nonprivileged user cannot set the LIBUIC. When you omit =[uic], the system displays the current LIBUIC. The default LIBUIC is [3,54].

/LINES=term:[value]

Establishes the number of lines per page (value) for the terminal.

term

The terminal for which the number of lines per page is being established. Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:).

[value]

The number of lines per page. The range for value is 1 to 255₁₀. To specify a decimal value, place a period (.) after the number.

SET

A nonprivileged user can display the number of lines per page for any terminal but can only specify the number for TI. A privileged user can specify the number of lines per page for any terminal.

When you omit value, the system displays the number of lines per page for the specified terminal.

/[NO]LOGON

(Privileged keywords.) Enables or disables logging in to the system.

/LOGON and /NOLOGON clear and set a flag checked by the HELLO command when a user attempts to log in on a terminal. /NOLOGON prevents users from accessing the system during such activities as system maintenance or account file maintenance (using the ACNT utility; see the *RSX-11M-PLUS and Micro/RSX System Management Guide*).

/LOWER[=dev]

Specifies that lowercase characters on a terminal or line printer are not to be converted to uppercase when they are received from the device driver. Note that this keyword only affects input from a terminal, not output to a terminal.

A nonprivileged user can display all devices that do not convert lowercase characters to uppercase but can only specify the option for TI. A privileged user can specify the option for any terminal or line printer.

Dev can be either a physical or a logical device name (for example, DB3: or MYDEV).

When you omit =ddnn:, the system displays all the devices for which lowercase characters are not converted to uppercase.

/NOLOWER[=dev]

Resets the characteristics for the terminal or line printer. For terminals, lowercase characters received on input are automatically converted to uppercase and echoed as uppercase. The keyword has no effect on characters output to the terminal. For line printers, lowercase characters output to the device are printed as uppercase.

A nonprivileged user can display all the devices that perform this conversion but can only specify the option for TI. A privileged user can specify the option for any terminal or line printer.

Dev can be either a physical or a logical device name (for example, DB3: or MYDEV).

When you omit =ddnn:, the system displays all the devices for which conversion to uppercase is specified.

/MAIN=pname[:base:size:type]

Establishes the specified partition as a main partition. A nonprivileged user can only display the base, size, and type of a main partition. This is a synonym for the /PAR keyword; for more information, see the description of /PAR.

SET

/NOMAIN=pname

(Privileged keyword.) Synonym for /NOPAR; eliminates the specified partition from the system.

/MAXEXT[=size]

(Privileged keyword.) Establishes the maximum size to which a task can extend itself beyond its mapped array area with the Executive directive Extend Task (EXTK\$). A nonprivileged user can display the maximum size to which a task can extend itself but cannot change the size.

The maximum size can be expressed in four formats:

n
nK
n.
n.K

See the description of the /PAR keyword for a definition of these size values.

When you omit =size, the system displays the current maximum size in the format:

MAXEXT=m

where m is an octal number equal to the maximum size in 64-byte blocks allowed for a task (for example, 1200 indicates 20K words).

See the *RSX-11M-PLUS and Micro/RSX Task Builder Manual* for information about arrays and the *RSX-11M-PLUS and Micro/RSX Executive Reference Manual* for a description of the EXTK\$ directive.

/MAXPKT[=n]

Specifies the maximum number of I/O packets to be retained in a separate queue for use by the Executive directive Queue I/O (QIO\$) request. A nonprivileged user can only display the maximum and current number of available I/O packets.

n

The number of retained packets used to optimize the servicing of QIO requests. The range for n is 0 to 15₁₀.

When you omit =n, the system displays the maximum number and the current number of available I/O packets in the following format:

MAXPKT=m . : c .

The value of m. is the maximum number, and the value of c. is the current number of available I/O packets. Note that both values are specified as decimal numbers.

For more information, see the *RSX-11M-PLUS and Micro/RSX Executive Reference Manual*.

/MCR[=term]

Enables MCR command recognition at the specified terminal. Commands entered in response to the default prompt are submitted to MCR.

SET

A nonprivileged user can display all the terminals that recognize MCR commands but can only specify the option for TI. A privileged user can enable MCR command recognition for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that recognize MCR commands.

/NAMED

Sets you to named directory mode. In named directory mode, you can use the SET /DEF command to change your default directory to either a named directory or a numeric (nonamed) directory.

The format for a named directory is [directory], where directory is between one and nine characters long, and can consist of the 26 letters A through Z and the numbers 0 to 9. Examples of named directories are [JWB], [CASEYCAT], [303024], and [BIOCHEM].

You can also specify numeric ([g,m]) directories while in named directory mode. The letters g and m are octal numbers from 1 to 377 that represent the group and member numbers of your UIC, respectively. Examples of numeric directories are [7,124] and [303,24].

/NONAMED

Sets you to nonamed (numeric) directory mode. In nonamed directory mode, you can use either named or numeric directories, but you cannot set your default directory to be a named directory. Specify a numeric directory as [g,m], where the letters g and m are octal numbers from 1 to 377. They represent the group and member numbers of your UIC, respectively. Examples of numeric directories are [7,124] and [303,24].

Some application programs do not recognize named directories. If a task that you want to run fails for this reason, you can try the following recommendations:

1. Rebuild your task using the most recent version of FCS or RMS-11 supplied with RSX-11M-PLUS. Note that you should try to rebuild your task only if the task contains FCS or RMS-11 routines or if the task used FCSFSL to build the task file. If your task uses either FCSRES or RMSRES, you do not need to rebuild your task. If rebuilding your task is not possible, try the next recommendation.
2. Use the PIP utility (either the copy function or the /RE switch) to place the files that the task uses in a numeric directory. Note that only a privileged user, such as a system manager, can create directories on a public volume.

Next, use the SET /DEF command to make the numeric directory your default. Finally, run the task.

/NETUIC=[uic]

Specifies the UIC in which all DECnet-related tasks are stored. The keyword applies only to systems that selected the external communication products option during system generation.

A nonprivileged user can display the current network UIC, but only a privileged user can set or change it.

When you omit =uic, the system displays the current network UIC.

SET

/NOCEX

Deallocates Executive space reserved for use by DECnet on the pregenerated RL02 distribution kits. The startup command file for the RL02 kits automatically deallocates the reserved space. If you intend to use DECnet, include the configuration file statement DECNET=YES in the SYSPARAM.DAT file. (For more information on SYSPARAM.DAT and STARTUP.CMD, see the *RSX-11M-PLUS System Generation and Installation Guide*.)

/OPT[=ddnn:opttyp:fairness-count]

Enables disk I/O queue optimization for the specified device.

A nonprivileged user can display all the devices that use I/O queue optimization, but only a privileged user can enable optimization for a device.

ddnn

The device that will use I/O queue optimization. Acceptable devices are DB-, DL-, DM-, and DR-type devices. When you do not specify a device, the system displays all the devices that use optimization.

opttyp

The algorithm for optimization. The algorithms are:

NEAR[EST]
ELEV[ATOR]
CSCAN

The default algorithm set at system generation is NEAR with a fairness count of 10₁₀.

fairness-count

The fairness count for the device. The value for this is an integer from 0 to 127₁₀.

When you omit =ddnn:opttyp:fairness-count, the system displays all the devices that use I/O queue optimization.

For more information on I/O Queue optimization and the parameters for this keyword, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.

/NOOPT[=ddnn:]

Disables disk I/O queue optimization for the specified device. A nonprivileged user can display all the devices that do not use optimization, but only a privileged user can disable optimization for a device.

When you omit =ddnn:, the system displays all the devices that do not use I/O queue optimization.

/OVL[=ccn]

Enables overlapped-seek support for the specified device controller. Overlapped-seek support is available only on DM and RH device-controllers (RH controllers are for DB- and DR-type devices).

A nonprivileged user can only display the device controllers that have overlapped-seek support enabled. A privileged user can enable overlapped seeks for any device controller that supports it.

When you omit `=ccn`, the system displays all the device controllers that have overlapped-seek support enabled.

/NOOVL[=`ccn`]

Disables overlapped-seek support for the specified device controller.

A nonprivileged user can only display the device controllers that support overlapped seeks but have it disabled. A privileged user can disable overlapped-seek support for any device controller that supports it.

When you omit `=ccn`, the system displays all the device controllers that support overlapped seeks but have it disabled.

/PAR=`pname`[:`base`:`size`[:`type`]]

Establishes a partition or displays an existing partition's boundaries. A nonprivileged user can only display the base, size, and type of a partition.

`pname`

The 1- to 6-character alphanumeric partition name.

:`base`

The physical base address of the partition, specified as a number of 64-byte blocks.

:`size`

The size of the partition, specified as a number of 64-byte blocks. The maximum size is 0 to 1920.K words for a task, common, or main partition.

:`type`

One of the following partition types:

Partition Type	Definition
SYS	A main task partition
DEV	A common partition mapping into the device registers
DIAG	A diagnostic partition

Partition type is an optional parameter; the default type is SYS. SYS partitions are used for user tasks and loadable drivers.

DEV partitions are for device commons, which are used by tasks to access the device registers (such as those for the UDC and ICS/ICR-11) or the I/O page. The first time you create a DEV partition, the system automatically creates a main partition, named IO PAR, over the entire I/O page. The DEV partition is then created as a subpartition of IO PAR. Future device partitions are created as additional subpartitions of IO PAR. Once created, IO PAR cannot be eliminated.

DIAG partitions are for diagnostic functions on multiprocessor systems. The specified partition is created without checking the top of memory.

SET

Base and size can be entered in any of the following formats where nnnn is a number to which a multiplication factor is applied to determine the value used:

Format	Calculated Value	Valid Range (Base, in words)	Valid Range (Size, in words)
nnnn	Octal (nnnn*100)	0 <=base <177777	0 <size <2000
nnnn.	Decimal (nnnn.*64.)	0. <=base <65535	0. <size <1024.
nnnK	Octal K (nnn*4000)	0K <=base <3777K	0K <size <40K
nnn.K	Decimal K (nnn.*2048.)	0.K <=base <2047.K	0.K <size <32.K

For SYS partitions, size may range from 0 to 1920.K or any valid representation of these limits. For example, any of the following inputs for size will allocate a partition of 2048 bytes:

40
32.
1K
1.K

When you omit base, size, and type, the system displays the values of these parameters for the specified partition. If the named partition is a task partition, the system also displays the parameters of all its subpartitions.

In a multiprocessor system, when you create or add device partitions, you must specify the I/O page of the desired processor. The format is as follows:

/AFF=[CPx]

The variable x can be A, B, C, or D.

/NOPAR=pname

Eliminates the specified partition from the system. You cannot eliminate a partition if any tasks or commons are installed or attached to it; MCR issues an error message.

/PARITY=[term:[option]]

Enables and determines the type of parity generation and checking for the specified terminal. Parity generation and checking is used to verify the transmission of data between the terminal and the computer. Verification is done by sending an extra bit with each character, which serves as a check that the transmitted character was received properly.

When parity checking is enabled, an additional bit called a parity bit is generated and sent with each character output from the computer. The state of the parity bit, which is either 0 or 1, is determined by the option used with the keyword.

/PARITY=term:EVEN

The state of the parity bit is selected to force the total of "1" bits to be even. This is the default.

/PARITY=term:ODD

The state of the parity bit is selected to force the total of "1" bits to be odd.

SET

The terminal driver checks the state of the parity bit to see if it is correct. If it is not, a transmission error has occurred. The terminal driver performs the same parity bit generation when you enter a character and the system checks for parity when it receives the character.

Note that the terminal hardware must be set to the same mode of parity generation and parity checking for correct data transmission to occur. On VT100- and VT200-series terminals, this is done through the terminal's SET-UP mode.

The /PARITY keyword is not related to the /EBC (Eight-Bit Character) keyword. If parity is selected, an extra bit is physically transmitted with each character, whereas the eight-bit character option affects only whether the eighth data bit should be cleared or left alone.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have parity generation and checking enabled.

/NOPARITY[=term]

Disables parity generation and checking for the specified terminal. Data transmitted between the terminal and the system is not verified.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that do not have parity generation and checking enabled.

/PASSWORD

Changes your password for the system. The format for setting a password is as follows:

```
>SET /PASSWORD [RET]
Old password:
New password:
Verification:
```

Nothing that you type in response to these prompts is echoed. To enhance security, choose passwords that are not obvious. For example, do not use your name or the name of your spouse or a close friend. Also, do not use the same password on more than one system. To make a password more difficult for someone else to guess, use as many characters as possible.

The maximum acceptable length of a password is 39. However, for accounts to be accessed using DECnet, the length of the password is limited to eight characters. The following Radix-50 characters are allowed in a password: the 26 uppercase letters A through Z, the numbers 0 to 9, the period (.), and the dollar sign (\$).

The /PASSWORD keyword invokes a task called PSW, which is installed as . . . PSW. The PSW task encrypts passwords, and this encryption cannot be removed. Also, passwords are not displayed on the terminal screen. Therefore, if a nonprivileged user forgets his or her password, a privileged user will have to set a new password for the account by running the Account File Maintenance program (ACNT). (For information on running ACNT, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

/PASTHRU[=term]

Requests that the system ignore the standard functions of special characters that are typed at the specified terminal. Instead, when /PASTHRU is enabled, the terminal driver passes special characters to a program in their binary form.

SET

`/PASTHRU` allows you to suppress standard operating system responses to special characters (for example, `CTRL/C` and `CTRL/O`), thereby controlling output to the terminal screen. When a terminal is set to `/PASTHRU`, it does not respond to special characters in the usual ways. The terminal does not recognize any control characters (except `CTRL/S` and `CTRL/Q`, if the terminal is set to `/TTSYNC`), and it does not respond to carriage-return and line-feed characters. Also, any programs that are running from a terminal that has `/PASTHRU` enabled do not process the standard special character functions.

If your terminal does not seem to be working properly, it may be because it has been set to `/PASTHRU`.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit `=term`, the system displays all of the terminals that are set to `/PASTHRU`.

`/NOPASTHRU[=term]`

Requests that the system treats special characters typed at the specified terminal according to their standard function.

The default terminal setting is `/NOPASTHRU`.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit `=term`, the system displays all of the terminals that are not set to `/PASTHRU`.

`/PRINTER_PORT[=term]`

Informs the system that the specified terminal has a printer port. A terminal with a printer port can be connected to a local printer so that you can print a hard copy of the display on your terminal screen. VT200-series terminals have printer ports.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit `=term`, the system displays all of the terminals that have a printer port.

`/NOPRINTER_PORT[=term]`

Informs the system that the specified terminal does not have a printer port.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit `=term`, the system displays all of the terminals that do not have a printer port.

`/PLCTL=[high][:low][:frsiz][:basep]]]`

(Privileged keyword.) Sets the dynamic storage region (pool) limit parameters used by the Pool Monitor Task (PMT). The parameters for the `/PLCTL` keyword are as follows:

high

The high pool limit in bytes.

low

The low pool limit in bytes.

frsiz

The minimum byte size of the largest free pool block required for avoiding low-pool action by the PMT.

basep

The base task priority, which is the lowest priority a nonprivileged task can have and still be eligible for memory contention during times of low pool. This priority remains in effect until pool conditions improve. Note that only those tasks requested while the system is in a low pool state are affected.

The following list defines the limits of the parameters and shows the default values:

Parameter	Minimum Limit	Maximum Limit	Default
high	low parameter	total size of system pool	1600. bytes
low	84.	high parameter	600. bytes
frsiz	84.	high parameter	200. bytes
basep	#0.	250.	51.

When you omit the parameters, the system displays the current parameters for the system. See the *RSX-11M-PLUS and Micro/RSX System Management Guide* for information on determining the values for the parameters.

/POOL[=*top*]

Increases the size of the dynamic storage region (pool). The parameter *top* specifies the first location in memory to be used for user partitions. You specify the location in units of 64-byte blocks. The location can be given as an octal or decimal number.

A nonprivileged user can only display the size of the dynamic storage region.

When you omit *=top*, the system displays the size of the dynamic storage region in the following format:

```
POOL=top:max.:total.
```

top

The first location for user partitions (displayed in bytes with two trailing zeros suppressed).

max.

The longest free block (displayed in words).

total.

The total pool space (displayed in words).

SET

/PRIV[=*term*]

Establishes the specified terminal as a privileged terminal.

A nonprivileged user can only display the terminals that are privileged. A privileged user can set any terminal to be privileged.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the privileged terminals.

/NOPRIV[=*term*]

Establishes the specified terminal to be nonprivileged.

A nonprivileged user can only display the terminals that are nonprivileged. A privileged user can set any terminal to be nonprivileged.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the nonprivileged terminals.

/PUB[=*ddnn*:]

Establishes the specified device as a public device. A public device is one that can be accessed by all system users. Note that allocated and already mounted devices cannot be set public. (Devices can be set public before they are mounted.)

A nonprivileged user can display all the public devices, but only a privileged user can establish a device as public.

When you omit =ddnn:, the system displays all the public devices.

/NOPUB[=*ddnn*:]

Establishes the specified device as a nonpublic device. A nonprivileged user can display the devices that were previously set public but are now nonpublic, but only a privileged user can make a public device nonpublic. Note that mounted devices cannot lose their public status.

When you omit =ddnn:, the system displays all of the devices that are in use and are nonpublic devices.

/REGIS[=*term*]

Indicates that the specified terminal supports the ReGIS graphics character set. The VT125 and the VT240 are two such terminals.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that support the ReGIS graphics character set.

/NOREGIS[=*term*]

Indicates that the specified terminal does not support the ReGIS graphics character set.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that do not support the ReGIS graphics character set.

/REMOTE[=term:[speed]]

Declares that the terminal term is connected to a modem and can be connected to the system through a dial-up network. For example, if you include a CXY08 controller in your system configuration during system generation, use the /REMOTE keyword to assign the remote terminal lines. A nonprivileged user can display all remote lines, but only a privileged user can assign remote lines.

Specify the speed parameter to establish the initial baud rate (answer speed) of the remote dial-up line for a terminal. You can specify an answer speed for terminals attached to the system through variable-speed multiplexers. However, note that you cannot specify a speed for serial-line units.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the remote terminals. When you omit speed, the current setting for the terminal remains in effect.

Table 3–5 lists the valid baud rates for various multiplexers.

Table 3–5: Valid Baud Rates For Variable-Speed Multiplexers

Multiplexer		Valid Baud Rates		
DH11	0	134.5	600	4800
	50	150	1200	9600
	75	200	1800	EXTA (user-specified A)
	110	300	2400	EXTB (user-specified B)
DHU11/DHV11	75	300	2000	19200
	110	600	2400	
	134.5	1200	4800	
	150	1800	9600	
DZ11/DZQ11/DZV11	50	150	1800	4800
	75	300	2000	7200
	110	600	2400	9600
	134.5	1200	3600	

/NOREMOTE[=term]

Declares that the terminal's line is a local line not connected to a modem.

A nonprivileged user can display all local lines, but only a privileged user can declare a terminal as local.

SET

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all the local lines.

/RNDL[=nn]

Defines the length of the Executive round-robin scheduling in ticks. The value for nn can be octal or decimal (if followed by a period). The minimum value for nn is zero. (For more information on round-robin scheduling, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

A nonprivileged user can display the value for the interval, but only a privileged user can change the value.

When you omit =nn, the system displays the current value for the interval.

/RNDH[=nn]

Defines the highest priority (1_{10} to 250_{10}) considered for Executive round-robin scheduling. The class must be higher than the one specified with /RNDL. (For more information on round-robin scheduling, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

A nonprivileged user can display the value for the priority, but only a privileged user can change the value.

When you omit =nn, the system displays the current value for the priority.

/RNDL[=nn]

Defines the lowest priority (in a range from 1_{10} to 250_{10}) that will be considered for Executive round-robin scheduling. The class must be lower than the one specified with /RNDH. (For more information on round-robin scheduling, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

A nonprivileged user can display the value for the priority, but only a privileged user can change the value.

When you omit =nn, the system displays the current value for the priority.

/RPA[=term]

Enables the read-pass-all option of the terminal driver. The terminal driver passes all input characters (including special function characters such as CTRL/C) to the driver input buffer.

A nonprivileged user can display all terminals that have the option enabled but can only enable the read-pass-all option for TI. A privileged user can enable the read-pass-all option for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all the terminals that have the read-pass-all option enabled.

/NORPA[=term]

Disables the read-pass-all option. The terminal driver does not pass special function input characters (such as CTRL/C) from the terminal to the driver input buffer.

SET

A nonprivileged user can display all terminals that have the option disabled but can only disable the read-pass-all option for TI. A privileged user can disable the read-pass-all option for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that do not pass special function characters to the terminal driver input buffer.

/SECPOL

Displays secondary pool use on the system. The display is in the following format:

SECPOL=secfr:secsiz:pctfr

secfr

The number of free blocks in secondary pool in units of 32₁₀-word blocks.

secsiz

The size of secondary pool in units of 32₁₀-word blocks.

pctfr

The percentage of free blocks in secondary pool.

/SERIAL[=term]

Causes unsolicited input from the specified terminal to be processed serially rather than in parallel. Usually, if you enter another command line before a previous command line has completed executing, the system processes the second line in parallel with the first. When you request serial execution of command lines, however, the system processes the first command line and then the second command line after the first is finished.

A nonprivileged user can display all of the terminals that have the serial option enabled but can only enable the option for TI. Privileged users can enable the option for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all the serial terminals.

/NOSERIAL[=term]

Causes unsolicited input from the specified terminal to be executed in parallel rather than serially.

A nonprivileged user can display all the terminals that do not have the serial option enabled but can only disable the option for TI. Privileged users can disable the option for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have the serial option disabled.

/SLAVE[=term]

Establishes the specified terminal as one that can enter data only if it is solicited from a task by a read Queue I/O Request (QIO\$). Thus, the specified terminal always rejects unsolicited input (other than CTRL/O, CTRL/Q, and CTRL/S).

SET

A nonprivileged user can display all slave terminals but can only establish TI as a slave terminal. Privileged users can establish any terminal as a slave terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that are currently classified as slaved.

/NOSLAVE[=term]

Removes slave status from a specified terminal.

A nonprivileged user can only display the nonslave terminals. A privileged user can set any slave terminal to be nonslave.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all the nonslave terminals.

/SOFT[=term]

Indicates that the specified terminal can accept software-defined character sets. The VT200-series terminals can accept these character sets.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that accept software-defined character sets.

/NOSOFT[=term]

Indicates that the specified terminal cannot accept software-defined character sets.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that do not accept software-defined character sets.

/SPEED=term:[recv:xmit]

Establishes the receive and transmit baud rate for terminals attached to the system through a variable-speed multiplexer. Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:).

recv

The baud rate at which characters are input to the computer from the terminal.

xmit

The baud rate at which characters are output to the terminal from the computer.

You must specify both arguments when setting the speed. If you do not specify either argument, the system displays the current settings. A nonprivileged user can display the speed settings for any terminal, but can set the speed only for TI. A privileged user can set the speed for any terminal.

Table 3-5 lists the valid baud rates for various multiplexers.

If you have a DZ11, DZQ11, or DZV11, the receive and transmit baud rates must be the same because these multiplexers do not support split speeds.

SET

/SWPC[=nn]

Defines the number of clock ticks for a single Executive swapping interval. (For more information on swapping, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

=nn

A number in the range 0 to 45,568 that can be octal or decimal (if followed by a period).

When you omit **=nn**, the system displays the current value for the interval.

A nonprivileged user can display the value for the interval, but only a privileged user can change the value.

/SWPR[=nn]

Defines a priority range for Executive swapping. (For more information on swapping, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

=nn

A number in the range 0 to 127₁₀ that can be octal or decimal (if followed by a period).

When you omit **=nn**, the system displays the current value for the priority range.

The value for **/SWPR** affects the installed priority of all tasks. Each task is initiated at its installed priority plus the value for **nn** (priority + **nn**). While the task is executing, its priority is decremented until it becomes the installed priority minus the value for **nn** (priority - **nn**). When the priority reaches this lower limit, the task is swapped out so that another task with a higher priority can execute. The priority for the new task changes in the same way.

A nonprivileged user can display the value for the priority, but only a privileged user can change the value.

/SYSUIC[=uic]

Establishes the UIC for the system and all system tasks. In general, the system UIC is [1,54]. These UIC values are the initial defaults on unsaved systems. The UIC also becomes the default UIC used by the **LOAD** command and the **Install-Run-Remove** option of the **RUN** command.

A nonprivileged user can display the system UIC, but only a privileged user can change it.

When you omit **=uic**, the system displays the current system UIC.

/TERM=term:[value]

Establishes the terminal type value for the specified terminal. Supported standard terminal types are listed in the following table.

SET

Standard Terminal Types						
ASR33	LA30P	LA50	LA2xx	VT50	VT101	VT132
ASR35	LA30S	LA75	LA210	VT52	VT102	VT2xx
DTC01	LA34	LA100	LQP01/02/03	VT55	VT105	LN03
KSR33	LA36	LA120	PC3xx	VT61	VT125	
LA12	LA38	LA180S	VT05B	VT100	VT131	

A nonprivileged user can display the terminal type for any terminal but can only establish the terminal type for TI. A privileged user can establish the terminal type for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit the value parameter, the system displays the terminal type for the specified terminal.

MCR also accepts an alternate form of the command. You can specify the terminal type and equate it to the desired terminal. This automatically associates certain characteristics of the particular terminal type with the specified terminal. (See the *RSX-11M-PLUS and Micro/RSX I/O Drivers Reference Manual* for a list of the implicit characteristics for each terminal type.)

The command is in the following format:

```
SET /term-type=term
```

The value for term-type is one of the standard terminal types. Note that the terminal types are mutually exclusive.

You can also use an alternate command form to display all of the terminals that are not a specific type. The format is as follows:

```
SET /NOterm-type
```

Note that you cannot negate a terminal type for a terminal. You can only display the terminals that are not a specific type. Negating terminal type returns a syntax error since the terminal would be an indeterminate type.

/TOP=pname:value

Directs MCR to move the top boundary of the specified partition up or down the amount indicated by the value parameter, or sets the partition size to that amount. The keyword modifies the top boundary of a partition even if the partition has tasks installed in it. If you modify the partition so that it may be too small to hold the tasks installed in it, MCR displays a warning message but modifies the partition anyway.

pname

The 1- to 6-character alphanumeric name for the partition.

value

The number of 64-byte blocks.

The value parameter can be supplied in five formats: +value, -value, value, ++ or *, and -*.

SET

+value

Moves the top boundary up by the specified amount. Moving the top boundary up makes the partition larger.

Specify the value in the same units as the base and size parameters for the /PAR keyword (see the description of /PAR).

-value

Moves the top boundary down by the specified value. Moving the top boundary down makes the partition smaller.

value

Establishes the total partition size equal to the specified value by moving the top boundary.

+* or *

Moves the top boundary up as far as possible. This format causes the top boundary to move to the bottom boundary of the partition above it or to the top of memory if the partition is the top partition in memory.

.*

Moves the top boundary down as far as possible. This format causes the top boundary to move down to the top of the first fixed task, common, or driver in the partition at the time the /TOP keyword is executed. If nothing is loaded into the partition, the partition assumes a size of one 64-byte block.

/TTSYNC[=term]

Enables the terminal synchronization option for the specified terminal. When /TTSYNC is enabled, you can press CTRL/S to halt output to the terminal screen and CTRL/Q to resume output to the terminal screen.

The default terminal setting is /TTSYNC.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttn:). When you omit =term, the system displays all of the terminals that have terminal synchronization.

/NOTTSYNC[=term]

Disables the terminal synchronization option for the specified terminal. If terminal synchronization is disabled on your terminal, the system does not respond when you press CTRL/S or CTRL/Q.

If you set your terminal to /NOTTSYNC, the NO SCROLL key on VT100-series terminals and the HOLD SCREEN key on VT200-series terminals no longer work.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttn:). When you omit =term, the system displays all of the terminals that do not have terminal synchronization.

/TYPEAHEAD[=term:[size]]

Instructs the terminal driver to store input characters in a buffer before passing the characters to a requesting task. Thus, characters input between requests are not lost.

SET

The size parameter applies only to RSX-11M-PLUS operating systems that support kernel data space. It specifies the size of the typeahead buffer, which can be between 0 and 255₁₀. However, if you specify 0 or 1, the effect is the same as /NOTYPEAHEAD; the terminal does not have the typeahead option enabled. The default size is 66 on I- and D-space systems. On systems that do not include support for I- and D-space, the size is fixed at 58.

A nonprivileged user can display all terminals that have the typeahead option enabled but can only enable the option for TI. A privileged user can enable typeahead for any terminal. These rules also apply to the size of the typeahead buffer.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have typeahead enabled.

For more information on typeahead buffers, see the *RSX-11M-PLUS and Micro/R SX I/O Drivers Reference Manual*.

/NOTYPEAHEAD[=term]

Disables the typeahead option; the terminal driver does not store input characters in a buffer to prevent their loss.

A nonprivileged user can display all terminals that have the typeahead option disabled but can only disable the option for TI. A privileged user can disable typeahead for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have typeahead disabled.

For more information on typeahead buffers, see the *RSX-11M-PLUS and Micro/R SX I/O Drivers Reference Manual*.

/UIC=[uic][:term]]

Establishes the specified uic as the default UIC for the terminal. Unless you specify term, the default UIC is set for TI. If you are a privileged user, the command also sets the protection UIC for the terminal. (For more information on protection UICs, see Chapter 2.)

A privileged user can override the terminal UIC with the /UIC keyword for the RUN command. External MCR function tasks are also requested with the terminal UIC. These tasks are: the MCR commands MOUNT, INSTALL, DISMOUNT, and UFD (which run as tasks), and all system-supplied software.

A nonprivileged user can only display and change the default UIC for TI. A privileged user can display and change the default UIC for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =[uic], the system displays the current default UIC for TI. When you omit =[uic] but specify =term, the system displays the current default UIC for that terminal.

If you are in named directory mode, you must be a privileged user to issue the SET /UIC command. When you use the /UIC keyword, the system changes your protection UIC, but does not change your default directory. For more information about named directory mode, see the description of the /NAMED and /NONAMED keywords.

SET

/VFILL[=term]

Enables the vertical fill characters option for the specified terminal. The option instructs the terminal driver to add four fill characters following each line feed.

A nonprivileged user can display all terminals that have the vertical fill characters option enabled but can only enable it for TI. A privileged user can enable the option for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have the vertical fill characters option enabled.

/NOVFILL[=term]

Disables the vertical fill characters option for the specified terminal.

A nonprivileged user can display all terminals that have the vertical fill characters option disabled but can only disable it for TI. A privileged user can disable the option for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have the vertical fill characters option disabled.

/[NO]VTLOGON

(Privileged keywords.) Enables or disables logging in to the system on a virtual terminal without affecting physical terminals. Thus, you can use virtual terminals while logins to physical terminals are disabled (that is, if /NOLOGON is specified).

For example, if STARTUP.CMD issues the SET /VTLOGON command during the system startup procedure, the batch processor (BPR) can log in to the system and execute commands from a virtual terminal; however, users are unable to log in to the system from a physical terminal.

Note

The SET /NOLOGON command disables logins at both physical and virtual terminals. However, you can use the SET /VTLOGON command to enable logins at virtual terminals that have been disabled with /NOLOGON.

/WCHK[=ddnn:]

Specifies that all write operations are to be followed by a write check for all Files-11 disk devices except DX: and DY:. The checks assure the reliability of data transfers to the specified disk. However, writing is slowed because there are two I/O operations instead of just one.

A nonprivileged user can only display the devices that have write checking enabled. A privileged user can enable write checking for any device that supports it.

When you omit =ddnn:, the system displays all the Files-11 disk devices that have write checking enabled.

/NOWCHK[=ddnn:]

Specifies that write checking is to be disabled for the specified device.

SET

A nonprivileged user can only display the devices that have write checking disabled. A privileged user can disable write checking for any device.

When you omit =ddnn:, the system displays all the Files-11 disk devices (except DX- and DY-type) that have write checking disabled.

/WRAP[=term]

Enables the wrap-around option. The wrap-around option instructs the terminal driver to generate a carriage return/line feed sequence when the number of input characters exceeds the terminal's buffer size. The carriage return/line feed sequence is transparent and does not appear in the input buffer.

A nonprivileged user can display all terminals that have the wrap-around option enabled but can only enable it for TI. A privileged user can enable wrap-around for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have the wrap-around option enabled.

/NOWRAP[=term]

Disables the wrap-around option; the terminal driver does not insert a carriage return or line feed when the number of characters exceeds the buffer size for the terminal.

A nonprivileged user can display all terminals that have the wrap-around option disabled but can only disable it for TI. A privileged user can disable the option for any terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:). When you omit =term, the system displays all of the terminals that have the wrap-around option disabled.

Examples

```
>SET /BUF=TT1:40. [RET]
```

Sets TT1 buffer size to 40₁₀.

```
>SET /CACHE=DB3:(CREATE=CACHE::10,READ_AHEAD=2) [RET]
```

Enables data caching for device DB3 with a region called CACHE in the default data cache partition, which is the GEN partition. The size of the region is 10 blocks and reading ahead is enabled with an extent size of 2 blocks.

```
>SET /CACHE [RET]
```

```
CACHE=DB1:
```

```
CACHE=DB2:
```

```
CACHE=DB3:
```

Displays all devices that have data caching enabled.

```
>SET /NOCACHE=LB: [RET]
```

Disables data caching for device LB.

SET

```
>SET /NOCACHE [RET]
NOCACHE=LB:
NOCACHE=DLO:
```

Displays all devices that do not have data caching enabled.

```
>SET /CHAR_LENGTH=TT3: [RET]
CHAR_LENGTH=TT3:8
```

Displays the current character length setting for terminal TT3.

```
>SET /CHAR_LENGTH=TT3:7 [RET]
```

Sets the receive and transmit character length for terminal TT3 to 7 bits.

```
>SET /CLI=TI: [RET]
CLI=TI:MCR
```

Displays the current default CLI for TI.

```
>SET /CLI=TI:ACLI [RET]
```

Sets the default CLI for TI to ACLI.

```
>SET /DEF [RET]
DB2:[303,24] Nonamed TT4:
Protection UIC: [303,24]
```

Displays the current default device and directory for a user in nonamed directory mode.

```
>SET /DEF [RET]
DB0:[JOYCE] Named TTO:
Protection UIC: [7,124]
```

Displays the current default device and directory for a user in named directory mode. Even though the default directory is a named directory, the protection UIC remains numeric (it is the UIC with which the named directory is associated).

```
>SET /DPRO=[RW,RWED,*,] [RET]
```

Sets your default file protection code as: read and write access for the system; all types of access for the file owner; the current default access for the group; and no access for the world.

```
>SET /DPRO [RET]
SYSTEM:RW,OWNER:RWED,GROUP:R,WORLD:NO ACCESS
```

Displays the current user-specified default file protection code, if there is one. If you have not specified a default file protection code, you receive the following message: **No user default protection specified.**

SET

```
>SET /DPRO=[...] [RET]
```

SET -- No protection specified for any field

You did not specify access for any of the user classes. Therefore, no default file protection is set. You must specify at least one type of access for at least one user class.

```
>SET /NODPRO [RET]
```

Assigns the default volume protection to all files created after you enter this command.

```
>SET /HOLD=TT3: [RET]
```

Enables hold-screen mode for CRT terminal TT3. The terminal erases its screen and positions the cursor at the top left (home) of the screen.

```
>SET /HOLD [RET]
```

HOLD=TT3:

HOLD=TT7:

HOLD=TT12:

Displays all of the terminals that have hold-screen mode enabled.

```
>SET /NOHOLD=TT3: [RET]
```

Disables hold-screen mode for terminal TT3.

```
>SET /NOHOLD [RET]
```

NOHOLD=TT0:

NOHOLD=TT3:

Displays all of the terminals that have hold-screen mode disabled.

```
>SET /HOST=FRIEND:: [RET]
```

Sets node FRIEND as the host node for your terminal.

```
>SET /HOST [RET]
```

Host=FRIEND RSX-11M-PLUS V4.0 BL40

Displays the name of the host node for your terminal. The display line includes the name and version number of the operating system that the host node runs.

```
>SET HSYNC=TT2: [RET]
```

Enables synchronization between the host and TT2.

```
>SET HSYNC [RET]
```

HSYNC=TT2:

HSYNC=TT4:

HSYNC=RT7:

Displays all synchronized terminals.

SET

```
>SET /NOHSYNC=TT20: [RET]
```

Disables synchronization for terminal TT20.

```
>SET /NOHSYNC [RET]
```

```
NOHSYNC=TT12:
```

```
NOHSYNC=TT20:
```

```
NOHSYNC=RT28:
```

Displays all of the terminals that are not synchronized.

```
>SET /INQUIRE=TT3: [RET]
```

Determines the terminal type of TT3; then, sets the appropriate attributes for that terminal type.

```
>SET /LIBUIC [RET]
```

```
LIBUIC=[3,54]
```

Displays the current library UIC.

```
>SET /LIBUIC=[6,54] [RET]
```

Sets the library UIC to [6,54].

```
>SET /LOWER=TT3: [RET]
```

Inhibits conversion of lowercase characters to uppercase when they are received from terminal TT3.

```
>SET /LOWER [RET]
```

```
LOWER=LPO:
```

```
LOWER=TT1:
```

```
LOWER=TT3:
```

```
LOWER=TT7:
```

Displays all the devices for which lowercase characters are not converted to uppercase.

```
>SET /NOLOWER [RET]
```

```
NOLOWER=LP1:
```

```
NOLOWER=TT0:
```

```
NOLOWER=TT2:
```

```
NOLOWER=TT4:
```

Displays all the devices that automatically convert lowercase characters to uppercase.

```
>SET /NOLOWER=TT3: [RET]
```

Resets terminal TT3 so that lowercase characters are automatically converted to uppercase.

SET

```
>SET /MAIN=SYSPAR [RET]
MAIN=SYSPAR:0420:0140:TASK
```

Displays the parameters of the main partition SYSPAR. Note that if the main partition is a task partition and contains subpartitions, the parameters of the subpartition are also displayed.

```
>SET /NOMAIN=SYSPAR [RET]
```

Eliminates the main partition SYSPAR from the system.

```
>SET /MAXEXT=20.K [RET]
```

Establishes 20.K as the maximum size to which a task can extend itself.

```
>SET /MAXEXT [RET]
MAXEXT=12000
```

Displays the current maximum size to which a task can extend itself.

```
>SET /MAXPKT=12. [RET]
```

Sets the maximum number of I/O packets retained for optimization of I/O servicing to 12₁₀.

```
>SET /MAXPKT [RET]
MAXPKT=12.:3.
```

Displays the maximum and current number of I/O packets. The maximum number of I/O packets to be retained explicitly for QIO processing is 12₁₀. Three packets are currently available.

```
>SET /NAMED [RET]
```

Sets you to named directory mode. In named directory mode, you can use either named or numeric directories, and you can set your default directory to be a named directory. To exit from named directory mode, enter the /NONAMED keyword.

```
>SET /NONAMED [RET]
```

Sets you to nonamed directory mode. You can now use either named or numeric directories in commands, but you cannot set your default directory to be a named directory.

The following example shows the difference in the way the SET /DEF command functions in named and nonamed directory modes. When the user (Jones) logs in and issues the SET /DEF command, the default directory is [JONES].

```
>SET /DEF [RET]
DR5:[JONES] Named TT3:
Protection UIC: [301,1]
```

Displays the default directory, which is the named directory [Jones].

SET

```
>SET /NONAMED [RET]
>SET /DEF [RET]
DR5:[301,1] Nonamed TT3:
Protection UIC: [301,1]
```

SET /NONAMED switches directory mode from named to nonamed. SET /DEF then displays the new default numeric directory ([301,1]). Note that this is an actual directory only if it has been created previously. This directory name is based on the user's User Identification Code (UIC). Anytime you change your terminal's default from /NAMED to /NONAMED, the name of your default directory is the same as your UIC.

```
>SET /NONAMED [RET]
>SET /DEF=[NAMEDMODE] [RET]
SET -- Invalid UIC
```

If you try to set your default directory to a named directory while you are in nonamed directory mode, you receive an error message. However, in named directory mode, you can set your default directory to both named and numeric directories.

```
>SET /NAMED [RET]
>SET /DEF=[100,100] [RET]
>SET /DEF [RET]
DR5:[100,100] Named TT3:
Protection UIC: [301,1]
```

Sets the default directory to the numeric directory [100,100]. Although the default directory is [100,100], the protection UIC remains [301,1]. See the description of the /UIC keyword for information about changing your UIC.

```
>SET /NAMED [RET]
>SET /DEF=[JONES] [RET]
>SET /DEF [RET]
DR5:[JONES] Named TT3:
Protection UIC: [301,1]
```

Returns the default directory to the original named directory [JONES].

```
>SET /NOCEX [RET]
```

Deallocates space reserved in the Executive for DECnet use so that the system can use it.

```
>SET /PASSWORD [RET]
Old password:<SHORT>
New password:<LONGER>
Verification:<LONGER>
>
```

Changes the user's password from SHORT to LONGER. (The angle brackets in the example indicate that the passwords are not echoed on the terminal.) In response to the "Verification" prompt, you must type your new password a second time. This verifies that the new password is correct. If you type in different responses to the *New password* and *Verification* prompts, the system does not change your password.

SET

```
>SET /PLCTL RET  
PLCTL=1600.:600.:200.:51.
```

Displays the current settings for the pool limit parameters.

```
>SET /POOL=1200 RET
```

Establishes 120000₈ as the beginning location for user partitions.

```
>SET /POOL RET  
POOL=1200:03380.:06322.
```

Displays the first location for user partitions, the longest free block, and the total of all pool space (the first free block is at 120000, the longest free block is 3380 decimal words, and the total pool space is 6322 decimal words).

```
>SET /PRIV=TT1: RET
```

Establishes TT1 as a privileged terminal.

```
>SET /PRIV RET  
PRIV=TT0:  
PRIV=TT1:
```

Displays all the privileged terminals.

```
>SET /NOPRIV RET  
NOPRIV=TT2:  
NOPRIV=TT3:
```

Displays all the nonprivileged terminals.

```
>SET /NOPRIV=TT1: RET
```

Establishes TT1 as a nonprivileged terminal.

```
>SET /PUB=LP: RET
```

Establishes LP0 as a public device.

```
>SET /PUB RET  
PUB=DB0:  
PUB=DB1:  
PUB=LP0:
```

Displays all the public devices.

```
>SET /NOPUB RET  
NOPUB=DK0:  
NOPUB=DK1:
```

Displays all the private and unowned (nonpublic) devices.

SET

```
>SET /NOPUB=LPO: [RET]
```

Establishes LP0 as a nonpublic device.

```
>SET /REMOTE [RET]
REMOTE=TT1:1200
REMOTE=TT2:0
REMOTE=TT4:0
```

Displays all of the terminals that are currently set as remote dial-up lines.

```
>SET /REMOTE=TT3:1200 [RET]
```

Sets the terminal line corresponding to TT3 as a remote dial-up line. The initial baud rate (answer speed) for the line will be 1200.

```
>SET /NOREMOTE=TT3: [RET]
```

Declares that the terminal line for TT3: is a local line.

```
>SET /NOREMOTE [RET]
NOREMOTE=TTO:
NOREMOTE=TT3:
```

Displays all the local lines.

```
>SET /SECPOL [RET]
SECPOL=285.:640.:44%
```

Displays the amount of secondary pool currently being used.

```
>SET /SERIAL=TI: [RET]
>MAC TEST=TEST [RET]
TKB TEST=TEST
>
```

Sets the issuing terminal (TI) to be a serial terminal. MCR processes the MAC (MACRO-11 language) command line and then processes the Task Builder (TKB) command line. If the terminal had not been set for serial execution, the TKB command line would have failed because TEST.OBJ would not have been created yet. Note that the TKB command line is not echoed until it is selected for execution.

(For information on the Macro-11 Programming Language, see the *PDP-11 MACRO-11 Language Reference Manual*. For information on the Task Builder, see the *RSX-11M-PLUS and Micro/RSX Task Builder Manual*.)

```
>SET /NOSERIAL [RET]
NOSERIAL=TT1:
NOSERIAL=TT5:
NOSERIAL=TT20:
```

Displays all terminals that do not have the serial option enabled.

SET

```
>SET /NOSERIAL=TT16: [RET]
```

Establishes TT16 as a terminal whose unsolicited command lines will be executed in parallel rather than serially.

```
>SET /SPEED=TT3: [RET]  
SPEED=TT3:2400:2400
```

Displays the current speed setting for terminal TT3. The input (recv) and output (xmit) speeds are the same (2400 baud).

```
>SET /SPEED=TT3:9600:9600 [RET]
```

Sets the receive and transmit baud rates for TT3 to 9600.

```
>SET /SWPC [RET]  
SWPC=30.
```

Displays the current number of clock ticks for the swapping interval.

```
>SET /SWPC=60. [RET]
```

Sets the new swapping interval to 60₁₀.

```
>SET /SYSUIC [RET]  
SYSUIC=[1,54]
```

Displays the current system UIC.

```
>SET /SYSUIC=[3,54] [RET]
```

Sets the system UIC to [3,54].

```
>SET /TERM=TT1:LA36 [RET]
```

Establishes TT1 as an LA36 terminal.

```
>SET /LA36=TT1: [RET]
```

Same effect as previous example; establishes TT1 as an LA36 terminal.

```
>SET /TOP=TSTPAR:+5 [RET]
```

Moves the top boundary of TSTPAR up by five 64-byte blocks.

```
>SET /TOP=PAR23:-* [RET]
```

Moves the top boundary of PAR23 down as far as possible.

SET

```
>SET /UIC [RET]  
UIC=[10,10]
```

Displays the current default UIC for terminal TI.

```
>SET /UIC=[303,3] [RET]
```

Sets the default UIC for terminal TI to [303,3].

```
>SET /UIC=TT12: [RET]  
UIC=[12,20]
```

Displays the current default UIC for terminal TT12.

```
>SET /DEF [RET]  
DR5:[1,1] Named TT3:  
Protection UIC: [1,1]
```

Displays the current default directory and protection UIC.

```
>SET /UIC=[12,10] [RET]  
>SET /DEF [RET]  
DR5:[1,1] Named TT3:  
Protection UIC: [12,10]
```

Sets the default UIC to [12,10], but the default directory does not change when you change the default UIC in named directory mode.

```
>SET /NONAMED [RET]  
>SET /DEF [RET]  
DR5:[12,10] Nonamed TT3:  
Protection UIC: [12,10]
```

In nonamed (numeric) directory mode, the default directory changes to match the specified UIC.

```
>SET /UIC=[200,200] [RET]  
>SET /UIC [RET]  
Default UFD: [200,200] Protection UIC: [200,200]
```

Changes both the default User's File Directory (UFD) and protection UIC. In nonamed directory mode, this behavior is compatible with previous versions of the RSX operating system. Remember that the default UFD is used for the location of files, while the protection UIC is used to determine privilege for file protection purposes.

SSM

3.43 SYSTEM SERVICE MESSAGE (P)

The SYSTEM SERVICE MESSAGE (SSM) command inserts text into the Error Log File (LB:[1,6]LOG.ERR). The text appears in error log reports produced by the error log report generator (RPT).

For information on the report generator, see the *RSX-11M-PLUS and Micro/RSX Error Logging Manual*.

Format

SSM message

Parameter

message

Any text string up to a maximum of 79 characters.

Example

```
>SSM TESTING VOLUME INTEGRITY ON DM1:, POSSIBLE FORMAT ERRORS. [RET]
```

Inserts the message *TESTING VOLUME INTEGRITY ON DM1:, POSSIBLE FORMAT ERRORS.* into the error log file.

3.44 SWITCH REGISTER (P)

The SWITCH REGISTER (SWR) command either displays the current value or sets or clears a bit in the switch register. Diagnostic functions use the values in the switch register to interrupt diagnostic processing and to select specific diagnostics to execute.

For processors that do not have a console switch register, the Executive directive Get Sense Switches (GSSW\$) accesses the software switch register (\$SWR) in the Executive module SYSCM. To allow a task to access or modify \$SWR, use the SWR command.

Formats

SWR
SWR value
SWR bitposition/keyword

Keywords

/SET
/CLE
/DIS

Parameters

value

An octal number. When you include a value, the command deposits this number into the switch register.

bitposition

The bit number (0 through 15). The command sets, clears, or displays the value of the specified bit.

Keyword Descriptions

/SET

Sets bit in the specified bit position.

/CLE

Clears bit in the specified bit position.

/DIS

Displays value of bit in the specified bit position.

Examples

```
>SWR RET
177640
```

Displays the current value of the switch register.

SWR

>SWR 177660 RET

Deposits 177660 into the switch register.

>SWR 3/SET RET

Sets the bit in bit position 3 (changes the switch register value in the previous example to 177664).

3.45 TASKLIST-ATL FORMAT (NP)

The TASKLIST-ATL (TAL) command displays the names and status of all tasks or of a specific task installed in the system. The display lists the tasks installed in primary pool and then those installed in secondary pool. The tasks in secondary pool are indicated by a plus sign (+).

The display format is the same as that of the ACTIVE TASK LIST (ATL) command. See the ATL command for a description of the display.

For more information on secondary pool, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.

Format

TAL [taskname]

Parameter

taskname

The name of a specific task about which you want to display information.

Example

```
>TAL RET
...RMD 006246+ GEN      114020 00741000-00770200  Pri - 225.  Dpri - 225.
  Status:  -EXE -CHK -PMD PRV PRO XHR
  TI - None IOC - 0.  BIO - 0.  Eflg - 001400 000000
...DMO 006224+ GEN      114020 00741000-00756500  Pri - 160.  Dpri - 160.
  Status:  -EXE -PMD PRV PRO
  TI - None IOC - 0.  BIO - 0.  Eflg - 001326 000000
```

The plus sign (+) following the TCB field for a task indicates that the task is installed in secondary pool. In the TAL display, these tasks follow the tasks installed in primary pool.

TAS

3.46 TASKLIST (NP)

The TASKLIST (TAS) command displays a description of each installed task. The display contains the following information:

1. Task name
2. Task version identification
3. Partition name
4. Task priority
5. Size of task in bytes (in octal)
6. Load device identification
7. Disk address logical block number (in octal)
8. Task memory state

The display lists the tasks installed in primary pool and then those installed in secondary pool.

Format

`TAS[KLIST] [taskname] [/DEV=dev]`

Parameter

taskname

The name of a specific task.

Keyword

/DEV=dev

Displays the names and status of all tasks installed from the device dev. If you specify both taskname and /DEV, the system displays information about the task installed from that device.

The device dev can be the logical name for the device or a physical device name and unit number (ddnn:).

Examples

In the following examples, FIXED indicates that the task is fixed in memory. In the first example, pressing CTRL/O suppresses further output.

TAS

```
>TAS [RET]
...LDR 07.05 SYSPAR 248. 00002200 LB0:-01035303 FIXED
TKTN 03.3 SYSPAR 248. 00010000 LB0:-01126742
RMDEMO X03.03 GEN 225. 00013700 SY0:-00352100
MTAACP 0006 GEN 200. 00013000 DS0:-00000777
F11MSG V0010 GEN 200. 00005400 SY0:-01053030
MCR... 3.2 SYSPAR 160. 00010000 LB0:-01051626
TAST17 01 GEN 160. 00025000 LB0:-01051676
...STO 000005 SYSPAR 151. 00010000 SY0:-01136540
...BYE 01.5 GEN 150. 00040000 LB0:-01051337
F11ACP M0235 FCPPAR 149. 00040000 LB0:-01052445
SECFCP M0235 GEN 149. 00026200 SY0:-00055463
DTAACP M0235 GEN 149. 00026200 SY0:-01052554
...DMO 03.2 GEN 140. 00040000 LB0:-01051403
...INI 03.1 GEN 140. 00040000 LB0:-01051561
...MOU 03.01 GEN 140. 00040000 LB0:-01051653
^0
```

The next example is summarized in the table that follows it.

```
>TAS /DEV=DRO: [RET]
DROOF1 M0323 SYSPAR 149. 00055700 LB0:-00475656 FIXED
F11ACP M0323 GEN 149. 00044000 LB0:-00315566
DB01F1 M0323 GEN 149. 00044000 LB0:-00315566
DB07F1 M0323 SYSPAR 149. 00044000 LB0:-00315566 FIXED
ERRLOG V1.01 GEN 148. 00042200 LB0:-00335276
PMD... 04.0 GEN 140. 00015200 LB0:-00503535
HRC... 02 GEN 140. 00055100 LB0:-00505331
SYSLOG 1.02 GEN 130. 00016300 LB0:-00504250
...INS 06 GEN 100. 00035400 LB0:-00502750
```

Reading from left to right, the displays contain the following information:

Column	Information
1	Task name
2	Task version Task version identification
3	Partition name
4	Task priority
5	Task size
6	Load device identification Logical block number (on the load device)
7	Task memory state

If the task version identification field is blank (the rest of the line is offset to the left) or contains meaningless output, the task was installed from a disk that has since been replaced or removed from the drive.

TIM

3.47 TIME (NP,P)

If you are a privileged user, the TIME (TIM) command allows you to set the current time of day and the current date. If you are a nonprivileged user, the TIME command allows you to display the current time and date.

Format

The TIME command has two formats:

`TIM[E] [hrs:mins[:secs]] [m1/day/year]`

`TIM[E] [hrs:mins[:secs]] [day-m2-year]`

If you do not specify the time or date in the command line, the system displays the current time and date on the entering terminal (TI). The form you use to specify the date does not affect the display format. The date is always displayed as day-month-year (for example, 10-FEB-87).

Parameters

hrs

The value for hours, which can be between 0 and 23.

mins

The value for minutes, which can be between 0 and 59.

secs

The value for seconds, which can be between 0 and 59. (The value for seconds is an optional parameter.)

m1

The value for the month, specified as a number between 1 and 12.

m2

The value for the month, specified as a 3-letter abbreviation.

day

The value for the day of the month, which can be between 1 and 31.

year

The value for the year, which can be between 0 and 99. The year is relative to 1900, so that 1987 is specified as 87.

Notes

1. If a privileged user specifies the time and date, the command sets the clock and date. If only the time is specified, only the clock is set; if only the date is specified, only the date is set.
2. A privileged user can specify the time and date in either order.
3. All numeric values are decimal. No terminating period is permitted.

TIM

Examples

```
>TIM   
10:23:31 26-SEP-87
```

Displays the current time and date.

```
>TIM 01:02 9/23/87   
Sets the time to 01:02:00 and the date to 23-Sep-87.
```

UFD

3.48 USER FILE DIRECTORY (NP,P)

The USER FILE DIRECTORY (UFD) command creates a User File Directory (UFD) on a Files-11 volume and enters its name into the Master File Directory (MFD). (See Chapter 2 for more information about UFDs.)

Before creating a UFD, you must first initialize and mount (INI and MOU) the volume.

A nonprivileged user can create a directory only on a volume mounted on a privately allocated device. A privileged user can create a directory on any mounted volume.

Format

UFD ddnn: [volume-label] [g,m] [/keyword(s)]

Keywords

/ALLOC=number

/DEL

/OWNER=[uic]

/PRO=protection-spec

Parameters

ddnn:

Device unit containing the volume on which the directory being created will reside.

There is no default device unit; you must specify one.

volume-label

If specified, the label is compared with the label on the volume. If the names match, a directory can be created. If they do not match, the command is rejected.

By default, the volume-label is null; no check is made if you do not specify a volume-label.

[g,m]

Specifies the directory that you want to create. The directory can be a named or a numeric directory. The square brackets are required parts of the directory syntax.

There is no default for the directory; you must specify one.

Keyword Descriptions

/ALLOC=number

The number of directory entries for which space in the UFD is to be allocated. The specified number is rounded up to the next multiple of 32₁₀.

The default is 32₁₀.

/DEL

Deletes a directory on a Files-11 volume and removes its name from the volume's Master File Directory (MFD). Nonprivileged users can delete directories only on volumes mounted on their own private (allocated) device.

/OWNER=[uic]

Establishes the owner UIC for the directory file.

/PRO=protection-spec

Establishes access rights for the directory file. The protection specification (protection-spec) has two formats:

(SYSTEM:RWED,OWNER:RWED,GROUP:RWED,WORLD:RWED)

[RWED,RWED,RWED,RWED]

The user classes (system, owner, group, world) are positional; that is, the location of the word in the string defines the user class to which the code applies. The square brackets around the protection code are required syntax.

For each user class, the system recognizes four types of protection access codes:

Code	Type of Access
R	Read
W	Write
E	Create access at volume level; extend access at file level
D	Delete

To specify the default protection for a user class, enter an asterisk (*) instead of access codes in that class's place in the string. For each user class, the absence of a code means the class is denied that type of access.

The defaults are: [RWED,RWED,RWED,R].

Example

```
>UFD DM1:[1,1] [RET]
```

Creates a directory for the UIC [1,1] on device DM1. The name and file number of the number of the UFD file are entered into the MFD. The name of the UFD is 001001.DIR;1, and its owner is UIC [1,1].

UNB

3.49 UNBLOCK (NP,P)

The UNBLOCK (UNB) command continues the execution of a previously blocked active task or allows a previously blocked dormant task to execute if it is requested to do so. (See the description of the BLOCK command, Section 3.49.)

A nonprivileged user can unblock any active task running from the issuing terminal. A privileged user can unblock any task.

The system automatically unblocks an active task when it is aborted.

Format

UNB[LOCK] [taskname] [/TERM=term]

Parameter

taskname

The name of the task. If you omit taskname, the command unblocks the task requested from the issuing terminal (task TTnn).

Keyword

/TERM=term

A privileged keyword that clears the block bit for a task being run from the specified terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (ttnn:).

Examples

```
>UNB TST RET
```

Unblocks task TSTT36 and allows it to continue executing. (TT36 is the number of the terminal from which the task is running.)

```
>UNB MAS/TERM=TT23: RET
```

Unblocks task MAST23 and allows it to continue executing.

3.50 UNFIX (P)

The UNFIX (UNF) command frees a fixed task from memory. This allows tasks that have been waiting for the partition in which the fixed task resides to compete for the partition. However, if a fixed task exits or aborts, it still occupies the physical memory in the partition.

UNFIX is the complement of the FIX command.

Formats

One of the following formats:

UNF[IX] **regionname**/REG

UNF[IX] **taskname**/RON

Parameters

regionname

The name of the common task region to be freed from memory.

taskname

The name of the task to be freed from memory.

Keywords

/REG

Allows you to unfix a common task region from a partition.

/RON

Allows you to unfix a common, read-only segment of a multiuser task from a partition. To unfix the segment, type the full name of the multiuser task.

Examples

```
>UNFIX XKE RET
```

Unfixes task XKE, freeing the partition in which it resides for task competition.

```
>UNF FCSRES/REG RET
```

Frees the resident library for FCS from its partition.

```
>UNFIX ...MAC/RON RET
```

Unfixes the read-only segment of the MACRO-11 Assembler from its partition.

UNL

3.51 UNLOAD (P)

The UNLOAD (UNL) command removes a loadable device driver from memory. If a device is mounted, attached, or has outstanding I/O, its driver cannot be unloaded. Also, the UNLOAD command cannot remove a data base from memory, even if the data base was loaded by means of the LOAD command.

To unload a device driver from memory, the driver's symbol table (STB) file must reside on the system device (LB) in the system or library directory. The SET /SYSUIC command displays and defines the system directory. However, unless you redefine them, the system directory is set to [1,54], and the library directory is set to [3,54].

Format

UNL[OAD] dd:[/keyword]

Parameter

dd

A 2-character ASCII device name.

Keywords

/VEC

Specifies that the device driver or extended Executive partition (EXP) to be unloaded is vectored (see the description of the LOAD keyword /VEC).

For information on vectored device drivers, see the *RSX-11M-PLUS and Micro/RSX I/O Drivers Reference Manual*.

/EXP=expname

Specifies the name or file specification of an extended Executive partition to be unloaded from memory. (Note that this keyword does not apply to secondary pool partitions.)

Example

>UNL LP: RET

Unloads the loadable device driver for device LP.

3.52 UNSTOP (NP,P)

The UNSTOP (UNS) command continues execution of a task that has been stopped internally by the Executive. Examples of stopped tasks are tasks that have issued the Executive directives Stop (STOP\$S) or Receive Data or Stop (RCST\$).

A nonprivileged user can only unstop tasks being run from the issuing terminal. A privileged user can unstop any stopped task.

Format

UNS[*TOP*] [*taskname*] [/TERM=*term*]

Parameter

taskname

The name of the task. If you omit *taskname*, the command unstops the task being run from the issuing terminal (task *ttnnn*).

Keyword

/TERM=*term*

A privileged keyword that clears the stop bit for a task being run from the specified terminal.

Term can be a logical name assigned to the terminal, or it can be the physical device and unit number for the terminal (*ttnn*:).

Examples

```
>UNS TST RET
```

Clears the stop bit for task TSTT17 and allows it to continue executing. (TT17 is the number of the terminal from which the task is running.)

```
>UNS LAR/TERM=TT131: RET
```

Clears the stop bit for task LARTD1 and allows it to continue executing. The task is being run from TT131 (TD1).

Appendix A

MCR and TKTN Messages

This appendix lists messages from MCR and the Task Termination Notification Program (TKTN). The first four sections provide general information about different type of messages. Section A.5 lists all the messages in alphabetical order according to the text of the message.

A.1 TKTN Messages

TKTN displays information about tasks that are being aborted by the ABORT command or by some other means. The display has the following format:

```
Task <taskname> terminated  
<abort cause>
```

If the task was not checkpointed, a list of the task's registers at the time of the abort follows the displayed cause for the abort. The possible causes of an abort are described in the messages.

Note that, unlike error messages from MCR commands, the text of the message is not preceded by a three-letter mnemonic.

A.2 Abort Command Error Messages

On receiving an ABORT command, MCR requests the Executive to abort the task. The Executive subsequently activates TKTN, which then produces a termination display. Thus, messages following an ABORT command can come either from the ABORT command itself or from TKTN.

A.3 Mounted Magnetic Tape Messages

Messages that begin with xxxxxx are from the Ancillary Control Processor (ACP) that is servicing your ANSI magnetic tape volume. The messages are generated by volume-switching operations for multivolume tape sets.

A message first appears on the console terminal. If no action is taken before a timeout interval elapses, the message appears again on the console terminal and on the terminal that issued the command line.

These messages do not occur during the execution of the MOUNT command, but rather as a result of operations performed by a system utility or user application program. The variable xxxxxx is replaced by the name of the task or utility that returned the error.

See the *RSX-11M-PLUS and Micro/RSX I/O Operations Reference Manual* for definitions of I/O error codes that may accompany these messages.

A.4 Warning Messages

Warning messages inform you of conditions that require your consideration. The general format is as follows:

```
xxx -- WARNING -- <message text>
```

Depending on the message and the operation, you decide what further action is called for. The operation continues.

A.5 Message Descriptions

This section lists messages from MCR and TKTN in alphabetical order. Each message description includes an explanation and, when necessary, a suggested action for correcting the error.

The XXX in the messages indicates the 3-character component of MCR that detected the error (for example, a message returned from the SET command is preceded by the letters SET).

Aborted via CLI

Explanation: A CLI command aborted the task.

User Action: None. This is a TKTN message.

Aborted via CLI

Postmortem Dump will be generated

Explanation: A CLI command aborted the task and requested a Postmortem Dump.

User Action: None. This is a TKTN message.

Aborted via directive or CLI

Explanation: Either an Executive directive or a CLI command issued by another task caused the task to be aborted.

User Action: None. This is a TKTN message.

XXX—Access to common block denied

Explanation: One of the commons that the task requires cannot be accessed from the UIC with which you are attempting to install the task.

User Action: Enter the command from a UIC that has the necessary access privileges.

XXX—Account file open failure

Explanation: The account file was open for another user, or the disk containing the account file (RSX11.SYS) was not mounted. Unless the account file has been moved or deleted, it is located on the system library disk (pseudo device LB).

User Action: Wait for the other user to close the account file, or ask the system manager (or any privileged user that is currently logged in to the system) to mount the disk containing the account file. If the account file has been deleted, you may be able to restore it from a recent backup set; see your system manager.

XXX—Account file record(s) locked

Explanation: HELLO could not access an account record. Another user may have opened the account file.

User Action: Wait for the other user to close the account file, then reenter the command line.

XXX—Accounting is active

Explanation: The SAVE command cannot save a system if Resource Accounting is still active.

User Action: Use the STOP/ACCOUNTING command to stop Resource Accounting, then reenter the command.

XXX—Accounting sec. pool allocation failure for ' <name> '

Explanation: The Resource Accounting system could not find sufficient space in secondary pool to allocate a block.

User Action: Increase secondary pool size, using the LOA command with the /EXP=SEC keyword.

XXX—ACD already exists

Explanation: You attempted to install an ACD that is already installed.

User Action: Check the filename to be sure that the correct translation routine is installed.

XXX—ACD is busy but was marked for delete

Explanation: You attempted to remove an ACD that is linked to a terminal.

User Action: Unlink the ACD from all terminals, then the system will delete it automatically.

XXX—ACD region name conflict

Explanation: You attempted to install an ACD that has the same name as a common region in the system.

User Action: Reenter the command, specifying a unique ACD name.

XXX—ACD task was not found

Explanation: You specified an incorrect file name for the file containing the translation routine that you want to install.

User Action: Check the file specification and reenter the command, specifying the correct file.

XXX—Addressing extensions not supported

Explanation: You attempted to install a task that was built with a virtual section (VSECT) into a system that does not support the feature.

User Action: None. This cannot be done.

XXX—Alignment error

Explanation: You attempted to create a partition, but the base address or size conflicted with existing partitions or physical memory size.

User Action: Reenter the command, specifying a different base address.

... Allocation failure on task account block for <taskname>

Explanation: Resource Accounting could not find sufficient space in secondary pool to allocate a Task Account Block for the specified task.

User Action: None. This is a TKTN message.

XXX—Allocation for SYS file exceeds volume limit

Explanation: The system was unable to allocate the system file from the specified block because it encountered intermediate bad blocks or end-of-volume.

User Action: If many areas of bad blocks are present, use new media to perform the operation. Otherwise, reenter the command with smaller parameters.

XXX—Ambiguous HELP qualifier

Explanation: The qualifier does not specify a unique part of the help file. Further characters must be supplied.

User Action: Examine the command line that HELP displayed below the error message and specify more completely the last qualifier displayed.

XXX—Ambiguous HELP synonym

Explanation: The qualifier referenced as a synonym was not unique. This error occurs when a help file includes the pound sign (#) to reference identical qualifiers; the help file containing the text to be displayed includes a reference to itself.

User Action: If user-written help files have been added to the system, be sure that the synonym file references are valid. If this error occurs with the help files supplied by DIGITAL, submit a Software Performance Report (SPR).

XXX—Ambiguous keyword **<command-line>**

Explanation: The abbreviation used for a keyword in the command line was too short for MOUNT to distinguish it from another keyword.

User Action: Reenter the command line, using a longer form of the keyword.

XXX—Assign failure

Explanation: HELLO could not complete login logical assignments. This message is usually accompanied by another message from the ASN command.

This error may indicate that secondary pool has been depleted.

User Action: Log out of the system and wait for system resources to be restored, or correct the error indicated by the ASN command error message. Then, reenter the HELLO command. (If you cannot log in to another account to correct the problem, ask your system manager or a privileged user to correct the problem for you.)

AST abort. Bad stack

Explanation: An asynchronous system trap (AST) could not execute because the AST parameters could not be pushed onto the stack for the task.

This message usually indicates an error in the logic of the task, which should be corrected.

User Action: Modify the task to eliminate the error, then reenter the command.

<bell> ... ATTENTION ... <bell>

This volume is operating with a replacement home block
Please take the action outlined in the documentation

Explanation: HOME could not ensure that a home block would be correctly written back to the volume, so it placed an alternate home block on the first free block on the home block search path. The new home block is not allocated to or mapped by any file.

User Action: Copy the volume as soon as possible to prevent operations on a mounted volume from destroying the replacement home block.

XXX—Bad block file corrupt - data ignored

Explanation: Although you selected automatic bad block recognition, the bad block data on the disk was not in the correct format and was therefore ignored. This may indicate that the disk is damaged.

User Action: Run the Bad Block Locator Utility (BAD) again or use a new disk. (For information on running BAD, see the *RSX-11M-PLUS Utilities Manual*.)

XXX—Bad block file full

Explanation: The disk had more than 102₁₀ bad regions on it. This indicates that the disk is corrupt or that the disk drive is damaged.

User Action: Replace the disk in the drive with a new disk, or specify a different device.

XXX—Bad block header I/O error

Explanation: While writing the bad-block file header, the system detected a write error. This indicates that the disk is corrupt or that the disk drive is damaged.

User Action: Replace the disk in the drive with a new disk, or specify a different device.

XXX—Bad error message

Explanation: The system issued a request to the MCR Error Processor for a message that does not exist. This error should not occur.

User Action: Submit a Software Performance Report (SPR) to DIGITAL. In your SPR, include the command line that resulted in this error.

XXX—Bad task file VBN

Explanation: The task contained a bad Virtual Block Number (VBN) in its file header. The task image file has probably been corrupted.

User Action: Rebuild or replace the task image, then reenter the command.

XXX—Bad task file VBN, task removed - <taskname>

Explanation: The system removed the specified task because it contained a bad Virtual Block Number (VBN) in its file header. The task image file has probably been corrupted.

User Action: Using the Virtual MCR (VMR) command REMOVE, remove the task. Then, if necessary, reinstall the task with the VMR command INSTALL. (For information on VMR, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.) Reenter the command.

XXX—Base address must be on 4K boundary

Explanation: The virtual base address of the task is not on a 4K boundary because the task was built incorrectly.

User Action: Rebuild the task for the correct starting address, then reenter the command.

XXX—Base mismatch common block <commonname>

Explanation: The base address of the partition, as recorded in the task image, did not match the base address of the common block. The task image is probably built against a different version of the common than the one currently installed in the system.

User Action: Rebuild the task against the current version of the common. Then, reenter the command.

XXX—Block(s) exceed volume limit

Explanation: The specified block (or blocks) exceeded the physical size of the volume.

User Action: Reenter the command, specifying the correct block numbers.

XXX—Booted device cannot be brought online

Explanation: There was an error when SAVE attempted to bring either the unit or controller of the booted device on line. The Executive is corrupted; the device driver does not work; or the device does not work.

User Action: None. There is no recovery procedure.

XXX—Booted device's driver not loaded

Explanation: VMR has been used to unload the driver for the system (booted) disk.

User Action: Log in to another system and use VMR to load the driver. Then, reboot the system.

XXX—Booted device not in system - <dd nnn mmmmmm>

Explanation: When the system was booted, SAVE could not find the booted device (device name dd, physical unit number nnn, CSR address mmmmmm) in the system data structures. For example, the system was booted from DB3, but the system data structures include only DB0 and DB1.

On RSX-11M-PLUS multiprocessor operating systems, the boot device must be connected directly to the target processor; it cannot be connected by a bus switch.

User Action: Repeat the system generation procedure to include the device in the system configuration and then reboot the system, or boot the system from a different device. (For more information on system generation, see the *RSX-11M-PLUS System Generation and Installation Guide*.)

XXX—Byte address

Explanation: You specified an odd-numbered address as the argument to the OPEN command.

User Action: Reenter the command, specifying an even-numbered address (for example, 350).

XXX—Cannot allocate UAB

Explanation: The Resource Accounting system requires space in secondary pool to allocate a User Account Block (UAB). If sufficient space is not available in secondary pool, nonprivileged users cannot log in.

User Action: The system manager can use the Resource Accounting switch /POOL—RESERVE to alter the secondary pool limit. See the *RSX-11M-PLUS and Micro/RSX System Management Guide* for complete details.

XXX—Cannot assign SY:

Explanation: The ACD command issued an Executive Assign Logical Unit Number (ALUN\$) directive, but the assignment failed. This indicates an invalid logical name or device assignment for SY.

User Action: Correct the invalid logical assignment, then reenter the command.

XXX—Cannot find home block

Explanation: SAV could not find the device's home block when searching for it, or an error occurred while SAV was attempting to read the home block. The disk is probably corrupt.

User Action: Restore the disk from a recent backup set; rebuild the disk using VMR; or regenerate the system. (For more information on restoring a disk, see the description of the Backup and Restore Utility (BRU) in the *RSX-11M-PLUS Utilities Manual*.)

XXX—Cannot find physical LB:

Explanation: HELLO could not open the file because the pseudo device LB was not assigned.

User Action: Ask your system manager to assign the pseudo device LB to the system disk (see Section 3.7). Then, reenter the command.

XXX—Cannot initialize file storage region correctly

Explanation: The HELP text could not be buffered adequately.

User Action: Reenter the command line.

XXX—Cannot inquire remote terminal

Explanation: You specified a remote terminal of the type HTn: with the SET keyword /INQUIRE.

User Action: None. You cannot use SET /INQUIRE to set the attributes for an HT-type terminal.

XXX—Cannot load/unload a pseudo device

Explanation: The device you attempted to load is a pseudo device. Pseudo devices do not have device drivers.

User Action: Using the correct device name, reenter the command.

XXX—Cannot open output file

Explanation: The output file specified with the /OUT:filespec keyword cannot be created. This message can occur for several reasons. For example, the device may be write-locked or you do not have the necessary access privileges for the specified directory.

User Action: To enable write-access for a device, dismount the device and remount it using the MOUNT /UNLOCK command. (This enables write-access to the system file [0,0]INDEXF.SYS.) To obtain write-access to a privileged directory, log in to a privileged account. Then, reenter the command.

XXX—Cannot remove driver common

Explanation: On systems with a Q-bus, the driver common DYCOM cannot be removed if the DY driver (DYDRV) is loaded. Also, the driver common PUCOM cannot be removed if either the DU driver (DUDRV) or the MU driver (MUDRV) is loaded.

User Action: None. This cannot be done.

XXX—Cannot remove executive common

Explanation: The executive commons (on systems that support executive partitions) cannot be removed from the running system. The executive commons must be installed and removed with VMR (see the *RSX-11M-PLUS and Micro/RSX System Management Guide*).

User Action: None. This cannot be done.

XXX—Cannot set CLI

Explanation: (Multi-CLI operating systems only.) The command line interpreter (CLI) is installed in the system, but HELLO failed to set the terminal to the CLI. This indicates that either secondary pool is low or your default CLI has been disabled or eliminated.

User Action: Reenter the command later. If the problem persists, see your system manager.

XXX—Cannot use set host from remote terminal

Explanation: You issued the SET /HOST command from a remote (RT- or HT-type) terminal. If you set host to another system, you cannot enter a subsequent SET /HOST command from that system.

User Action: None. The SET /HOST command can be issued from physical terminals only.

XXX—Can't find <user>

Explanation: (Systems with Resource Accounting only.) You sent a message using the user-name format, but the user is not logged in.

User Action: Before reentering the command, use the MCR command DEV /LOG to obtain a list of the users currently logged in to the system. Then, reenter the command.

XXX—Can't install directive common

Explanation: You attempted to install a task in a directive common.

User Action: None. RSX-11M-PLUS operating systems do not allow you to install tasks in directive commons.

XXX—Can't install executive common

Explanation: The executive commons (on systems that support executive partitions) cannot be installed at run time.

User Action: Install the commons with the VMR command INSTALL. (See the *RSX-11M-PLUS and Micro/RSX System Management Guide* for more information.)

XXX—Can't install privileged task from non-privileged terminal

Explanation: A nonprivileged user attempted to install a privileged task. Only a privileged user can install a privileged task.

User Action: Reenter the command from a privileged account.

XXX—Can't run a common block

Explanation: You attempted to run a common block.

User Action: None. You cannot run a common block on an RSX-11M-PLUS system.

XXX—Checkpoint area too small

Explanation: The area allocated for checkpointing the task was smaller than the partition into which the task was being installed. This message applies only to systems that do not support the dynamic allocation of checkpoint space.

User Action: Allocate additional checkpoint space by rebuilding the task with the TKB /AL command. (For more information, see the *RSX-11M-PLUS and Micro/RSX Task Builder Manual*.)

Checkpoint failure. Read error

Explanation: The task could not be read back into memory after being checkpointed.

User Action: None. This is a TKTN message.

XXX—Checkpoint file already in use on device

Explanation: A previous ACS command established a checkpoint file on the volume mounted on the specified device. A volume can contain only one checkpoint file.

User Action: Use a different volume or use a file which is not checkpointed.

XXX—Checkpoint file header I/O error

Explanation: While writing the checkpoint file header, the system detected a write error. This indicates that the disk is corrupt or that the disk drive is damaged.

User Action: Replace the disk in the drive with a new disk, or specify a different device.

... <ddnn:> —Checkpoint file now inactive

Explanation: This message indicates that a request to discontinue use of a checkpoint file on device ddnn has been satisfied. The delay between the request and this message is caused by the need to return checkpointed tasks from the discontinued file back into memory.

User Action: None. This is a TKTN message.

XXX—Checkpoint file now inactive

Explanation: This message appears after you issue an ACS command to discontinue a checkpoint file and the file does not contain any checkpointed tasks. The message indicates that use of the file was discontinued immediately after the command was issued. If the file is still in use, TKTN will issue a message when the file is finally discontinued.

User Action: Wait for TKTN to discontinue the file, then reenter the command.

XXX—Checkpoint file still active

Explanation: You attempted to dismount a volume that contains an active checkpoint file. The volume cannot be dismounted until the checkpoint file has been discontinued.

User Action: Use the MCR command ACS to discontinue the file. After the system issues a message to indicate that the checkpoint file is inactive, reenter the DMO command.

XXX—Checkpoint file still in use on <ddnn:>

Explanation: The system cannot be saved because a checkpoint file on the specified device is still active.

User Action: Deallocate the checkpoint file (see the ACS command) and reenter the SAVE command line.

... <taskname> —Checkpoint space allocation failure

Explanation: The task could not be checkpointed because there was not enough space in the system checkpoint file and checkpoint space was not allocated in the task image file.

User Action: If you want the task to be checkpointed into the system checkpoint file, make the system checkpoint file bigger or create another one.

If you want the task to be checkpointed to its own task image file when the system checkpoint file is full, build the task with the Task Builder (TKB) switch /AL. /AL indicates to TKB that your task is checkpointable.

XXX—Checkpoint space too small, using checkpoint file

Explanation: The checkpoint space allocated in the task image file is too small for the size of the task (usually because of the /INC keyword). The system supports the dynamic allocation of checkpoint space, therefore, it uses a checkpoint file to contain the checkpointed task.

User Action: None. The task is installed.

... <taskname> <ddnn:> —Checkpoint write error

Explanation: This is a TKTN message. A write failure occurred while the system was attempting to checkpoint the specified task. This may be caused by one of the following conditions:

- An I/O error on the drive, indicating that the disk is corrupt or the drive is damaged
- Attempting to install a task, which has checkpoint space allocated in its task image, from a dismounted device

User Action: Replace the disk in the drive with a new disk; specify a different device; or install the task from a mounted device.

XXX—CLI already exists

Explanation: You attempted to initialize a command line interpreter (CLI) that already exists in the system.

User Action: None. This is an informational message.

XXX—CLI disabled

Explanation: A CLI command has been issued to prevent you from using the CLI.

User Action: Reenable the CLI or use a different CLI.

XXX—CLI does not accept messages

Explanation: The CLI was not initialized with the /MESSAGE keyword, so its message attribute bit has not been set. The CLI is unable to receive any messages.

User Action: If the CLI was designed to accept messages, reinitialize the CLI with the /MESSAGE keyword and then send the message again.

XXX—CLI has associated terminals

Explanation: You attempted to eliminate a CLI that has terminals set to it.

User Action: To eliminate the CLI, set the terminals to another CLI. Then, reenter the command.

XXX—CLI in use

Explanation: You attempted to remove a CLI that is still active or has terminals set to it. Before you can remove a CLI, you must eliminate its CLI Parameter Block (CPB) with the CLI /ELIM command.

User Action: Set the terminals to another CLI and eliminate the CPB with the CLI /ELIM command. Then, reenter the REMOVE command.

XXX—CLI is restricted

Explanation: An attempt was made to set a terminal to a CLI, but the CLI was initialized with the /RESTRICT subkeyword. This means that only the CLI itself can set a terminal to the CLI.

User Action: Your response to this problem depends upon the characteristics of the CLI. See your system manager.

XXX—CLI not in system

Explanation: You could not log in because the default CLI specified for you in the account file is not installed in the system.

User Action: Ask your system manager to either install the CLI or reassign the default CLI specified for you in the account file. Then, reenter the command.

XXX—CLI requires the terminal to be logged in

Explanation: An attempt was made to set a terminal to a CLI, but the terminal is not logged in. The CLI will only accept commands from logged-in terminals.

User Action: Log in to the system, then reenter the command.

XXX—Circular redirect error

Explanation: The attempt to redirect a device failed because it would result in a circular list of redirections.

User Action: Redirect the device to a different device.

XXX—Command input error

<IO error code and text>

Explanation: This error is caused by one of the following:

- Circumstances prevented the BROADCAST task from receiving the command line (usually an indirect command file could not be found).
- A system directive or the RUN command (instead of the HELLO command) initiated the HELLO task.
- An error occurred while MOUNT was attempting to read the command line.

User Action: Correct the error condition listed and reenter the command line.

XXX—Command I/O error

Explanation: An I/O error was encountered while the command line was being read. This error may indicate that pool has been depleted.

User Action: Reenter the command. If necessary, wait until pool is restored, then reenter the command. If the problem persists, see your system manager.

XXX—Command syntax error
<command-line>

Explanation: The syntax of the command line is incorrect. The incorrect part of the command line is enclosed in brackets.

User Action: Reenter the command line, using the correct command line format.

XXX—Command too long

Explanation: An INI or MOUNT command, including continuation lines, exceeded the maximum length of 512₁₀ characters.

User Action: Reenter the command, using fewer characters.

XXX—Common block is task partition <commonname>

Explanation: A task's request for access to a common block was rejected because it requested a task partition. This error usually occurs when there is an error in the task source code or when two tasks use the same name.

User Action: Modify the code to correct the error or specify a different task name.

XXX—Common block not loaded <commonname>

Explanation: The specified common block was linked to the task but had not been installed in the system.

User Action: Install the common block, then install the task.

XXX—Common block parameter mismatch <commonname>

Explanation: Parameters of a common block did not match those in the task's label block. This error occurs when you attempt to run a task with either an older or a more recent version of a common.

User Action: Rebuild the task with the common, then reenter the RUN command.

XXX—Common block segment count error

Explanation: The command installed a resident library with overlays, but the number of overlay segments specified in the task header is different from the number specified in the segment descriptors.

This error occurs when you attempt to run a task with either an older or a more recent version of a common.

User Action: Rebuild the task with the current version of the common, then reenter the RUN command.

XXX—Common, driver or task above system image file limit

Explanation: A system image file cannot be saved if addresses for a memory-resident structure are higher than the highest address of main memory written to the system image file.

User Action: Use the MCR command PARTITION DEFINITIONS (PAR) to determine the cause of the problem. (This command also displays the running task image of SAVE.) If necessary, create a larger system image file, using the following command lines:

```
>SET /UIC=[1,54]
>PIP RSX11M.SYS/NV/CO/BL:n.=RSX11M.TSK
>ASN SY:=LB:
>VMR @SYSVMR
```

By specifying a value for *n* that exceeds the current value, you can increase the number of contiguous blocks allocated to the system image file. (For more information, see the *RSX-11M-PLUS System Generation and Installation Guide*.)

XXX—Common in use

Explanation: You specified a common region in memory that is currently in use. You may have specified the name incorrectly.

User Action: Reenter the command, specifying the name of an available common.

XXX—Common <commonname> not installed from an LB:

Explanation: All checkpointable commons must be installed from an LB device.

User Action: Remove the common and reenter the SAVE command line.

XXX—Common not in system

Explanation: You specified a common that is not known to the system.

User Action: Be sure you specified the name correctly.

XXX—Communication executive loaded

Explanation: You attempted to deallocate the buffer space for the Communications Executive (CEX), but CEX is currently loaded in that space.

User Action: None. This cannot be done.

XXX—Communication executive not in pool space

Explanation: You attempted to deallocate the buffer space for CEX, but the space has already been deallocated.

User Action: None. This is an informational message.

XXX—Could not create ACD region

Explanation: The Executive directive Create Region (CRRG\$) failed to allocate the space needed to load the ACD. System resources (such as pool) have been depleted.

User Action: Wait for pool to be restored, then reenter the command. If the problem persists, see your system manager.

XXX—Could not size booted device

Explanation: SAVE recognized the device name as a device that it should be able to size but could not. This may indicate a device malfunction.

User Action: Reenter the command. If the problem recurs, specify a different device or see your system manager.

CPU time limit exceeded

Explanation: The task exceeded the CPU time limit specified with the /TIME keyword when you installed the task.

User Action: Use the INSTALL /TIME command with a longer CPU time limit to reinstall the task.

XXX—Crash device <ddnn:> has been successfully loaded

Explanation: It tells you that the device specified with the SET /CRASH_DEVICE keyword has been successfully loaded as the crash device for the system.

User Action: None. This is an informational message.

XXX—Crash device is being unloaded

Explanation: The system is currently unloading the Crash Dump device.

User Action: None. This is an informational message.

XXX—CTB <name> does not exist

Explanation: The Controller Table name specified with the /CTB keyword does not exist in the resident data base.

User Action: Using the correct CTB name, reenter the command.

XXX—CTB name <name> is a duplicate

Explanation: The loadable data base contains a Controller Table (CTB) with a name that is the same as a CTB name in the resident data base. CTB names must be unique.

User Action: Rename the CTB in the loadable data base, then reload the data base.

XXX—CTB <name> is not supported by driver—not loaded

Explanation: This is a warning message. VMR displays this message for either of the following reasons:

- The Driver Dispatch Table in the driver does not have all the Controller Table mnemonics that the rest of the data base (that is, DCBs and CTBs) implies that it should have.
- The CTB is defective. A defective CTB may contain an invalid name, or it may point at the wrong DCB.

User Action: Using the correct CTB name, reenter the command.

XXX—CTB <name> is not supported by driver, not loaded

Explanation: The device driver's dispatch table does not have all the Controller Table mnemonics that the rest of the data base (the DCBs and CTBs) implies that it has, or the CTB is defective. A defective CTB may contain an invalid name or its link to the DCB may be wrong.

User Action: Correct the source code for the device driver and rebuild it, or reenter the command with the correct CTBs.

XXX—Data error

Explanation: The specified bad-block number or the specified contiguous region size is too large.

User Action: Reenter a valid number or size.

XXX—DCB table for CTB <name> is full

Explanation: LOAD attempted to write the address of the Device Control Block (DCB) for the loadable data base into the DCB table of the specified resident Controller Table, but there were no null entries in the DCB table.

User Action: For more information on DCB tables, see the *RSX-11M-PLUS and Micro/RSX Guide to Writing an I/O Driver*.

XXX—Deallocation invalid on dspace system

Explanation: You attempted to use the SET /NOCEX command on a system that supports separate instruction and data space.

User Action: None. This cannot be done.

XXX—Default directory operation failed

Explanation: This error usually occurs because of low pool conditions.

User Action: Wait a few minutes and reenter the command.

XXX—Device allocated

Device allocated to other user

Explanation: The specified device has already been allocated by another user.

User Action: Use the MCR command DEV to determine which devices are currently allocated. Wait until the user deallocates the device before you allocate it or allocate an available device.

XXX—Device already attached

Explanation: You specified a device that cannot be mounted because it is attached to a task.

User Action: Wait until the task detaches the device, then reenter the MOUNT command line.

XXX—Device attached

Explanation: The specified device cannot be allocated because it is attached to a running task, or the CLI command cannot do a /SHOW display because another task has attached the terminal.

User Action: Specify a different device or wait for the task to complete, then reenter the command.

XXX—Device busy

Explanation: You attempted to set a terminal characteristic for a terminal that is busy (attached).

User Action: Wait for the terminal to become available, then reenter the command.

XXX—Device driver not loaded

Explanation: The device driver for the specified device is not loaded.

User Action: Load the device driver, using the LOAD command, and reenter the command line.

XXX—Device <ddnn:> is attached, busy, online and/or mounted

Explanation: Device ddnn is the first or only unit that is attached, on line, mounted, and/or has outstanding I/O. Therefore, the driver cannot be unloaded.

User Action: Place the device on line and mount it. If necessary, wait until the device is detached or the I/O completes. Then, reenter the command.

XXX—Device <ddnn:> is not in system

Explanation: You specified a device with the SET /CRASH_DEVICE keyword that is not in the current system configuration, but you did not specify the Control and Status Register (CSR) address for the device.

User Action: Reenter the command, specifying either a device that is known to the system or the correct CSR address for the device.

XXX—Device mounted

Explanation: You specified a mounted device as a parameter for one of the following commands:

- ALLOCATE
- DEALLOCATE
- SET /[NO]PUBLIC

User Action: Dismount the device and then reenter the command, or specify a device that is not currently mounted.

XXX—Device not allocated to this terminal

Explanation: The command line specified a private device that was allocated to a terminal other than the one from which the command was issued.

User Action: Reenter the command, specifying either a public device or a private device that is allocated to TI.

XXX—Device not Files-11 directory structured

Explanation: The specified device does not support the Files-11 disk structure. UFD cannot create a directory on a device that is not Files-11.

User Action: Initialize the device using the INI command, then reenter the command.

XXX—Device not in system

Explanation: The device specified in the command line is not in the current system configuration. The device is either off line or invalid.

If the message was preceded by the letters BOO, the message may indicate that the booting system does not contain the data structures needed for the device being booted.

User Action: Use the MCR command DEV to obtain a list of devices known to the system. Using a valid device name, reenter the command.

To enter the ASN command, be sure to specify the device name first and the logical name second.

To enter the BOO command, select a bootable device that is supported by the system from which you are booting. For a list of valid bootable devices, see Section 3.10.

XXX—Device <dd:> not in system

Explanation: The specified device driver does not exist in the system, or the data base for the device driver is not in the system or in the driver's task image.

User Action: Use the MCR command DEV to determine which devices are available within the system. See the *RSX-11M-PLUS and Micro/RSX Guide to Writing an I/O Driver* for more information.

XXX—Device not mountable

Explanation: The specified device cannot be mounted. Some devices do not require mounting although the media are removable.

User Action: Verify that you are using the correct device and reenter the command line if necessary.

XXX—Device not mounted

Explanation: The device specified in the file specification was not mounted. In response to a LOAD or UNLOAD command, the system device (LB) was not mounted.

User Action: If the system device is not mounted, mount it and reenter the command.

XXX—Device not mounted foreign

Explanation: You tried to initialize a volume that was not mounted as foreign (using the /FOR keyword with the MOUNT command).

User Action: Dismount the device, then remount it as a foreign volume.

XXX—Device not redirectable

Explanation: You attempted to redirect a device that cannot be redirected.

User Action: Reenter the command, specifying a different device.

XXX—Device not ready

Explanation: The specified device returned a device-not-ready status or failed to respond within approximately 60 seconds. If the device is a disk drive, the disk may not have reached the proper speed yet. If the device is a tape drive, the tape may not be loaded.

User Action: Check the command line to see if you entered the correct device name. If you are using a disk drive, be sure the READY light is on; if you are using a tape, be sure the tape has been loaded on the drive. For either type of device, check to see that the power is on. When the device is ready, reenter the command line.

XXX—Device not terminal

Explanation: You attempted to set terminal characteristics or use the /TERM keyword for a device that is not a terminal.

User Action: Use the MCR command DEV to obtain a list of valid terminal names. Reenter the command specifying a terminal device.

XXX—Device not variable speed multiplexer

Explanation: You attempted to set the baud rate for a terminal that was not attached to a variable-speed multiplexer (for example, a DHU11, DHV11, or DZ11).

User Action: None. You cannot set the baud rate for a terminal that is not attached to a variable-speed multiplexer.

XXX—Device offline [Device offline or privileged diagnostic]

Explanation: The device specified in the command line, although generated into the system, was not physically present in the host configuration. If the offline device is a magnetic tape drive, the message includes the device unit.

User Action: Place the device on line, then reenter the command.

XXX—Device status changed during mount

Explanation: The device status for the specified device changed between the initial device classification and the final setting up of the data structures. This is usually the result of another user mounting or dismounting the volume simultaneously with the command in error.

User Action: Use the DEV command to verify the device status, then reenter the command line.

XXX—Device write locked - <ddnn:>

Explanation: The command line specified a volume that was write locked.

User Action: To enable write access to the volume, dismount it and remount it using the MOUNT /UNLOCK command.

XXX—Directory already exists

Explanation: You specified a user file directory (UFD) that already exists on the volume.

User Action: None. This is an informational message.

XXX—Directory not deleted—files exist

Explanation: You attempted to delete a directory that still contains files.

User Action: Delete all the files in the directory first, then delete the directory.

XXX—Directory not found on device

Explanation: You attempted to delete a directory that does not exist. You may have specified the directory name incorrectly.

User Action: Reenter the command, specifying the correct directory name.

XXX—Disk is alignment cartridge

Explanation: The last track on an RK06/07, RL01/02, or RM02/03/05/80/RP07 disk identified the volume as an alignment cartridge, which cannot be initialized as a Files-11 volume. An alignment cartridge is specifically formatted for aligning disk read/write heads.

User Action: None. An alignment cartridge cannot be initialized.

... <ddnn:> —Dismount complete

Explanation: This message indicates that the device requested for dismount is now logically disconnected from the system (that is, all files are deaccessed and the Volume Control Block [VCB] is deallocated).

User Action: None. This is an informational message.

XXX—Dismount complete for <ddnn:>

Explanation: TKTN is not installed in the running system. If the load device is mounted when SAVE starts, SAVE attempts to dismount it. Since TKTN is not installed, the dismount complete message from DMO is not displayed on the console terminal. As a substitute, SAVE writes this message to the terminal.

User Action: None. This is an informational message.

XXX—Dismount is not necessary for cassettes

Explanation: Cassettes do not need to be dismounted.

User Action: None. This is an informational message.

XXX—DPB error

Explanation: MCR created a bad Directive Parameter Block (DPB). This error indicates that MCR itself has failed.

User Action: Reenter the command. If the error persists, submit a Software Performance Report (SPR) to DIGITAL.

XXX—Driver already resident

Explanation: The specified device driver was already loaded or is permanently resident.

User Action: None. The driver is in memory.

XXX—Driver being loaded or unloaded

Explanation: A LOAD or UNLOAD command entered by another user is currently executing.

User Action: Wait for the driver to be loaded (or unloaded).

XXX—Driver built with wrong executive STB file

Explanation: The symbol table file (file type STB) for the driver is not compatible with the current Executive. When you task built the driver, you may have specified an RSX11M.STB file that was not for the current system. This error also occurs if you attempt to load a vectored device driver without specifying the /VEC keyword.

User Action: Task build the driver again, specifying the correct RSX11M.STB file, or reenter the command and specify the /VEC keyword.

XXX—Driver cannot be unloaded

Explanation: You attempted to remove a permanently resident device driver (that is, a driver built as part of the Executive).

User Action: None. Only loadable drivers can be removed.

XXX—Driver dispatch table is inconsistent

Explanation: The device driver's dispatch table is formatted illegally.

User Action: For information on formatting the dispatch table, refer to the *RSX-11M-PLUS and Micro/RSX Guide to Writing an I/O Driver*.

XXX—Driver not loaded

Explanation: You specified a device driver in the UNL command that is not resident in memory, or the INI or MOUNT command specified a device for which a driver was not loaded.

User Action: Before initializing or mounting the device, load the device driver.

XXX—Duplicate block number - <blocknum>

Explanation: A block already specified as bad was being defined as bad a second time.

User Action: Reenter the command, specifying each bad block number only once.

XXX—Error attempting to dismount <ddnn:>

Explanation: If the load device is mounted when SAVE is initiated, SAVE issues a DISMOUNT command to MCR when the save operation is complete. This message indicates that the dismount operation was not successful.

User Action: The system may be usable, but it is recommended that you reboot and issue a DISMOUNT command.

XXX—Error logging not active

Explanation: The ERRLOG task is not currently running on your system.

User Action: To start Error Logging, use the START ERROR_LOG command. (For more information, see the *RSX-11M-PLUS and Micro/RSX Error Logging Manual*.)

XXX—Error logging still active

Explanation: A system cannot be saved while error logging is active.

User Action: Disable error logging and reenter the SAVE command line.

XXX—Error or timeout from spawn

Explanation: Your logout command file (LOGOUT.CMD) exceeded the time limit allowed by the BYE command. You are logged out of the system, but your logout command procedure did not complete successfully.

User Action: If you have created a LOGOUT.CMD file for yourself, you should log back into the system and shorten it to prevent this error from recurring. If you did not create the LOGOUT.CMD file, see your system manager.

XXX—Error reading ACD into memory

Explanation: While the system was trying to read the task image file for an Ancillary Control Driver (ACD), an I/O error occurred. The task image is probably corrupt.

User Action: Reenter the command, specifying a different ACD.

XXX—Error reading command line

Explanation: MCR could not read the command line because you specified the command or command file name incorrectly.

User Action: Reenter the command line, typing the command more carefully. Note that certain MCR commands (such as ASSIGN and DEFINE LOGICALS) are abbreviated with 3-letter acronyms (ASN and DFL, respectively) and not with the first three letters of the command.

XXX—ERROR, Task LOAD is not installed

Explanation: The SET command could not spawn the LOAD command to load the specified crash driver.

User Action: If LOAD is not installed, install it and then reenter the command.

XXX—ERROR, Task PSW is not installed

Explanation: The task that changes passwords is not installed in the system.

User Action: Ask your system manager to install PSW or change your password with the Account File Maintenance Utility (ACNT). (For information on using the ACNT utility, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

XXX—ERROR, Task UNLOAD is not installed

Explanation: The SET command could not spawn the UNLOAD command to load the specified crash driver.

User Action: If UNLOAD is not installed, install it and then reenter the command.

XXX—ERROR, Unable to load new crash device

Explanation: The system was unable to load the Crash device. You may have specified an incorrect CSR address for the device.

User Action: This message is accompanied by another message from the LOAD command. See the description of that message for more information.

XXX—Excessively nested or recursive synonyms

Explanation: A string synonym used in the help file has been defined recursively. In other words, a help file referenced itself using the number sign (#).

User Action: If user-written help files have been added to the system, be sure that the synonym references are valid. (For more information on the help file format, see the description of the HELP command in Section 3.27.) If this error occurs with the help files supplied by DIGITAL, submit a Software Performance Report (SPR).

Executive interface parameter error

Explanation: You issued a call to the Executive language interface routines using invalid parameters.

User Action: For more information, see the *RSX-11M-PLUS and Micro/RSX Executive Reference Manual*.

XXX—Exiting

Explanation: The system is executing the BYE or LOG command; the terminal is being logged out of the system.

User Action: None. This is an informational message.

**xxxxxx—Expiration date not reached on volume <volume-id> on <ddnn:>
Mount another volume on drive <ddnn:> or place on line to use**

Explanation: A new output volume is being opened and the expiration date has not been reached.

This message occurs only on volume switching. If a program is creating a file and specifies the file position of a file whose expiration date has not been reached, the create operation terminates with the error code IE.EXP.

User Action: If you place a new volume on line, the expiration date for the new volume is also checked. If you place the same volume or another volume with the same Volume ID on line, the volume is overwritten even though it is not expired.

XXX—External headers not supported

Explanation: INSTALL first checks to see that the task was built with /XH specified. Then, it checks the feature mask bit of the system to see if external headers are supported. When external header support is not included in the system, you cannot install a task with an external header.

Either external header support was not included during system generation, or Option 5 was selected when the INSTALL task was built.

User Action: Include external header support during system generation or by modifying the command file INSBLD.CMD. If you cannot include external header support, then enter the INSTALL command without specifying /XHR=YES.

XXX—F11MSG not installed

Explanation: The task F11MSG is not installed in the system.

User Action: Ask your system manager to install the task.

XXX—Failed to allocate sufficient dynamic storage

Explanation: Mounting a volume may require a significant amount of primary or secondary pool for data structures and the ACP. Either MOUNT or the ACP was unable to allocate enough space in pool.

User Action: Wait until activity on the system has lessened and then reenter the command line.

XXX—Failed to allocate sufficient dynamic storage for caching

Explanation: Your disk was mounted, but there was not sufficient space in pool to activate data caching.

User Action: Wait until activity on the system has lessened and then reenter your command line.

XXX—Failed to attach device - <ddnn:>

Explanation: The specified device could not be attached. Another user may have the device attached.

User Action: Reenter the command later. If the error persists, see your system manager.

XXX—Failed to create directory

Explanation: The volume is full or an I/O error occurred.

User Action: Use the File Structure Verification Utility (VFY) to check the volume structure for inconsistencies (see the *RSX-11M-PLUS Utilities Manual*). Also, be sure that there is sufficient space on the volume. If necessary, purge or delete files to create additional space.

XXX—Failed to delete directory

Explanation: The system was unable to delete the directory you specified in the command line.

User Action: Reenter the command. If the error persists, submit a DIGITAL Software Performance Report (SPR).

XXX—Failed to enter directory

Explanation: No space existed in the Master File Directory (MFD) or on the volume, or an I/O error occurred on the volume.

User Action: Purge or delete files to create additional space, then reenter the command.

XXX—Failed to find home block

Explanation: HOME could not locate the home block of the volume. The volume is not in Files-11 format or the disk is corrupt.

User Action: Reenter the command, specifying a Files-11 device, or use new media.

XXX—Failed to place alternate home block

Explanation: When HOME cannot ensure that a good home block will be written back to the volume, it attempts to place an alternate home block on the first free block of the home block search path. This message indicates that the attempt failed.

This error may indicate that your disk is corrupted and therefore cannot be mounted, or that the disk drive is damaged.

User Action: Replace the disk in the drive with a new disk, or specify a different device.

XXX—Failed to read bad block file

Explanation: The INI command was unable to read the bad block information from the last track of an RK06/07, RL01/02, or RM02/03/05/80/RP07 disk.

User Action: Reenter the command line and include the /BAD=OVR option.

XXX—Failed to read manufacturer's bad sector file

Explanation: A disk-read (hardware) error occurred when INI attempted to read the manufacturer-recorded bad block data on a last-track device.

User Action: Reenter the command line and include the /BAD=OVR option.

XXX—Failed to read software bad sector file

Explanation: The software-detected bad sector file could not be read.

User Action: Reenter the command line and include the /BAD=OVR option.

**XXX—Failed to set volume valid bit
<I/O error code and text>**

Explanation: A hardware volume valid bit is maintained by certain devices. When the attempt was made to set this hardware status bit, the driver returned an error.

User Action: Check the device (using Error Logging or the I/O Exerciser), then reenter the command line. If the problem persists, contact DIGITAL Field Service.

For more information on Error Logging, see the *RSX-11M-PLUS and Micro/RSX Error Logging Manual*. For information on the I/O Exerciser (IOX), see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.

XXX—Failed to start Ancillary Control Processor

Explanation: The Executive was unable to start the Ancillary Control Processor (ACP) task. The task may be exiting or there may not be sufficient resources.

User Action: Reenter the command line at a later time.

XXX—Fast map not supported

Explanation: You attempted to install a task with the /FMAP=YES keyword, but support for fast mapping was not selected for your system during system generation.

User Action: Install the task without the /FMAP=YES keyword.

Fatal error—Boot device not found in system tables:

R0=device type (ASCII)

R1=Physical unit number

R2=CSR address

R3=CPU ordinal

Explanation: (Multiprocessor systems only.) You attempted to boot the system from a device that is not included in the current system configuration.

User Action: Use the VMR command CON to include the device in the system configuration or use a device that is already known to the system. Reboot the system when the drive is properly configured.

**Fatal Error—controller <xxn> didn't come online
error code in R1**

Explanation: When you attempted to boot the system, the controller for the device failed to come on line. This indicates one of the following problems:

- An error in a user-written device driver
- A hardware-related problem
- A configuration error (such as an incorrect Control Status Register address)

User Action: Register 1 (R1) contains an I/O error code that you can use to diagnose the problem. See the *RSX-11M-PLUS and Micro/RSX I/O Operations Reference Manual* for a description of the I/O error code.

Fatal Error—Device <ddnn> —does not support controller type

Explanation: You attempted to boot the system from a device that is not recognized by the associated device driver.

User Action: If the device driver was supplied by DIGITAL, submit a Software Performance Report (SPR). If the device driver is user-written, correct the problem before reentering the BOOT command.

Fatal Error—Device dd—Driver not loaded

Explanation: You attempted to boot the new system from a device whose driver was not loaded with VMR.

User Action: Load the driver with the VMR LOAD command, then reenter the BOOT command.

Fatal error—Directive partition not fixed in memory

Explanation: When you attempted to boot the system image, an essential directive common region was not present. (The missing region contains the Executive directive dispatcher and most of the Executive directive processing code.) Either you did not run VMR to prepare the system image or VMR failed to create a valid system image.

User Action: Recreate the system image with VMR, then reenter the BOOT command.

**Fatal Error—Driver didn't return control after
controller online call**

Driver error—If DEC driver, please submit an SPR!

Explanation: The system requested a driver to bring a controller on line, but the driver was unable to complete the request immediately.

User Action: If a user-written driver controls the system device, this error indicates a problem with that driver. If the driver was supplied by DIGITAL, submit an SPR.

Fatal Error—Driver didn't return control after unit online call

Driver error—If DEC driver, please submit an SPR!

Explanation: The system requested a driver to bring a unit on line, but the driver was unable to complete the request immediately.

User Action: If a user-written driver controls the system device, this error indicates a problem with that driver. If the driver was supplied by DIGITAL, submit an SPR.

Fatal error—Executive data space not loaded

Explanation: The data-space (D-space) portion of the Executive was not present when you attempted to boot the system image. Either you did not run VMR to prepare the system image or VMR failed to create a valid system image.

User Action: Recreate the system image with VMR, then reenter the BOOT command.

Fatal error—No CPU partition created in MP system

Explanation: (Multiprocessing systems only.) The vector area of the multiprocessing system was not present when you attempted to boot the system image. Either you did not run VMR to prepare the system image or VMR failed to create a valid system image.

User Action: Recreate the system image with VMR, then reenter the BOOT command.

Fatal error—Secondary pool not created with VMR

Explanation: The buffer area for secondary pool was not present when you attempted to boot the system image. Either you did not run VMR to prepare the system image or VMR failed to create a valid system image.

User Action: Recreate the system image with VMR, then reenter the BOOT command.

**Fatal Error—unit <xxn> didn't come online
error code in R1**

Explanation: You attempted to boot the system from a device that failed to come on line. This indicates one of the following problems:

- An error in a user-written device driver
- A hardware-related problem
- A configuration error (such as an incorrect Control Status Register address)

User Action: Register 1 (R1) contains an I/O error code that you can use to diagnose the problem. See the *RSX-11M-PLUS and Micro/RSX I/O Operations Reference Manual* for a description of the I/O error code.

XXX—Feature not currently supported

Explanation: The command keyword specified a feature or device that was not incorporated into the system at system generation, or the command itself cannot be used. For example, the system may not support alternate CLIs.

User Action: Select support for the desired feature (such as alternate CLIs) during system generation.

XXX—File <filename> has illegal STB format

Explanation: The driver's symbol definition (STB) file contained an illegal object code or data record format.

User Action: Check and rebuild the driver, then reenter the command.

XXX—File I/O error nnn.

Explanation: The ACS command detected an error when it tried to allocate or open the checkpoint file. The code nnn. is an FCS error code that defines the cause of the error.

If the code is -24, the message indicates that the disk does not have enough contiguous space to allocate the file.

User Action: If the code is -24, purge or delete unnecessary files to provide more space on the disk. Otherwise, see the *RSX-11M-PLUS and Micro/RSX I/O Operations Reference Manual* for an explanation of the FCS error code.

XXX—File <filename> not a valid driver task image

Explanation: One of three things has occurred:

- The driver's task image has been overlaid.
- The driver has a header.
- The driver has referenced a resident library.

User Action: Rebuild the driver, following the guidelines in the *RSX-11M-PLUS and Micro/RSX Guide to Writing an I/O Driver*.

XXX—File <filename> not contiguous

Explanation: An attempt was made to boot a system or install a task from a noncontiguous file. System images and task images must be contiguous.

User Action: Use the Peripheral Interchange Program (PIP) with the /CO switch to produce a contiguous file. Then, reenter the command. (For information on PIP, see the *RSX-11M-PLUS Utilities Manual*.)

XXX—File ddDRV.TSK not contiguous

Explanation: The file ddDRV.TSK was not contiguous. Device drivers (like all task image files) must be contiguous.

User Action: Recopy the file using the PIP /CO command. (For more information on PIP, see the *RSX-11M-PLUS Utilities Manual*.)

XXX—File not found

Explanation: The requested file was not in the directory on the specified volume. You may have entered the file specification incorrectly.

User Action: Use the PIP /LI command to obtain a directory listing. Reenter the command with the correct file specification.

XXX—File not in use

Explanation: You specified a device that is not currently using a checkpoint file.

User Action: Reenter a different command line or establish a checkpoint file on the device.

XXX—File not properly closed

Explanation: An attempt was made to install a file that was not properly closed (that is, locked). Since the file is locked, it is probably corrupted.

User Action: Install a new copy of the file.

XXX—File not task image

Explanation: Data in the label block was not correct, indicating that the file was not a valid task image.

User Action: Reenter the command, specifying the correct name for the task image file. If the task image is corrupt, you may need to modify and rebuild the task or use another version of the task image.

XXX—File protection violation

Explanation: You attempted to install a task to whose image file you do not have proper access. You must have read access to install a task image file.

User Action: Log in to a system UIC (a privileged account), use the SET /PROT command to enable read access, then reenter the command.

... Final dismount initiated ...

Explanation: DMO is dismounting the requested device.

User Action: None. This is an informational message.

XXX—Function requires logical name support

Explanation: You specified a function that requires extended logical name support.

User Action: Ask your system manager to include extended logical name support during system generation.

XXX—Group or terminal number error

Explanation: You specified an invalid terminal number or UIC group number.

User Action: Reenter the command, specifying the correct group or terminal number.

XXX—HELP file error <nnn>

Explanation: The help file could not be opened for the reason specified by the FCS code nnn. If the code number is -26, the help file does not exist.

User Action: See the *RSX-11M-PLUS and Micro/RSX I/O Operations Reference Manual* for definitions of the error codes.

XXX—Help file is unavailable for <filename>

Explanation: You specified a help file that does not exist. This error occurs when a help file references another file indirectly by using the at sign (@), but the file does not exist.

User Action: If user-written help files have been added to the system, be sure that the indirect file references are valid. (For more information on help file format, see the description of the HELP command in Section 3.27.) If this error occurs with the help files supplied by DIGITAL, submit a Software Performance Report (SPR).

XXX—HELP file nesting depth exceeded

Explanation: You referenced a help file that exceeded the nesting limit of 9 levels.

User Action: If user-written help files have been added to the system, reorganize the help files so that the level numbers do not exceed 9. If this error occurs with the help files supplied by DIGITAL, submit a Software Performance Report (SPR).

XXX—HELP synonym not found

Explanation: The help file referenced a synonym, but HELP was unable to include it.

User Action: If user-written help files have been added to the system, be sure the pound sign (#) references are valid. (For more information on help file format, see the description of the HELP command in Section 3.27.) If this error occurs with the help files supplied by DIGITAL, submit a Software Performance Report (SPR).

XXX—Home block allocate write error

Explanation: A write error occurred while the system was overwriting a bad home-block area. The volume has probably been corrupted.

User Action: Use new media or specify a different device.

XXX—Home block I/O error

Explanation: An error was detected while reading or writing the Volume Home Block. This indicates that the volume is corrupt or that the drive is damaged.

User Action: Use new media or specify a different device.

XXX—IIST cannot be brought online

Explanation: (Multiprocessing systems only.) The Interprocessor Interrupt and Sanity Timer (IIST), which connects each of the processors, cannot be brought on line. To reschedule activity, the Executive requires the IIST for interrupting the processors.

User Action: Check the connections to the processors and the bus cable to be sure they are correct. Switch the IIST to on line, if you have not done so already. If the problem persists, contact DIGITAL Field Service.

XXX—Illegal affinity specification

Explanation: (Multiprocessing systems only.) You specified a task that is not built to run on the current system.

User Action: Rebuild the task on the current system before attempting to run it, or run the task on the system for which it was built.

XXX—Illegal argument value

Explanation: This message can occur if you specify one or more of the following:

- A value greater than 200₁₀ with /EXT.
- A value less than 16₁₀ with /INF.
- A value too large for the device type with /INF or /MXF.
- A value was greater than 127₁₀ with /LRU.
- A value greater than 127₁₀ with /WIN.

User Action: Reenter the command line with valid values for each keyword.

XXX—Illegal device <ddnn:>

Explanation: The device specified at task-build time by the assign (ASG) option does not exist in the system.

User Action: None. This is a warning message only.

XXX—Illegal device specified

Explanation: You specified a device that is not a terminal. BROADCAST can be used only to send message to terminals.

User Action: Reenter the command specifying a terminal as the device.

XXX—Illegal device/volume

Explanation: You specified a device that was not a valid task-residence device (that is, the device was not in Files-11 format).

User Action: Reenter the command, specifying a Files-11 device.

XXX—Illegal driver task APR usage

Explanation: A device driver must be built for APR 5 and must be less than 8K-bytes (for example, PAR=DRVPAR:120000:40000).

User Action: Rebuild the driver correctly.

XXX—Illegal first APR

Explanation: The task you tried to install was built using an incorrect base APR.

User Action: Rebuild the task and observe the following rules:

1. A nonprivileged task must be built with APR 0 as its base APR.
2. A privileged task that does not map into the Executive must be built with APR 0 as its base APR.
3. If the Executive is 16K-words or less, a privileged task that is to map to the Executive routines and data structures must be built with APR 4 as its base APR.
4. If the Executive is 20K-words (or less on RSX-11M-PLUS systems), a privileged task that is to map to the Executive routines and data structures must be built with APR 5 as its base APR.

XXX—Illegal function

Explanation: A command was entered that MCR could not recognize, or an inappropriate keyword was specified.

If the message was returned by the FLA command, it is displayed for one of the following reasons:

- You specified the /CRE keyword, but the event flags already existed (even though they may have been marked for delete).
- You specified the /ELIM keyword, but the event flags were already eliminated or marked for delete.

User Action: Be sure you specified the correct UIC. If you did, no further action is necessary.

XXX—Illegal keyword combination

Explanation: You specified mutually exclusive keywords in the same command line.

User Action: Reenter the command line, specifying a legal combination of keywords in each line. If necessary, use a separate command line for additional keywords.

XXX—Illegal keyword value

Explanation: You entered an invalid string or value for a keyword. For example, you specified an invalid string with the /CPR or /DPR subkeyword.

User Action: Refer to the appropriate command description. Then, reenter the command using a legal string or value.

If you specified an invalid string with the CLI command keywords /CPR or /DPR, select a string using the same syntax required for the MACRO-11 .ASCII directive (see the *PDP-11 MACRO-11 Language Reference Manual*). The maximum number of characters is 31.

XXX—Illegal MXF value for single directory volume

Explanation: You specified a value for the /MXF keyword that is greater than 25,593. /MXF specifies the maximum number of files allowed on a volume. Because single-directory volumes are restricted to one index file header-block, the maximum MXF value is smaller for a single-directory volume than it is for volumes with a multiheader index file.

User Action: Reenter the command, specifying a file count that is less than 25,593.

XXX—Illegal operation for magtape

Explanation: You specified a magnetic tape as the device parameter for the HOME command; however, tape blocks are not replaceable and cannot be updated.

User Action: None. The HOME command applies to Files-11 disk volumes only.

XXX—Illegal password syntax

Explanation: You typed a password using incorrect syntax.

User Action: Type in a password consisting of 39 or fewer Radix-50 characters. The Radix-50 characters are the 26 uppercase letters A through Z, the numerals 0 to 9, the period (.), and the dollar sign (\$).

XXX—Illegal priority

Explanation: The value of the priority in the command was out of range (that is, not 1 through 250 decimal).

User Action: Specify a priority within the range 1 through 250₁₀.

XXX—Illegal slave attribute

Explanation: You attempted to install a task with the /SLV keyword, but the task's name is in the form . . . xxx. The task is a prototype task and cannot be installed as a slaved task.

User Action: Reenter the command without the /SLV keyword.

XXX—Illegal switch - not logged in

Explanation: You attempted to reference a local or group help file or output help text to another file without being logged in.

User Action: Log in on the system and then enter the HELP command line.

XXX—Illegal UIC

Explanation: You specified an incorrect User Identification Code (UIC) in the command line.

User Action: Reenter the command line specifying a valid UIC.

XXX—Illegal use of <pname> partition or common

Explanation: You attempted to install a task in a CPU partition (CPUPAR) or secondary pool partition (SECPOL). Although you can install a task with its Task Control Block (TCB) in secondary pool, the task itself cannot be installed in the secondary pool partition.

User Action: Install the task in a partition other than CPUPAR or SECPOL.

XXX—Illegal use of partition or region <name>

Explanation: The partition into which the driver was to be loaded was a secondary pool or CPU partition.

User Action: Reenter the command, specifying a different partition.

XXX—Illegal use of restrict switch

Explanation: A CLI cannot be initialized with /RESTRICT if the name of the CLI task is in the form . . . xxx.

User Action: Rename the task or omit the /RESTRICT keyword in the CLI command line.

XXX—Illegal user default protection code

Explanation: You entered a wildcard character (*) for a user class that does not currently have a default file protection code.

User Action: Reenter the command, specifying a value for that user class.

XXX—Illegal value for symbol <symname> in file <filename>

Explanation: The symbol symname is defined to an illegal value in file ddDRV.STB. This can occur for several reasons, some general and some specific to individual symbols. For example:

- Symbols cannot have odd values
- Most symbols cannot be defined as zero
- \$ddTBL must exist and have a value less than \$ddEND
- Mapped loadable drivers cannot reference \$INTSV

Since ddDRV.STB had to pass a previous inspection by the LOA command, there probably has been a procedural error or ddDRV.STB has been corrupted.

User Action: See the *RSX-11M-PLUS and Micro/RSX Guide to Writing an I/O Driver* for more information.

XXX—Improper HELP file format

Explanation: The help file is not in proper format and cannot be used.

User Action: Edit the file or reenter it in proper format. For more information, see the description of the HELP command.

XXX—Incompatible devices for multivolume set

Explanation: You specified devices that are incompatible in one or more of the following ways:

- All must be either disk or magnetic tape devices.
- All must be either public, allocated, or not allocated.
- If magnetic tapes, they must all support either 7-track or 9-track and they must all support a common density.

User Action: Verify the device specifications and reenter the command line.

XXX—Incorrect File Set Identifier

Explanation: The File Set ID specified in the command line does not match that in the File Set ID field of the HDR1 label.

User Action: Determine the correct File Set ID and reenter the command line, or mount the volume, specifying the privileged MOUNT keyword /OVRFSID.

XXX—Incorrect Volume Identifier

Explanation: The Volume ID specified in the command line does not match that in the Volume ID field of the VOL1 label.

User Action: Determine the correct Volume ID and reenter the command line, or reenter the command line without specifying any Volume ID.

XXX—Incorrect volume label

Explanation: The volume label specified in the command line does not match the volume label in the home block.

User Action: Determine the correct volume label and reenter the command line, or mount the volume, specifying the /OVR keyword.

XXX—Index file bit map I/O error

Explanation: An error was detected in writing the index-file bitmap. This indicates that the volume is corrupt or the drive is damaged.

User Action: Use new media or specify a different device.

XXX—Index file header checksum error

Explanation: While rebooting a saved system, SAVE detected a checksum error in the file header of the index file. This error causes the system to halt. The disk has probably been corrupted.

User Action: If you have access to another system, use the File Structure Verification Utility (VFY) to examine, reconstruct, or restore the volume containing the saved system. Otherwise, reboot the system using a backup copy of the system image file.

XXX—Index file header read error

Explanation: While rebooting a saved system, SAVE detected an error in the file header of the index file. This error causes the system to halt. The disk has probably been corrupted.

User Action: If you have access to another system, use the File Structure Verification Utility (VFY) to examine, reconstruct, or restore the volume containing the saved system. Otherwise, reboot the system using a backup copy of the system image file.

XXX—Index file I/O error

Explanation: An error was detected in writing the index-file header. This indicates that the volume is corrupt or the drive is damaged.

User Action: Use new media or specify a different device.

XXX—Indirect HELP file open error

Explanation: HELP attempted to reference another file from within the help file, but could not open the referenced file.

User Action: If you have added your own help files, correct the indirect reference or locate the missing file. If this error occurs while you are using the help files supplied by DIGITAL, submit a Software Performance Report (SPR).

XXX—Indirect HELP file syntax error

Explanation: HELP encountered a syntax error either in a reference to another file or in the indirect file itself.

User Action: If you have added your own help files, correct the indirect reference or locate the missing file. If this error occurs while you are using the help files supplied by DIGITAL, submit a Software Performance Report (SPR).

XXX—Input I/O error

Explanation: In attempting to read the next command, OPEN detected an error. This error occurs if you press CTRL/Z to terminate an OPENREGISTER (OPE) command line.

User Action: Use a valid line terminator to direct the subsequent action of OPE. (For a list of valid line terminators, see Section 3.34.)

XXX—Inquire cannot determine terminal type

Explanation: The terminal did not respond to the SET /INQUIRE escape sequence to identify itself. The terminal may not be a type supported by the SET /INQUIRE command.

User Action: For a list of supported terminal types, see Section 3.42.

XXX—Insufficient ICB pool space for CPU CPx

Explanation: There is not enough processor-dependent dynamic memory to allocate an Interrupt Control Block (ICB) for the CPU designated in the error message.

User Action: None. This message applies only to RSX-11M-PLUS multiprocessor, I- and D-space systems.

XXX—Insufficient pool space

Explanation: The required amount of system dynamic memory (pool) was not available.

User Action: Wait for pool to be restored, then reenter the command.

XXX—Insufficient privilege for attempted operation

Explanation: An option specified in the command line requires that the user be privileged.

User Action: Reenter the command, without specifying the privileged option; enter the command from a privileged account; or ask a privileged user to enter the command for you.

XXX—Insufficient Secondary Pool for user logical table

Explanation: The system could not create your logical name table due to a lack of secondary pool space. You are logged in to the system, but you cannot create local logical assignments.

User Action: If you require local logical assignments, log out of the system and wait for secondary pool to be restored before logging in again. If this error persists, see your system manager.

XXX—Insufficient system resources

Explanation: The system lacks the necessary resources for processing your command.

User Action: Allow the system a few minutes to recover its resources, then reenter the command. If this error persists, see your system manager.

XXX—Internal logic error

Explanation: An internal programming error has been detected. This may be the result of an unusual software or hardware configuration or option selection.

User Action: Retry the operation. If the error persists, vary the options selected. In any case, submit a Software Performance Report (SPR) with a console listing of the command lines and error messages. Include as much information on the circumstances of the error as possible.

XXX—Invalid account

Explanation: You specified a name or UIC that is not stored in the account file, or you specified a password that is incorrect for your name or UIC.

User Action: If you do not have an account on the system, have the system manager run the Account File Maintenance Utility (ACNT) to add one for you. If you have an account, reenter the command with the correct name or UIC and password.

XXX—Invalid address

Explanation: The address specified as an argument by the OPEN command referenced a nonexistent memory location, an address outside of the specified partition, or an address outside of the task's virtual address space.

User Action: Reenter the command specifying a valid address.

XXX—Invalid block number - <blocknum>

Explanation: While manually entering the logical block numbers (LBNS) for bad blocks, you entered an invalid number.

User Action: Reenter the command, specifying valid block numbers.

XXX—Invalid command in named directory mode

Explanation: You attempted to enter a command that is not valid in named directory mode.

User Action: Use the SET /NONAMED command to set yourself to nonamed directory mode, then reenter the command.

XXX—Invalid device specified

Explanation: You specified the device name incorrectly.

User Action: Reenter the command, specifying a valid device name (see Chapter 2).

XXX—Invalid directory specification

Explanation: You specified the directory incorrectly.

User Action: Reenter the command, specifying a valid directory (see Chapter 2).

XXX—Invalid driver data base at offset <xxxx> in file <filename>

Explanation: The driver had an invalid data base value at offset xxxx relative to the symbol \$ddDAT. This can occur for three general reasons:

- An invalid value, for example, D.UCB was odd.
- The value for a word is not within the bounds of the loadable data base. LOAD produces an error message citing the offending value.
- An element is missing from the loadable data base. LOAD attempts to verify one kind of data structure as another kind. For example, if a DCB is missing, LOAD tries to verify the following UCB as the DCB. LOAD cites the DCB as being incorrect.

User Action: See the *RSX-11M-PLUS and Micro/RSX Guide to Writing an I/O Driver*.

XXX—Invalid error code from system

Explanation: This error indicates an internal error in MCR.

User Action: If this error recurs, submit a Software Performance Report (SPR).

XXX—Invalid file name specification

XXX—Invalid file type specification

XXX—Invalid file version specification

Explanation: You specified a file name, type, or version incorrectly.

User Action: Reenter the command, using a valid file specification (see Chapter 2).

XXX—Invalid keyword

Explanation: You specified a keyword in the command line that cannot be used with the command.

User Action: Reenter the command line, specifying the correct keyword.

XXX—Invalid load device

Explanation: The BOOT or INSTALL command detected a device that was invalid as a system- or task-residence device. The device is not bootable.

User Action: For a list of bootable devices, see Section 3.10. Then, reenter the command line, specifying a valid device.

XXX—Invalid logical name

Explanation: The logical name that you tried to specify is not a valid logical name.

User Action: Refer to the MCR commands ASSIGN or DEFINE LOGICALS for the syntax rules that apply to logical names. Then, reenter the command using a valid logical name.

XXX—Invalid logical name

Explanation: You specified an invalid logical name in the ASSIGN logical parameter of the INSTALL function. There are several syntax errors that may result in this message:

- You included a colon within an equivalence name that you enclosed in quotation marks.
- You embedded a colon in a logical name.
- You tried to assign a logical name enclosed in quotation marks.

User Action: Refer to the MCR commands ASSIGN or DEFINE LOGICALS for the syntax rules that apply to logical names. Then, reenter the command using a valid logical name.

XXX—Invalid logical name equivalent string

Explanation: You specified an equivalence name incorrectly in the ASN command line. Note that you cannot embed a colon within a logical name and you must enclose special characters in quotation marks. Also, you must use the required syntax of the equivalent directory, device, or file specification.

User Action: Reenter the command, specifying a valid logical name equivalent string (see Section 3.7).

XXX—Invalid speed

Explanation: The multiplexer line does not support the requested speed, or you specified unequal receive and transmit baud rates for a multiplexer that does not support split speeds.

User Action: Reenter the command, specifying a speed that is supported by the corresponding multiplexer.

XXX—Invalid time parameter

Explanation: You specified an incorrect time field.

User Action: Reenter the command, specifying the time in hours and minutes (for example, 13:00 for 1:00 p.m.).

XXX—Invalid UIC

Explanation: A value of zero was detected for either the group number or the member number. Zero is a reserved number that is used only by the system.

User Action: Reenter the command, specifying group and member numbers between 1 and 377₈.

XXX—IO.STC VV\$CHE, DC\$SET or DC\$ACT failed

Explanation: Data caching attributes could not be set for the disk you specified. The disk has been mounted, but data caching has not been activated.

User Action: Check the cache partition or the device to determine what went wrong.

IOT execution

Explanation: The task executed an Input/Output Trap (IOT) instruction, but you did not specify an SST routine to process the trap. This error can occur when you attempt to execute a task that switches to system state but that was not linked as a privileged task.

User Action: If the task executed the EMT accidentally, this error is due to a programming error. If so, correct the error, then reenter the command. However, if you intentionally designed the task to use EMT instructions for internal communication, this error is due to a lack of an SST routine for non-RSX EMT instructions. To allow the task to handle EMT instructions, modify the task to include an SST routine.

XXX—I/O error <ddnn:>

Explanation: An I/O error occurred on the specified device. This may indicate a hardware error or a temporary condition in the system (such as low pool).

User Action: Reenter the command. If the error persists, see your system manager.

XXX—I/O error on device <ddnn:>

Explanation: The INI task was unable to issue the function code Set Density (IO.SEC).

User Action: Check the device driver and the media. If the error persists, contact DIGITAL Field Service.

XXX—I/O error on device <I/O error code and text>

Explanation: An I/O error occurred in the file system software while accessing the device. The line enclosed in brackets contains the specific error code returned by the system or the device driver.

User Action: Correct the error condition and reenter the command line.

XXX—I/O error on input file <filename>

Explanation: An input I/O error occurred on the indicated file. Either the file is corrupted or the device is damaged.

User Action: Check the device; if necessary, use another device. If the device is functioning properly but the error persists, the file is probably corrupted. If possible, obtain a backup copy of the file from your system manager.

XXX—I/O error sizing device - <ddnn:>

Explanation: The system encountered an I/O error while sizing an RF11 disk. The disk may be corrupt or the device may be damaged.

User Action: Replace the disk in the drive with a new disk, or specify a different device.

I/O resumed

Explanation: Queue I/O (QIO) requests that were being held have been resumed.

User Action: None. This is an informational message.

I/O stalled

Explanation: QIO requests are not being processed.

User Action: None. This is an informational message.

<ddnn:> is attached by task <taskname>

Explanation: You attempted to dismount an attached device. If the task to which it belongs detaches before DMO exits (DMO processes the mount list several times before exiting), the device will be dismounted and a normal dismount message will appear.

User Action: Wait for the task to detach the device. If the normal dismount message does not appear, reenter the command.

XXX—Keyword error

Explanation: MCR could not parse the specified keyword.

User Action: Reenter the command.

XXX—KRB <krbname> is not offline

Explanation: All controllers of a device type must be off line before the driver can be unloaded.

User Action: Enter an OFFLINE command to the reconfiguration facility. (Reconfiguration commands are described in the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

XXX—KRB <name> not in loadable data base

Explanation: You are attempting to load the driver for a MASSBUS device with a loadable data base. The special symbol (KRBname), which defines the location of the KRB, is not defined in the loadable data base.

User Action: For more information on the special symbol KRB, refer to the *RSX-11M-PLUS and Micro/R SX Guide to Writing an I/O Driver*.

XXX—KRB table of CTB <name> will not accept KRB <name>

Explanation: You are attempting to load the driver for a MASSBUS device with a loadable data base. If this operation is to be successful, two conditions must exist:

1. The appropriate slot in the CTB (Controller Table) must exist.
2. The slot in the CTB must be unused.

When you get this error message, one of these conditions does not exist.

User Action: Refer to the *RSX-11M-PLUS and Micro/R SX Guide to Writing an I/O Driver*.

XXX—Label block I/O error

Explanation: In saving the system image, SAVE wrote the transfer address in the label block of the system image file. An error occurred during this write attempt.

User Action: None. The disk may be corrupted.

XXX—Label block read error

Explanation: BOOT attempted to read the label block of the system image file and failed. Although BOOT was able to access the file, it could not read the first block. This may indicate a device error, such as a bad block in the file.

User Action: Reenter the command. If the problem recurs, use Error Logging to check the device. (For information on Error Logging, see the *RSX-11M-PLUS and Micro/R SX Error Logging Manual*.) If possible, boot the system from another device.

XXX—Later

Explanation: The dynamic storage region (pool) is temporarily full.

User Action: Wait for the system to restore pool, then reenter the command.

XXX—Length mismatch common block <blockname>

Explanation: The length parameter for the common block, as described in the label block for the task image, did not match the corresponding length parameter defined in the system. A task's label block data must match system data for that task before it can be installed.

User Action: Rebuild the task, then install it.

XXX—Link was rejected by the terminal driver

Explanation: The terminal driver prevented the Ancillary Control Driver (ACD) connection. This error occurs when pool is low, the device is busy, or the device is already linked to another ACD.

User Action: If the device is linked to another ACD, use the ACD UNLINK command to remove the current ACD and install the ACD that you want to use. (Note that you can link only one ACD to a terminal at a time.) If the device is not linked to another ACD, wait for pool to be restored or for the device to become available. If this error persists, see your system manager.

XXX—Listing device not available

Explanation: The device unit on which MCR was attempting to display information was attached and unavailable for use.

User Action: Reenter the command, specifying a different listing device.

XXX—Loadable driver support not in system

Explanation: The system generation option to support loadable device drivers was not chosen, or necessary routines are not in the Executive.

User Action: Ask your system manager to include support for loadable device drivers during system generation.

XXX—Load device not LB:, task removed - <taskname>

Explanation: The system removed the specified task while saving a system, because the task had not been installed from the system library device LB.

User Action: To prevent the system from removing a task, remove the task from the system image with VMR; then, use the VMR command INSTALL to reinstall it from the pseudo device LB:.

XXX—Loader queue is not empty

Explanation: An activity that involves the loading or checkpointing of regions is currently in progress.

User Action: Wait for the activity to complete, then reenter the SAVE command.

Load failure. Read error

Explanation: The task could not be loaded because of a hardware error.

User Action: Reenter the command. If the problem persists, use Error Logging to check the device (see the *RSX-11M-PLUS and Micro/RSX Error Logging Manual*) or contact DIGITAL Field Service.

XXX—Loadable driver support not in system

Explanation: The system generation option to support loadable device drivers was not chosen or necessary routines are not in the Executive.

User Action: Include support for loadable device drivers during system generation. For more information, see the *RSX-11M-PLUS System Generation and Installation Guide*.

XXX—Logical device not in system

Explanation: The specified logical device name was not defined in the logical device tables.

User Action: Use the DFL command to define the logical device name, then reenter the command.

XXX—Logins are disabled

Explanation: The system was in the process of shutting down or the command SET /NOLOGON has been issued.

User Action: None. You cannot log in at these times.

XXX—Low pool - nonprivileged logins disabled

Explanation: To save space in pool, the system is not allowing nonprivileged users to log in. This is usually a temporary condition.

User Action: Wait a few minutes for pool space to be restored, then reenter the command. (For more information on saving pool space, see the description of Pool Monitoring Support in the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

XXX—Low pool, try later

Explanation: (Systems with pool monitoring support only.) During low pool conditions, the Pool Monitor Task (PMT . . .) temporarily disables install-run-remove and /CMD requests for nonprivileged users.

User Action: For more information on PMT, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.

XXX—LUN out of range

Explanation: You attempted to reassign a LUN for a task that is higher than the maximum number of LUNs allocated for the task when it was built.

User Action: None. This cannot be done.

XXX—LUNs not available because task image is deleted

Explanation: The LUN assignments for the specified task could not be displayed because the task's image has been deleted from the system.

User Action: None. This is an informational message.

XXX—Magtape is not shareable, device in use

Explanation: The specified device is already mounted, or the command line requested shared or public access to the device. Magnetic tapes are sequential devices and are processed sequentially. Only one user can access a tape at one time.

User Action: Reenter the command line, specifying the /NOSHARE keyword.

XXX—Magtape label must be specified

Explanation: An INI command attempted to initialize a magnetic tape without specifying the required volume label.

User Action: Reenter the command, specifying the volume label or the privileged keyword /OVR.

XXX—Magtape device error - <ddnn:>

Explanation: While positioning a magnetic tape before initializing it, the system encountered an I/O error. Either the tape or the drive is damaged.

User Action: Replace the tape in the drive with a new tape, or specify a different tape drive.

XXX—Magtape write error - <ddnn:>

Explanation: While writing to the magnetic tape during initialization, the system encountered an I/O error. Either the tape or the drive is damaged.

User Action: Replace the tape in the drive with a new tape, or specify a different tape drive.

XXX—Main cache partition does not match existing one

Explanation: You can receive this message for several reasons:

- The region that you specified with the CREATE option of the /CACHE keyword already exists.
- The region that you specified with the REGION option of the /CACHE keyword is not a common region.
- The region that you specified with the REGION option of the /CACHE keyword is not a cache region.

When you receive this message, the disk you specified in the MOUNT command has been mounted, but data caching for the disk could not be activated.

User Action: One of the following:

- Omit the CREATE option or specify a valid name for the region
- Enter the CBD command to determine the correct region name of the cache partition

XXX—Main cache partition not found, defaulting to GEN

Explanation: You specified a partition that cannot be found, so your disk is being mounted (or set) with data caching defaulted to the GEN partition.

User Action: To change the default to an existing partition (other than GEN), use the SE /CACHE command with the REGION option. If the partition does not exist, use the SE /CACHE command with the CREATE option to create it.

XXX—Manufacturer's bad sector file corrupt

Explanation: The manufacturer-recorded bad block data on a last-track device is in an inconsistent format.

User Action: Reenter the command line and include the /BAD=OVR option.

XXX—Max number of CLIs already present

Explanation: You attempted to initialize another CLI, but the maximum number of CLIs allowed in the system has already been reached.

User Action: Before initializing another CLI, use the REMOVE command to eliminate one of the existing CLIs.

XXX—MCR . . . already installed. Second copy not allowed

Explanation: You attempted to install a second copy of the MCR primary dispatcher (MCD).

User Action: None. This is not allowed.

XXX—MCR is not installed

Explanation: When a system is booted, SAVE uses MCR to mount the system disk.

User Action: Use Virtual MCR (VMR) to install the MCR . . . task. For information on VMR, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.

... Memory parity error in partition ' <pname> '

Explanation: The error logging subsystem detected a memory parity error in the specific partition.

User Action: None. This is a TKTN message.

Memory protect violation

Explanation: The task encountered a memory-protect violation and you did not specify an SST routine to process the trap. This error can occur when you attempt to execute a task that switches to system state but that was not linked as a privileged task.

User Action: If the task executed the EMT accidentally, this error is due to a programming error. If so, correct the error, then reenter the command. However, if you intentionally designed the task to use EMT instructions for internal communication, this error is due to a lack of an SST routine for non-RSX EMT instructions. To allow the task to handle EMT instructions, modify the task to include an SST routine.

XXX—Message failed to reach ttnn:

Explanation: The message could not be displayed within 20 seconds at the terminal specified by ttnn.

User Action: Reenter the command.

XXX—Message file error <nnn.>

Explanation: The system could not open the file LOGIN.TXT for a reason indicated by the File Control Services (FCS) code nnn.

User Action: See the *RSX-11M-PLUS and Micro/RSX I/O Drivers Reference Manual* for a definition of the FCS code.

XXX—MFD file header I/O error

Explanation: An error was detected in writing the Master File Directory (MFD) file header. This indicates that the disk is corrupt or that the disk drive is damaged.

User Action: Replace the disk in the drive with a new disk, or specify a different device.

XXX—MFD write error

Explanation: An error was detected in writing a block to the Master File Directory. This indicates that the disk is corrupt or that the disk drive is damaged.

User Action: Replace the disk in the drive with a new disk, or specify a different device.

XXX—Mount is not necessary for cassettes

Explanation: Cassettes do not have to be mounted.

User Action: None. This is an informational message only.

xxxxxx—Mount next volume on drive <ddnn:>

Explanation: The ACP does not know the name of the next volume in the tape set. The next volume must be placed on the drive specified.

User Action: The action to be taken depends on whether a program is currently reading or writing the set as follows:

- When writing, the ACP accepts any tape that has been properly initialized. The expiration date of the first file on the tape is checked to verify overwrite access. If the write ring is missing when the tape is placed on line, the program writing to the tape will receive an error message.
- When reading, the next volume of the current volume set must be placed on the drive specified in the message. The Volume ID is not checked, but other consistency checks are made, depending on the type of read operation currently in progress.

XXX—Mount not supported for device class

Explanation: Although the specified device is mountable, MOUNT is unable to process the command line for this class of device.

User Action: None. MOUNT supports only Files-11 random-access devices and labeled (ANSI) and unlabeled sequential tape devices. MOUNT does not support communications class devices such as DECdataway or DECnet.

xxxxxx—Mount <volume-id> on drive <ddnn:>

Explanation: The ACP knows the name of the volume because you specified multiple Volume IDs in the command line or because the ACP processed the Volume ID while the tape set was mounted.

User Action: Place the volume *volume-id* on drive *ddnn*.

XXX—Movement blocked by resident tasks or commons

Explanation: You attempted to modify the size of a common, but the modification interfered with task or common regions that are currently loaded in memory. The size of the common is unchanged.

User Action: Reenter the command and specify a smaller size adjustment, or remove some of the other regions.

XXX—Multiprocessing not supported

Explanation: You entered a command that requires a multiprocessing system.

User Action: If the system supports multiprocessing, repeat the system generation procedure to include the necessary feature. Otherwise, do not use this command.

XXX—Multivolume disk not supported

Explanation: The MOUNT command only supports multivolume ANSI magnetic tape sets.

User Action: None. MOUNT does not support multivolume disks.

XXX—Mutually exclusive switches specified

Explanation: This message can occur for the following reasons:

- The keywords /ACCESS, /OWNER, and /UIC cannot be specified in the same command line.
- The keyword /POS cannot be specified with any other keyword except /VI.

User Action: Reenter the command with the correct combination of keywords.

XXX—MXF less than or equal to the existing value

Explanation: You specified a value with /MXF that is less than or equal to the maximum number of files already specified for the volume. This value must be greater than the current number of files allowed.

User Action: Reenter the command, specifying a larger value for the /MXF keyword.

XXX—MXF too large for existing bitmap

Explanation: You attempted to increase the maximum number of files allowed on the volume to a value that requires a larger index bitmap file. However, the HOME command cannot extend the current bitmap file.

User Action: Reenter the command, specifying a smaller value for the /MXF keyword.

XXX—Neither main cache partition nor GEN exists

Explanation: Neither the partition you specified nor the GEN partition could be found, so your disk was mounted but data caching could not be activated.

User Action: None. Data caching cannot be activated without a cache partition.

XXX—New device not known to system

Explanation: The new device specified by the REDIRECT command was not known to the system (that is, it does not exist in the device tables).

User Action: To obtain a list of devices known to the system, use the DEV command. Then, reenter the command, specifying a known device.

XXX—New password verification error

Explanation: The password you typed in response to the “Verification” prompt was not the same as the one you typed in response to the “New password” prompt. The password remains unchanged.

User Action: Reenter the command.

XXX—No bad block data found

Explanation: Although automatic bad-block specification was selected, no bad-block file was found on the volume.

User Action: None. This is an informational message.

XXX—No checkpoint space, assuming not checkpointable

Explanation: The command attempted to install the task as checkpointable, but the task was not built as checkpointable and therefore had no checkpoint space allocated in its task image file. Because the system does not support the dynamic allocation of checkpoint space, it considers the task not to be checkpointable.

User Action: None. This is an informational message.

XXX—No checkpoint space or dynamic checkpoint file

Explanation: You attempted to install a task with external headers (/XHR=YES) or a checkpointable task (/CKP=YES), but no checkpoint space or dynamic checkpoint file was available for it.

User Action: Reenter the command without the /XHR=YES or /CKP=YES keywords.

XXX—No device available

Explanation: You attempted to allocate a device of a particular type (for example, a DU- or MM-type device), but all devices of that type are currently allocated to other users.

User Action: To obtain a list of the devices and their current status, use the MCR command DEVICES. When a device becomes available, reenter the command.

XXX—No home block found or structure not supported

Explanation: F11ACP was unable to locate a valid home block on the volume. The volume is either uninitialized, corrupted, or in an unsupported format such as Files-11 Structure Level 2 or RT-11. (Certain utilities, such as FLX, support other formats such as DOS-11 and RT-11.)

User Action: Mount the volume using the /FOR keyword, then reenter the command.

XXX—No LUNs

Explanation: You specified a task that had no current logical unit number (LUN) assignments.

User Action: None. This is an informational message.

XXX—No pool space

Explanation: The Executive could not currently satisfy MCR's request for dynamic memory.

If the message comes from SAVE, it indicates that there is not enough space in pool to contain checkpoint information. SAVE requires pool space when it tries to force resident read/write commons to their file images.

If the message comes from ASN, it indicates that pool was low when you logged in.

User Action: Wait for pool to be restored, then reenter the command. If you require local logical assignments, log out of the system and wait for secondary pool to be restored before logging in again. If this error persists, see your system manager.

XXX—No privilege for attempted operation

Explanation: You attempted to issue a privileged command from a nonprivileged account. If you are a nonprivileged user, you can only create directories on a private device.

User Action: Log in to a privileged account or mount a device as private, then reenter the command.

XXX—No protection specified for any field

Explanation: You entered commas instead of access codes in every field of a default file protection code.

User Action: Specify access for at least one user class.

XXX—No room available in STD for new task

Explanation: No dynamic memory is available for making an entry in the System Task Directory (STD).

User Action: None. The task cannot be installed.

XXX—No such device available

Explanation: The specified device name and unit was not found in the logical or physical device tables.

User Action: Determine the correct device name and unit number and reenter the command line.

XXX—No transfer address

Explanation: BOOT did not consider the file to be a system image file because the specified *transfer address* in the label block appears to be corrupted. The transfer address is a part of the label block provided by the Task Builder. It includes the address at which BOOT starts when a program is loaded.

This message indicates that the transfer address of the image is an odd number; either the task was built incorrectly, or the image is not bootable.

User Action: Rebuild the task with an even-numbered transfer address. Then, reenter the BOOT command line. If the message persists, the image is not bootable.

XXX—No volume list

Explanation: You specified a magnetic tape for which a mounted volume label list does not exist. You may have specified an incorrect device name.

User Action: Reenter the command, specifying the correct name.

XXX—Nonexistent memory

Explanation: You attempted to define a partition in memory that does not exist.

User Action: Reenter the command, specifying valid memory addresses.

Non-RSX EMT execution

Explanation: The task executed an Executive EMT instruction with an argument other than 377_8 (or in the case of a privileged task switching to system state, 376_8) and you did not specify a synchronous system trap (SST) routine to process the trap.

This error can occur when you attempt to execute a task that switches to system state but that was not linked as a privileged task.

User Action: If the task executed the EMT accidentally, this error is due to a programming error. If so, correct the error, then reenter the command. However, if you intentionally designed the task to use EMT instructions for internal communication, this error is due to a lack of an SST routine for non-RSX EMT instructions. To allow the task to handle EMT instructions, modify the task to include an SST routine.

XXX—Not a system image

Explanation: BOOT did not consider the file to be a system image file, probably because the file is formatted improperly. Either the task was built incorrectly, or the image is not bootable.

User Action: BOOT requires a system image that is built with the Task Builder (TKB) switch /-HD. Rebuild the task with the TKB /-HD switch, then reenter the BOOT command line. If the message persists, the image is not bootable.

XXX—Not a valid save device

Explanation: You attempted to save a system on a device that is not part of the system I/O data structures (\$SYSIZ+2 and \$SYSIZ+6 are corrupted, or SAVE does not support the device).

User Action: Use VMR to recreate the system image on a supported SAVE device, then reenter the SAVE command. For a list of supported devices, see Section 3.41.

XXX—Not enough APRs for task image

Explanation: You specified an increment that, when combined with the task size, overflows the virtual address space.

User Action: Reenter the command, specifying a smaller increment with the /INC keyword.

XXX—Not enough memory in main cache partition

Explanation: There is not enough space in the main cache partition to accommodate data caching for the volume you have specified.

User Action: Extend the main cache partition, then reenter the command.

XXX—Not file structured device

XXX—Not Files-11 device

Explanation: You specified a device that does not contain a Files-11 disk. For the UFD command, the volume on which the directory was to be created was not a Files-11 volume and therefore could not support UFDs.

User Action: Reenter the command line and specify a mounted Files-11 disk as the device unit.

XXX—Not first volume of tape set

Explanation: Tape sets must be read from the first volume. The first tape volume of the tape set was not loaded on the first tape drive specified in the command line.

User Action: Load the first tape volume on the first tape drive, then reenter the command.

XXX—Not logged in

Explanation: You entered a command at a terminal that is not logged in to the system.

User Action: Log in to the system, then reenter the command.

... <ddnn:> —Not ready

Explanation: The specified device was not ready (the device was off line or turned off).

User Action: Turn the device on and place it on line, then reenter the command.

XXX— <ddnn> Now allocated

Explanation: The device ddnn has been allocated successfully.

User Action: None. This is an informational message.

XXX—Null file header I/O error

Explanation: An error was detected in writing null file headers to the index file. This indicates that the disk is corrupt or that the disk drive is damaged.

User Action: Replace the disk in the drive with a new disk, or specify a different device.

XXX—Odd address or other trap four

Explanation: The task executed a word instruction with an odd address, and you did not specify an SST routine to process the trap. This error can occur when you attempt to execute a task that switches to system state but that was not linked as a privileged task.

User Action: If the task executed the EMT accidentally, this error is due to a programming error. If so, correct the error, then reenter the command. However, if you intentionally designed the task to use EMT instructions for internal communication, this error is due to a lack of an SST routine for non-RSX EMT instructions. To allow the task to handle EMT instructions, modify the task to include an SST routine.

XXX—Old device attached

Explanation: You attempted to redirect an attached device.

User Action: Wait until the device is no longer attached, then reenter the command.

XXX—Old device mounted

Explanation: You attempted to redirect a mounted device.

User Action: Use the DMO command to dismount the device, then reenter the command.

XXX—Old device not known to system

Explanation: You attempted to redirect an unknown device (the device does not exist in the device tables). You may have entered the device name incorrectly.

User Action: Reenter the command, specifying the correct device name.

XXX—Old password validation error - password unchanged

Explanation: You typed in your old password incorrectly.

User Action: Check for the correct password and retype it.

XXX—Open failure on file <filename>

Explanation: The LOA command encountered an error in attempting to open the specified file.

User Action: Check to see that the specified file exists and is not locked.

XXX—Open file(s) on <ddnn:>

Explanation: There are open files on the device ddnn.

User Action: Ensure that the Queue Manager is stopped. For more information, see the *RSX-11M-PLUS Batch and Queue Operations Manual*.

XXX—Operation invalid to spooled device

Explanation: The specified device has been redirected to an intermediate device for spooling. Generally, only unit record devices are spooled and are usually not mountable.

User Action: If the device is mountable, stop the processor for the queue servicing the device and set the device unspooled.

XXX—Other user logged on

Explanation: Another user is currently logged in on the issuing terminal. Only one user at a time can be logged in on a terminal.

User Action: Wait for the other user to log out or log in to a different terminal.

XXX—Output error

Explanation: An MCR terminal-write operation failed because the device is currently in use.

User Action: Wait for the device to become available or specify a different device.

XXX—Overlap seeks not supported

Explanation: The command attempted to enable overlapped-seek support for other than a DM- or an RH-type controller.

User Action: None. Only DM- and RH-type controllers support overlapped seeks.

Overlay load failed

Explanation: A task using the overlay runtime system failed to load an overlay. The task is aborted.

User Action: None. This is a TKTN message.

XXX—Parameter conflict with already mounted volume

Explanation: The volume was already mounted foreign and Files-11 access was requested, or the volume was mounted Files-11 and foreign access was requested.

User Action: Be sure you specified the correct device name. If the device is Files-11 and was incorrectly mounted with the /FOR keyword, dismount it and remount it as Files-11. Then, reenter the command.

Parity error

Explanation: A parity error occurred while the task was executing. The task was fixed in memory so that the memory could not be reused by another task. This may indicate a hardware error.

User Action: If the error persists, contact DIGITAL Field Service.

XXX—Partition already exists

Explanation: You attempted to define a partition with a name already in use.

User Action: Reenter the command, specifying a unique partition name.

XXX—Partition busy

Explanation: You attempted to fix a task in or remove a task from a partition that is currently occupied by another task.

User Action: To free the occupied memory partition, use the UNFIX or REMOVE command (see Section 3.50 or 3.38, respectively). Then, reenter the command with the name of the task you want to fix or remove.

XXX—Partition not common

Explanation: You specified a partition for a common area or library that is not defined as a common partition.

User Action: Define the partition as a common partition, then reenter the command.

XXX—Partition <pname> not in system, defaulting to GEN

Explanation: The specified partition does not exist, so the system is installing the task in the GEN partition.

User Action: None. This is an informational message.

XXX—Partition/region <name> already loaded

Explanation: You attempted to load an Executive partition that is currently loaded in memory.

User Action: None. The partition is already loaded.

XXX—Partition/region <name> cannot be loaded

Explanation: Using the /EXP keyword, you attempted to load an extended partition that could not be loaded.

User Action: This error is accompanied by additional messages. Refer to the descriptions of those messages for more information.

XXX—Partition/region <name> cannot be unloaded

Explanation: You specified the /EXP keyword in the UNLOAD command line, but the common region was not loaded as an extended partition (that is, with the LOA /EXP command).

User Action: Reenter the command without the /EXP keyword.

XXX—Partition/region <name> is a common

Explanation: You attempted to load a device driver into a common partition or region. A device driver cannot be loaded into a common partition or region.

User Action: Load the device driver into a different partition.

XXX—Partition/region <name> is not a common

Explanation: The symbol \$ddCOM is globally defined in the driver. The partition ddCOM exists, but it is not a common partition or region.

User Action: Remove the ddCOM partition and reenter the command.

XXX—Partition/region <name> not in system

Explanation: You attempted to load a driver into a partition that does not exist in the system, or LOAD found a symbol \$xxCOM in the driver and the region xxCOM does not exist in the system.

User Action: Install the partition before you attempt to load the driver.

XXX—Partition <parname> too small

Explanation: The partition into which the driver was to be loaded was not large enough to contain it.

User Action: Load the driver into a different partition, or create more room in the partition by removing drivers, commons, or fixed tasks.

XXX—Partition too small to buffer information

Explanation: The command resulted in excessive output to the buffer. The information in excess of the buffer size is not displayed. This can occur when the CLI /SHOW subkeyword does not have enough space to buffer the display information.

User Action: Reinstall the MCR task with a larger increment, using the /INC keyword (see the description of the INSTALL command). If the error persists, submit a Software Performance Report (SPR).

XXX—Password cannot be validated

Explanation: The encryption algorithm used for your password is not known to the version of HELLO currently installed on the system. The account file was created on a later version of the operating system, using an updated version of the password encryption algorithm.

User Action: See your system manager to change your password.

xxxxxx—Place drive <ddnn> on-line

Explanation: The next device drive requested in a multivolume, multiunit operation is off line.

User Action: Place the device drive <ddnn> on line, then reenter the command.

Postmortem Dump not possible

Explanation: A Postmortem Dump was requested (or the task was built specifying a Postmortem Dump), but the dump could not be generated. For example, the PMD task was not installed, the PMD task and the aborted task were in the same partition and not checkpointable, or there was not enough memory available.

User Action: None. This is an informational message.

Postmortem Dump will be generated

Explanation: This is a TKTN message that indicates that a Postmortem Dump was requested and will be generated.

User Action: None. This is an informational message.

XXX—Preallocated too many headers for single header index files

Explanation: The number you specified with the /INF keyword was greater than 25598₁₀.

User Action: To specify a number greater than 25,598, use a volume with a multiheader index file.

XXX—Preallocation insufficient to fill 1st index file header

Explanation: The number you specified with the /INF keyword was less than 25,588.

User Action: Reenter the command, specifying a value greater than 25,588.

XXX—Preallocation insufficient to fill 1st and 2nd index file headers

Explanation: The number you specified with the /INF keyword was less than 51,694.

User Action: Reenter the command, specifying a value greater than 51,694.

XXX—Privileged command

Explanation: A command that is available only to privileged users was issued by a nonprivileged user.

User Action: Log in to a privileged account and reenter the command, or ask a privileged user (usually a system manager) to enter the command for you.

Also, note the following special conditions:

- DEB command. If you are a nonprivileged user, you cannot debug tasks that were not initiated from your own terminal. Log in to a privileged account or initiate the task from your own terminal and reenter the command.
- BRO command. A nonprivileged user cannot broadcast one message to all connected or logged-in terminals. If you are a nonprivileged user and you want to send a message to more than one terminal, create an indirect command file containing a list of target terminals and the message to be broadcast. Then, enter the command name followed by an at sign (@) and the command file specification.

XXX—Privileged user logged in without UAB

Explanation: This message indicates that there was not sufficient space in secondary pool for the Resource Accounting system to allocate a User Account Block (UAB). If you are a privileged user, the system permits you to log in. However, the accounting system is not recording your use of the operating system.

User Action: You can continue under these conditions, or you can log out with the BYE command and wait for secondary pool to be restored before logging in again.

The system manager can use the Resource Accounting switch /POOL_RESERVE to alter the secondary pool limit. See the *RSX-11M-PLUS and Micro/RSX System Management Guide* for complete details.

XXX—Privilege violation

Explanation: This message can occur for the following reasons:

- A nonprivileged user tried to use the HOM /OVR keyword.
- A nonprivileged user tried to initialize a volume in a nonmultiuser protection system.
- A nonprivileged user tried to install or remove an ACD. The INSTALL and REMOVE functions are privileged functions.

User Action: Log in to a privileged account and reenter the command.

XXX—Processor <processorname> is online

Explanation: (Multiprocessing systems only.) To save or boot a system, all but one of the processors must be off line.

User Action: Using the CON command, place all but one of the processors off line. Then, reenter the command.

XXX—Proper controllers and/or units are not offline

Explanation: When a system is saved, all device units, device controllers (except the TI for SAVE), and the load device must be off line.

User Action: Use the DEVICES or CON DISPLAY command to determine which devices are on line and then enter the appropriate CON OFFLINE commands.

XXX—Pseudo device assignment error

Explanation: MCR was unable to assign the specified pseudo device to a physical device.

User Action: For an explanation of pseudo device assignments, see Chapter 2.

XXX—Pseudo device error

Explanation: The specified device is a pseudo device. Pseudo devices cannot be allocated.

User Action: Use a physical or logical device name to allocate a device. Reenter the command after using the MCR command DEV to check the proper device name.

XXX—Pseudo device redirect error

Explanation: An attempt was made to redirect one pseudo device to another pseudo device.

User Action: None. You cannot redirect one pseudo device to another.

XXX—Public device - <ddnn>

Explanation: You attempted to allocate or initialize a public device. Public devices cannot be allocated or initialized.

User Action: Set the device private, or reenter the command and specify a different device.

... <ddnn:> —Read failure. Check hardware status

Explanation: The card reader driver detected a hardware error.

User Action: Check the card reader device.

XXX—Region or common already fixed

Explanation: You attempted to fix a task or common region in memory, but the region is already fixed.

User Action: Be sure that you specified the correct name. Note that the name of the region to be fixed in memory must be unique.

XXX—Region or common not fixed

Explanation: You attempted to unfix a task or common region that was not fixed or to open a virtual location of a task that was not fixed. This message indicates that the task is not in memory.

User Action: If this message is returned in response to the UNFIX command, no further action is necessary. If you entered the OPEN command, use the FIX command to fix the task; then, reenter the command.

XXX—Region/partition <name> is a common

Explanation: You attempted to load a device driver into a common partition or region. A device driver cannot be loaded into a common partition or region.

User Action: Load the driver into a different partition.

... <ddnn:> —Replacement control task not installed

Explanation: This is a TKTN message. While bringing the specified device on line or detecting a bad block on the device, the driver could not call the replacement control task (RCT) because it is not installed.

User Action: None. This is an informational message. (However, if you require automatic bad block replacement, install RCT before entering this command.)

xxxxxx—Requested action for drive <ddnn:> not completed

Explanation: A condition reported in a previous message from the Ancillary control Processor (ACP) has not yet been taken care of.

User Action: None. This is a reminder message.

**xxxxxx—Requested action for task <taskname> on drive
<ddnn:> not completed/Please complete or abort task**

Explanation: This is a reminder message. It is displayed after a long delay.

User Action: Abort the task using the ABO command, or wait for it to complete.

XXX—Requested density not available

Explanation: You specified a density in the command line that is not supported by the specified devices.

User Action: Either specify the correct density or select hardware that supports the desired density.

Required bus runs are offline or not present

Explanation: (RSX-11M-PLUS multiprocessor operating systems only.) You installed the task, or a common to which the task is mapped, with an affinity for a CPU or a bus run that is off line.

User Action: Bring the CPU or bus run on line, or install the task with a different affinity.

Reserved inst execution

Explanation: The task executed an illegal instruction and you did not specify an SST routine to process the trap. This error can occur when you attempt to execute a task that switches to system state but that was not linked as a privileged task.

User Action: If the task executed the EMT accidentally, this error is due to a programming error. If so, correct the error, then reenter the command. However, if you intentionally designed the task to use EMT instructions for internal communication, this error is due to a lack of an SST routine for non-RSX EMT instructions. To allow the task to handle EMT instructions, modify the task to include an SST routine.

XXX—Resource in use

Explanation: The requested system resource is currently unavailable.

User Action: Reenter the command later.

XXX—R/O partition <pname> not in system, defaulting to task's partition

Explanation: You specified a read-only partition that does not exist in the system. INSTALL places the read-only portion of the multiuser task in the same partition in which the read/write portion of the task is placed.

User Action: None. The task is installed.

XXX—Searching for bad block descriptor file

Explanation: The INI task is attempting to find the bad block descriptor file that the Bad Block Locator Utility (BAD) created. This does not indicate an error.

User Action: None. This is an informational message.

XXX—Secondary pool allocation failure

Explanation: The system failed to allocate secondary pool. This may indicate a lack of free pool space.

User Action: Wait a few minutes, then reenter the command. If the error persists, see your system manager.

XXX—Secondary pool does not fit into system image

Explanation: The system image file is not large enough to contain all of secondary pool.

User Action: Either use the VMR command SET /PAR to place secondary pool in a lower portion of memory, or use the PIP utility to make the system image file larger. Then, run VMR to reinitialize the file. (For more information on VMR, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

XXX—Secondary Pool extended by <n> blocks (<m> bytes)

Explanation: The LOA /EXP=SEC command has extended secondary pool the requested number of blocks (n).

User Action: None. This is an informational message, indicating that the command was successful.

XXX—Sec pool or CPU partition cannot be modified

Explanation: You attempted to modify the limits of the secondary pool (SECPOL) or CPU partition.

User Action: To change these limits, you must use VMR to recreate the system. For more information, see the *RSX-11M-PLUS System Generation and Installation Guide*.

... <ddnn> —Select error

Explanation: This is a TKTN message. The selected device was not ready or more than one drive had the same unit number.

User Action: Be sure the power is turned on and the device is on line. When the device is ready, the system will continue processing your request from the point at which the error occurred.

XXX—Shadow device

Explanation: The device you specified in the command line is a shadow device, but the system cannot perform the requested operation with that type of device.

User Action: Stop shadow recording and reenter the command, or specify a different device.

XXX—Shadow recording is active on <ddnn>

Explanation: You specified a shadow device, and shadow devices cannot be dismounted.

User Action: Stop shadow recording, then reenter the command. (For information on shadow recording, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

XXX—Space used

Explanation: You attempted to create a partition in a storage area already occupied.

User Action: Reenter the command, specifying an available area in memory.

XXX—Spawn failure

Explanation: The Executive Spawn (SPWN\$) directive failed to assign your system device, or the Executive Request and Pass Offspring Information (RPOI\$) directive failed to chain to Indirect to execute the login command file.

User Action: Reenter the command. If the problem persists, submit a Software Performance Report (SPR) to DIGITAL.

XXX—Specified partition for common block

Explanation: You attempted to install a task in a common block.

User Action: None. You cannot install a task in a common block.

XXX—Specified partition too small

Explanation: You attempted to install a task in a partition that is smaller than the task.

User Action: Reenter the command, specifying a larger partition.

XXX—Specified processor not in system

Explanation: (Multiprocessing systems only.) You specified a processor name incorrectly.

User Action: Reenter the command, specifying the correct processor name.

XXX—Spooled device

Explanation: The device you specified in the command line is set spooled. The system cannot use a spooled device to perform the requested operation.

User Action: Reenter the command, specifying a different device.

SST abort. Bad CSM parameters

Explanation: The task executed a Call Supervisor Mode (CSM) instruction with invalid parameters.

User Action: Specify valid parameters for the CSM instructions. For more information on CSM libraries and completion routines, see the *RSX-11M-PLUS and Micro/RSX Task Builder Manual*.

SST abort. Bad stack

Explanation: An SST failed to execute because the parameters for the SST could not be pushed onto the task stack. This indicates an error within the task.

This error can occur when you attempt to execute a task that switches to system state but that was not linked as a privileged task.

User Action: Locate the error in the source code for the task and correct it.

XXX—Storage bitmap file header I/O error

Explanation: A fatal hardware error occurred while the storage bitmap file header was being initialized. This indicates that the disk is corrupt or the disk drive is damaged.

User Action: Replace the disk in the drive with a new disk, or specify a different device.

XXX—Storage bitmap file I/O error

Explanation: An error was detected in writing the storage allocation file header. This indicates that the disk is corrupt or the disk drive is damaged.

User Action: Replace the disk in the drive with a new disk, or specify a different device.

XXX—Supervisor mode library not supported

Explanation: You attempted to run a task that is linked to a supervisor mode library on a system that does not support supervisor mode libraries.

User Action: Run the task on a system that supports supervisor mode libraries.

XXX—Switch is not legal for this device type

Explanation: A keyword was specified that cannot be used with the specified device.

User Action: Check the description of the keyword for the valid devices.

XXX—Switch is not legal in this mode

Explanation: You attempted to use HOME keywords or their options with the INI command, or you attempted to use INI keywords or their options with the HOME command.

User Action: Reenter the command, specifying the correct keywords (or options) for the command.

XXX—Switch syntax error

Explanation: You specified a keyword incorrectly.

User Action: Reenter the command line using the correct syntax.

XXX—Symbol <symname> is doubly defined by file <filename>

Explanation: The symbol symname is defined twice in the specified file. Duplicate symbols are illegal. The driver is not loaded.

User Action: Eliminate the duplicate symbol and reenter the command line.

XXX—Symbol <symname> is undefined in file <filename>

Explanation: The symbol symname was found in the specified file, but the symbol was not defined.

User Action: Define or delete the symbol and reenter the command line.

XXX—Syntax error

Explanation: This message indicates that you entered the required information incorrectly. If you specified the INI command, this message can occur for one or more of the following reasons:

- The value specified with the /ACCESS keyword was more than one character long.
- The volume label for an ANSI magnetic tape contained an invalid character.
- Illegal syntax was used during the manual input of bad block numbers.
- A keyword was specified immediately after the command name in the command line, instead of after the volume name (for example, INI /UPD DD:).

User Action: Check the command specification, then retype the command line according to the correct command format.

XXX—Syntax error - mutually exclusive switches

Explanation: You specified two keywords that are mutually exclusive. For example, the HELP command keywords /LOC and /MCR cannot be used together.

User Action: Reenter the command with the correct keyword or combination of keywords.

XXX—System disk being dismounted

Explanation: This message should only appear during a system generation or during system shutdown. Since the system disk is a public device, it can be dismounted only by a privileged user.

User Action: None. This is an informational message only.

System <name> dismounted from <ddnn>

Explanation: Device ddnn has been dismounted.

User Action: None. This is an informational message.

XXX—System may not boot correctly

Explanation: The file [sysuic]SAV.TSK was not found on the boot device. If SAVE is checkpointed to redirect and mount the booted device, the system disk will be overwritten, causing unpredictable results.

User Action: None. This is an informational message.

XXX—System may not work - Corrupted file for common <commonname>

Explanation: When SAVE attempted to convert the file-ID for the common, it found that the task image of the checkpointable common was corrupted or had been deleted. SAVE altered the system data structures to prevent checkpointing of the common into what may now be another task image.

User Action: Use VMR to remove all tasks that access the common, then remove the common. Next, replace the common and reinstall the tasks. Finally, reenter the SAVE command.

XXX—System may not work - Larger than main memory

Explanation: This message indicates that the booted system has less main memory than the saved system image file and that a structure resident in the system image file is completely or partially absent in the booted system.

User Action: If the system can run without the structure, you can use the UNLOAD and UNFIX commands to remove the nonexistent structures.

XXX—\$SYSIZ does not point at system image file

Explanation: SAVE determines the location of the system image file on the system disk by examining the locations near the Executive label \$SYSIZ. SAVE then makes several validation checks on that file. If those checks fail, SAVE does not write to the disk on the assumption that it could corrupt the disk by writing to a file that is not a system image file.

The system image or the system image file has been corrupted.

User Action: Re-create the system image with VMR, then reboot the system.

XXX—Tape not ANSI or incorrect tape format

Explanation: The tape labels did not conform to the ANSI standard or the tape is not an ANSI labeled tape.

User Action: Specify other tape formats with the /NOLABEL and /FOR keywords.

XXX—Task active

Explanation: You specified a task that is already active. Active tasks cannot be fixed.

User Action: To fix the task in memory, first use the ABORT command to abort the task, then reenter the FIX command. For information on the ABORT command, see Section 3.1.

XXX—Task active in another system, task removed - <taskname>

Explanation: The task is installed in another system as well as in the booted system.

User Action: None. Since the task is active and mapped to dynamic regions in the other system, it cannot be run in the booted system.

XXX—Task active or not runnable due to affinity

Explanation: (Multiprocessing systems only.) The task requires access to UNIBUS Runs (URMs) that are currently inaccessible.

User Action: Modify the URMs, then reenter the command.

XXX—Task already fixed

Explanation: You specified a task that is already fixed in memory.

User Action: Be sure that you specified the correct task name. Note that the name of the task to be fixed in memory must be unique.

XXX—Task being aborted

Explanation: You attempted to run a task that was being aborted for one of the following reasons:

- An unrecoverable error
- Another user issued an ABORT command
- A task issued the Executive directive Abort Task (ABRT\$)

User Action: Wait for the task to be aborted, then reenter the command.

XXX—Task being fixed

Explanation: You attempted to either fix or alter the priority of a task that was in the process of being fixed.

User Action: Wait for the task to be fixed.

XXX—Task cannot be blocked

Explanation: You attempted to block one of the following:

- An Ancillary Control Processor (ACP)
- A command line interpreter (CLI)
- A task in the process of being aborted

User Action: None. This cannot be done.

XXX—Task cannot be fixed

Explanation: You attempted to fix a prototype task in memory (that is, a task name in the form . . . xxx or xxx\$\$\$).

User Action: None. Prototype tasks cannot be fixed in memory.

XXX—Task checkpointed into its task image

Explanation: You attempted to save a system in which one or more tasks are currently active and have been checkpointed into the checkpoint space allocated in their task images.

User Action: Force the tasks back into memory, then reenter the command.

timestamp ... Task <taskname> does not contain a debugging aid

Explanation: You attempted to debug a task that was not built with the Task Builder (TKB) switch /DA or that did not issue the Executive SVDB\$ directive.

User Action: Rebuild the task with the TKB switch /DA or include the SVDB\$ directive. Then, reenter the DEBUG command.

Task exit with outstanding I/O

Explanation: The task exited with one or more outstanding I/O requests.

User Action: Allow the task to terminate all I/O operations before exiting.

XXX—Task file deleted, task removed - <taskname>

Explanation: While rebooting a saved system, a file identification that appears in the Task Control Block (TCB) could not be found in the index file on the boot device. This indicates that the file has been deleted.

User Action: Install a valid copy of the task, then reenter the command.

XXX—Task file header error, task removed - <taskname>

Explanation: When SAVE read the task header to restore the LBN of the task file, the checksum was bad or there was a file number mismatch. Therefore, the task was removed.

User Action: Install a valid copy of the task, then reenter the command.

XXX—Task file header read error, task removed - <taskname>

Explanation: The system removed the specified task because it encountered a failure while reading the task's file header. The volume may be write-locked.

User Action: Enable write access or install a valid copy of the task, then reenter the command.

XXX—Task file header write error, task removed - <taskname>

Explanation: When SAVE attempted to reassign the LUNs of the task or to rewrite a mapping window PCB address, it could not successfully rewrite the task header. Therefore, the task was removed.

User Action: Install a valid copy of the task, then reenter the command.

XXX—Task has no read only segment

Explanation: You attempted to fix the read-only segment of a multiuser task, but the specified task does not have a read-only segment.

User Action: Reenter the command without specifying the /RON keyword.

XXX—Task header read error

Explanation: The system detected an I/O error while reading in a task header in order to write the file identification into the Task Control Block (TCB).

This error causes the system to halt.

User Action: Reboot the system.

XXX—Task header read error, task removed - <taskname>

Explanation: SAVE detected an I/O error while reading in a task header in order to reassign LUNs or to remap the mapping windows. Therefore, the task was removed.

User Action: Install a valid copy of the task, then reenter the command.

XXX—Task image already installed

Explanation: You attempted to install a checkpointable task image that is already installed. On systems that do not support the dynamic allocation of checkpoint space, checkpointable tasks that have checkpoint space allocated can be installed only once; other tasks can be installed more than once (under different names).

User Action: None. The task is installed.

XXX—Task image I/O error

Explanation: INSTALL cannot read the task image file or could not rewrite the task image header. The device may be write-locked or damaged.

User Action: Enable write access or specify another device. Then, install a valid task image and reenter the command.

XXX—Task image I/O error in file <filename>

Explanation: The device is probably write-locked. MCR could not read the task image file or cannot rewrite the task image header.

User Action: Check to see if the device is write-locked.

XXX—Task image virtual address overlaps common block <blockname>

Explanation: The virtual addresses reserved for the task image overlap those reserved for the common block specified in the message. A corruption of the task image file probably caused the overlap.

User Action: Rebuild the task, then reenter the command.

Task installed in more than one system

Explanation: You installed the task image file in more than one system.

When a task is installed, pointers to various system data structures are stored in the task header in the task image file; so, the header contains pointers for the last system in which the task was installed. When the task is loaded for execution, the loader attempts to verify that the pointers are valid for the current system. When you install a task in more than one system, the loader check fails and the task is aborted.

User Action: Remove the task from all but one system and run the task again.

XXX—Task is checkpointable

Explanation: You attempted to fix a checkpointable task in memory. A checkpointable task cannot be fixed in memory.

User Action: Rebuild the task as noncheckpointable (TKB switch /NOCP), then reenter the command.

XXX—Task label block read error, task removed - <taskname>

Explanation: When SAVE attempted to reassign the LUNs of the task to the current system, the task's label block could not be read (the label block contains the static LUN assignments). Therefore, the task was removed.

User Action: Install a valid copy of the task, then reenter the command.

Task load device dismounted

Explanation: The task cannot be loaded into memory because its load device has been dismounted.

User Action: None. This is a TKTN message.

XXX—Task marked for abort

Explanation: A previous request has already been made to abort the specified task, but the abort has not yet occurred. The task marked for abort is not currently resident in memory or it has outstanding I/O (for example, an MM tape-positioning operation must complete).

User Action: Wait for the task to be aborted.

XXX—Task may not be run

Explanation: This message is issued for the following reasons:

- You attempted to install a CLI task. CLI tasks are activated by the system; they cannot be activated with the install-run-remove option of the RUN command.
- You specified a task with the . . . tsk form of the task name. The . . . tsk form of a task name identifies a task that was installed with a prototype TCB. Thus, the task cannot be run. Instead, specify only the 3-character task name (tsk); or install and run the task under a different name (such as tskTnn).
- You specified a task with the tsk\$\$\$ form of the task name. The tsk\$\$\$ form of a task name identifies a special network task. Such tasks cannot be run.
- The RUN command encountered a spawn failure when it tried to spawn the specified task.

User Action: Reenter the command, specifying a valid task.

XXX—Task name already in use

Explanation: You attempted to install a task with the same name as one already in the system.

User Action: Rename the task and then install it.

XXX—Task not abortable

Explanation: You attempted to abort a task that cannot be aborted.

User Action: None. This cannot be done.

XXX—Task not a CLI

Explanation: You attempted to initialize a CLI task that was not installed with the /CLI=YES keyword.

User Action: Install the CLI task with the /CLI=YES keyword, then initialize the CLI.

XXX—Task not active

Explanation: The specified task is not currently active.

User Action: Check the command for the proper task name and reenter it.

XXX—Task not active on specified terminal

Explanation: A task name specified in a command was not activated by the terminal specified with the keyword /TERM.

User Action: Enter the ACT or ALL command to determine which terminal activated the task or to verify that the task is no longer active in the system.

XXX—Task not fixed

Explanation: You attempted to unfix a task that was not fixed or to open a virtual location of a task that was not fixed. This message indicates that the task is not in memory.

User Action: If this message is returned in response to the UNFIX command, no further action is necessary. If you entered the OPEN command, use the FIX command to fix the task; then, reenter the command.

XXX—Task not in system

Explanation: The specified task has not been installed or the task was initiated by the install-run-remove option of the RUN command. You may have specified the task name incorrectly.

An uninstalled task cannot be fixed.

User Action: Install the task using the INSTALL command, then reenter the command. For information on the INSTALL command, see Section 3.30.

XXX—Task not installed with external header

Explanation: This is a warning message to indicate that the specified task is installed with its header in pool (the dynamic storage region).

User Action: None.

XXX—Task not suspended

Explanation: The task specified in the RESUME command line was not suspended.

User Action: Be sure you specified the correct task name.

XXX—Task <taskname> has outstanding I/O

Explanation: A system cannot be saved if a task is waiting for I/O to complete.

User Action: Wait for the I/O to complete, then reenter the command.

XXX—Task <taskname> is active and checkpointed

Explanation: You cannot save a system if it contains an active and checkpointed task. This restriction prevents a possible system failure because, if the task was installed in another system image file, the task image could be corrupted when the task was run in the second system.

User Action: Wait for the task to finish executing, then reenter the SAVE command.

XXX—Task <taskname> is connected to an interrupt vector

Explanation: You attempted to save the system, but a task is linked to an interrupt vector. This cannot be done. (See the preceding message.)

User Action: Disconnect the task from the interrupt vector or abort it, then reenter the SAVE command line.

XXX—Task <taskname> not installed from an LB:

Explanation: All tasks must be installed from an LB. Use the TAS command to determine which tasks are not.

User Action: Reenter the SAVE command line after removing the tasks or installing them from an LB.

XXX—Task or region in process of loading

Explanation: You attempted to load a task or region that is currently being loaded into memory.

User Action: Wait for the load operation to complete.

XXX—Task stopped for IO or not stopped

Explanation: You attempted to unstop a task that has not been stopped by the STOP command or the Executive Directive Stop (STOP\$).

User Action: None. The task continues to execute.

Task <taskname> terminated on processor <processorname> and with pending I/O requests

Explanation: A task with pending I/O requests was aborted.

User Action: None. This is an informational message.

XXX—Task too big for partition, task removed - <taskname>

Explanation: The current CPU has less memory than the system image file. This message indicates that the last partition has contracted such that the indicated task cannot fit into it, even if everything else is removed from the partition.

User Action: To run the task *taskname*, you must boot a system with more memory.

XXX—Tasks installed in partition

Explanation: You attempted to eliminate a partition that contains installed tasks.

User Action: Remove the installed tasks, then reenter the command.

T-bit trap or BPT execution

Explanation: This is a TKTN message. The task either set the T-bit in the Processor Status Word (PSW) or executed a Breakpoint Trap instruction, and you did not specify an SST routine to process the trap.

This error can occur when you attempt to execute a task that switches to system state but that was not linked as a privileged task.

User Action: If the task executed the EMT accidentally, this error is due to a programming error. If so, correct the error, then reenter the command. However, if you intentionally designed the task to use EMT instructions for internal communication, this error is due to a lack of an SST routine for non-RSX EMT instructions. To allow the task to handle EMT instructions, modify the task to include an SST routine.

XXX—Terminal allocated to other user

Explanation: The issuing terminal is already allocated to another user. You cannot log in on a terminal allocated to someone else.

User Action: Wait for the other user to deallocate the terminal, or use another terminal to log in to the system.

XXX—Terminal not a console

Explanation: The BRK command must be issued from the console terminal.

User Action: Issue the command from a console terminal.

XXX—Terminal not logged in

Explanation: You specified a terminal that is not currently logged in to the system.

User Action: Use the MCR command DEV /LOG to obtain a list of terminals currently logged in to the system. Then, specifying one of the terminals listed, reenter the command line. Alternately, you can log in the terminal from which you want to make the assignment and reenter the command line.

XXX—That ACD is not installed

Explanation: You tried to remove (or to link a terminal to) an ACD that is not currently installed.

User Action: If you are a privileged user, install an ACD then remove (or link) it to a terminal. If you are a nonprivileged user, have a privileged user install the ACD for you, then remove (or link) your terminal to it.

XXX—This program must be invoked as an MCR function

Explanation: The task must be installed with the task name . . . HOM or . . . INI.

User Action: Install the task with the appropriate task name, then invoke it by using the name (that is, INI or HOM).

XXX—Timeout on response

Explanation: You did not respond to the prompt before the timeout count elapsed. The timeout count is specified when the task is built.

User Action: Reenter the command as soon as the prompt appears.

XXX—TI redirect error

Explanation: You attempted to redirect the pseudo device TI.

User Action: None. This device cannot be redirected.

TI: virtual terminal eliminated

Explanation: The terminal from which the task was initiated (pseudo device TI) was a virtual terminal that has since been eliminated. This happens to an offspring task when its parent task issues an Executive Eliminate Virtual Terminal (ELVT\$) directive, exits, or aborts. The offspring task cannot continue running without a TI, so it is aborted.

This is a TKTN message.

User Action: Ensure that all offspring tasks have completed before aborting the parent task.

XXX—Too many common block requests

Explanation: A task made more than seven requests for common blocks.

User Action: None. A task is limited to seven requests.

XXX—Too many devices attached, no further attach messages

Explanation: DMO issues this message when eight (or more) devices are attached during a DMO /USER operation. The message is issued only when the eighth device is attached; it is not issued again if more devices are attached.

User Action: Wait for the tasks to detach the devices, then reenter the command.

XXX—Too many LUNs

Explanation: A task requested more than 255₁₀ Logical Unit Numbers (LUNs) to be assigned.

User Action: None. A task is limited to 255₁₀ LUN assignments.

XXX—Too many symbols of the form \$xxTMO in file <filename>

Explanation: LOAD is attempting to extract global symbols of the form \$xxTMO from the driver's symbol definition file. There are more symbols of this form than LOAD can process.

User Action: See the *RSX-11M-PLUS and Micro/RSX Guide to Writing an I/O Driver* for more information.

Trap execution

Explanation: This is a TKTN message. The task executed a Trap instruction and you did not specify a synchronous system trap (SST) routine to process the trap.

This error can occur when you attempt to execute a task that switches to system state but that was not linked as a privileged task.

User Action: If the task executed the EMT accidentally, this error is due to a programming error. If so, correct the error, then reenter the command. However, if you intentionally designed the task to use EMT instructions for internal communication, this error is due to a lack of an SST routine for non-RSX EMT instructions. To allow the task to handle EMT instructions, modify the task to include an SST routine.

XXX—TT redirect error

Explanation: You attempted to redirect a terminal to the null device.

User Action: None. You cannot redirect a terminal to a null device.

XXX—Undefined density selection

Explanation: The command line specified an illegal density value.

User Action: Reenter the command, specifying a valid density for the device type.

XXX—Unexpected DTRG directive error

Explanation: While attempting to delete an Ancillary Control Processor (ACD), the Executive directive Detach Region (DTRG\$) failed.

User Action: Submit a Software Performance Report (SPR) to DIGITAL.

XXX—Unit allocated to or in use by another user

Explanation: Another user has allocated the device or a task has the unit attached.

User Action: Verify that the volume is loaded in the correct unit, that the correct unit is specified, and that no other user has allocated the device.

XXX—Unit does not support 800 bpi

XXX—Unit does not support 1600 bpi

XXX—Unit does not support 6250 bpi

Explanation: You specified a density (bpi) for a drive that does not support that density.

User Action: Reenter the command, specifying the correct density.

XXX—Unit does not support density switch

Explanation: The command line specified multiple densities for a device that does not have multiple density capability.

User Action: Reenter the command, without specifying the /DENS keyword.

XXX—Unit does not support high/low density selection

Explanation: You specified high or low density for a device for which the HIGH and LOW options (for the /DENS keyword) are undefined.

User Action: Reenter the command, specifying the correct density.

XXX—Unit is not at low density

Explanation: The command line specified that a diskette in an RX02 drive be initialized at low density, but the diskette was formatted at high density.

User Action: Reenter the command, specifying the HIGH density option with the /DENS keyword.

XXX—Unit is not at high density

Explanation: The command line specified that a diskette in an RX02 drive be initialized at high density, but the diskette was formatted at low density.

User Action: Reenter the command, specifying the LOW density option with the /DENS keyword.

XXX—Unit offline

Explanation: You specified a device unit that was not on line or that was in use for privileged diagnostic operations.

User Action: Specify another unit or, if the unit becomes available, place the device on line with the reconfiguration services. Then, reenter the command line. (For more information on Reconfiguration Services, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.)

XXX—Unit specified more than once in multivolume set

Explanation: A device can only be specified once for a multivolume tape set.

User Action: Reenter the command, specifying each unit only once in the command line.

XXX—Unknown ATTACH directive error

Explanation: While attempting to delete an Ancillary Control Processor (ACD), the Executive directive Attach Region (ATRG\$) failed.

User Action: Submit a Software Performance Report (SPR) to DIGITAL.

XXX—Unknown CRAW directive error

Explanation: While attempting to map an ACD region, the Executive directive Create Address Window (CRAW\$) failed.

User Action: Submit a Software Performance Report (SPR) to DIGITAL.

XXX—Unknown HELP qualifier

Explanation: The help file does not contain the last qualifier displayed in the command line below the error message.

User Action: Make sure you typed the qualifier name correctly. If the error persists and the qualifier is part of a user-written help file, check the file to be sure the format is valid. If this error occurs with the help files supplied by DIGITAL, submit a Software Performance Report (SPR).

Unknown program detected fault

Explanation: A task issued an Executive Breakpoint or Message (BOM\$) directive specifying a fault error code incorrectly.

If this error occurs in user-written code, it indicates a programming error. If it occurs in code supplied by DIGITAL, the task may have been built for a more recent version of the RSX-11M-PLUS operating system.

User Action: Correct the error or rebuild the task for the correct version of RSX-11M-PLUS.

XXX—Unlink was rejected by the terminal driver

Explanation: The terminal driver would not allow the terminal to unlink from the ACD. The terminal may not be available.

User Action: Wait for the terminal to become available, then reenter the command.

... <ddnn:> —Unrecoverable hardware device error Unrecoverable error

Explanation: Error Logging recorded an unrecoverable hardware error.

User Action: None. This is a TKTN message.

XXX—Unrecovered device error

Explanation: After the standard number of retries, the I/O operation still could not be successfully completed. This error message usually indicates an error in the media.

User Action: Correct the problem and reenter the command line.

XXX—User D-space not supported

Explanation: You attempted to install a task with separate instruction and data space on a system that does not support user data space.

User Action: Select user data space as a system generation option.

XXX—User logged on terminal

Explanation: You attempted to allocate a terminal that has been logged in by another user. Logged in terminals cannot be allocated.

User Action: Use the MCR command DEV/LOG to determine which terminals are currently logged in. Allocate a terminal that is not logged in.

XXX—User not logged in

Explanation: You entered a command at a terminal that is not logged in to the system.

User Action: Log in to the system, then reenter the command.

XXX—User not receiving messages

Explanation: The terminal to which the message was sent has been set NOBROADCAST with the SET /NOBRO command.

User Action: None. You cannot broadcast a message to a terminal that has been set NOBROADCAST.

XXX—Value of <INF + 5> exceeds /MXF

Explanation: The value specified with the /INF keyword plus 5 (for the five system files) is greater than the maximum number of files specified with /MXF.

User Action: Specify a smaller value for /INF or a larger value with /MXF.

XXX—Virtual terminal error

Explanation: An attempt was made to set a terminal characteristic for a virtual terminal.

User Action: None. This cannot be done.

XXX—Volume already mounted

Explanation: The volume is already mounted as nonshareable, or it is a public volume and cannot be mounted a second time.

User Action: None. The volume is mounted.

XXX—Volume is single directory only

Explanation: The specified device does not support multiple directories. UFD cannot create directories on such a device.

User Action: Reenter the command, specifying a different device.

XXX—Volume mounted but cache not activated

Explanation: You receive this informational message when the disk you specified has been mounted but data caching could not be enabled for the disk. This message may be preceded by a message that tells you the specific reason why data caching could not be enabled for your disk.

User Action: Resolve the problem, then activate caching with the SET /CACHE command.

XXX—Volume mounted Files-11

Explanation: An attempt was made to initialize a mounted Files-11 volume.

User Action: None. Mounted Files-11 volumes cannot be initialized.

XXX—Volume mounted foreign with ACP

Explanation: The command line specified a device that was mounted foreign but with an ACP. To initialize a volume on an RSX-11M-PLUS operating system, you cannot include an ACP name when the volume is mounted as foreign.

User Action: Be sure you specified the correct device name. If so, dismount the volume, then remount it as a foreign, using the /FOR keyword.

XXX—Volume name too long - (volume name)

Explanation: The command line specified a volume label that exceeded six characters for magnetic tape devices or 12 characters for disk or DECtape devices.

User Action: Reenter the command line, specifying a shorter volume name.

XXX—Volume not mounted <ddnn>

Explanation: The specified device was not mounted. For example, you attempted to dismount or to create a UFD on a volume that is not mounted; a volume on which a UFD is to be created must be mounted.

User Action: To determine what devices are mounted, use the MCR command DEV. If you entered the wrong device name, reenter the command and specify the correct device.

XXX—Volume not mounted by TI:

Explanation: This error has occurred for one of the following reasons:

- You specified a dismount operation for a volume that was not mounted from the issuing terminal.
- You specified the wrong device name for a magnetic tape set.

User Action: To dismount a volume that was mounted from another terminal, enter the command from a privileged account and specify the /TERM keyword. To dismount a tape set, specify the correct device name.

XXX—Volume still mounted on <ddnn:>

Explanation: The volume on device ddnn: was still mounted when the SAVE command line was issued. A system with mounted volumes cannot be saved.

User Action: Use the DEVICES command to determine which volumes are mounted, then dismount the volumes and reenter the SAVE command line.

XXX—Volume structure not supported

Explanation: Your operating system does not support the Files-11 structure level of the volume being mounted.

In response to a SAVE command, while rebooting a saved system, the system determined from the disk's home block that the disk's structure is not supported by the current version of your operating system. This error causes the system to halt.

User Action: Reboot the system.

XXX—Warning—All units of multiunit drive will spin down <ddnn:>

Explanation: When a unit of a multiunit device is spun down (by a privileged user), all other units of the device are also spun down.

User Action: Before dismounting a multiunit device, be sure that none of the units are currently in use to avoid disrupting users.

XXX—Warning—Block 0 is bad

Explanation: Block 0 of the specified volume, the boot block, was bad. Therefore, a bootable image cannot be placed on this volume.

User Action: None. INI continues and initializes the volume.

XXX—Warning—Boot block write error

Explanation: An error was detected in writing the volume boot block.

User Action: Replace the disk in the drive with a new disk, or specify a different device.

Warning—Crash device not found in system tables:

R0=device type (ASCII)

R1=logical unit number

Enter CSR address in R2, physical unit number in R1 and type P

Explanation: The device specified as a crash device is not included in the system configuration. This is not a fatal error, but it requires attention if you want the crash device to work.

If support for the Executive Debugging Tool (XDT) was included in your system during system generation, this error passes control to XDT.

User Action: Be sure that the Control Status Register (CSR) and vector addresses for the crash device are correct, then continue. If your system includes XDT support, check the CSR and vector addresses, then type P to continue.

XXX—WARNING, Crash dump support is inactive

Explanation: This error is caused by one of the following actions:

- Attempting to unload the crash driver when it is not loaded
- Attempting to load the crash driver when it could not be loaded
- Attempting to display the crash driver when it is not loaded

User Action: None. Crash dump support is not enabled.

XXX—Warning -- Default device not in system

Explanation: Your default system device is not in the system, so HELLO did not make the assignment. However, you are still logged in.

User Action: Use the MCR command ASSIGN to establish your default system device (see Section 3.7).

Warning—Device <ddnn> —address above V\$\$CTR

Explanation: You attempted to boot the system from a device that has a vector address greater than the maximum vector address specified during system generation. The system may continue to operate.

User Action: To ensure that the system functions normally, do one of the following:

- Repeat system generation, specifying a higher vector address.
- Move the device to a lower vector address; then, use the VMR command CON SET to modify the device database for the system image.

Warning—Device <ddnn> —UNIBUS run not accessible

Explanation: (Multiprocessing systems only.) You attempted to boot the system from a device that is configured on an inaccessible UNIBUS run.

User Action: Reenter the BOOT command, specifying a device that is directly connected to a CPU.

Warning—Device <ddnn> —Vector in use

Explanation: You attempted to boot the system from a device which requires a vector address that is already in use.

If you specified the same vector address for both the system device and the console terminal, this error indicates an invalid system configuration. The system image may be corrupt.

User Action: One of the following:

- Repeat system generation, specifying different vector addresses for the boot device and console terminal.
- Move the boot device or console terminal to a different vector address; then, use the VMR command CON SET to modify the device database for the system image.

XXX—Warning - KRB <name> interrupt vector <nnn> in use

Explanation: You attempted to load a driver that specifies an interrupt vector that is not pointing to an entry point address for a nonsense interrupt. This is usually caused by a previously loaded driver that has used this vector.

The LOA command correctly loads the driver, but the problem must be corrected before the device is brought on line.

User Action: Resolve the vector conflict before bringing the device on line.

XXX—Warning - KRB <name> interrupt vector <nnn> too high

Explanation: You attempted to load a driver that specifies an interrupt vector address that is higher than the highest permissible vector address in your system.

When you get this message, LOAD has loaded the driver correctly.

User Action: Use the reconfiguration services to adjust the vector address in the driver before placing the device on line. For more information on the reconfiguration services, see the *RSX-11M-PLUS and Micro/RSX System Management Guide*.

XXX—Warning - Loadable driver larger than 4K

Explanation: Loadable drivers can be up to 8K words in length. The driver must explicitly map to any location above 4K words.

User Action: Make sure your driver is written to map the additional 4K words of memory when needed.

XXX—(Warning) Nonexistent LUN assignment for task <taskname>

Explanation: The physical device to which SAVE was attempting to reassign a LUN does not exist in the booted system. This condition is resolved if the task performs a run-time assignment to the LUN; otherwise, the task will encounter an error condition when it attempts to use the LUN.

User Action: Use the VMR command REASSIGN to reassign the LUN to a device that exists in the booted system.

XXX—Warning—Privileged task overmaps the I/O page

Explanation: A privileged task is larger than 8K and therefore overlapped the I/O page. This message occurs if the task is installed with the /IOP=YES option (the default).

User Action: Install the task with the /IOP=NO option.

XXX—WARNING, System disk chosen as crash device

Explanation: You specified the system device as the crash dump device with the SET /CRASH_DEVICE keyword.

User Action: The system device will be loaded as the crash dump device, but it is recommended that you do not use it as such. Reenter the command and specify a different device.

XXX—Warning—Tasks installed from <ddnn:>

Explanation: The disk being dismounted has tasks installed from it.

User Action: Although DMO dismounts the disk, you can run the tasks until the disk spins down. Use the MCR command TAS to obtain a list of installed tasks.

XXX—Warning—Tasks installed from <ddnn:> - Tasks disabled

Explanation: The disk is being dismounted with the /LOCK=N or LOCK=U option rather than with /LOCK=V. Tasks installed from the disk are no longer executable.

User Action: To allow task installed from the disk to execute, specify the /LOCK=V option in the DMO command line.

XXX—Warning—This volume is not backwards compatible

Explanation: INI has created a structure level 402 volume because you specified a value greater than 25,593 with the /MXF keyword. Level 402 volumes cannot be used on versions of RSX-11M prior to Version 4.0 or on versions of RSX-11M-PLUS prior to Version 3.0.

User Action: None. This is an informational message.

XXX—WARNING - Unable to execute login commandfile

Explanation: HELLO was unable to pass your login command file (LOGIN.CMD) to MCR. Pool space may be low.

User Action: Wait a few minutes, then reenter the command. If the error persists, see your system manager.

XXX—Warning—Volume will not spin down <ddnn:>

Explanation: A nonprivileged user attempted to spin down the removable unit of a multiunit device, either implicitly with the DMO command or explicitly by specifying /LOCK=U in the command line. Only privileged users can spin down multiunit devices. (For nonprivileged users, the volume is logically dismounted but not spun down.)

User Action: To spin down a multiunit device, log in to a privileged account and reenter the command.

XXX—Write attributes failure

Explanation: An error was encountered while the attributes of either the MFD or the newly created UFD were being written. This indicates low pool conditions.

User Action: Delete the directory, then reenter the command after pool is restored.

... <ddnn:> —Write back caching data lost. Unit write locked

Explanation: This is a TKTN message. When the specified device was brought on line, RCT detected that its cache contained corrupted data, so the device was write-locked for protection.

Every time the device is brought on line, TKTN displays this message.

User Action: After correcting the cache data, mount the device as write-enabled (MOUNT /WRITE).

XXX—Write check not supported for device

Explanation: You attempted to support write checking on a device that does not support it.

User Action: See the description of the SET command /WCHK keyword for a list of valid devices.

XXX—Wrong volume label

Explanation: You specified a volume label in the command line that does not match the current label for the volume.

User Action: Reenter the command line with the correct volume label name. If you are a privileged user, you can specify the /OVR keyword to override label processing.

xxxxxx—Wrong volume mounted on drive <ddnn:>

Explanation: A subsequent volume of a multivolume tape set has been placed on line, but the ACP does not think it is the correct volume. This condition can occur for the following reasons:

- The MOUNT command line specified explicit volume IDs and the volume that should be mounted is not the one on the drive.
- The ACP has learned the volume sequence of the current tape set because of previous processing while the set has been mounted, and the volume that should be mounted is not the one on the drive.
- The volume on the drive is not in ANSI format.
- A hardware error prevented the ACP from reading any of the labels in the label set at the beginning of the volume.
- Some other inconsistency in the volume label set has been encountered.

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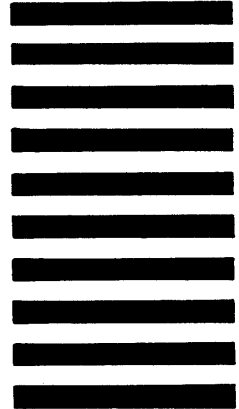
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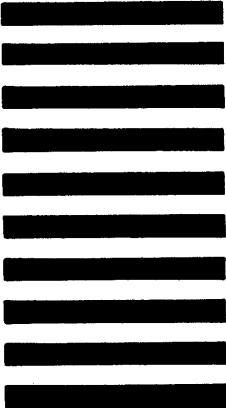
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