

# RSX-11M-PLUS Mini-Reference

Order No. AV-H435F-TC

**digital**<sup>TM</sup>  
software

# RSX-11M-PLUS Mini-Reference

Order Number. AV-H435F-TC

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# Preface

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## Manual Objectives

This manual is a quick reference guide to the RSX-11M-PLUS operating system. It lists the commands and procedures for operating the most commonly used parts of the system: command line interpreters (CLIs), utilities, and some tools for program development and system management.

## Intended Audience

This manual is intended for users who are already familiar with the operating system. It lists information that is explained in other manuals in the RSX-11M-PLUS documentation set.

# CONVENTIONS

The following conventions are used in this manual:

Convention	Meaning
>	A right angle bracket is the default prompt for the Monitor Console Routine (MCR), which is one of the command interfaces used on RSX-11M-PLUS operating systems. All systems include MCR.
\$	A dollar sign followed by a space is the default prompt of the Digital Command Language (DCL), which is one of the command interfaces used on RSX-11M-PLUS operating systems. Many systems include DCL.
MCR>	This is the explicit prompt of the Monitor Console Routine (MCR).
DCL>	This is the explicit prompt of the Digital Command Language (DCL).
xxx>	Three characters followed by a right angle bracket indicate the explicit prompt for a task, utility, or program on the system.
UPPERCASE	Uppercase letters in a command line indicate letters that must be entered as they are shown. For example, utility switches must always be entered as they are shown in format specifications.
command abbreviations	Where short forms of commands are allowed, the shortest form acceptable is represented by uppercase letters. The following example shows the minimum abbreviation allowed for the DCL command DIRECTORY:  \$ DIR

Convention	Meaning
lowercase	Any command in lowercase must be substituted for. Usually the lowercase word, such as <i>filespec</i> , identifies the kind of substitution expected.
/keyword, /qualifier, or /switch	A command element preceded by a slash (/) is an MCR keyword; a DCL qualifier; or a task, utility, or program switch. Keywords, qualifiers, and switches alter the action of the command they follow.
parameter	Required command fields are generally called parameters. The most common parameters are file specifications.
[option]	Brackets indicate optional entries in a command line or a file specification. If the brackets include syntactical elements, such as periods (.) or slashes (/), those elements are required for the field. If the field appears in lowercase, you are to substitute a valid command element if you include the field. Note that when an option is entered, the brackets are not included in the command line.
[,...]	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.

## Conventions

Convention	Meaning
: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). In DCL, the equal sign (=) can be substituted for the colon to introduce arguments. COPIES=3 and COPIES:3 are the same.
( )	Parentheses are used to enclose more than one argument in a command line. For example:  SET PROT = (S:RWED,O:RWED)
,	Commas are used as separators for command line parameters and to indicate positional entries on a command line. Positional entries are those elements that must be in a certain place in the command line. Although you might omit elements that come before the desired element, the commas that separate them must still be included.

Convention	Meaning
[g,m] [directory]	<p>The convention [g,m] signifies a User Identification Code (UIC). The g is a group number and the m is a member number. The UIC identifies a user and is used mainly for controlling access to files and privileged system functions.</p> <p>This may also signify a User File Directory (UFD), commonly called a directory. A directory is the location of files.</p> <p>Other notations for directories are: [ggg,mmm], [gggmmm], [ufd], [name], and [directory].</p> <p>The convention [directory] signifies a directory. Most directories have 1- to 9-character names, but some are in the same [g,m] form as the UIC.</p> <p>Where a UIC, UFD, or directory is required, only one set of brackets is shown (for example, [g,m]). Where the UIC, UFD, or directory is optional, two sets of brackets are shown (for example, [[g,m]]).</p>
filespec	<p>A full file specification includes device, directory, file name, file type, and version number, as shown in the following example:</p> <pre>DL2: [46,63] INDIRECT.TXT;3</pre> <p>Full file specifications are rarely needed. If you do not provide a version number, the highest numbered version is used. If you do not provide a directory, the default directory is used. Some system functions default to particular file types. Many commands accept a wildcard character (*) in place of the file name, file type, or version number. Some commands accept a file specification with a DECnet node name.</p>

## Conventions

Convention	Meaning
.	A period in a file specification separates the file name and file type. When the file type is not specified, the period may be omitted from the file specification.
;	A semicolon in a file specification separates the file type from the file version. If the version is not specified, the semicolon may be omitted from the file specification.
. . .	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.
KEYNAME	This typeface denotes one of the keys on the terminal keyboard, for example, the RETURN key.
black ink	In examples, what the system displays is printed in black.  In interactive examples, what the user types is printed in red. System responses appear in black.
<code>xxx</code>	A symbol with a 1- to 3-character abbreviation, such as <code>␣</code> or <code>RET</code> , indicates that you press a key on the terminal. For example, <code>RET</code> indicates the RETURN key, <code>LF</code> indicates the LINE FEED key, and <code>DEL</code> indicates the DELETE key.
<code>CTRL/G</code>	The symbol <code>CTRL/G</code> means that you are to press the key marked CTRL while pressing another key. Thus, <code>CTRL/Z</code> indicates that you are to press the CTRL key and the Z key together in this fashion. <code>CTRL/Z</code> is echoed on some terminals as <code>^Z</code> . However, not all control characters echo.

---

# Online Help Files



## ONLINE HELP FILES

Extensive help files for the utilities, the Monitor Console Routine (MCR), the Digital Command Language (DCL), and many other system components are available to you at your terminal.

For help in logging in to the system, type HELP HELLO (from MCR) or HELP LOGIN (from DCL or MCR). You will need a User Identification Code (UIC) and password to log in.

RSX-11M-PLUS systems have two major command line interpreters or CLIs: MCR and DCL. Once you log in, your terminal is set to either MCR or DCL. All terminals are set to MCR prior to logging in.

From either an MCR terminal or a DCL terminal, type HELP for information on commands, or type HELP MORE for information on tasks and utilities.

The general form of the HELP command is as follows:

```
>HELP[/keyword][/qualifier][qualifier 2][.../qualifier]
$ HELP[/qualifier] [/qualifier] [/qualifier 2][.../qualifier]
>HELP % [/qualifier][/qualifier 2][.../qualifier]
```

DCL users can also obtain help while entering a command by typing a question mark (?) in response to any DCL prompt. Once the help text has been printed on the terminal, the prompt returns and you can continue to enter the command.

Normally, HELP text is displayed on your screen, but the /OUT[PUT]:filespec qualifier permits you to name a file to which the HELP text is to be written from a logged-in terminal.

If you do not include the /CLI qualifier to the HELP command, the default is the name of the CLI to which your terminal is set.

Except for /OUT[PUT], each of the qualifiers in the following examples has the effect of specifying a file where help can be found. The MCR form of these qualifiers is limited to the first three characters. The DCL form includes the entire qualifier name.

## Examples

>HELP/LOC[AL] [param[s]]

or

>HELP % [param[s]]

Specifies that the HELP text is in the file HELP.HLP in the default directory on the default volume. HELP/LOC and HELP % are the same.

>HELP/GRO[UP] [param[s]]

Specifies that the HELP text is in the file HELP.HLP in the directory [current group,1] on the default volume.

>HELP/CLI:cliname [param[s]]

Specifies that the HELP text begins in the file LB:[1,2]cliname.HLP. This qualifier is for installations with alternate CLIs for which HELP is provided.

>HELP/MCR [param[s]]

Specifies that the HELP text begins in the file LB:[1,2]MCR.HLP. This is the default for terminals set to MCR.

>HELP/DCL [param[s]]

Specifies that the HELP text begins in the file LB:[1,2]DCL.HLP. This is the default for terminals set to DCL.

>HELP/FIL[E]:filespec [param[s]]

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.

>HELP/xxx [param[s]]

Specifies that the HELP text is located in the file LB:[1,2]xxx.HLP, where xxx is the name of the CLI (equivalent to HELP/CLI:cliname).

---

# Command Line Interpreters





## Monitor Console Routine (MCR) Commands

### ALLOCATE CHECKPOINT SPACE (P) ACS ddnn:/BLKS=n.

Allocates or discontinues a checkpoint file on disk for systems that support the dynamic allocation of checkpoint space. The /BLKS keyword specifies the number of blocks to be allocated to the checkpoint file. Use n=0 to discontinue use of a checkpoint file.

### ALTER ALT taskname[/keyword] (P)

#### Keywords

/PRI=static and running priority

/RPRI=running priority only

/TERM=ttnn: = task priority from a specified terminal

Changes the static or running priority of an installed task.

### ANCILLARY CONTROL DRIVER ACD function

#### Functions (P)

INSTALL filename AS NUMBER n [ASSIGN logicalname]

REMOVE NUMBER [n] [logicalname]

Loads and unloads character translation routines, so terminals that conform to other standards can use the Digital Multinational Character Set (MCS).

#### Functions (NP)

LINK tttn: TO NUMBER [n] [logicalname]

UNLINK tttn:

Links or unlinks the specified routine to the specified terminal.

### ASSIGN ASN equivalencename=logicalname [/keyword] ASN =[logicalname] [/keyword] ASN [logicalname] [/keyword]

#### Keywords

/ALL (P)

/FINAL (P)

/GLOBAL (P)

/GROUP (P)

/LOGIN (P)

#### Comments

Synonym for /GLOBAL

**/SYSTEM (P)**  
**/TERM=ttnn: (P)**

Assigns, deletes, or displays individual, session local, session login, group, system, and global logical-name assignments if extended logical name support was selected during system generation or logical device assignments. The first format shown assigns a logical name. The second (with no *equivalencename* parameter) deletes a logical name. The third [with no equal sign (=)] displays logical-name assignments. In displaying assignments, you can substitute the percent sign wildcard character (%) for one character in the name and the asterisk (\*) for zero or more characters. The display lists the name of the logical name table as well as the assignment. If you use quotation marks (") around the logical name, the ASN command interprets them literally.

**BLOCK BLK [taskname][/TERM=ttnn:]**

Declares that the specified task is ineligible to execute or to compete for memory resources. Nonprivileged users can block only tasks running from their own terminals. Privileged users can block any task. However, Ancillary Control Processor (ACP) tasks, Command Line Interpreter (CLI) tasks, tasks being aborted, and halted tasks cannot be blocked.

**BOOT BOO [filespec] (P)**

Bootstraps a system that exists as a task image file on a Files-11 volume.

**BREAKPOINT TO XDT (P) BRK**

Passes control to the Executive Debugging Tool (XDT).

**BROADCAST BRO ttnn:message**  
**BRO @filespec**  
**BRO ALL:message (P)**  
**BRO LOG:message (P)**  
**BRO user-name message**

**(Requires Resource Accounting)**

Displays the specified message at one terminal for a nonprivileged user or at a number of terminals for a privileged user.

**BYE [/keyword]**

**Keyword**

/[NO]HOLD

Logs the user out of a system, optionally specifying that the full-duplex terminal driver not hang up a remote line or that DECnet not break the connection.

**CANCEL CAN taskname**

Cancels time-based initiation of a task. Privileged users can cancel any task, but nonprivileged users can cancel only tasks that they initiated.

**COMMON BLOCK DIRECTORY CBD [command-region-name[/TASKS]]**

Displays information about all entries or a specific entry in the Common Block Directory (CBD). Also, CBD with the /TASKS keyword displays the name of each task attached to a specific common region and the number of times the task has mapped to the region.

**COMMAND LINE INTERPRETER CLI/keyword=cliname**

**Keywords**

/DISABLE=cliname	/ELIM=cliname or ELIM=*
/ENABLE=cliname	/INIT=cliname[/subkeyword(s)]
/MESSAGE=cliname:"message-text"	
/SHOW	/UNOVR

**Subkeywords**

/CPR="string"	/CTRLC
/DISABLE	/DPR="string"
/LOG	/MESSAGE
/NULL	/PRIV
/PROMPT	/QUIET
/RESTRICT	/SNGL
/TASK=taskname	

Sets up for use a command line interpreter (CLI) other than MCR, such as DCL or a user-written CLI.

**CLOCK QUEUE CLQ[UEUE]**

Displays on the entering terminal information about tasks currently in the clock queue.

**DEALLOCATE DEA [ddnn:]**

Releases a private (allocated) device, where *ddnn:* is the device name and unit number. Privileged users can deallocate any device, but nonprivileged users can only deallocate devices that they have allocated. If no device is specified, the command deallocates all of the user's allocated devices.

**DEBUG DEB [taskname]**

Allows you to debug a task by forcing the task to trap to a debugging aid. Nonprivileged users can debug only tasks that they initiated. Privileged users can debug any task.

**DEFINE LOGICALS DFL equivalencename=logicalname[/keyword]  
 DFL =[logicalname][/keyword]  
 DFL [logicalname][/keyword]**

Keywords	Comments
/ALL (P)	
/FINAL (P)	
/GBL (P)	Synonym for /SYSTEM
/GROUP (P)	
/FINAL (P)	
/LOGIN (P)	
/SYSTEM (P)	
/TERM=ttnn: (P)	

Defines, deletes, or displays individual, session local, session login, group, and system logical-name assignments. The first format shown assigns a logical name. The second (with no *equivalencename* parameter) deletes a logical name. The third [with no equal sign (=)] displays logical names. In displaying assignments, you can substitute the percent sign wildcard character (%) for one character in the name and the asterisk (\*) for zero or more characters. The display lists the name of the logical-name table as well as the assignments. If you use quotation marks around the name, the DFL command removes them.



flags only for their own login group. Any user can display all of the group global event flags.

**HELLO/LOGIN**    **HEL** [uic[/password]]  
                   **HEL** [username[/password]]  
                   **LOG** [uic[/password]]  
                   **LOG** [username[/password]]

Logs you in to a terminal to access a multiuser system.

**HELP**    **HELP** [/keyword] [/qualifier][/**qualifier 2**][.../**qualifier 9**]  
           **HELP** % [/**qualifier**][/**qualifier 2**][.../**qualifier 9**]

**Keywords**

/CLI:cliname	/DCL
/FIL:[filespec]	/GRO
/LOC	/MCR
/OUT:filespec	/xxx

Displays the contents of a help file on the issuing terminal.

**HOME**    **HOM** ddnn:volume-label/keywords

**Keywords**

/DENS=density	/EXT=block-count
/FPRO=[sys,own,grp,wor]	/LRU=directory-count
/MXF=file-count	/NAME=new-volume-label
/OVR (P)	/OWNER=[g,m]
/PRO=[sys,own,grp,wor]	/UIC=[g,m]
/VI	/WIN=retrieval-pointer-count

Modifies certain fields in the home block of a Files-11 disk volume.

**INITIALIZE VOLUME**    **INI** ddnn:["]volume-label["][/keywords]

**Keywords**

/ACCESS="character"	/BAD=[option]
/DENS=density	/EXT=block-count
/FPRO=[sys,own,grp,wor]	/INDX=index-file-position
/INF=initial-index-file-size	/LRU=directory-count
/MXF=file-count	/OWNER=[g,m] or OWNER="owner"
/POS	/PRO=[sys,own,grp,wor]



## MOUNT

Allows the file system software access to a physical device.

### Files-11 Disk or DECTape Format

MOU ddnn:[label][/**keywords**]

#### Keywords

/ACP=option (P)	/CACHE=option
/DENS=density	/EXT=block-count
/FOR	/FPRO=[sys,own,grp,wor]
/LOCK=option	/LRU=directory-count
/OVR (P)	/PARM="user parameters"
/PRO=option	/PUB
/[NO]SHARE	/UIC=[g,m]
/UNL	/VI
/[NO]WAIT	/WIN=option
/[NO]WRITE	

### Files-11 (ANSI) Magnetic Tape Format

MOU device-list:[file-set-ID][/**keywords**]

#### Keywords

/ACP=option (P)	/BS=n
/CC=option	/DENS=density
/FOR	/FPRO=[sys,own,grp,wor]
/[NO]HDR3	/[NO]LABEL
/LOCK=option	/OVR (P)
/OVRACC (P)	/OVREXP (P)
/OVRFSID (P)	/PARM="user parameters"
/PRO=option	/PUB
/RS=n	/[NO]SHARE
/TR=option	/UIC=[g,m]
/VI	/VOL=(list)
/[NO]WAIT	/[NO]WRITE

**OPEN REGISTER (P)** OPE mem-addr[+/-n][/**keyword**]  
mem-addr /contents [ctrl-char][value]term

#### Keywords

/AFF=[CPx,UBy] (Multiprocessor only)	/CPU=CPx
/DRV=dd:	/KNL
/KNLD	/KNLI
/REG=region-name	/TASK=taskname
/TASKD	/TASKI

Allows examination and optional modification of a register in memory.

## Monitor Console Routine (MCR) Commands

### **PARTITION DEFINITIONS    PAR**

Displays a description of each memory partition in the system.

### **REASSIGN (P)    REA taskname lun dev**

Reassigns a task's static logical unit numbers (LUNs) from one device to another.

### **REDIRECT (P)    RED newdev=olddev**

Redirects all I/O requests from one physical device unit to another (from 0 to n).

### **REMOVE (P)    REM taskname                   REM region-name/keyword**

#### **Keyword**

/REG

Deletes an entry (task name) from the System Task Directory (STD) and thereby removes the task from the system. The optional device specification indicates the device from which the task was installed. The /REG keyword removes regions from the Common Block Directory (CBD).

### **RESUME    RES taskname [/keyword]**

#### **Keyword**

/TERM=tttn: (P)

Allows nonprivileged users to continue execution of a suspended task that was initiated from the entering terminal. Privileged users can resume any suspended task.

**RUN    RUN taskname [/EST=option][/UIC=[g,m]] (/UIC (P))  
          RUN taskname dtime [/RSI=magu][/UIC=[g,m]] (P)  
          RUN taskname sync [dtime][/RSI=magu][/UIC=[g,m]] (P)  
          RUN taskname atime[/RSI=magu][/UIC=[g,m]] (P)  
          RUN [ddnn:][d\$] filespec [/keywords]**

#### **Keywords**

/CKP=option

/EST=option

/IOP=option

/CMD="command-line"

/INC=size

/PAR=pname

/PMD=option	/PRI=number (P)
/ROPAR=pname	/SLV=option
/TASK=taskname	/TIME=nM or TIME=nS
/UIC=[g,m]	

Initiates execution of a task, either immediately or at one of several time-dependent intervals.

## SAVE (P) SAV [/keywords]

### Keywords

/CSR=x	/SFILE="filespec"
/MOU="string"	/WB

Copies the current system image into the system image file from which the current system was booted.

## SET SET /keyword=values

### Keywords

/[NO]ABAUD[=ttnn:]	/[NO]ANSI[=ttnn:]
/[NO]AVO[=ttnn:]	/[NO]BLKMOD[=ttnn:]
/[NO]BRO[=ttnn:]	/BUF=ddnn:[size]
/[NO]CACHE=option	/CHAR_LENGTH
/CLI=ttnn:[cli]	/COLOG
/CRASHDEV=ddnn:[CSRaddr]	/[NO]CRT[=ttnn:]
/CRASH_DEVICE=ddnn: [CSRaddr]	/DCL[=ttnn:]
/DEF=[ddnn:][directory]]	/[NO]DEC[ttnn:]
/[NO]EBC[=ttnn:]	/[NO]DPRO[=protection codes]
/[NO]EDIT[=ttnn:]	/[NO]ECHO[=ttnn:]
/[NO]FDX[=ttnn:]	/[NO]ESCSEQ[=ttnn:]
/HFILL=ttnn:[value]	/[NO]FORMFEED[=ttnn:]
/[NO]HOLD[=ttnn:]	/[NO]HHT[=ttnn:]
/[NO]HSYNC[=ttnn:]	/HOST[=node[:]]
/LIBUIC=[uic]	/INQUIRE
/[NO]LOGIN (P)	/LINES=ttnn:[value]
/[NO]MAIN=pname	/[NO]LOWER[=ddnn:]
[base:size:type]	/MAXEXT[=size] (P)
/MCR[=ttnn:]	/MAXPKT[=n]
/NETUIC=[g,m]	/[NO]NAMED
/NOPAR=pname	/NOCEX
/[NO]OVL[=ccn]	/[NO]OPT[=ddnn:opttyp:fairness- count]
/PAR=pname[:base:size[:type]]	/[NO]PARITY
/PASSWORD	/[NO]PASTHRU[=ttnn:]
/PLCTL=[high][:low][[:frsiz] [:basep]]] (P)	/POOL[=top]
	/[NO]PRINTER_PORT[=ttnn:]

## Monitor Console Routine (MCR) Commands

```
/[NO]PRIV[=ttnn:]           /[NO]PUB[=ddnn:]
/[NO]REGIS[=ttnn:]         /[NO]REMOTE[=ttnn:[speed]]
/RNDC[=nn]                 /RNDH[=nn]
/RNDL[=nn]                 /[NO]RPA[=ttnn:]
/SECPOL                    /[NO]SERIAL[=ttnn:]
/[NO]SLAVE[=ttnn:]        /[NO]SOFT[=ttnn:]
/SPEED=ttnn:[recv:xmit]   /SWPC[=nn]
/SWPR[=nn]                 /SYSUIC[=[g,m]]
/TERM=ttnn:[value]       /TOP=pname:value
/[NO]TYPEAHEAD            /[NO]TTSYNC[=ttnn:]
    [=ttnn:size]]        /UIC[=[g,m]:ttnn:]
/[NO]VFILL[=ttnn:]       /[NO]VTLOGON
/[NO]WCHK[ddnn:]         /[NO]WRAP[=ttnn:]
```

Affects characteristics of the system, tasks, and devices. Privileged users can alter the characteristics of any device or task, but nonprivileged users can alter only characteristics for devices and tasks allocated to them. All users can display information.

### SYSTEM SERVICE MESSAGE (P)   SSM message

Inserts text into the error log file.

### SWITCH REGISTER (P)   SWR SWR value SWR bitposition/keyword

#### Keywords

```
/CLE                        /DIS
/SET
```

Displays the current value, sets a bit, or clears a bit in the switch register.

### TASKLIST   TAL [taskname]

Displays the names and status of all tasks installed in the system or of a specific task.

### TASKLIST   TAS [taskname][/DEV=ddnn:]

Describes each task installed in the system, a specific task, or one or more tasks installed from a specific device.



## Monitor Console Routine (MCR) Commands

**UNSTOP    UNS taskname[/keyword]**

**Keyword**

**/TERM=tnn: (P)**

Continues execution of a task previously stopped internally by the Executive. Nonprivileged users can continue only tasks running from their own terminals. Privileged users can continue any task.



**File Qualifiers**

```

/ALL
/ACTIVE:(arg[,...])
    DEVICES
    TASKS
/BLOCK:n
/CLOCK_QUEUE
/CONTROLLERS
/DATA_STRUCTURES:(arg[,...])
    COMMAND_PARSER
    DEVICE
    PARTITION
    STATUS
    TASK
    UNIT

/DENSITY:n
/DEVICES
/DUMP[::(START:n,END:n[ADDRESS:n])]
/HEADERS
/KERNEL:(arg[,...])
    DATA:(START:n,END:n)
    INSTRUCTION:(START:n,END:n)
    REGISTERS

/PARTITION
/POOL
/SECONDARY_POOL[::(START:n,END:n)]
/[NO]SYSTEM
/TASKS:(arg[,...])
    ADDRESS:(NAME:name[,START:n,END:n])
    DATA:(NAME:name[,START:n,END:n])
    DIRECTORY
    INSTRUCTION:(NAME:name[,START:n,END:n])

```

Helps you determine the cause of system crashes by analyzing and formatting a memory dump created by the Executive Crash Dump Module.

**ANALYZE/ERROR\_LOG    ANALYZE/ERROR\_LOG[/qualifiers] ddnn:**

Command Qualifiers	Comments
/BRIEF	
/COMMAND:switchstring	Invokes predefined switch string
DAY	
MONTH	
WEEK	
SYSTEM	
/DEVICES[:devicelist]	

/ENTRY[:(start:end[,...])]	Specifies error log packet numbers
/FULL	
/INCLUDE:(arg[,...])	Specifies type of errors to report
ALL	
CONTROL	
MEMORY	
PERIPHERAL	
PROCESSOR	
SYSTEM_INFORMATION	
/NODETAIL	
/OUTPUT[:outputfile]	Writes report in file
/PREVIOUS_DAYS:n	
/REGISTERS	
/SERIAL_NUMBER:(arg[,...])	
PACK:n	
DRIVE:n	
/SINCE:dd-mmm-yy/THROUGH:dd-mmm-yy	
/STATISTICS:(arg[,...])	Writes report based on disk geometry
ALL	
ERROR	
DISK_GEOMETRY	
HISTORY	
NONE	
/THROUGH:dd-mmm-yy	
/TODAY	
/VOLUME_LABEL:volumelabel	
/[NO]WIDE	
/YESTERDAY	

**ANALYZE/MEDIA    ANALYZE/MEDIA[/qualifiers] ddnn:**

<b>Command Qualifiers</b>	<b>Comments</b>
/ALLOCATE=label	Prompts for bad block numbers to put in BADBLOCK.SYS and to enter in the bad block descriptor file
/BADBLOCKS	
/BADBLOCKS/EXERCISE	
/BADBLOCKS/NOEXERCISE	
/[NO]EXERCISE[=(n,m)]	
/OVERRIDE	
/RETRY	
/SHOW	

Allows you to identify and determine the number of bad blocks on a disk. ANALYZE/MEDIA determines if bad blocks exist on a disk volume and records their locations for use by the BACKUP and INITIALIZE commands.

**APPEND    APPEND[/qualifiers] infile[s] outfile**

<b>Command Qualifiers</b>	<b>Comments</b>
/DATE:dd-mmm-yy	Given day only
/EXCLUDE:filespec	Filespec can include wildcard characters
/NOWARNINGS	Suppresses error messages
/REWIND	Tape only; rewinds tape before beginning
/SHARED	Permits others to access file while you append it
/SINCE:dd-mmm-yy	From given day through current day
/SINCE:dd-mmm-yy/THROUGH:dd-mmm-yy	From given day through given day
/THROUGH:dd-mmm-yy	From beginning through given day
/TODAY	Today only

Appends to an existing sequential file records from one or more sequential files. The file specification for the /EXCLUDE qualifier can include wildcards. Data range qualifiers, together with the /EXCLUDE qualifier, are also accepted on the COPY, DELETE, DIRECTORY, PURGE, RENAME, SET PROTECTION, TYPE, and UNLOCK commands.

**APPEND/ERROR\_LOG    APPEND/ERROR\_LOG filespec[/qualifier]**

<b>Command Qualifier</b>	<b>Comments</b>
/DELETE	Deletes error log file after appending it

Appends the specified file to the end of the current error log file. Error logging must be active for this qualifier to work. The default is to append the file to the current error log file and to keep the appended file as well.

**ASSIGN    ASSIGN[/qualifiers] [equivalencename logicalname]**

<b>Command Qualifiers</b>	<b>Comments</b>
/FINAL (P)	
/GLOBAL (P)	
/GROUP: [g] (P)	UIC group number
/LOCAL	Default
/LOGIN (P)	
/SYSTEM (P)	Synonym for /GLOBAL

**/TERMINAL:ttnn: (P)**  
**/TRANSLATION:ATTRIBUTES=TERMINAL (P)**  
 Synonym for **/FINAL**

Equates a logical name to a physical Files-11 device name, to all or part of a Files-11 file specification, or to another logical name. The ASSIGN command checks the syntax of an equivalence name that is either a device or a file specification. You can substitute the percent sign wildcard character (%) for one character in the name and the asterisk (\*) for more than one character. All references to the logical name are resolved by the operating system. This format applies only to RSX-11M-PLUS operating systems that support extended logical names.

**ASSIGN/QUEUE (P) ASSIGN/QUEUE queuename processorname**  
 Establishes a path between a queue and a processor in the Queue Manager (QMG) subsystem.

**ASSIGN/REDIRECT (P) ASSIGN/REDIRECT oldddnn: newddnn:**  
 Redirects output from one physical device to another. You can also redirect a physical device to a pseudo device, or vice versa.

**ASSIGN/TASK (P) ASSIGN/TASK:taskname ddnn: lun**  
 Reassigns an installed task's logical unit numbers (LUNs) from one physical device to another. The reassignment overrides the static LUN assignments in the task's disk image file. You cannot change the LUNs of an active task.

**BACKUP BACKUP[/qualifiers] source:[filespec[,s]] destination:**

Command Qualifiers	Comments
--------------------	----------

#### Group 1: Selective Backup and Restore

<b>/AFTER:(dd-mmm-yy hh:mm[:ss])</b>	
<b>/BEFORE:(dd-mmm-yy hh:mm[:ss])</b>	
<b>/CREATED/BEFORE:(dd-mmm-yy hh:mm[:ss])</b>	
<b>    /AFTER:(dd-mmm-yy hh:mm[:ss])</b>	
<b>/EXCLUDE</b>	
<b>/IMAGE:arg</b>	
<b>    SAVE</b>	
<b>    RESTORE</b>	
<b>/MODIFIED/BEFORE:(dd-mmm-yy hh:mm[:ss])</b>	
<b>    /AFTER:(dd-mmm-yy hh:mm[:ss])</b>	





**CONVERT[/qualifiers] infile outfile**

Command Qualifiers	Comments
/[NO]APPEND	
/BLOCK_SIZE:n	Default is 512
/[NO]FIXED_CONTROL	Default is /NOFIXED_CONTROL
/[NO]IDENTIFICATION	Default is /NOIDENTIFICATION
/INDEXED	Outfile is indexed
/KEY[:n]	Default=1
/[NO]LOG_FILE[:filespec]	/Default is NOLOG_FILE
/[NO]MASS_INSERT	
/MERGE	
/PAD[:{( # )}arg]	Pad infile records to outfile length Default pad character is blank
/RELATIVE	
/[NO]REPLACE	
/SEQUENTIAL	
/[NO]TRUNCATE	Default is /NOTRUNCATE

Invokes the RMSCNV utility, which moves records from one file to another. RMSCNV reads records from an input file and writes them to an output file. The action of RMSCNV depends on the organization—sequential, relative, or indexed—of the two files and on the qualifiers you include in the CONVERT command. See the main text and the RMS-11 documentation supplied with your system for more information.

**COPY COPY infile[s] outfile[s]**

Command Qualifiers	Comments
/ALLOCATION:n[.]	Specifies n blocks of contiguous space
/BLOCK_SIZE:n	Defines block size for outfile on magnetic tape; n is octal unless terminated with a decimal point; no effect on infile
/[NO]CONTIGUOUS	
/DATE:dd-mmm-yy	
/EXCLUDE:filespec	
/NONEW_VERSION	Suppresses automatic increment of version numbers
/NOWARNINGS	Suppresses error messages
/OWN	Makes outfile UIC owner of copy
/OVERLAY	
/PRESERVE_DATE	Preserves the creation date
/REPLACE	
/REWIND	



**DEASSIGN**    **DEASSIGN[/qualifiers] logical\_name:**

Command Qualifiers	Comments
/ALL	Combine with any other qualifier
/GLOBAL (P)	
/GROUP[:g] (P)	Default
/LOCAL	
/LOGIN	
/SYSTEM (P)	Synonym for global
/TERMINAL:ttnn: (P)	

Deletes logical name assignments. The DEASSIGN command counteracts both the ASSIGN and DEFINE commands.

**DEASSIGN/QUEUE (P) DEASSIGN/QUEUE queue\_name processor\_name**  
Counteracts the ASSIGN/QUEUE command. It is used to eliminate the path from a queue to a processor in the Queue Manager (QMG) subsystem.

**DEBUG**    **DEBUG [taskname]**

Forces a task to trap to a debugger by setting the T-bit in the task's Processor Status Word (PSW). The task must have been built using the /DEBUG qualifier to the LINK command or have issued an Executive directive specifying a debugger. Nonprivileged users can use this command only for nonprivileged tasks running from their own terminals. Privileged users can name any task, but the command must be issued from the terminal from which the task was run. The default *taskname* parameter is ttnn:.

**DEFINE**    **DEFINE[/qualifiers] logicalname equivalencename**

Command Qualifiers	Comments
/FINAL (P)	
/GLOBAL (P)	
/GROUP[:g] (P)	Default
/LOCAL	
/LOGIN (P)	
/SYSTEM (P)	Synonym for /GLOBAL
/TERMINAL:ttnn: (P)	
/TRANSLATION:ATTRIBUTES=TERMINAL (P)	Synonym for /FINAL

Equates a logical name to a physical device name, to all or part of a file specification, or to another logical name. All references to the logical

name are resolved by the operating system. Unlike the ASSIGN command, DEFINE does not check the syntax of an equivalence name that is either a device or a file specification.

## DELETE DELETE[/qualifiers]

Command Qualifiers	Comments
/[NO]CONFIRM	
/DATE:dd-mmm-yy	
/EXCLUDE:filespec	
/[NO]LOG	Lists deleted files on TI:
/NOWARNINGS	
/[NO]QUERY	Default is /NOQUERY
/SINCE:dd-mmm-yy	
/SINCE:dd-mmm-yy/THROUGH:dd-mmm-yy	
/THROUGH:dd-mmm-yy	
/TODAY	

Deletes specified versions of files and releases the storage space that the files occupy.

## DELETE/DIRECTORY DELETE/DIRECTORY[ddnn:][directory]

Deletes a directory on a Files-11 volume and removes its name from the volume's Master File Directory (MFD). Nonprivileged users can only delete directories on mounted volumes on their own private (allocated) device.

## DELETE/ENTRY DELETE/ENTRY:n[/FILE\_POSITION:n]

Deletes Queue Manager (QMG) jobs by entry number.

## DELETE/JOB DELETE/JOB[/FILE\_POSITION:n] queuname [[g,m]] jobname

Deletes Queue Manager (QMG) jobs by queue name and job name.

## DELETE/PROCESSOR (P) DELETE/qualifiers processorname

Command Qualifiers	Comments
/APPLICATIONS_PROCESSOR	
/BATCH_PROCESSOR	
/CARD_READER	Synonym for /INPUT
/DEVICE	Synonym for /PRINTER
/INPUT	Synonym for /CARD_READER



**Destination Qualifiers**

/OUTPUT[:filespec] /PRINTER	Names output files; TI: is default Output to printer
--------------------------------	---

**Other Qualifiers**

/DATE:dd-mmm-yy /EXCLUDE:filespec /NOWARNINGS /REWIND /SINCE:dd-mmm-yy /THROUGH:dd-mmm-yy /SINCE:dd-mmm-yy/THROUGH:dd-mmm-yy /TODAY	Suppresses error messages
--	---------------------------

Displays information on files in directories (UFDs).

**DISMOUNT    DISMOUNT ddnn: [label]**

Command Qualifiers	Comments
/TERMINAL:ttn: (P)	Dismounts volumes from another terminal
/ALL	Dismounts all devices mounted by user
/PUBLIC (P)	Dismounts all users from volume
/SAVE (P)	Disk keeps spinning
/SYSTEM	Synonym for /PUBLIC
/[NO]UNLOAD	Affects magnetic tape, DB-, DM-, and DU-type devices

Marks the volume mounted on the specified device as logically off line and disconnected from the file system.

**EDIT    EDIT[/qualifier] [edit-input]**

Command Qualifiers	Comments
/EDI	Line text editor
/KED	Unbundled KED editor
/K52	VT52 version of KED
/MAKE	Unsupported TECO editor
/MUNG	Unsupported TECO editor
/OUTPUT:filespec	Use with KED and K52
/CREATE	Use with KED and K52
/SOS	Unsupported Son of Stopgap



**HELP**    **HELP[/qualifiers] [%] [parameter1] [...parameter9]**

Command Qualifiers	Comments
/OUTPUT:filespec	Default is /OUTPUT:TI:
/LOCAL	Help file is in default directory
/GROUP	Help file is in [g,1]; g is your group number
/CLI:cliname	
/MCR	Default for MCR terminals
/DCL	Default for DCL terminals
/FILE:filespec	Names file containing help text
/filename	Defaults to LB:[1,2]filename.HLP

Displays information about your system. Help for MCR, DCL, and most utilities is supplied with the system. Your system may also have help for an alternate Command Line Interpreter (CLI), as well as local, group, or other special help.

**HOLD/ENTRY**    **HOLD/ENTRY:n**  
Holds a job in its queue by entry number.

**HOLD/JOB**    **HOLD/JOB queueName [[g,m]] jobName**  
Holds a Queue Manager (QMG) job in its queue by queue name and job name.

**INITIALIZE**    **INITIALIZE[/qualifiers] ddn: volumelabel**

Command Qualifiers	Comments
/ACCESSED:n	Number of directories accessed simultaneously
/BAD_BLOCKS:arg	
	AUTOMATIC
	(AUTOMATIC,MANUAL)
	MANUAL
	NOAUTOMATIC
	OVERRIDE
	(OVERRIDE,MANUAL)
/DENSITY:arg	
	800
	1600
	HIGH
	LOW
	6250
/EXTENSION:n	Default for TU81 devices is 6250.
/FILE_PROTECTION:(code)	Extends files by n blocks; default n=5 <sub>10</sub>
/HEADERS:n	

## Digital Command Language (DCL)

/INDEX:arg	Locates index file on volume
BEGINNING	Default for tapes and DECTapes
MIDDLE	Default for disks
END	
n	Logical blocks n
/LABEL:VOLUME_ACCESSIBILITY: "c"	Magnetic tape only; limits access
/MAXIMUM_FILES:n	
/[NO]SHOW	Default is /NOSHOW
/OWNER:[uic]	Specifies owner of volume
/PROFESSIONAL	Initializes disk Professional 300 series
/PROTECTION:(code)	
/WINDOWS:n	Default n=7

Creates Files-11 disk structure on a volume. See also INITIALIZE/UPDATE. You must mount the volume with the /FOREIGN qualifier. Nonprivileged users must allocate the device.

**INITIALIZE/FORMAT    INITIALIZE/FORMAT[/qualifiers] ddnn:  
                          volumelabel**

### Command Qualifiers

/BADBLOCKS  
/DENSITY:arg  
    HIGH or DOUBLE  
    LOW or SINGLE  
/ERROR\_LIMIT:n  
/MANUAL  
/[NO]MESSAGE  
/OVERRIDE  
/[NO]VERIFY  
/WRITE\_LAST\_TRACK:n

Formats and verifies volumes on disk cartridges, disk packs, fixed media disks, and flexible disks associated with any RSX-11M-PLUS operating system that includes online formatting support in the Executive.

**INITIALIZE/PROCESSOR    INITIALIZE/processortype  
                          processorname/qualifiers**

Processor Type	Comments
APPLICATIONS_PROCESSOR	Output
BATCH_PROCESSOR	Input
CARD_READER	Output
DEVICE	Output

INPUT	Input
PRINTER	Output
PROCESSOR	Output
<b>Command Qualifiers</b>	<b>Comments</b>
/BATCH_QUEUE:queuename	Input
/CONSOLE:ddnn:	Input
/FLAG_PAGE:n	Output
/FORMS:n	Output
/[NO]LOWERCASE	Output
/[NO]SHAREABLE	Output
/[NO]UPPERCASE	Output
/PRINTER_QUEUE:queuename	Input

Creates, names, and starts a print processor, batch processor, or other output device.

**INITIALIZE/QUEUE (P) INITIALIZE/QUEUE queuename[/qualifiers]**

<b>Command Qualifiers</b>	<b>Comments</b>
/BATCH	
/PRINTER	Default
/NOWARNINGS	Suppresses error messages

Creates, names, and starts a queue in the Queue Manager (QMG) subsystem.

**INITIALIZE/UPDATE INITIALIZE/UPDATE[/qualifiers] ddnn:  
volumelabel**

<b>Command Qualifiers</b>	<b>Comments</b>
/ACCESSED:n	
/DENSITY:arg HIGH LOW	
/EXTENSION:n	Extend full files by n blocks
/FILE_PROTECTION:code	
/LABEL:newvolumelabel	
/MAXIMUM_FILES:n	
/OWNER:[uic]	
/PROFESSIONAL	Initializes disk Professional 300 series
/PROTECTION:code	
/[NO]SHOW	Default is /SHOW
/WINDOWS:n	Mapping pointers to file windows; default is 7

Invokes the HOME utility to alter values in the Volume Home Block without affecting the other data on the volume. The

INITIALIZE/UPDATE command can be used only with disks and DECtapes in Files-11 format. You must mount the volume with the /FOREIGN qualifier.

**INSTALL (P)   INSTALL[/qualifiers] [\$] filespec**

Command Qualifiers	Comments
/[NO]CHECKPOINT	
/[NO]DEFER_BINDING	/DEFER is default
/EXTENSION:n	n (decimal) additional words of address space
/[NO]INTERPRETER	
/MULTIUSER_PARTITION:parname	Read-only portion
/PARTITION:parname	
/[NO]POSTMORTEM	
/PRIORITY:n	n = 0-250
/[NO]READONLY_COMMON	
/[NO]RESIDENT_HEADER	
/[NO]SLAVE	Default is /NOSLAVE
/TASK_NAME:taskname	1-6 characters
/TRANSLATION_ROUTINE:n	
/UIC:[uic]	
/[NO]WRITEBACK	

Includes a task in the System Task Directory (STD), thus making it known to the system.

**LIBRARY   LIBRARY[/operation][/qualifiers]  
LIBRARY @filespec**

Creates and maintains user-written library files. The command has eight functions, each listed here as a separate command. See main text for more details on all functions and qualifiers.

**LIBRARY/COMPRESS   LIBRARY/COMPRESS[: (arg[,s])] lib[newlib]**

Arguments	Comments
BLOCKS:n	Size in 256-word blocks
GLOBAL:n	Entry point table entries
MODULES:n	Module name table entries

Physically deletes modules that have been logically deleted through the LIBRARY/DELETE command. You can rename the resulting

compressed library. You can also use this command to copy a library and rename it.

**LIBRARY/CREATE**    **LIBRARY/CREATE[:(arg[,s])][/*qualifiers*lib[*infile*[s]]]**

**Arguments**

BLOCKS:n  
GLOBAL:n  
MODULES:n

**Comments**

Size in 256-word blocks  
Entry point table entries  
Module name table entries

**Command Qualifiers**

/[NO]GLOBALS  
/MACRO  
/OBJECT  
/SELECTIVE\_SEARCH  
/SQUEEZE  
/UNIVERSAL

**Comments**

Identifies object library; default

Creates a library and optionally inserts one or more modules into it.

**LIBRARY/DELETE**    **LIBRARY/DELETE *libspec* *module*[,*module*[s]]**

Deletes object modules from a library. See the LIBRARY/REMOVE command for removing global symbols (entry points) from a library.

**LIBRARY/EXTRACT**    **LIBRARY/EXTRACT[/*OUTPUT*[:*filespec*]]  
                          ***libspec* *module*[,s]****

Reads one or more modules from a library and writes them to a specified output file. You can extract up to eight modules with a single command. If you extract more than one module, the modules are concatenated in the output file. Default output file is TI.

**LIBRARY/INSERT**    **LIBRARY/INSERT[/*qualifiers*] *libspec* *filespec*[,s]**

**Command Qualifiers**

/[NO]GLOBALS  
/SELECTIVE\_SEARCH  
/SQUEEZE

**Comments**

Inserts modules from one or more files into a library.

**LIBRARY/LIST**    **LIBRARY/LIST[:filespec][/*qualifiers*] *libspect***

**Command Qualifiers**

**Comments**

*/BRIEF*

*/FULL*

*/[NO]NAMES*

Names and global entry points

Lists the names of all modules in a library on your terminal or in an output file.

**LIBRARY/REMOVE**    **LIBRARY/REMOVE *libspect* *global*[,*global*[*s*]]**

Removes global symbols (entry points) from a library. See the LIBRARY/DELETE command for deleting object modules from a library.

**LIBRARY/REPLACE**    **LIBRARY/REPLACE[/*qualifiers*] *libspect* *filespec*[,*s*]**

**Command Qualifiers**

**Comments**

*/[NO]GLOBALS*

*/SELECTIVE\_SEARCH*

*/SQUEEZE*

Replaces a module in a library with a new module of the same name and deletes the old module.

**LINK**    **LINK[/*qualifiers*] *filespec*[/*qualifiers*][,*filespec*[,*s*]]**

**Command Qualifiers**

**Comments**

*/ANCILLARY\_PROCESSOR[:*n*]*

*/[NO]CHECKPOINT:arg*

SYSTEM  
TASK

Checkpoints to [1,2]CORMIG.SYS  
Checkpoints to task image file

*/CODE:(arg[s])*

CLI

DATA\_SPACE

EAE

FAST\_MAP

[NO]FPP

OTS\_FAST

PIC

POSITION\_INDEPENDENT

Fast mapping

Same as POSITION\_INDEPENDENT

*/COMPATIBLE*

*/[NO]CROSS\_REFERENCE*

*/[NO]DEBUG[:filespec]*

Default is On-Line Debugging  
Tool (ODT)

/ERROR_LIMIT:n	Stops task build after n errors
/[NO]EXECUTABLE:filespec	Same as /TASK
/[NO]EXTERNAL	
/FAST	
/FULL_SEARCH	
/[NO]HEADER	
/[NO]IO_PAGE	
/LONG	Long Map
/MAP[:filespec]	
/[NO]MEMORY_MAN- AGEMENT[:n]	Default is /MEM
/OPTIONS[:filespec]	
/OVERLAY_DESCRIPTION	
/POSTMORTEM	
/[NO]PRINT	
/[NO]PRIVILEGED	Default is /NOPRIV
/[NO]RECEIVE	
/[NO]RESIDENT_OVERLAYS	
/SAVE	Saves indirect file
/[NO]SEGREGATE	Default is /NOSEG
/SEQUENTIAL	
/SHAREABLE[:arg]	Multiuser
COMMON	
LIBRARY	
TASK	Default
/SLAVE	
/SLOW	
/SYMBOL_TABLE[:filespec]	
/[NO]SYSTEM_LIBRARY_DISPLAY	
	Default is /NOSYS
/[NO]TASK[:filespec]	Same as /EXEC
/TKB	Default
/TRACE	
/[NO]WARNINGS	Default is /WARNINGS
/[NO]WIDE	
<b>File Qualifiers</b>	<b>Comments</b>
/[NO]CONCATENATE	
/DEFAULT_LIBRARY	Names file to replace [1,1]SYSLIB.OLB
/[NO]GLOBALS	Default is /GLOBALS
/LIBRARY	
/INCLUDE:(module1,...,modulen)	
/OVERLAY_DESCRIPTION	
/SELECTIVE_SEARCH	

Invokes the Task Builder (TKB), which links object modules and routines from user and system libraries to form an executable task.

**LOGIN LOGIN userid password**

Grants access to a multiuser protection system and establishes your privileges as a system user.

**LOGOUT LOGOUT[/qualifier]**

**Command Qualifier**

**/[NO]HOLD**

**Comments**

Holds remote line after logout;  
default is /NOHOLD

Counteracts the LOGIN command. The LOGOUT command also aborts any nonprivileged tasks running from the terminal and dismounts any volumes and deallocates any private devices allocated from the terminal.

**MCR MCR mcrcommand**

Enters an MCR command from a DCL terminal without leaving DCL.

**MOUNT MOUNT[/qualifiers] ddnn: volumelabel**

(Disks and other random-addressable devices)

**MOUNT[/qualifiers] ddnn:[,ddnn:...] fileset-ID**

(magnetic tapes)

**Command Qualifiers**

**For Both Disks and Tapes**

**/[NO]CACHE:(option[s])**

par=[main\_pname:]subpname[:size]

[NO]DEFER\_WRITES

[NO]DIRECTORY

[NO]LOGICAL

[NO]OVERLAY

[NO]READ\_AHEAD

[NO]VIRTUAL

**/DEFAULT:arg**

SAVE

NOUNLOAD

UNLOAD

**/FILE\_PROTECTION:(code)**

Protection for files created during  
mount operation

**/FOREIGN**

**/OVERRIDE:IDENTIFICATION (P)**

**/PARAMETERS:"user parameters"**

```

/PROCESSOR:arg
                acpname
                UNIQUE
/PROTECTION:(code)
/PUBLIC (P)                Deallocates and sets device public
/[NO]SHAREABLE
/[NO]SHOW
/SYSTEM
/[NO]WAIT                Default is /NOWAIT
/WRITE

```

**For Disks and Other Files-11 Devices**

```

/ACCESSED:n                n is number of File Control Blocks
                            (FCBs)
/EXTENSION:n                Extend full file by n blocks
/OWNER:[uic]
/UNLOCK
/WINDOW:arg
                n
                (USER:n,INDEX:n)
                FULL

```

**For ANSI and Unlabeled Tapes**

```

/BLOCK_SIZE:n
/CARRIAGE_CONTROL:arg
                FORTRAN
                LIST
                NONE
/DENSITY:arg
                800
                1600
                6250                Default for TU81 devices is 6250.
/[NO]HDR3
/[NO]LABEL
/OVERRIDE:arg
                ACCESSIBILITY
                EXPIRATION_DATE
                IDENTIFICATION
                SET_IDENTIFICATION
/RECORD_SIZE:n
/TRANSLATE:arg
                EBCDIC
                NONE
                UT1
                UT2
                UT3
/VOLUME_IDENTIFICATION:(volume-ID[,volume-ID[s]])

```

Declares a volume to be logically known to the system, on line, and available for use. Some qualifiers can be used with any MOUNT command; some are limited to mounting disks (and other random-addressable devices) and others are limited to mounting magnetic tapes.

**PRINT**    **PRINT**[/qualifiers] filespec[/qualifiers][filespec[,s]]

<b>Command Qualifiers</b>	<b>Comments</b>
/[NO]ADJACENT	
/AFTER:(dd-mmm-yy hh:mm)	
/AFTER_TOMORROW	
/COPIES:n	
/[NO]DELETE	
/DEVICE:dnn:	
/[NO]FLAG_PAGE	Flag page on each file; default is /NOFLAG
/FORMS:n	n can be 0-256; default is 0
/[NO]HOLD	Default is /NOHOLD
/JOB_COUNT	
/[NO]JOB_PAGE	Flag page on job; default is /JOB_PAGE
/LENGTH:n	
/[NO]LOWERCASE	
/NAME:jobname	1-9 characters
/[NO]TRANSFER	
/PAGE_COUNT:n	
/PRIORITY:n	n is 1-150 nonprivileged; 1-250 privileged; default is 50
/QUEUE:queuname	
/[NO]RESTART	
/[NO]UPPERCASE	
<b>File Qualifiers</b>	
/COPIES:n	
/[NO]DELETE	
/[NO]TRANSFER	

Queues files for printing on a line printer. The PRINT comand can also queue jobs for other output devices.

**PURGE**    **PURGE**[/qualifiers] filespec[,s]

<b>Command Qualifiers</b>	<b>Comments</b>
/DATE:dd-mmm-yy	
/EXCLUDE:filespec	
/KEEP:n	

<b>/[NO]LOG</b>	Lists files on TI: as deleted
<b>/NOWARNINGS</b>	Suppresses error messages
<b>/SINCE:dd-mmm-yy</b>	
<b>/SINCE:dd-mmm-yy/THROUGH:dd-mmm-yy</b>	
<b>/THROUGH:dd-mmm-yy</b>	
<b>/TODAY</b>	

Deletes all but the latest versions of files and releases the storage space that the deleted files occupy.

**RELEASE/ENTRY    RELEASE/ENTRY:n**

Releases, by queue name and entry number, a print or batch job that has been held in its queue.

**RELEASE/JOB    RELEASE/JOB queuename [[g,m]]jobname**

Releases, by queue name and job name, a print or batch job that has been held in its queue.

**REMOVE    REMOVE[/qualifiers] taskname (P)**

<b>Command Qualifiers</b>	<b>Comments</b>
<b>/REGION (P)</b>	
<b>/TRANSLATION_ROUTINE:n (P)</b>	Removes an Ancillary Control Driver (ACD)

Counteracts the INSTALL command. The REMOVE command takes a task name out of the System Task Directory (STD).

**RENAME    RENAME[/qualifiers] oldfilespec newfilespec**

<b>Command Qualifiers</b>	<b>Comments</b>
<b>/DATE:dd-mmm-yy</b>	
<b>/EXCLUDE:filespec</b>	
<b>/NOWARNINGS</b>	Suppresses error messages
<b>/SINCE:dd-mmm-yy</b>	
<b>/SINCE:dd-mmm-yy/THROUGH:dd-mmm-yy</b>	
<b>/THROUGH:dd-mmm-yy</b>	
<b>/TODAY</b>	

Changes the name, type, or version number of an existing file.

**REQUEST REQUEST message**

Sends a message to the operator's console (CO:).

**RUN uninstalledtask RUN[/qualifiers] [!]filespec**

**Command Qualifiers**

/[NO]CHECKPOINT  
/COMMAND:"taskcommand"  
/EXTENSION:n  
/PARTITION:parname  
/[NO]POSTMORTEM  
/PRIORITY:n (P)  
/STATUS:arg  
    COMMAND  
    TASK  
/TASK\_NAME:taskname  
/TIME\_LIMIT:n[u]  
/UIC:[uic] (P)

When used to run an uninstalled task from a task image file, RUN is a combination command, encompassing the INSTALL, RUN, and REMOVE commands.

**RUN installedtask RUN[/qualifiers] taskname**

**Command Qualifiers**

/DELAY:n (P)  
/INTERVAL:nu (P)  
/SCHEDULE:hh:mm:ss (P)  
/STATUS:arg  
    COMMAND  
    TASK  
/SYNCHRONIZE:u (P)  
/UIC:[uic] (P)

Initiates the execution of installed tasks. Privileged users can use the RUN command to initiate the execution of installed tasks on a schedule by creating entries in the system clock queue.

**SET[DAY]TIME (P) SET[DAY]TIME:[dd-mmm-yy][hh:mm]**

Sets the system date and time.

**SET DEBUG**    **SET DEBUG[/qualifiers]**

Command Qualifiers	Comments
/[NO]EXECUTE	Translates, then executes the command
/FULL	Displays logical symbols and translation

Displays the MCR translation of any DCL command.

**SET DEFAULT**    **SET DEFAULT[/[NO]NAMED\_DIRECTORY] device\_name[:]**

Command Qualifiers	Comments
/[NO]NAMED_DIRECTORY	Allows the system to accept either named or numbered directories Default is /NONAMED

Establishes your default device or directory, or both. With no arguments, the SET DEFAULT command returns a nonprivileged user to login device and User Identification Code (UIC).

**SET DEVICE (P)**    **SET DEVICE:ddnn:/qualifiers**

Command Qualifiers	Comments
/CACHE:(option[s]) PAR=[main_parmname:]subparmname[:size] [NO]DEFER_WRITES [NO]DIRECTORY [NO]OVERLAY [NO]VIRTUAL [NO]LOGICAL [NO]READ_AHEAD	Modifies data caching
/NOCACHE	
/[NO]CHECKPOINT_FILE[:n]	n is number of decimal blocks in [0,0]CORIMG.SYS
/[NO]LOWERCASE	
/[NO]PUBLIC	Default is /NOPUBLIC
/[NO]SYSTEM	Synonym for /[NO]PUBLIC
/WIDTH:n (Nonprivileged for TI:)	

Establishes certain device attributes.

**SET ERROR\_LOG**    **SET ERROR\_LOG[/qualifiers] ddnn:[,ddnn:[,s]]**  
**SET ERROR\_LOG[/qualifiers]**

<b>Command Qualifiers</b>	<b>Comments</b>
/BACKUP_FILE:filespec	Manipulates error log file
/DELETE	Manipulates error log file
/HARD_LIMIT:n	Sets up error logging
/[NO]LIMITING	Manipulates error log file
/NEW_LOG_FILE:filespec [/qualifiers]	Manipulates error log file
/NEW_VERSION	Manipulates error log file
/RESET_COUNTS	Sets up error logging
/SOFT_LIMIT:n	Sets up error logging

Sets up error logging operations and manipulates the error log file.

**SET FILE**    **SET FILE[/qualifiers] filespec[/qualifiers]**

<b>Command Qualifiers</b>	<b>Comments</b>
/ENTER:synonym_filespec	Refers to a file by more than one name
/NOWARNINGS	Suppresses error messages
/REMOVE	
/REWIND	
/TRUNCATE	

**File Qualifier**

/END\_OF\_FILE:(BLOCK:n, BYTE:n)

Establishes certain file characteristics. You can change an end-of-file marker, have an entry in one directory point to a file in another directory, remove an entry from a directory, or truncate files to their actual length.

**SET GROUPFLAGS**    **SET GROUPFLAGS:n[/qualifier]**

<b>Command Qualifiers</b>	<b>Comments</b>
/CREATE	Default
/DELETE	

Creates and deletes group global event flags. Nonprivileged users can use the command for their own group. The variable n is the group number.

**SET HOST SET HOST nodename**

Connects your terminal to another system. Both your current system and the remote system must run DECnet software.

**SET HOST/DTE SET HOST/DTE t1nn:[/qualifier]**

**Command Qualifiers**

**Comments**

/DIAL

Allows the specification of a dial command string for the modem

/MUTE

Alters certain device characteristics

/VERSION

Displays version of Data Terminal Emulator (DTE)

Establishes data terminal emulation between a local RSX system and a host system.

**SET LIBRARY/DIRECTORY (P) SET LIBRARY/DIRECTORY:[directory]**

Establishes the directory where the system utilities and other nonprivileged system tasks are kept.

**SET [NO]PARTITION (P) SET [NO]PARTITION:parname/qualifiers**

**Command Qualifiers**

**Comments**

/BASE:n

/DEVICE

Device common

/DIAGNOSTIC

/SIZE:n

/SYSTEM

/TOP

/[+]n

Creates or eliminates a partition.

**SET PASSWORD SET PASSWORD**

Allows nonprivileged users to change their passwords.

**SET PRIORITY (P) SET PRIORITY:n taskname**

Alters the priority of an active task.

**SET PROTECTION    SET PROTECTION:(code)[/qualifiers] filespec[,s]**

<b>Command Qualifiers</b>	<b>Comments</b>
/DATE:dd-mmm-yy /[NO]DEFAULT	Establishes your personal default protection code for all files that you create after issuing command.
/EXCLUDE:filespec /SINCE:dd-mmm-yy /SINCE:dd-mmm-yy/THROUGH:dd-mmm-yy /THROUGH:dd-mmm-yy /TODAY	
Establishes the protection status of files. Default is SY:RWED, OW:RWED, GR:RWED, W:R.	

**SET QUEUE/ENTRY    SET QUEUE/ENTRY:n[/qualifier]**

<b>Command Qualifiers</b>	<b>Comments</b>
/AFTER:(dd-mmm-yy hh:mm) /COPIES:n /[NO]DELETE /FILE_POSITION:n /FORMS:n /HOLD /JOBCOUNT:n /LENGTH:n /[NO]LOWERCASE /PAGE_COUNT:n /PRIORITY:n	Same as HOLD/QUEUE
/RELEASE /[NO]RESTART /[NO]UPPERCASE	
	Nonprivileged: n is 1-150; Privileged: n is 1-250 Default is 50
	Same as RELEASE/QUEUE

Modifies by entry number some attributes of print or batch jobs once they are in a queue. See SET QUEUE/JOB to modify by job name.

**SET QUEUE/JOB    SET QUEUE/JOB[/qualifier] queue [[g,m]]jobname**

<b>Command Qualifiers</b>	<b>Comments</b>
/AFTER:(dd-mmm-yy hh:mm) /COPIES:n /[NO]DELETE /FILE_POSITION:n	

/FORMS:n	
/JOBCOUNT:n	
/HOLD	Same as HOLD/QUEUE
/LENGTH:n	
/[NO]LOWERCASE	
/PAGE_COUNT:n	
/PRIORITY:n	n is 1-150 nonprivileged; 1-250 privileged; default n = 50
/RELEASE	Same as RELEASE/QUEUE
/[NO]RESTART	
/[NO]UPPERCASE	

Modifies by job name some attributes of print or batch jobs once they are in a queue. See previous command to modify by entry number.

**SET SYSTEM (P) SET SYSTEM/qualifier**

Command Qualifiers	Comments
/[NO]CRASH_DEVICE:ddnn: /REGISTER=nnnnnn	Loads crash driver
/DIRECTORY:[directory] /EXTENSION LIMIT:n	Sets directory where system tasks are kept Maximum size a task can be extended
/[NO]LOGINS /NETWORK_UIC:[uic]	Sets directory for DECnet-related tasks n is 0-15
/PACKETS:n	Increases pool size
/POOL:top	
/POOL/LIMITS:arg HIGH=n	High pool limit
LOW=n	Low pool limit
MINIMUM_ SIZE=n	Minimum size of largest free pool block required
TASK_PRIOR- ITY=n	Lowest task priority

Establishes certain characteristics of the system.

**SET TERMINAL SET TERMINAL[:ttnn:]/qualifiers**

Command Qualifiers For Common Use	Comments
/[NO]BROADCAST /CLI:cliname /[NO]CONTROL=C /DCL /[NO]HOLD_SCREEN	Not for VT100s

## Digital Command Language (DCL)

`/INQUIRE` Automatically sets proper terminal characteristics  
`/[NO]LOWERCASE` `/NOLOWER` default; same as `/UPPER`  
`/MCR`  
`/[NO]PRIVILEGED (P)`  
`/SPEED:(transmit,receive)`  
`/[NO]UPPERCASE` `/UPPERCASE` default

### For Terminal Setup

`/[NO]ADVANCED_VIDEO`  
`/[NO]ANSI_CRT`  
`/[NO]AUTOBAUD`  
`/ASR33`  
`/ASR35`  
`/[NO]BLOCK_MODE`  
`/CRFILL:n` n is 0-7  
`/[NO]DEC_CRT`  
`/DTC01`  
`/[NO]EDIT_MODE`  
`/[NO]FORM_FEED`  
`/[NO]HARDCOPY`  
`/[NO]HOSTSYNC`  
`/KSR33`  
`/LA12`  
`/LA24`  
`/LA30P`  
`/LA30S`  
`/LA34`  
`/LA36`  
`/LA38`  
`/LA50`  
`/LA75`  
`/LA100`  
`/LA120`  
`/LA180S`  
`/LA200_SERIES`  
`/LA210`  
`/LFFILL`  
`/LN03`  
`/LQP02`  
`/LQP03`  
`/MODEL:arg`  
`/PAGE_LENGTH:n` Default is terminal hardware setting  
`/PRINTER_PORT`  
`/PRO_SERIES`  
`/[NO]REGIS`  
`/[NO]SCOPE`  
`/[NO]SOFT_CHARACTERS`  
`/[NO]TAB`

```

/TRANSLATION_ROUTINE[:arg]
                                n          ACD number
                                logical     Logical name for ACD number

/[NO]TTSYNC
/VT05B
/VT50
/VT52
/VT55
/VT61
/VT100
/VT101
/VT102
/VT105
/VT125
/VT131
/VT132
/VT200_SERIES
/WIDTH:n

```

**For Task Setup**

```

/[NO]CHARACTER_LENGTH
/[NO]ECHO
/[NO]EIGHT_BIT
/[NO]ESCAPE
/[NO]FULL_DUPLEX
/[NO]INTERACTIVE
/[NO]LOCAL
/[NO]PARITY[:type]
                                ODD      ODD is default
                                EVEN
/[NO]PASSALL
/[NO]PASTHRU
/[NO]REMOTE
/[NO]SERIAL                      /SERIAL is default
/[NO]SLAVE
/[NO]TYPE_AHEAD[:n]            n can be 0-25510
/[NO]WRAP

```

Sets various attributes of your terminal. Privileged users can set attributes for any terminal.

**SET UIC (P) SET UIC [g,m]**  
 Changes your User Identification Code (UIC).

**SHOW ACCOUNTING    SHOW ACCOUNTING/qualifier**

**Command Qualifiers**

/INFORMATION  
/TRANSACTION[:infile] outfile

Displays current information on your terminal session for nonprivileged users. Privileged users can display information about any terminal session.

**SHOW ASSIGNMENTS    SHOW ASSIGNMENTS  
                          [logicalname][/qualifiers]**

**Command Qualifiers**

**Comments**

/ALL	
/GLOBAL (P)	Same as /SYSTEM
/GROUP[:g] (P)	UIC group number
/LOCAL	Default
/LOGIN (P)	
/SYSTEM (P)	
/TERMINAL:tttn: (P)	

Displays at your terminal all individual, session local, session login, group, and system logical-name assignments. Only privileged users can display group assignments, system assignments, and assignments from other terminals. You can use the *logicalname* parameter to display all assignments for a single logical name. You can substitute the percent sign wildcard character (%) for one character in the name and the asterisk (\*) for zero or more characters. The display lists the name of the logical-name table as well as the assignments.

**SHOW CACHE    SHOW CACHE[ddnn:][/RATE:n]**

Displays disk data caching information.

**SHOW CLOCK\_QUEUE    SHOW CLOCK\_QUEUE**

Displays information about tasks currently in the clock queue. This information consists of the task names, the next time each task is to be run, and each task's reschedule interval, if any.

**SHOW COMMON    SHOW COMMON[:name][/TASK]**

Displays the name of resident commons installed in the system, their Partition Control Block (PCB) addresses, the number of attached tasks, and the status of the common.

**SHOW [DAY]TIME    SHOW [DAY]TIME**

Displays the system time and date setting.

**SHOW DEFAULT    SHOW DEFAULT**

Displays the current default device and directory for your terminal, along with your terminal number.

**SHOW DEVICES    SHOW DEVICES[/qualifier][dd[nn:]]**

Command Qualifiers	Comments
/[NO]CACHE	
/dd[nn:]	
/[NO]PUBLIC	
/[NO]SYSTEM	Synonym for /[NO]PUBLIC
/WIDTH:ddnn:	

Displays information about the devices included in the system.

**SHOW ERROR\_LOG    SHOW ERROR\_LOG[/qualifiers] devlist**

Command Qualifiers	Comments
/CURRENT	
/HISTORY	
/OUTPUT[:filespec]	Writes report to specified file
/RECENT	

Provides a brief display of error-logging information on the device specified. If you do not specify any devices, the qualifier provides information on all devices in the system. The default is to display this report on your terminal.

**SHOW GROUPFLAGS    SHOW GROUPFLAGS**

Displays the group global event flags currently in the system.

**SHOW HOST    SHOW HOST[/VERSION]**

Displays the name of the processor to which your terminal is currently connected. It also shows the name and version number of the operating system running on the processor.

**SHOW LIBRARY    SHOW LIBRARY**

Displays the current library directory. This is the directory where nonprivileged system utilities are kept.

**SHOW LOGICALS    SHOW LOGICALS [logicalname][/qualifiers]**

Command Qualifiers	Comments
/ALL (P)	
/GLOBAL (P)	
/GROUP[:g] (P)	UIC group number
/LOCAL	Default
/LOGIN (P)	
/SYSTEM (P)	Synonym for /GLOBAL
/TERMINAL:ttnn: (P)	

Displays at your terminal all individual, local, group, and system logical-name assignments. You can substitute the percent sign wildcard character (%) for one character in the name and the asterisk (\*) for zero or more characters. Only privileged users can display group assignments, system assignments, and assignments from other terminals. The display lists the name of the logical-name table as well as the assignment.

**SHOW MEMORY    SHOW MEMORY**

Invokes the Resource Monitoring Display (RMDEMO), a dynamic display of the system's activities in memory.

**SHOW PARTITIONS    SHOW PARTITIONS[:name]**

Displays address and content information about the partitions in the system. You can display information about all partitions or about a single partition.

**SHOW PROCESSOR    SHOW PROCESSOR[/qualifiers] [processor-name]**

<b>Command Qualifiers</b>	<b>Comments</b>
/BATCH	
/CARD_READER	Same as /INPUT
/DEVICE	Output processor; same as /PRINTER
/INPUT	
/PRINTER	

Displays information about the batch processors, printers, card readers, and other devices under control of the Queue Manager.

**SHOW PROTECTION    SHOW PROTECTION**

Displays your personal default file protection code.

**SHOW QUEUE    SHOW QUEUE[/qualifier] [queuename]**

<b>Command Qualifiers</b>	<b>Comments</b>
/ALL	All entries in all queues; default
/BATCH	All entries in all batch queues
/BRIEF	
/DEVICE	Same as /PRINTER; all queues
/ENTRY:n	
/FILE	Files in each job; shorter than /FULL
/FORMS:n	
/FULL	
/NAME:jobname	
/OWNER_UIC:[uic]	Lists only jobs from that UIC; default UIC is login UIC
/PRINTER	

Displays information about print jobs in queues.

**SHOW SYSTEM    SHOW SYSTEM[/qualifier]**

<b>Command Qualifiers</b>	<b>Comments</b>
/CLI	CLIs on current system
/CRASH_DEVICE	
/DIRECTORY	Default; displays system directory
/EXTENSION_LIMIT	Task extension limit
/NETWORK_UIC	Location of DECnet tasks
/PACKETS	Maximum I/O packets and number currently available
/POOL	Displays pool statistics

/POOL/LIMITS	Displays pool limits
/SECONDARY_POOL	Displays secondary pool

Displays information about the current system.

**SHOW TASKS**    **SHOW TASKS[:taskname]/qualifiers**

Command Qualifiers	Comments
/ACTIVE[:ttnn:]	
/ALL	
/BRIEF	
/DEVICE:ddnn:	Use only with /INSTALL/BRIEF
/FULL	
/INSTALLED	
/LOGICAL_UNITS	Static logical unit numbers (LUNs) for installed task qualifier

Displays information about active or installed tasks.

**SHOW TASKS/ACTIVE/DYNAMIC**    **SHOW TASKS[:taskname]/DYNAMIC**

Format to display information on a single active task:

**SHOW TASKS:taskname/DYNAMIC**

Format to display information on all active tasks:

**SHOW TASKS/ACTIVE/DYNAMIC[/qualifiers]**

Command Qualifiers	Comments
/OWNER:arg	
ddnn:	
/ALL	Default
/PRIORITY:n	Default for n is 250
/RATE:n	Rate in seconds for display change; default is 1

Invokes Resource Monitoring Display (RMD) to display on a video terminal continuously updated information on a single task or on all or part of the active task list. On a hardcopy terminal, the SHOW TASKS/ACTIVE/DYNAMIC command provides a static display.

**SHOW TERMINAL    SHOW TERMINAL[:ttnn:][/*qualifier*]**

**Command Qualifiers**

**/[NO]ANSI\_CRT  
/[NO]ADVANCED\_VIDEO  
/[NO]AUTOBAUD  
/[NO]ASR33  
/[NO]ASR35  
/[NO]BLOCK\_MODE  
/CHARACTER\_LENGTH  
/[NO]CONTROL=C  
/[NO]CRFILL  
/DCL  
/[NO]DEC\_CRT  
/DTC01  
/[NO]ECHO  
/[NO]EDIT\_MODE  
/[NO]EIGHT\_BIT  
/[NO]ESCAPE  
/[NO]FORM\_FEED  
/[NO]FULL\_DUPLEX  
/[NO]HARDCOPY  
/[NO]HOLD\_SCREEN  
/[NO]HOST\_SYNC  
/HT  
/[NO]INTERACTIVE  
/[NO]KSR33  
/[NO]LA12  
/[NO]LA24  
/[NO]LA30P  
/[NO]LA30S  
/[NO]LA34  
/[NO]LA36  
/[NO]LA38  
/[NO]LA50  
/[NO]LA75  
/[NO]LA100  
/[NO]LA120  
/[NO]LA180S  
/[NO]LA200\_SERIES  
/[NO]LA210  
/[NO]LFFILL  
/[NO]LN03  
/[NO]LOCAL  
/LOGGED\_ON  
/[NO]LOWERCASE  
/[NO]LQP01  
/[NO]LQP02  
/[NO]LQP03**

## Digital Command Language (DCL)

```
/MCR  
/MODEL  
/PAGE_LENGTH  
/[NO]PARITY  
/[NO]PASSALL  
/[NO]PASTHRU  
/PRINTER_PORT  
/[NO]PRIVILEGE  
/[NO]PRO_SERIES  
/[NO]REGIS  
/[NO]REMOTE  
/RT  
/[NO]SCOPE  
/[NO]SERIAL  
/[NO]SLAVE  
/SPEED  
/[NO]SOFT_CHARACTERS  
/[NO]TAB  
/TI:  
/TT  
/[NO]TTSYNC  
/[NO]TYPE_AHEAD  
/[NO]UPPERCASE  
/VT  
/[NO]VT05B  
/[NO]VT50  
/[NO]VT52  
/[NO]VT55  
/[NO]VT61  
/[NO]VT100  
/[NO]VT101  
/[NO]VT102  
/[NO]VT105  
/[NO]VT125  
/[NO]VT131  
/[NO]VT132  
/[NO]VT200_SERIES  
/WIDTH  
/[NO]WRAP
```

Displays information about your terminal and other terminals on your system.

**SHOW UIC    SHOW UIC**

Displays your User Identification Code (UIC).

**SHOW USERS    SHOW USERS**

Displays all currently logged-in terminals, including DECnet host terminals and virtual terminals, with the default directory and login UIC for each.

**START    START[/qualifier][taskname]**

Command Qualifier	Comments
/TERMINAL:ttn: (P)	

Resumes execution of a task stopped by a STOP\$\$ directive. The *taskname* parameter defaults to ttnn:.

**START PROCESSORNAME (P) START/qualifier processorname/qualifier**

Command Qualifiers	Comments
/APPLICATIONS_PROCESSOR	
/BATCH_PROCESSOR	
/CARD_READER	Same as /INPUT
/DEVICE	Same as /PRINTER
/INPUT	
/PRINTER	
/PROCESSOR	
Parameter Qualifiers	Comments
/FORMS:n	Overrides initialization value
/CONTINUE	Default
/RESTART	
/NEXT	
/TOP_OF_FILE	
/BACKSPACE:n	
/FORWARDSPACE:n	
/PAGE:n	
/ALIGN	

Starts an output processor or card-reader processor.

**START/QUEUE (P)    START/QUEUE queuename**

Starts a queue.

**START/QUEUE/MANAGER (P)    START/QUEUE/MANAGER**  
Starts the Queue Manager.

**START/UNBLOCK    START/UNBLOCK[qualifier][taskname]**

**Command Qualifier**

**/TERMINAL:ttn: (P)**

Continues the execution of a task blocked by the STOP/BLOCK command. Nonprivileged users can unblock any task running from their own terminals. Privileged users can unblock any task.

**STOP/ABORT    STOP/ABORT printer[:]**  
Stops the current job on a line printer immediately. Privileged users can stop any job. Nonprivileged users can stop only their own jobs.

**STOP/BLOCK    STOP/BLOCK [/qualifier][taskname]**

**Command Qualifier**

**/TERMINAL:ttn: (P)**

Blocks an installed running task. The task no longer executes or competes for memory. Nonprivileged users can block tasks running from their own terminals. Privileged users can block any task.

**STOP PROCESSORNAME (P)    STOP/qualifier processorname/qualifier**

**Command Qualifiers**

**/APPLICATIONS\_PROCESSOR  
/BATCH\_PROCESSOR  
/CARD\_READER  
/DEVICE  
/INPUT  
/PRINTER  
/PROCESSOR**

**Comments**

Same as /INPUT  
Same as /PRINTER

Parameter Qualifiers	Comments
/ABORT /FILE_END /JOB_END /PAUSE	Stops a batch processor, card-reader processor, printer, or other output processor.
<b>STOP/QUEUE (P)    STOP/QUEUE queueName</b> Stops queues.	
<b>STOP/QUEUE/MANAGER (P)    STOP/QUEUE/MANAGER[/ABORT]</b> Stops the Queue Manager after the current job. The /ABORT qualifier stops the Queue Manager immediately.	
<b>SUBMIT    SUBMIT[/qualifiers] filespec[,s]</b>	

Command Qualifiers	Comments
/AFTER:TOMORROW /AFTER:(dd-mmm-yy hh:mm) /[NO]DELETE /[NO]HOLD	Deletes batch file after run; command or filespec qualifier Default is /NOHOLD; /HOLD has same effect as HOLD command
/[NO]LOG_FILE /NAME:jobname /[NO]PRINTER[:queueName] /PRIORITY:n	1-9 characters; default is first file name Optional name queue for log print job n is 1-150 nonprivileged; 1-250 privileged; default n = 50
/QUEUE:queueName /[NO]RESTART /[NO]TRANSFER	
Creates a waiting line of batch jobs for processing by a batch processor.	

**TYPE**    **TYPE[/qualifiers] filespec[,s]**

**Command Qualifiers**

/DATE:dd-mmm-yy  
/EXCLUDE:filespec  
/SINCE:dd-mmm-yy  
/SINCE:dd-mmm-yy/THROUGH:dd-mmm-yy  
/THROUGH:dd-mmm-yy  
/TODAY

Prints selected files on your terminal.

**UNFIX**    **UNFIX[/qualifier] taskname**

**Command Qualifiers**

**Comments**

/REGION  
/READONLY\_SEGMENT            RO segment of multiuser task

Frees a fixed task or region from memory. The *taskname* parameter can also be a region name.

**UNLOCK**    **UNLOCK[/qualifiers] filespec[,s]**

**Command Qualifiers**

**Comments**

/DATE:dd-mmm-yy  
/EXCLUDE:filespec  
/SINCE:dd-mmm-yy  
/SINCE:dd-mmm-yy/THROUGH:dd-mmm-yy  
/THROUGH:dd-mmm-yy  
/TODAY

Unlocks locked files. Locked files are files that have been improperly closed. They are identified by an *L* in the directory listing.

---

# Utilities



## BAD COMMAND SUMMARY

Command lines for the Bad Block Locator Utility (BAD) use the format shown next.

### Format

**BAD** *ddnn*:[/switch1...]

In this command line, *dd* is the abbreviation for the volume on which BAD is being run and *nn* is the unit number of the volume.

### Switches

**ALLOCATE** **BAD** *ddnn*:/ALO[:*volumelabel*]

Prompts you for blocks to be allocated to the BADBLK.SYS file and to be entered in the bad block descriptor file.

**CSR ADDRESS** **BAD** *ddnn*:CSR=*nnnnn*

Specifies the CSR address of a device that is not in a standard location (standalone version of BAD only).

**LIST** **BAD** *ddnn*:/LI

Lists bad blocks as they are located.

**MANUAL** **BAD** *ddnn*:/MAN

Allows you to enter bad blocks, which are then included in the bad block descriptor file.

**NOWRITECHECK** **BAD** *ddnn*:/NOWCHK

Negates the effect of /WCHK.

**OVERRIDE** **BAD** *ddnn*:/OVR

Creates the bad block descriptor file on a last-track device.

**PATTERN** **BAD** *ddnn*:/PAT=*m:n*

Specifies the doubleword data pattern used to locate bad blocks.

## BAD Command Summary

**RETRY**    **BAD ddnn:/RETRY**

Recovers hardware errors and software errors.

**UPDATE**    **BAD ddnn:/UPD**

Reads the bad block descriptor file and prompts for your entries.

**VECTOR**    **BAD ddnn:/VEC=nnn**

Specifies the interrupt vector address of a device that is not in a standard location (standalone version of BAD only).

**WRITECHECK**    **BAD ddnn:/WCHK**

Causes a write-check operation to take place after each write operation (standalone version of BAD only). The switch is not valid for DT-, DX-, or DY-type devices.

## BRU COMMAND SUMMARY

Command lines for the Backup and Restore Utility (BRU) use the format shown next.

### Format

```
/qualifiers[...] indevice[,...][filespec[,...]] outdevice[,...]
```

In this command line, the qualifier or qualifiers are any of the command qualifiers listed below, indevices are the physical device or devices from which data is transferred, filespec is the particular file or category of file to be backed up or restored, and the outdevice or outdevices are the output devices to which data is being transferred.

### Qualifiers

#### **/APPEND**

Appends new backup data to a magnetic tape or to a disk if you are using the **/IMAGE** qualifier.

#### **/BACKUP\_SET:name**

Specifies the name of the backup set to be placed on magnetic tape or disk.

#### **/BAD:MANUAL**

**AUTOMATIC**  
**OVERRIDE**

Enters the locations of bad blocks on volumes. The default is **/BAD:AUTOMATIC**.

#### **/BUFFERS:number**

Specifies the default number of directory File Control Blocks (FCBs) kept by the Ancillary Control Processor (ACP) for the volume.

#### **/COMPARE:SINGLEBUFFER** **:DOUBLEBUFFER**

Compares the data on the output volume to the data on the input volume and reports any differences. The **DOUBLEBUFFER** option is the default for MU-type devices, and its use is restricted to these devices. **SINGLEBUFFER** is the default for devices other than the MU-type.

**/CREATED:BEFORE:dd-mmm-yy**  
**BEFORE:hh:mm:ss**  
**BEFORE(dd-mmm-yy hh:mm:ss)**  
**AFTER:dd-mmm-yy**  
**AFTER:hh:mm:ss**  
**AFTER:(dd-mmm-yy hh:mm:ss)**

Directs BRU to process files created before or after a specified date or time or both.

**/DENSITY:number**

Specifies the data density at which BRU writes to tape.

**/DIRECTORY**

Displays information (such as backup set names, file names, or the volume number of a tape or disk) for a specified tape or disk volume.

**/DISPLAY**

Displays at your terminal the directory and file name of each file being backed up.

**/ERRORS:n**

Terminates a restore operation after the specified number of errors is reached. The default number of errors is 25. The qualifier can also be used with double-buffered compare and verify operations on data backed up from a disk to an MU-type device. The default number of errors is 25.

**/EXCLUDE**

Excludes selectively from a backup or restore operation all files specified on the command line.

**/EXTEND:number**

Specifies the number of blocks by which a file is extended when that file has exhausted its allocated space.

**/HEADERS:number**

Specifies the number of file headers to allocate initially to the index file.

**/IDENTIFICATION**

Directs BRU to identify itself by displaying its version.

**/IMAGE:SAVE  
RESTORE**

Specifies that you want to do a multiple disk-to-disk backup or restore operation. Use the SAVE option for backup operations. Use the RESTORE option for restore operations.

**/INITIALIZE**

Directs BRU to initialize the output disk before proceeding with the operation.

**/INVOLUME:name**

Specifies the volume label of the input disk.

**/LENGTH:number**

Specifies the length of the output magnetic tape in decimal feet.

**/MAXIMUM:number**

Specifies the maximum number of files that can be placed on a volume as determined by the number of file headers in the volume's index file.

**/MOUNTED**

Allows you to back up files from a disk that is mounted (with the MCR or DCL command MOUNT) as a Files-11 volume.

**/NEW\_VERSION**

Directs BRU to resolve conflicts resulting from files with identical file specifications by creating a new version of the file.

**/NOINITIALIZE**

Specifies that you do not want to initialize the output disk because it is already in Files-11 format.

**/NOPRESERVE**

Specifies that you do not want to preserve file identifiers.

**/NOSUPERSEDE**

Specifies that when files on the input and output volumes have identical file specifications, the input files will not be transferred and the output files will not be superseded. The default is **/NOSUPERSEDE**.

**/OUTVOLUME:name**

Specifies the volume label of the output disk. The label can be up to 12<sub>10</sub> characters long.

**/POSITION:BEGINNING**

**MIDDLE**

**END**

**BLOCK:number**

Specifies the location of the index file on the output disk volume.

**/PROTECTION:SYSTEM:value**

**OWNER:value**

**GROUP:value**

**WORLD:value**

Specifies the default protection status for all files created on the output volume being initialized.

**/REVISED:BEFORE:dd-mmm-yy**

**BEFORE:hh:mm:ss**

**BEFORE:(dd-mmm-yy hh:mm:ss)**

**AFTER:dd-mmm-yy**

**AFTER:hh:mm:ss**

**AFTER:(dd-mmm-yy hh:mm:ss)**

Directs BRU to process files revised before or after a specified date or time.

**/REWIND**

Rewinds the first tape of a magnetic tape set before performing the operation.

**/SUPERSEDE**

Resolves file specification conflicts by deleting the old file on the output volume and by replacing it with the file from the input volume. (The default is **/NOSUPERSEDE**.)

**/TAPE\_LABEL:label**

Specifies a 6-character ANSI volume identifier for identifying the magnetic tape volume.

**/UFD**

Directs BRU to create User File Directories (UFDs) (if they do not already exist) on a mounted output volume and then to copy into them the files from the same directories on the input volume. Used only with the **/NOINITIALIZE** qualifier.

**/VERIFY:SINGLEBUFFER  
DOUBLEBUFFER**

Copies data from the input volume to the output volume, compares the volumes, and reports any differences. The **DOUBLEBUFFER** option is the default for MU-type devices. **SINGLEBUFFER** is the default for devices other than the MU-type.

**/WINDOWS:number**

Specifies for the output disk the default number of mapping pointers allocated for file windows. The default number is the same as that for the input disk.

# CMP COMMAND SUMMARY

Command lines for the File Compare Utility (CMP) use the format shown next.

## Format

```
CMP [outfile[/sw...=]]infile1,infile2
```

In this command line, outfile is the file specification for the output file that contains the comparison, sw is one or more of the CMP switches described below, and infiles are the two files being compared.

If you do not specify an output file, CMP output defaults to TI: and is displayed on your terminal. If you specify the equal sign (=), but no output file, CMP displays only the total number of differences it finds in the input files.

CMP switches always modify the output file specification or the default output file specification.

## Switches

**BLANK LINES** [outfile]/[-]BL=infile1,infile2

Specifies that blank lines in both files be included in compare processing. If specified in the form /-BL, blank lines are not included in compare processing. /-BL is the default switch.

**CHANGE BARS** [outfile]/[-]CB=infile1,infile2

Specifies that CMP list infile2 with change bars, in the form of exclamation points (!), to denote each line that does not have a corresponding line in infile1. /-CB is the default switch.

You can change the change bar character from the exclamation point to any character you wish by means of the /VB switch. See VERTICAL BAR.

When a section of lines in infile1 has been deleted in infile2 (the output listing file), the first line after the deleted lines is marked.

**COMMENTS** [outfile]/[-]CO=infile1,infile2

Specifies that CMP include comments (that is, text preceded by a semicolon) in compare processing. /CO is the default switch.

**DIFFERENCES** [outfile]/[-]DI=infile1,infile2

Specifies that CMP list the differences between the two files (rather than marking the lines in infile2). /DI is the default switch.

/CB and /DI are mutually exclusive switches. If both are specified, /CB overrides /DI.

**FORM-FEED** [outfile]/[-]JFF=infile1,infile2

Specifies that CMP include records consisting of a single form-feed character in compare processing. /-FF is the default switch.

**LINES** [outfile]/LI:n=infile1,infile2

Specifies that a number (n) of lines must be identical before CMP recognizes a match. If you do not specify this switch, CMP searches for three identical lines to match (/LI:3).

When it encounters a match, CMP prints all the preceding nonmatching lines, along with the first line of the matched sequence of lines, to help you find the location in the code where the match occurred.

**LINE NUMBER** [outfile]/LN=infile1,infile2

Specifies that lines in the output file be preceded by their line number. Line numbers are incremented by 1 for each record read, including blank lines. /LN is the default switch. If you specify /SL (following), /LN is unnecessary.

**MERGE BLANKS** [outfile]/[-]JMB=infile1,infile2

Specifies that CMP include all blank and tab characters in a line in compare processing. If you specify /-MB, CMP interprets any sequence of blank characters or tab characters as a single blank character in compare processing. However, all spaces and tabs are printed in the output listing. /MB is the default switch.

**SLP FILE** **outfile/SL[:au]=infile1,infile2**

Directs CMP to generate an output file suitable for use as SLP command input. When you specify /SL, CMP generates the SLP command input necessary to make infile1 identical to infile2. If a 1- to 8-character alphanumeric symbol is included (:au), an audit trail is specified for SLP input.

**SPOOL** **outfile/[-]SP[:n]=infile1,infile2**

Specifies that the output file be spooled on the line printer. You can optionally specify the number (in octal or decimal) of files to be spooled. /-SP is the default switch.

This switch applies only if you have the Queue Manager (QMG) installed.

**TRAILING BLANKS** **[outfile]/[-]TB=infile1,infile2**

Specifies that CMP include all trailing blanks on a line in compare processing. If you specify /-TB, CMP ignores all blanks following the last nonblank character on a line. When you specify /-CO and /-TB together, blanks that precede a semicolon (;) are considered trailing blanks and are ignored. /TB is the default switch.

**VERTICAL BAR** **outfile/VB:nnn=infile1,infile2**

Specifies an octal character code for use as a change bar. You use this switch with the /CB switch. The value nnn specifies the octal character code. For example, you can specify /VB:174 for a vertical bar (if your printer is capable of printing the vertical bar character). /VB:041 (for the exclamation point) is the default switch.

## DMP COMMAND SUMMARY

Command lines for the File Dump Utility (DMP) use the format shown next.

### Format

```
[outfile][/switch(es)]=inspec[/switch(es)]
```

In this command line, `outfile` specifies the output file dump, `switch(es)` specifies one or more of the DMP switches described below, and `inspec` specifies the input device and file or input device only.

### Switches

**ASCII** `outfile=infile/AS`

Specifies that data be dumped 1 byte at a time in ASCII mode.

**BASE ADDRESS** `outfile/BA:n:m=infile`

Specifies a 2-word base block address.

**BLOCK** `outfile=infile/BL:n:m`

Specifies the first and last logical blocks to be dumped.

**BYTE** `outfile=infile/BY`

Specifies that data be dumped in octal byte format.

**DECIMAL** `outfile/DC=infile`

Specifies that data be dumped in decimal word format.

**DENSITY** `outfile=infile/DENS:n`

Specifies density of an input magnetic tape when DMP is in device mode only. Values for `n` can be 800, 1600, or 6250.

**FILE ID** `outfile=infile/Fl:filename:sequencenumber`

Specifies the input file with its file ID instead of its name (file mode only).

## DMP Command Summary

**HEADER**    **outfile=infile/HD:F**  
              **outfile=infile/HD:U**

Includes the file header in the data dumped. *F*, the default, specifies a formatted Files-11 dump for the header. *U* specifies an unformatted octal dump.

**HEADER FILES-11**    **outfile=infile/HF**

Specifies the format for data blocks that have the Files-11 header structure. Other blocks are dumped as unformatted octal.

**HEXADECIMAL**    **outfile/HX=infile**

Specifies that data be dumped in hexadecimal byte format.

**IDENTIFICATION**    **/ID**

Causes the current version of DMP to be displayed or printed.

**LIMIT**    **/LIM:n:m**

Specifies the range of bytes *n* to *m* of each record or block to be dumped.

**LOGICAL BLOCK**    **outfile=infile/LB**

Requests the starting (logical) block number and a contiguous or noncontiguous indication for the file to be displayed.

**LOWERCASE**    **outfile=infile/LC**

Specifies that the data should be dumped in lowercase characters. This switch is valid only if the output device supports lowercase characters.

**LONG WORD**    **outfile=infile/LW**

Specifies that data be dumped in hexadecimal doubleword format.

**MEMORY**    **outfile/MD:[n]=infile**

Controls line number sequencing during a memory image dump.

**OCTAL**    **outfile=infile/OCT**

Specifies that the data should be dumped in octal format. If no DMP format switches are included, the default is octal format.

**RECORD**    **outfile=infile/RC**

Dumps one record at a time in the specified format.

**REWIND**    **outfile/RW=infile[/RW]**

Issues a rewind command to the tape driver before referencing a specified tape. You can use the /RW switch at any time to reposition a tape at beginning-of-tape (BOT).

**RADIX-50**    **outfile=infile/R5**

Dumps in Radix-50 word format.

**SPACE BLOCKS**    **outfile=infile/SB:[-]n**

Specifies the number of blocks DMP spaces forward (n) or backward (-n) on a tape.

**SPACE FILES**    **outfile=infile/SF:[-]n**

Specifies the number of end-of-file (EOF) marks DMP spaces forward (n) or backward (-n) on a tape.

**SPOOL**    **outfile/SP=infile**

Spools the dump file (the output file) to the line printer.

**WORD**    **outfile=infile/WD**

Specifies that data be dumped in hexadecimal word format.

## DSC COMMAND SUMMARY

Command lines for the Disk Save and Compress Utility (DSC) use the format shown next.

### Format

DSC outdev[s]:[label][/switch[es]]=indev[s]:[label][/switch]

In this command line, outdev[s] is the physical volume or volumes to which data is copied, label identifies the Volume ID of the output or input device, switch[es] is the command switches described next, and indev[s] is the physical volume or volumes from which data is copied.

### Switches

**APPEND** outdev:/AP=indev

Appends a DSC file to the first volume of a magnetic tape set that already contains a DSC file.

**BAD** outdev:/BAD=MAN:NOAUTO=indev  
/BAD=NOAUTO  
MAN  
OVR  
MAN:OVR

Allows manual entry of bad block locations; can supplement, override, or ignore the disk's own bad block file.

**BLOCKS** outdev:/BL=n=indev

Sets the number of 256-word blocks DSC can include in each of its two buffers.

**COMPARE** outdev:/CMP=indev

Compares input and output volumes for differences.

**DENSITY** outdev:/DENS=nnnn=indev

Overrides the DSC default storage density for magnetic tapes of 800 bpi. The first form of the switch creates magnetic tapes at 1600-bpi density. The second form (the split density switch) creates magnetic tapes with volume header information at 800 bpi and the rest of the tape at 1600 bpi.

**REWIND** outdev:/RW=Indev

Rewinds all volumes in a magnetic set before execution of the current command line.

**VERIFY** outdev/VE=Indev

Copies data from the input volume and compares it with the output volume following the data transfer.

## LINE TEXT EDITOR (EDI) COMMANDS

In this section, the following conventions are used:

The asterisk (\*) can be used in place of any numeric argument in an EDI command. It evaluates to 32,767<sub>10</sub>. For example, the following line prints the remainder of the block buffer or file:

```
>P *
```

An ellipsis (...) can be used in many search strings to identify characters between the first and last characters of the string.

EDI allows the use of abbreviations in commands.

### Commands

#### **Add**    **A string**

Adds the text in the string to the end of the current line.

#### **Add & Print**    **AP string**

Adds the text in the string to the end of the current line and displays the entire line of the terminal.

#### **ALTMODE Key**    **ALT**

In block mode, causes the system to print the previous line in the block. That line becomes the current line.

#### **Begin**    **B**

Sets the current line to the line preceding the top line in the file or block buffer. In line mode, creates a copy of the file.

#### **Block On/Off**    **BL OFF** or **BL [ON]**

Changes from the EDI block mode to line mode or from line mode to block mode to access text.

#### **Bottom**    **BO**

Moves the line pointer to the bottom of the current block (in block mode) or to the bottom of the file (in line mode).

**Change** [n]C /string1/string2[/]

Replaces string 1 with string 2 in the current line n times.

**Close** CL [filespec]

Transfers the remaining lines in the block buffer and input file to the output file and closes all files. Renames output files to filespec.

**Close & Delete** CD [filespec]

Transfers the remaining lines in the block buffer and the input file to the output file, closes the output file, and deletes the input file.

**Close Secondary** CLOSES

Closes the secondary input file.

**Concatenation Character** CC [character]

Changes the concatenation character used to separate EDI commands on one line to the character specified. (The default concatenation character is the ampersand (&).)

**CTRL/Z** 

Closes all open files and terminates the editing session.

**Delete** D [n] or D -n

Deletes the current line and the next n-1 lines if n is a positive number. Deletes n lines preceding the current line, but not the current line, if n is a negative number. Negative numbers can be used only in block mode.

**Delete & Print** DP [n] or DP -n

Deletes lines specified and prints the new current line.

**End** E

Sets the last line in a file or block buffer as the current line.

**Erase** ERASE[n]

Erases the current line in line mode. Erases the current block buffer and the next n-1 blocks in block mode.

**ESCAPE Key**    **ESC**

In block mode, prints previous line in block and makes it the new current line. In input mode, it terminates the line of input and, if entered as the first character in the line, exits from input mode.

**Exit**    **EX [filespec]**

Transfers the remaining lines in the block buffer and input file to the output file. Closes files, renames the output file if specified, and terminates the editing session.

**Exit & Delete**    **ED [filespec]**

Transfers the remaining lines in the block buffer and input file to the output file, closes files, and renames the output file if specified. Deletes the input file and terminates the editing session.

**File**    **FIL filespec**

Transfers lines from the input file to both the output file and the specified file until a form feed or end-of-file is encountered. The original file remains intact. This command is used only in line mode.

**Find**    **[n]F [string]**

Finds the line in the current block starting with string, or the nth line starting with string. A string must begin in the first column of the line to be a match.

**Form Feed**    **FF**

Inserts a form feed into the block buffer.

**Insert**    **I [string]**

Enters the specified string immediately following the current line. If no string is specified, EDI enters input mode.

**Kill**    **KILL**

Closes the input file and deletes the output file.

**Line Change**    **[n]LC /string1/string2[/]**

Changes all occurrences of string1 in the current line (and n-1 lines) to string2.

**List on Pseudo Device LP**

Displays on the Console Listing Device, CL;, lines remaining in the block buffer or input file, starting with the current line.

**List on Terminal LI**

Displays on the terminal all lines remaining in the block buffer or input file, starting with the current line.

**Locate [n]L [string]**

Locates the nth or next occurrence of the specified string. In block mode, the search stops at the end of the current block.

**Macro MACRO x definition**

Defines the macro number x for the EDI commands in the definition. The value x can be 1, 2, or 3.

**Macro Call MC**

Retrieves a macro definition stored in the file MCALL;n.

**Macro Execute [n]Mx [a]**

Executes macro x n times, while passing numeric argument a to it. The value x can be 1, 2, or 3.

**Macro Immediate [n] < definition >**

Defines and executes a macro n times. Stores macro definition in macro number 1 storage area.

**Next N[n] or N -n**

Establishes a new current line n lines away from the current line.

**Next & Print NP[n] or NP -n**

Establishes a new current line and displays it on the terminal.

**Open Secondary OP filespec**

Opens the specified secondary input file.

**Output On/Off**    **OU [ON] or OU OFF**

Continues or discontinues a file transfer to output file in line mode.

**Overlay**    **O[n]**

Deletes n lines, enters input mode, and inserts new lines, as typed, in place of the deleted lines.

**Page**    **PAG n or PAG -n**

Enters block mode. Reads page n into current block buffer. If n is less than the current page, EDI goes to the top of the file first. Pages are set by form-feed characters.

**Page Find**    **[n]PF string**

Searches successive block buffers for the nth occurrence of the string. The string must begin in the first column of the line.

**Page Locate**    **[n]PL string**

Searches successive blocks for the nth occurrence of the string. The string can begin anywhere on the line.

**Paste**    **PA /string1/string2[/]**

Searches for all remaining lines in the input file or block buffer that contains string1 and replaces them with string2.

**Print**    **P [n]**

Displays the current line and the next n-1 lines on the terminal. The last line printed becomes the current line.

**Read**    **REA [n]**

Reads the next n blocks of text into the block buffer. If the buffer already contains text, the new text is appended to it.

**Renew**    **REN [n]**

Writes the current block to an output file and reads a new block n from an input file (block mode only).

**RETURN Key** [RET]

Displays the next line on the terminal and makes it the current line.  
Exits from input mode if it is entered as the first character of a line.

**Retype** R [string]

Replaces the current line with the specified string or deletes the current line if no string is specified.

**Save** SA [n] [filespec]

Saves the current line and the next n-1 lines in the specified file. If no file is specified, saves the lines in the SAVE.TMP file.

**Search & Change** SC /string1/string2[/]

Locates string 1 and replaces it with string 2.

**Select Primary** SP

Selects or reestablishes the primary file as the input file.

**Select Secondary** SS

Selects the secondary file that will be an input file.

**Size** SIZE n

Specifies the maximum number of lines that can be read into a block buffer.

**Tab On/Off** TA [ON] or TA OFF

Turns automatic tabbing on or off.

**Top** T

Sets the current line to the line preceding the top line in the file or block buffer. In line mode, creates a copy of the file.

**Top of File** TOF

Returns to the top of the input file in block mode and saves all of the previously edited pages. Reads in a new block after writing the output file. This command creates a new version of the file each time it is executed in line mode.

## Line Text Editor (EDI) Commands

### **Type TY [n]**

Displays the next n lines on the terminal. This command is identical to the PRINT command in line mode. However, in block mode, the line pointer remains at the current line unless EDI reached the end of a block.

### **Unsave UNS [filespec]**

Inserts all lines from the specified file following the current line. If no file name is used, EDI uses SAVE.TMP.

### **Uppercase On/Off UC [ON] or UC OFF**

Enables or disables conversion of lowercase letters to uppercase letters when they are entered at a terminal.

### **Verify On/Off V [ON] or V OFF**

Selects whether the operation of the LOCATE and CHANGE commands will be verified (printed on the terminal) after the line is located or changed.

### **Write W**

Writes the contents of the block buffer to the output file and erases the block buffer.

# DIGITAL STANDARD EDITOR (EDT) COMMANDS

EDT lets you edit text in line mode and character mode, using the keypad or nokeypad functions.

## Line Mode Commands

You can tell EDT is in line mode when you receive an asterisk (\*) prompt. You can then edit the text on a line-by-line basis. Press CTRL/Z to exit from EDT. The following commands work from EDT line mode:

### CHANGE C[range]

Starts either keypad or nokeypad character editing, depending upon the terminal type. EDT defaults to keypad character editing for VT52, VT100, and VT200-series terminals and nokeypad editing for all other terminals. EDT puts the cursor ahead of the location you specify as range.

Pressing CTRL/Z returns you to line mode.

### CLEAR CL textbuffer

Deletes the contents of a text buffer but does not delete the buffer itself.

### COPY CO [range-1] TO [range-2][/qualifier(s)]

Copies text from range-1 to the location in front of the line you specify in range-2. EDT can copy from one buffer to another or from one place to another within a text buffer.

#### Qualifiers

/QUERY Verifies each line to be inserted.

/DUPLICATE Inserts the range of text more than once.

### DEFINE KEY DEF K{[GOLD](number|CONTROL letter)| GOLD character}AS'string'

Redefines keypad keys in terms of nokeypad commands. The following table describes the command format:

Braces { } You must choose one of the options.

OR | Separates choices.

Brackets [ ]	You can use the GOLD key to specify the alternate function of a keypad or control key.
number	Number of the keypad key.
CONTROL letter	Press the CONTROL key and a character from A to Z.
GOLD	The GOLD keypad key.
GOLD character	Press the GOLD and any keypad character except 0 to 9, !, %, ', and ".
string	One or more nokeypad commands used to redefine the key.

**DEFINE MACRO DEF M macroname**

Assigns a name to a sequence of editor commands stored in the file macroname.

**DELETE D [range][/qualifier]**

Deletes the lines specified and displays a message stating the number of lines deleted. When you do not specify a range, the DELETE command deletes the current line.

**Qualifier**

/QUERY Verifies each line to be deleted.

**EXIT EX[filespec][/qualifier(s)]**

Ends an editing session and moves the main text buffer to the output file specified. You can define the name of the output file in the command line that invokes EDT or in the EXIT command.

**Qualifiers**

/SEQ[UENCE][:initial  
[:increment]]

Assigns integer line numbers before the text transfer and places them in a fixed field in the file. You define the initial number and the increment between numbers.

**/SA[VE]** Saves the journal file created during the editing session.

**FIND F range**  
Locates the line or lines specified by range.

**HELP H [topic[subtopic]]**  
Displays information on requested topics or subtopics.

**INCLUDE INC filespec [range]**  
Copies disk files into text buffers. The *filespec* parameter is the name of the file you want to copy. EDT copies the file to the current text buffer in front of the first line of the range.

**INSERT I [range][;line to be inserted]**  
Inserts text into a buffer. When you specify a range, EDT inserts the text before the first line of the range. If you do not specify a range, EDT inserts the text before the current line.

**MOVE M [range-1] TO [range+n2][/qualifier]**  
Moves the lines in range-1 to the location preceding range-2. Deletes the text from range-1.

**Qualifier**

**/QUERY** EDT prompts you to verify each line of range-1 to be moved.

**null (Implied TYPE) [range] [RET]**  
Displays the next line of text. You can specify a range of text to be displayed. However, the REST, WHOLE, BEGIN, END, LAST, and ALL range specifications must be preceded by a percent sign (%).

**PRINT P filespec[range]**  
Copies text from a text buffer into a file. Range selects a portion of the buffer to be copied. Without a range, the default is the current text buffer.

**QUIT**    **QUIT[/qualifier]**

Ends the current editing session without saving the main text buffer.

**Qualifier**

**/SAVE**    Saves the contents of the journal file under the name specified in the command line to invoke EDT.

**REPLACE**    **R [range][:line to be inserted]**

Deletes lines specified in range and inserts new text. EDT inserts the new text at the first line in the range specification. Without a range, EDT deletes the current line and inserts the new text in its place.

**RESEQUENCE**    **RES [range]/[qualifier]**

Assigns new line numbers to the contents of a buffer or the range of lines specified. Without a range, EDT resequences all lines in the current text buffer.

**Qualifier**

**/SEQ[UENCE][:initial[:increment]]**    Sets the first line resequenced to the initial value and increments succeeding numbers by the increment specified.

**SET**    **SET parameter**

Controls the operating characteristics of EDT.

**Parameters**

**CASE {UPPER | LOWER | NONE}**

EDT flags uppercase or lowercase characters with a preceding apostrophe. The default is NONE, which does not flag any characters.

**CURSOR top:bottom**

Sets the number of lines over which the cursor moves on the display. Top is the number of lines for the upper limit and bottom is the number of lines for the lower limit.

**ENTITY {WORD | SENTENCE | PARAGRAPH | PAGE} 'string'**

Sets user-definable entities for character operation.

**KEYPAD**

Allows the keypad to control the character-editing operation.

**LINES number**

Sets the number of lines that EDT displays on the terminal during character editing.

**MODE {LINE | CHANGE}**

Used in a startup command file to control the editing mode entered at the end of the initialization.

**[NO]NUMBERS**

Determines whether EDT displays line numbers in line editing.

Default: NUMBERS

**[NO]QUIET**

Controls the ringing of the terminal bell when an error occurs in change mode editing. Default: NOQUIET

**SCREEN width**

Controls the maximum width of the line EDT displays. Default: 80 characters

**SEARCH {EXACT | GENERAL}**

EDT searches for exact comparisons of case or ignores case in searches.

Default: GENERAL

**{BOUNDED | UNBOUNDED}** EDT stops searching at the next page entity marker. Default: UNBOUNDED

**{BEGIN | END}** EDT leaves the cursor at the end of the string when it is found. If the string is not found, the cursor does not move. Default:

BEGIN

**{TAB n | NOTAB}**

Sets the number of spaces for the first tab stop in keypad editing. Remaining tabs are unchanged. Default: 8

**TERMINAL {HCPY | VT52 | VT100 | VT200}**

Determines the type of terminal in use. EDT gets the terminal type from the operating system and this command overrides that setting.

**[NO]TRUNCATE**

Ends display of a line at the value of SET SCREEN. Default: TRUNCATE

**[NO]VERIFY**

Enables or disables display of commands from command files and macro commands. Default: NOVERIFY

**[NO]WRAP n**

Sets or eliminates a line length limit of n character positions. Default: NOWRAP

**SHOW SHOW parameter**

Displays the operating characteristics of EDT.

**Parameters**

**BUFFER**

Lists the buffers in use during the current editing session and the number of lines of text in each.

**CASE**

Shows the current case setting.

**CURSOR**

Shows the current cursor range.

**ENTITY {WORD | SENTENCE | PARAGRAPH | PAGE}**

Shows the current setting for the user-default entity specified.

**KEY** {[GOLD](number | CONTROL letter) | GOLD character}  
Shows the definition of the specified key in change mode.

**SCREEN**  
Shows the current setting for screen width.

**SUBSTITUTE** S/string-1/string-2/[range][/qualifier(s)]  
Replaces occurrences of string-1 with string-2 within the range specified. Without a range, EDT replaces the next occurrence of string-1 with string-2. EDT returns to the first line in the specified range at the end of the substitution.

**Qualifiers**

- /B[R]IEF[:n] EDT displays the first n characters of the line containing string-1. The default for n is 10.
- /Q[UE]RY EDT prompts you to verify each line of range-1 to be moved.
- /NOT[Y]PE EDT does not display the lines on which it makes substitutions.

**SUBSTITUTE NEXT** [S] N[/string-1/string-2]  
EDT searches for the next occurrence of string-1 from the current location forward. The line on which the substitution is made becomes the current line.

If you do not specify string-1 or string-2, EDT uses the strings specified in the last SUBSTITUTE command.

**TYPE** T [range][/qualifier(s)]  
Displays the specified range of lines or all the lines in the current text buffer.

**Qualifiers**

- /B[R]IEF[:n] EDT displays the first n characters of the selected lines. The default for n is 10.
- /S[T]AY EDT does not change the cursor position.

**WRITE WR filespec [range][/qualifier]**

Copies the defined range of text from a text buffer to the specified file. Does not change the contents of the text buffer. Without a range, EDT copies the contents of the current text buffer to the file.

**Qualifier**

/SEQUENCE[:initial[:increment]] EDT writes the line numbers as a part of the output file.

**Character Mode Keypad Editing Commands**

The keypad editing functions are those used when you enter character mode with the EDT CHANGE command and set the terminal to use the keypad keys with the SET KEYPAD command. You can also use all line mode commands with the Gold Command Keys. The character mode keypad editing commands are as follows:

- DELETE Erases the character to the left of the cursor.
- GOLD integer Repeats any keypad function except SPECINS, DELETE, and CTRL/U.
- LINE FEED Erases the word to the left of the cursor.
- CTRL/A Computes tab level.
- CTRL/C Aborts the current command and returns EDT to keypad editing.
- CTRL/D Decreases tab level.
- CTRL/E Increases tab level.
- CTRL/K Defines key.
- CTRL/T Adjusts tabs.
- CTRL/U Deletes to start of line.
- CTRL/W Refreshes screen.
- CTRL/Z Returns to line-editing prompt.

**Nokeypad Change Mode Commands**

Nokeypad commands have only one format. They can be used in a series without any delimiter between commands. However, no abbreviations are allowed.

**ADVANCE** [-]ADV

Sets all commands forward (to the right and down from the current cursor position). [-]ADV sets commands backward (to the left and up from the current cursor position).

**APPEND** [+ | -][count]APPEND[+ | -][entity-count]  
[+ | -]entity[=buffer]

Moves the specified entities to another text buffer and deletes the text from the current buffer. Buffer names the receiving text buffer. If no buffer is specified, EDT uses the PASTE buffer.

**ASCII** [count]ASC

EDT displays an ASCII character when you specify the character's decimal number representation.

**BACK** BACK

Sets all commands backward (to the left or up from the cursor). Override with a plus sign preceding another command.

**CHANGE CASE** CHGC[entity]

Changes the case of the characters within an entity.

**CUT** [+ | -][rep]CUT[+ | -][entity-count][+ | -]entity[=buffer]

Deletes the moved text from the current text buffer and moves it to the specified text buffer, or to the PASTE buffer if no other buffer is specified. Deletes previous contents of the receiving text buffer.

**DELETE** [+ | -][rep]D[+ | -][entity-count][+ | -]entity[=buffer]

Deletes a specified number of entities.

**DEFINE KEY** DEFK

Defines the keystrokes used in keypad editing in terms of nokeypad commands.

**EXIT** EX

Exits EDT from nokeypad editing back to line editing.

**EXTENDED EXT**

Enters line mode commands when EDT is in character mode. Returns to change mode after executing the command.

**FILL [+ | -][rep]FILL[+ | -][entity-count][+ | -]entity[=buffer]**

Places the maximum amount of text on each line within the limit determined by the SET WRAP command. Default: 80 characters

**INSERT I**

Prepares the current text buffer for insertion of text in front of the cursor position.

**NULL [+ | -][rep][+ | -][entity-count][+ | -]entity[=buffer]**

Moves the cursor the specified number of entities.

**PASTE PASTE**

**[+ | -][rep]PASTE[+ | -][entity-count][+ | -]entity[=buffer]**

Copies the contents of the specified text buffer in front of the current cursor location.

**QUIT QUIT**

Ends the editing session without saving any edits and returns to the monitor (CLI) prompt.

**REPLACE R**

**[+ | -][rep]R[+ | -][entity-count][+ | -]entity[=buffer]**

Deletes the text specified and enters insert mode so that you can replace the deleted text. To exit from insert mode here, press CTRL/Z.

**REFRESH REF**

EDT refreshes the entire screen.

**SUBSTITUTE [+ | -][count]S/s1/s2**

Replaces one string of characters with another. Count defines the number of substitutions, and minus (-) indicates a backward search. Use any nonalphanumeric character as a delimiter, in place of the slash (/).

**SELECT SEL**

Lets you select a range of text by entering SEL at one end and by moving the cursor to the other end. The select range is the text between the cursor and the position marked by SEL.

**SHIFT LEFT [count]SHL**

Shifts the screen image to the left. The amount shifted is equal to the count you specify times 8 (one tab stop). The default count is 1.

**SHIFT RIGHT [count]SHR**

Shifts the screen image to the right. The amount shifted is equal to the count you specify times 8 (one tab stop).

**SUBSTITUTE NXT [+ | -][count]SN**

Uses the s1 and s2 defined in the last substitute command to replace the next occurrence of s1 with s2. Count defines the number of substitutions, and a minus (-) sign indicates a backward search.

**TAB TAB**

When no tab size is specified with the SET TAB command or when the cursor is not at the beginning of a line, the TAB key inserts a tab character at the cursor position.

When a tab size is specified with the SET TAB command, and the cursor is at the beginning of a line, TAB key moves the cursor to the column position specified in the SET TAB command.

**TAB ADJUST [+ | -][rep]TADJ[+ | -][entity-count]  
[+ | -]entity[=buffer]**

Adjusts the tab level for the selected range of lines.

**TAB COMPUTE TC**

Sets the indentation level count to the value obtained by dividing the current cursor column position by the SET TAB number.

**TAB DECREMENT [count]TD**

Decreases the indentation level count.

**TAB INCREMENT** [count]TI  
Increases the indentation level count.

**TOP TOP**  
Places the current line at the top of the screen.

**UNDELETE CHARACTER** [count]JUNDC  
Inserts the last character deleted by a **DELETE CHARACTER** command into the current text buffer (in front of the cursor).

**UNDELETE WORD** [count]JUNDW  
Inserts the last word deleted by a **DELETE WORD** command into the current text buffer (in front of the cursor).

**UNDELETE LINE** [count]JUNDL  
Inserts the last line deleted by a **DELETE LINE** command into the current text buffer (in front of the cursor).

**CIRCUMFLEX** [count]^[A...Z]  
Inserts a control character in the text buffer.

### Line Ranges

Most EDT commands allow you to specify a range of text on which the action of the command is performed. These ranges are:

#### Single Line Ranges

.(period)	Current location of cursor.
number[.decimal]	The line number specified.
-'string'   -"string"	The most recent preceding line containing the string specified. Without a string specification, EDT uses the last search string.
[range]+[number]	The line that is the specified number of lines after the specified range.
[range]-[number]	The line that is the specified number of lines before the specified range.
<b>BEGIN</b>	The first line in the text buffer.

END	An empty line following the last line in the text buffer.
LAST	The last line in the most recent text buffer before the current text buffer.
ORIGINAL number	The line numbers assigned to the text in the main text buffer from the primary input file. You can locate text by its original line number even after it has been assigned new numbers.

### Contiguous Line Ranges

[range-1]:[range-2]	The set of lines from range-1 to range-2 inclusive. Range-1 and Range-2 are any single line range specification.
[range]#number   [range]FOR number	The specified number of lines beginning with range, where range is any single line range specification.
BEFORE	All lines preceding the current line in the current buffer.
REST	All lines after and including the current line.
WHOLE	The current text buffer.

### Noncontiguous Ranges

[range,range,...]   [range AND range...]	All lines specified by each range, which must be a single line range.
[range]All'string'	All lines in the range containing the specified string.

### Text Buffer Ranges

[=buffer][range]   [BUFFER buffer][range]	When you use a buffer without a range specification, the default is the entire text buffer and the cursor is placed at the first line in the text buffer.
---	---

## FLX COMMAND SUMMARY

Command lines for the File Transfer Utility Program (FLX) use the format shown next.

### Format

[ddnn:[[directory]]/switch[...]=infile1[...]/switch[...]

FLX assumes the following defaults if no switches are specified in the command line:

Input volume     DOS-11  
Output volume    Files-11

### Switches

**BLOCKS**    outfile/BL:n=infile

Specifies the number of contiguous blocks (n) in octal or decimal to be allocated to the output file.

**BLOCK SIZE**   outfile/BS:n=infile

Specifies the block size (n) for cassette tape output.

**CONTIGUOUS**   outfile/CO=infile

Specifies that the output file is to be contiguous.

**DELETE**    outfile/DE=infile[/DE]

Deletes files from a DOS-11 or an RT-11 (used with the /RT switch) volume.

**DIRECTORY**   outfile/DI=infile

Causes a directory listing of a cassette or DOS-11 volume or, when used with the /RT switch, of an RT-11 volume. The directory is placed in the specified output file.

**DENSITY**    outfile/DNS:n=infile

Specifies a density of 800 or 1600 bpi for magnetic tape volumes or 6250 for TU81 magnetic tape volumes.

- DOS-11 outfile/DO=infile[/DO]**  
 Identifies the volume as a DOS-11 formatted volume.
- FORMATTED ASCII outfile/FA[:n]=infile**  
 Specifies formatted ASCII transfer mode file format.
- FORMATTED BINARY outfile/FB[:n]=infile**  
 Specifies formatted binary transfer mode file format.
- FORTRAN CONTROL outfile/FC=infile**  
 Specifies that FORTRAN carriage control conventions are to be used.
- IDENTIFICATION /ID**  
 Displays the current version number of FLX.
- IMAGE MODE outfile/IM[:n]=infile**  
 Specifies image mode (n is in decimal bytes).
- LIST outdevice/LI**  
 Same as /DI.
- NUMBER outfile/ZE/NU:n=infile**  
 Used with the /ZE and /RT switches; specifies the number of directory blocks (n) in octal or decimal to allocate when you are initializing an RT-11 disk or DECtape.
- RSX FORMAT outfile/RS=infile[/RS]**  
 Identifies the volume as a Files-11 formatted volume.
- RT FORMAT outfile/RT=infile[/RT]**  
 Identifies the volume as an RT-11 formatted volume.
- REWIND outfile/[-]RW=infile[/RW]**  
 Specifies whether a magnetic tape will rewind before FLX begins the file transfer.

## FLX Command Summary

**SPOOL** **outfile/SP=infile**

Specifies that the converted file is to be spooled by the print spooler or the Queue Manager (QMG).

**UIC** **outfile/UI=infile**

Specifies that the output file is to have the same User File Directory (UFD) as the input file.

**VERIFY** **outfile/VE=infile**

Verifies each record written to a cassette.

**ZERO** **outfile/ZE[:n]=infile/RT**

Initializes cassettes or DOS-11 volumes or, when used with the /RT switch, RT-11 volumes. Initializing erases any files already on the volume.

## FMT COMMAND SUMMARY

Command lines for the Disk Volume Formatter Utility (FMT) use the format shown next.

### Format

**FMT** `ddnn:[/switch1][...]`

In this command line, `dd` is the abbreviation for the volume being formatted and `nn` is the unit number of the volume.

### Switches

**BAD** `ddnn:/BAD`

Runs the Bad Block Locator Utility (BAD) if it is installed. Note that you can use this switch only with operating systems that allow spawning of tasks. RSX-11M-PLUS provides spawned tasks as a system generation option.

**DENSITY** `ddnn:/DENS=option`

Selects HIGH (double) or LOW (single) density for RX02 floppy diskettes and HIGH for RX33 diskettes.

**ERROR LIMIT** `ddnn:/ERL=n`

Determines the maximum number of errors FMT allows on the volume.

**MANUAL** `ddnn:/MAN`

Enters manual operating mode and formats the sector or track you specify.

**NOVERIFY** `ddnn:/-VE` or `/NOVE`

Inhibits the default verification of a successful FMT operation.

**OVERRIDE** `ddnn:/OVR`

Overrides or ignores the manufacturer-detected bad sector file (MDBSF).

## FMT Command Summary

### **VERIFY** `ddnn:/VE`

Verifies that an FMT operation was successfully completed. This switch is the default.

### **WRITE LAST TRACK** `ddnn:/WLT=n`

Rewrites the MDBSF (on the last track of the device) to add bad sectors found during an FMT operation.

### **INDIRECT** `ddnn:/@Y`

Informs FMT that it is receiving input from an indirect command file. User intervention is not allowed during the operation.

## LBR COMMAND SUMMARY

Command lines for the Librarian Utility Program (LBR) use the format shown next.

### Format

`outfile[,listfile]=infile[,...]`

For this section, **M** signifies that the command affects macro libraries, **O** signifies that the command affects object libraries, and **U** signifies that the command affects universal libraries.

### Switches

**COMPRESS** `outfile/CO:size:ept:mnt=infile`

Compresses a library file by physically deleting logically deleted records, by putting the free space at the end of the file, and by making the free space available for new library module inserts.

**CREATE** `outfile/CR:size:ept:mnt:libtype:infiletype`

Allocates a contiguous library file on a direct access device (for example, a disk).

**DELETE** `outfile/DE:module[...]`

Logically deletes library modules and their associated entry point from a file.

**DEFAULT** `outfile/DF:filetype  
/DF:filetype`

Specifies the default library file type.

**DELETE GLOBAL** `outfile/DG:global[...]`

Deletes the specified library module entry points from the entry point table.

**ENTRY POINT** `outfile[/EP]=infile[,...]  
outfile=infile[/EP][,...]`

Includes or excludes entries in the entry point table.

**EXTRACT**    **outfile=infile/EX[:modulename[...]]**  
Reads (extracts) one or more modules from a library and writes them into the specified output file.

**INSERT**    **outfile/IN=infile 1[,...]** (M and O)  
              **outfile=infile/IN:name[:op[...]]** (U)  
Inserts library modules into a library file.

**LIST**    **outfile[,listfile]/switch**  
Lists all modules in the library file plus additional information, depending on which form of the switch you use as follows:

- /LI**    Lists all modules in the library file.
- /LE**    Lists all modules in the library file and their corresponding entry points.
- /FU**    Lists all modules in the library file and provides a full module description that includes the size, date of insertion, and module-dependent information.

**MODIFY HEADERS**    **outfile/MH:module[:op[,...]]**  
Modifies the optional user-specified information in the module header of a universal library.

**REPLACE**    **outfile/RP=infile[,...]** (M and O)  
              **outfile=infile[/RP][,...]** (M and O)  
              **outfile/RP:name[:op[,...]]-infile[,...]** (U)  
              **outfile=infile/RP:name[:op[,...]][,...]** (U)  
Replaces or, in certain cases, inserts library modules in a library file.

**SELECTIVE SEARCH**    **outfile=infile/SS[,...]**  
Sets the selective search attribute bit in the object module header.

**SPOOL**    **outfile,listfile/[-]SP**  
Spools the listing file for printing. This is the default setting; use **/-SP** to prevent the file from being printed.

**SQUEEZE**    **outfile/SZ=infile[,...]** (global format)  
              **outfile=infile/SZ[,...]** (local format)  
Reduces the size of macro definitions by removing comments, blank lines, and trailing blanks and tabs from the macro text.

## PAT COMMAND SUMMARY

Object Module Patch Utility (PAT) command lines use the format shown next.

### Format

`[outfile]=infile[/CS[:n]],correctfile[/CS[:n]]`

In this command line, `outfile` is the file specification for the output file, `infile` is the file specification for the input file containing one or more concatenated object modules, and `correctfile` is the specification for the correction file containing updates to be applied to one module in the input file.

### Switch

**CHECKSUM** `[outfile]=infile/CS[:n],correctfile[/CS[:n]]`

Directs PAT to calculate the checksum for all the binary data that constitutes the module. PAT displays this checksum in octal format.

## PIP COMMAND SUMMARY

Command lines for the Peripheral Interchange Program (PIP) use the format shown next.

### Format

ddnn:[directory]filename.type;version[/switch][...][/subswitch]

### Default Operation

The default PIP operation (with no switches) is to copy the specified files, using the format shown next.

### Format

outfile=infile[...][/subswitch[...]]

### Parameters

- outfile**            If the command does not specify a file name, file type, or file version number, PIP uses the input name and type and the next highest version number.  
                      If the command specifies a file name, file type, or file version number, no other field can be a wildcard and the command line can specify only one input file.
- infile**             If the command does not specify file name, file type, or version number, the default is \*.\*.\*.

### Subswitches

- /BL**                Specifies the number of contiguous blocks allocated for the output file, where n is octal or decimal.  
                      If n is decimal, it is followed by a period (n.).
- /CO**                Specifies a contiguous or noncontiguous output file.
- /FO**                Specifies file ownership (output file directory).

- /NV** Forces the output version number of the copied file to be 1 higher than the current highest version.
- /SU** Copies the output file, superseding an existing file.

**Switches**

**Append** `outfile=infile[,...]/AP[/FO]`

Opens an existing file and appends the input files, infile(s), to the end of it.

PIP allows the following parameters for this command:

- `outfile` Explicit file name and file type.
- `infile(s)` Explicit file parameters; wildcard by default.
- `/FO` File ownership is the output file User File Directory (UFD); without `/FO`, ownership is the User Identification Code (UIC) of the user running PIP.

**Block Size** `outfile/BS:n=infile`

Defines the block size for magnetic tape.

**Creation Date** `outfile/CD=infile[,...]`  
`outfile=infile/CD[,...]`

Gives the output file the creation date of the input file rather than the date of the file transfer. (This switch cannot be used with the merge switch or with a magnetic tape as an output device.)

**Default Date** `/DD:startdate:enddate`

Restricts file searches to files created during the specified period of time.

**Delete** `infile[,...]/DE[/LD]`

Deletes files. `/LD` is a subswitch that causes PIP to list the files it deletes.

**Default** `[ddnn:][directory]/DF`  
`ddnn:/DF`  
`[directory]/DF`  
`/DF`

Changes the default device or directory for the current PIP task.

**End-of-File** `infile/EOF[:block:byte][,...]`

Specifies the pointers for the end of a file (EOF). If values for block and byte are not entered, PIP places EOF at the last byte of the last block in the file.

**Enter** `outfile=infile[...]/EN[/NV]`

Enters a synonym for a file in a directory on the same device, with an option to force the version number of the output file to 1 greater than the latest version for the file. PIP allows the following parameters for this command:

- |                      |   |
|----------------------|---|
| <code>outfile</code> | The file name, file type, or file version can be explicit, a wildcard, or null. A field that is a wildcard or null assumes a corresponding input field. |
| <code>infile</code>  | Default for the file name, file type, and file version number is *.*.*.   |
| <code>/NV</code>     | Forces a new version of the file.   |

**File Exclusion** `filespec/EX`

Excludes one file specification during a search.

**File Identification** `outfile=/FI:filenum:seqnum`

Accesses a file by its file identification number (file ID).

**Free** `[ddnn:]/FR`

Displays on the terminal the amount of space available on a volume, the largest block of contiguous space, the number of available file headers, and the number of headers used.

**Identify** `/ID`

Identifies the version number of PIP currently in use and whether PIP is linked to ANSFCS.

**LIST** `[!lstfile=]infile[...]/LI[/subswitch]`

Lists the contents of one or more directories, with an option to specify formats for output directories. PIP allows the following parameters for this command:

- |                      |  |
|----------------------|--|
| <code>outfile</code> | Listing file specifier; defaults to TI:. |
| <code>infile</code>  | Default is *.*.*.                        |

The following subswitches determine what type of report is displayed:

<b>/LI/BR</b> or <b>/BR</b>	Brief report.
<b>/LI</b>	Limited report.
<b>/LI/FU[:n]</b> or <b>/FU:n</b>	Full report (n specifies the decimal characters per line; the default is device buffer size).
<b>/LI/TB</b> or <b>/TB</b>	Total blocks report.

**Merge outfile=infile[,...][/ME][subswitch]**

Creates one file by concatenating two or more files. The legal subswitches are as follows:

<b>/BL</b>	Specifies the number of contiguous blocks allocated for the output file, where n is octal or decimal. If n is decimal, it is followed by a period (n.).
<b>/CO</b>	Specifies a contiguous or noncontiguous output file.
<b>/FO</b>	Specifies file ownership (output file UFD).
<b>/NV</b>	Forces the output version number of the copied file to be 1 higher than the current highest version.
<b>/SU</b>	Copies the output file, superseding an existing output file.

**No Message infile[,...][switch]/NM**

Causes certain PIP error messages not to be displayed: for example, the message NO SUCH FILE(S). The switches that can be used with the /NM switch are as follows:

<b>/LI</b>	Lists directory.
<b>/DE</b>	Deletes the file or files.
<b>/PU</b>	Purges the file or files.
<b>/UN</b>	Unlocks the file or files.

You can also use any subswitches of these switches.

**Protect Symbolic:** `infile/PR/SY[:RWED][:/OW[:RWED]]  
 [:/GR[:RWED]][/WO[:RWED]][/FO]`

Alters the file protection for the file specified. The file name and file type must be explicit.

Symbolic protection codes assign privilege merely by their presence, using the following:

System = /SY:RWED  
 Owner = /OW:RWED  
 Group = /GR:RWED  
 World = /WO:RWED

The symbolic codes are as follows:

R = Read  
 W = Write  
 E = Execute  
 D = Delete

Numeric protection denies privilege by setting bits in a protection status word. Add octal values from the following list to deny privilege.

User Class	Privilege	Octal Code	Bit
System	R	1	0
	W	2	1
	E	4	2
	D	10	3
Owner	R	20	4
	W	40	5
	E	100	6
	D	200	7
Group	R	400	8
	W	1000	9
	E	2000	10
	D	4000	11
World	R	10000	12
	W	20000	13
	E	40000	14
	D	100000	15

**Purge** `infile[...]/PU[:n][/LD]`

Deletes a specified range of versions of a file (but does not delete the latest version). Specification of a file version number is not necessary. Wildcards are valid for file name and file type.

When `:n` is specified, PIP deletes all but the `n` latest consecutively numbered version. Without `:n`, PIP deletes all but the latest version.

**Remove** `infile[...]/RM`

Removes an entry from a directory, but does not delete the file.

**Rename** `outfile=infile[...]/RE[/NV]`

Changes the name of the file specified. Used with the `/NV` switch, `/RE` creates an output file with a version number 1 higher than the latest version of the file. PIP allows the following parameters for this command:

<code>outfile</code>	A wildcard (*) or null field assumes the value of the corresponding field in the input file.
<code>infile</code>	Null file name, file type, and file version default to *.*.*.
<code>/NV</code>	Forces the output version number of the renamed file to be one higher than the current highest version.

**Rewind** `outfile/RW=infile`  
`outfile=infile/RW`

Directs PIP to rewind magnetic tape. PIP allows the following parameters for this command:

<code>outfile</code>	Causes the magnetic tape on the specified unit to be rewound and erased.
<code>infile</code>	Causes the magnetic tape on the specified unit to be rewound before the input file is opened.

**Selective Delete** `infile[...]/SD`

Prompts for user response before deleting files.

**Shared Reading** `outfile=infile/SR`

Allows shared reading of a file that has already been opened for writing.

**Span Blocks** `ddnn:outfile/SB=mmnn:infile`

Allows output file records to cross block boundaries when ANSI tapes are being copied to Files-11 volumes.

**Spool** `infile[,...]/SP[:n]`

Specifies a list of files to be printed on a line printer. n is the number of copies. This switch applies only if you have the Queue Manager (QMG).

**Truncate** `infile[,...]/TR`

Truncates files to their logical end-of-file point.

**Today Default** `/TD`

Limits the use of files to those created today.

**User File Directory Entry** `outfile/UF[/FO]=infile[,...]`

Creates a User File Directory (UFD) entry in the Master File Directory (MFD) on a volume. PIP allows the following parameters for this command:

`outfile` Specifies the User Identification Code (UIC) as `[*,*]` to transfer multiple infile UICs.

`/FO` File ownership is the output file UFD; without `/FO`, ownership is the UIC of the user running PIP.

**Unlock** `infile[,...]/UN`

Unlocks a file that was locked as a result of being closed improperly.

**Update** `outfile=infile[,...]/UP[/FO]`

Opens an existing file and writes new data (infile) in it, from the beginning. PIP allows the following parameters for this command:

`outfile` Must be explicitly identified.

`infile` Null parameters default to `*.**`. The input file or files replace the current contents of output files.

## QUEUE MANAGER COMMAND SUMMARY

This section describes the Queue Manager (QMG) commands for RSX-11M-PLUS. It includes syntax to use the commands from either DCL or MCR.

### DELETE

Deletes queues or QMG jobs by name or by the job's unique entry number.

#### Format

```
DCL> DELETE/JOB  queueName jobName[FILE_POSITION:n]
DCL> DELETE/ENTRY:nnn[/FILE_POSITION:n]
MCR> QUE  queueName:jobName[/FI:n]/DEL
MCR> QUE  /EN:nnn[/FI:n]/DEL
```

### HOLD AND RELEASE

You can specify that a job be held when you issue your PRINT or SUBMIT command. You can also hold jobs with the HOLD command and release such jobs with the RELEASE command.

HOLD (QUE /HO) blocks a job in its queue until it is explicitly released.

RELEASE (QUE /REL) unblocks a job that has been held in queue.

#### Format

```
DCL> HOLD/JOB  queueName jobName
DCL> HOLD/ENTRY:nnn
MCR> QUE  queueName:jobName/HO
MCR> QUE  /EN:nnn/HO
DCL> RELEASE/JOB  queueName jobName
DCL> RELEASE/ENTRY:nnn
MCR> QUE  queueName:jobName/REL
MCR> QUE  /EN:nnn/REL
```

## PRINT

Queues files for printing on a line printer or for use on other output devices.

### Format

```
DCL> PRINT[/commandqualifier[s]] filespec[s]/[filequalifier[s]]
MCR> PRI [[queuename:]jobname]/[jobswitch]=]filespec[s]
        [/fileswitch[es]]
```

#### DCL Command Qualifiers

```
/[NO]ADJACENT
/JOBCOUNT:n
/QUEUE:queuename
/UPPERCASE
/LOWERCASE
/[NO]HOLD
/PAGE_COUNT:n
/NAME:jobname
/PRIORITY:n
/FORMS:n
/LENGTH:n
/[NO]RESTART
/[NO]FLAG_PAGE
/AFTER:(dd-mmm-yy hh:mm)
/AFTER:TOMORROW [hh:mm]
/DEVICE:ddnn:
/[NO]JOB_PAGE
```

#### DCL File Qualifiers

```
/COPIES:n
/[NO]DELETE
/[NO]TRANSFER
```

#### MCR Job Switches

```
/[NO]AD
/CO:n
queuename:
/NOLOW
/LOW
/[NO]HO
/PA:n
jobname
/PRI:n
/FO:n
/LE:n
/[NO]RES
/[NO]FL
/AF:hh:mm:dd-mmm-yy
/AF::TOMORROW
queuename:
/[NO]JO
```

#### MCR File Switches

```
/CO:n
/[NO]DEL
/[NO]TR
```

## SET QUEUE

Modifies attributes given to print jobs, batch jobs, or files that compose jobs in queues. Such jobs and files have been entered in queues by the PRINT command.

### Format

```
DCL> SET QUEUE queuename:jobname/qualifier[/qualifier[s]]
DCL> SET QUEUE/ENTRY:nnn/qualifier[/qualifier[s]]
MCR> QUE queuename:jobname/MOD/switch[/switch[es]]
MCR> QUE /EN:nnn/MOD/switch/[switch[es]]
```

**DCL Job Qualifiers**

/AFTER:(dd-mmm-yy hh:mm)  
 /JOB\_COUNT:n  
 /FORMS:n  
 /LENGTH:n  
 /LOWERCASE  
 /PAGE\_COUNT:n  
 /PRIORITY:n  
 /[NO]RESTART  
 /UPPERCASE

**MCR Job Switches**

/AF:hh:mm:dd-mmm-yy  
 /CO:n  
 /FO:n  
 /LE:n  
 /LOW  
 /PA:n  
 /PRIO:n  
 /[NO]RES  
 /NOLOW

**Format**

DCL> SET QUEUE/ENTRY:nnn/FILE\_POSITION:n/qualifier  
 [/qualifier[s]]

DCL> SET QUEUE queuename jobname/FILE\_POSITION:n  
 /qualifier[/qualifier[s]]

MCR> QUE /EN:nnn/MOD/Fl:n/switch[/switch[es]]

MCR> QUE queuename:jobname/MOD/Fl:n/switch[/switch[es]]

**DCL File Qualifiers**

/COPIES:n  
 /[NO]DELETE  
 /FILE\_POSITION:n

**MCR File Switches**

/CO:n  
 /[NO]DEL  
 /Fl:n

**SHOW PROCESSOR**

Displays information about the initialized characteristics printers and other devices under control of the Queue Manager (QMG).

**Format**

DCL> SHOW PROCESSOR[/qualifier[s]][[processorname]]

MCR> QUE [processorname:]/switch

**DCL Qualifiers**

processorname[:]  
 /PRINT or /DEVICE  
 /INPUT or /CARD\_READER

**MCR Switches**

/LI:DEV  
 /LI:DEV:P  
 /LI:DEV:I

**SHOW QUEUE**

SHOW QUEUE displays information about QMG print jobs.

## Queue Manager Command Summary

### Format

DCL> SHOW QUEUE [queuename][/**qualifier[s]**]

MCR> QUE/LI [queuename:][**[uic]**][**jobname**]/**switch[es]**]

#### DCL Command Qualifiers

/BATCH  
/BRIEF  
/DEVICE  
/ENTRY:nnn  
/FILES  
/FORMS[:n]  
/FULL  
/NAME:jobname  
/OWNER\_UIC:uic  
/PRINT

#### MCR Job Switches

/LI:B  
/BR  
/LI:P  
/EN:nnn  
/LI  
/FO[:n]  
/FU  
jobname  
[uic]  
/LI:P

# SLP COMMAND SUMMARY

Command lines for the Source Language Input Program (SLP) use the format shown next.

## Format

outfile[/switch][,listfile][/switch]=[primary\_input\_device: [/switch]]

SLP switches have the same effect and can be used on either input or output file specifications, except for the /SP switch, which can only modify the listfile.

## Switches

**AUDIT TRAIL** [/AU:position:length] or /-AU

Enables or disables the audit trail, which indicates the changes made during the most recent editing session.

**BLANK FILL** [/BF] or /-BF

Enables or disables blank fill (right-justification) for an audit trail.

**COMPRESS** /CM[:n]

Deletes the audit trail and any trailing spaces or tabs, and truncates the text at the specified horizontal position.

**CHECKSUM** /CS[:n]

Calculates the checksum value for the edit commands.

**DOUBLESPEACE** /DB or /-DB]

Enables or disables double-spaced listings. /-DB is the default switch.

**NO SEQUENCE** /NS

Does not sequence lines in the output file. New lines are indicated by the audit trail (if specified). This switch overrides the /RS and /SQ switches.

**RESEQUENCE** /RS

Resequences the lines in the output file so that the line numbers are incremented for each line written to the output file.

**SPOOL** [/SP] or /-SP

Enables or disables the spooling or listing files to a line pinter. This switch applies only if the Queue Manager (QMG) is installed.

**SEQUENCE** /SQ

Sequences the lines in the output file so that the numbers reflect the line numbers of the original input file.

**TRUNCATE** /TR

Specifies that a diagnostic error message occurs when lines are truncated by the audit trail.

SLP uses the following special operators, in edit mode, to perform specific functions:

---

<b>Operator</b>	<b>Function</b>
-	Identifies the dash as the first character of an SLP edit command line.
\	Suppresses audit-trail processing.
%	Reenables audit-trail processing.
@	Invokes an indirect command file for SLP processing.
/	Terminates the SLP edit session and returns to SLP command mode.
<	Allows characters in the input file that SLP would normally use as operators.

---

## VFY COMMAND SUMMARY

The format of the File Structure Verification Utility (VFY) command is shown next.

### Format

[listfile,scratchdev=][indev]/switch

### Parameters

#### listfile

Specifies the output file specification.

#### scratchdev

Specifies the device in the form ddnn on which the scratch file produced by VFY is to be written.

#### indev

Specifies the volume to be verified in the form ddnn.

#### /switch

Specifies one of the VFY switches as follows:

- /DE Resets the marked-for-deletion indicators.
- /DV Validates directories against the files they list.
- /FR Prints out the available space on a volume.
- /HD Deletes bad file headers on a volume. The ALL subswitch (/AL) allows the /HD switch to delete bad file headers without prompting the user.
- /ID Identifies the VFY version. This switch may be specified on a command line by itself any time.
- /LI Lists the index file by file identification number (FID).
- /LO Scans the file structure looking for files that are not in any directory.
- /RC Checks the volume to see if every block of every file can be read.

## VFY Command Summary

- /RE** Recovers blocks that appear to be allocated but are not contained in a file.
- /UP** Allocates blocks that appear to be available but are actually allocated to a file.

## ZAP COMMAND SUMMARY

Invoke the Task/File Patch Program (ZAP) before you enter the ZAP command line, using the format shown next.

### Format

`ddnn:[directory]filename.type;version/switch[...]`

You cannot enter a file specification on the command line when you invoke ZAP.

In this command, the file specification is the task image file to be examined or modified. The default file type is .TSK and the default version is the latest one.

### Switches

**Absolute Mode** `ddnn:filespec/AB`  
Specifies absolute mode.

**List** `ddnn:filespec/LI`  
Displays the overlay segment table for an overlaid task image file.

**Read-Only** `ddnn:filespec/RO`  
Specifies read-only mode.

ZAP uses the commands shown next to examine or modify a task image file.

### ZAP Open/Close Commands

**/ (slash)**

Opens a location, displays its contents in octal, and stores the contents of the location in the Quantity Register (Q). If the location is odd, it is opened as a byte.

**" (quotation mark)**

Opens a location, displays the contents of the location as two ASCII characters, and stores the contents of the location in the Quantity Register (Q).

**% (percent sign)**

Opens a location, displays the contents of the location in Radix-50 format, and stores the contents of the location in the Quantity Register (Q).

**\ (backslash)**

Opens a location as a byte, displays the contents of the location in octal, and stores the contents of the location in the Quantity Register (Q).

**' (apostrophe)**

Opens a location, displays the contents as one ASCII character, and stores the contents of the location in the Quantity Register (Q).

**RET (RETURN key)**

Closes the current location as modified and opens the next sequential location if no other values or commands are on the command line. ZAP commands take effect only after you press the RETURN key.

**^ or ↑ (circumflex or up arrow)**

Closes the currently open location as modified and opens the preceding location.

**\_ (underscore)**

Closes the currently open location as modified, uses the contents of the location, as an offset from the current location, and opens the new location.

**@ (at sign)**

Closes the currently open location as modified, uses the contents of the location as an absolute address, and opens that location.

**> (right angle bracket)**

Closes the currently open location as modified, interprets the low-order byte of the contents of the location as the relative branch offset, and opens the target location of the branch.

**< (left angle bracket)**

Closes the currently open location as modified, returns to the location from which the last series of underscore ( \_ ), at sign ( @ ), or right angle bracket ( > ) commands began, and opens the next sequential location.

**General-Purpose Commands****X**

Exits from ZAP and returns control to the Command Line Interpreter (CLI).

**K**

Calculates the offset in bytes between an address and the value contained in a Relocation Register, displays the offset value, and stores it in the Quantity Register (Q).

**O**

Displays the jump and branch displacements from the current location to a target location.

**=**

Displays in octal the value of the expression to the left of the equal sign.

**V**

Verifies the contents of the current location.

**R**

Sets the value of a Relocation Register.



---

# Programming Tools



# ON-LINE DEBUGGING TOOL (ODT) COMMANDS

## Open/Display/Modify Task Locations

### Format

address mode-symbol contents new-value terminator

### Parameters

#### address (a)

Specifies the effective address of the location (word or byte) to be opened. The address can be expressed absolutely or in relative form (see Relocatable Address). An odd address forces byte mode.

#### mode-symbol

Specifies the mode in which the location is to be opened or displayed. If the address is not specified, the last opened location is opened and displayed.

Symbol	Open/Display Location As:
/	6-digit octal word
\	3-digit octal byte
"	2 ASCII characters (word)
'	1 ASCII character (byte)
%	3 Radix-50 characters (word)

#### contents

Specifies the current contents of the opened location.

#### new-value [k]

Specifies the optional value to replace the current contents upon termination of the command line.

#### terminator

Closes the currently open location, replacing the current contents (if so directed). The terminators are as follows:

## On-Line Debugging Tool (ODT) Commands

Return key <b>RET</b>	Terminates the current sequence, displays the ODT prompt ( <code>_</code> ), and waits for the next command.
Line-feed key <b>LF</b>	Opens the next sequential location and prints its contents.
Circumflex ( <code>^</code> ) or up-arrow ( <code>↑</code> )	Opens the preceding location in the current mode. If typed as an ODT prompt rather than as a terminator, opens the location that precedes the last-opened location in the same mode.
Underline ( <code>_</code> ) or back-arrow ( <code>←</code> )	Opens the program-counter-relative location. The effective address equals the contents (previous or replaced) of the current location added to its address plus 2. Mode is the same, except that odd effective addresses force byte mode.
At sign ( <code>@</code> )	Opens the location addressed absolutely by the contents (previous or replaced) of the current location. Mode is the same, except that odd effective addresses force byte mode.
Right angle bracket ( <code>&gt;</code> )	Opens the PC-relative branch-offset location. The effective-address calculation involves the low-order byte of the contents (previous or replaced) of the just-closed location. Byte, as a signed value, is multiplied by 2 and added to its effective address plus 2. Mode remains the same as when the location was opened.
Left angle bracket ( <code>&lt;</code> )	Reopens the location most recently opened by a <code>/</code> , Line Feed, or <code>^</code> . If the currently open location was not opened by an <code>_</code> , <code>@</code> , or <code>&gt;</code> , then <code>&lt;</code> closes and reopens the current location.

### Command Input Errors

Individual characters in a command line cannot be corrected. In general, typing an invalid character or command (such as 8 or 9) causes ODT to ignore the input, to print the question mark error indicator (`?`), and to wait for a valid command.

## Relocatable Address

An effective address can be entered as an explicit value relative to (plus) the contents of a relocation register; typically the register contains the relocatable base address for the applicable program section or object module. ODT displays task addresses in relative form if a relocation register contains an address-offset value equal to or less than the address to be displayed; if the Format Register (\$F) contains 0, ODT also displays the register's initialized state. Otherwise, ODT displays addresses in absolute form. The relocation registers are identified as 0R to 7R; a null value is taken as 0 when an offset is established. The registers initially contain -1, the nonactive state.

---

### Establishing Relocatable Address Offsets

---

value;nR	Value replaces current contents of relocation register n.
n,value;nR	Value is added to (subtracted from) current contents of relocation register n.
\$nR/	Displays current contents of relocation register n. New value is typed before terminator replaces current contents.

---



---

### Inhibiting Relocatable Addressing

---

R	Sets all active relocation registers to -1, the nonactive state.
nR	Sets relocation register n to -1, the nonactive state.

---



---

### Entering or Displaying Relative Address

---

n,k	Effective address is address relative to (plus) the current contents of relocation register n.
-----	--

---

## Breakpoints

A breakpoint must be set in the first word of an instruction. Breakpoints are identified as 0B to 7B. (8B is reserved for use with single-step execution.) A breakpoint address can be entered in absolute or in relative form (see Relocatable Address).

---

**Inserting Breakpoints**

---

address;nB	Inserts breakpoint n at specified address.
address;B	Inserts next unset breakpoint at specified address.

---

---

**Removing Breakpoints**

---

B	Removes all inserted breakpoints.
nB	Removes only breakpoint n.

---

---

**Moving Breakpoints**

---

address;nB	Moves breakpoint n to new address, overriding previous address.
------------	---

---

---

**Report of Breakpoint Occurrence**

---

nB:address	Reports address at which breakpoint n suspended task execution.
------------	---

---

---

**Displaying Breakpoint Position**

---

\$nB/	Displays current absolute address (or inactive state) of breakpoint n. Entering a replacement value alters the current contents of the breakpoint register.
-------	---

---

---

**Control of Task Execution**

---

---

**Go (G) Command**

---

G	Initiates task at entry address.
r,address G	Initiates task at specified address (address must be even). Execution continues to a breakpoint or to completion.

---

---

**Proceed (P) Command**


---

P	Resumes task execution from current breakpoint suspension and continues to a breakpoint or completion.
nP	Resumes task execution from current breakpoint suspension and does not recognize this breakpoint again until its nth occurrence.
\$nC	Displays current contents of the proceed-count register associated with breakpoint n. New value typed before terminator replaces current contents.

---



---

**Single-Instruction (S) Command**


---

S	Executes PC-addressed instruction, suspends task, and prints address of next instruction.
nS	Executes next n instructions, suspends task, and prints address of next instruction.
8B:address	Specifies the next instruction's address.

---

**Fill Memory Block—F Command**

The memory-limit registers, low (\$L) and high (\$H), must contain the address boundaries of the affected memory area. Both contain 0 initially.

The following sequence establishes the address reference, which can be in relative or absolute form:

---

**\$L (or \$H)/Contents New-address Terminator**


---

Value F	Places a value in search argument register (\$A), and/or enters the current contents of (\$A) in all memory locations from low limit (\$L) to high limit (\$H) in the same mode as the last-opened location.
---------	--

---

### List Memory Block—L Command

L	Prints memory locations within specified address limits on console listing device (CL:).
kL	Uses address value k as ending location and initiates listing operation.
a;L	Uses address value a as a beginning location and initiates listing operation.
a;kL	Uses address values a and k as beginning and ending addresses and initiates listing operation.
n;a;kL	All listing control arguments are specified in a single listing command; n is the LUN register containing the address of the listing device.

### Calculating Offsets—O Command

Calculates positive or negative (two's complement) PC-relative and branch offsets between even (word) addresses.

#### From Open Location

The format for calculating an offset from an open location is shown next.

#### Format

address/contents/addressO pc-rel> branch

#### Example

16126/001402/161340 000004>000002

#### Between Two Specified Addresses

The format for calculating an offset between two specified addresses is shown next.

#### Format

address;addressO pc-rel> branch

#### Example

16126;161340 000004>000002

**General-Purpose Registers****C Constant Register**

Contains user-specified 16-bit value (unsigned, absolute) for reference as “C” in any address or new-value expressions. \$C/ prints current contents. New value typed before RETURN replaces contents.

**Q Quantity Register**

Always contains the last value printed for reference as “Q” in address or new value expressions.

**Processor Status Word****\$S/**

Displays the task Processor Status Word (PSW). The new value typed before the terminator replaces the old PSW contents.

**Directive Status Word****\$W/**

Displays a task’s Directive Status Word (DSW). The new value typed before the terminator replaces the old contents.

**Miscellaneous Symbols and Operators**

+ or space	Sums contiguous arguments.
–	Subtracts the following argument from the preceding one.
.	Equals address of the last explicitly opened location.
=	Calculates the 16-bit value (positive or two’s complement) of the preceding argument string, prints it as six octal digits, and stores it in Q. Arguments can be signed or unsigned octal values, relocatable address expressions, or any valid ODT expression.

**Terminating ODT Session**

**X**

Terminates ODT and returns control to the system monitor.

For additional information, refer to the *RSX-11M-PLUS and Micro/RSX Debugging Reference Manual*.

## TASK BUILDER (TKB) SWITCHES AND OPTIONS

The format for Task Builder (TKB) commands is shown next.

### Format

> TKB

TKB> taskimagefile,memallocfile,symdeffile = inputfile(s)

For example, to task build a program called ZEBRA, type the following:

>

TKB>

TKB>

ENTER OPTIONS:

TKB>

TKB>           to end Task Builder operation

or

TKB>           if you have another task to build

The Task Builder uses the following default file types for the files named:

Task Image File	TSK
Memory Allocation File	MAP
Symbol Definition File	STB
Object Module File	OBJ
Overlay Description File	ODL
Indirect Command File	CMD
Object Module Library	OLB

### Switches

The following key is used in the descriptions that follow to designate which input and output files can use the Task Builder switch specified:

[C]       Common or Library   (TSK)\*

[T]       Task Image           (TSK)

## Task Builder (TKB) Switches and Options

[M]	Task Builder Map	(MAP)
[S]	Symbol Definition	(SFB)
[I]	Input	(OBJ, OLB, ODL, CMD)

\* Commons or libraries are specified with the `/-HD` switch, which produces a TSK file without a header.

The default value for switches is negative (`-sw`) unless otherwise specified.

### `/AC:n`

Specifies that the task is an Ancillary Control Processor (ACP); `n` specifies the base relocation register (allowable registers are 0, 4, or 5; default register is 5). Overrides `/PR` if applied to the same file. [T]

### `/AL`

Makes the task image file checkpointable and allocates checkpoint space in the task image file. (Do not use with `/CP` in the same command line.) [T]

### `/CC`

Specifies that the input file contains more than one object module. `/-CC` task builds only the first object module. The `/LB` (library) switch overrides `/CC` if it is applied to the same file. (Default is `/CC`.) [T]

### `/CL`

Specifies that the task is a command line interpreter (CLI). [T]

### `/CM`

Specifies a compatibility mode resident overlay structure. (Overlay segments are aligned on 256-word physical boundaries.) [T]

### `/CO`

Causes the Task Builder to build a shared command. [C]

### `/CP`

Makes the task image checkpointable and allows the task to be checkpointed to system checkpoint space. (Do not use in the same command line with `/AL`.) [T]

- /CR**  
Appends a global cross-reference listing to the memory-allocation file.  
[M]
- /DA**  
Includes a debugging aid in the task image (ODT) for a task image (output) file or a user-supplied debugging program (for an input file).  
[T,I]
- /DL**  
Specifies a default library file (replacing SYSLIB.OLB) for global references that remain undefined after user-specified library files have been searched. (Can be applied to only one input file per task.) [I]
- /EA**  
Specifies that the task uses the extended arithmetic element. (/FP overrides /EA if applied to the same file.) [T]
- /EL**  
Specifies the maximum possible size for the library, according to the size specified in the PAR option. (The actual size of the library may be smaller.)
- /FM**  
Causes the allocation of additional memory between the task and the external header for fast mapping. [T]
- /FO**  
Causes task to use overlay run-time system Fast Map module. [T]
- /FP**  
Specifies that the task uses the floating-point processor. (Overrides /EA if applied to the same file.) [T]
- /FU**  
Specifies a full search of all co-tree segments for a matching definition or reference when processing modules from the default object module library. [T]

**/HD**

Includes a header in the task image. (Default is /HD; /-HD is used with common blocks, resident libraries, loadable drivers, and system images.) [T,S]

**/ID**

Directs TKB to mark your task as one that uses I-space Active Page Registers (APRs) and D-space APRs in user mode. TKB separates I-PSECTs from D-PSECTs.

**/IP**

Allows the Task Builder to inform INSTALL that the privileged task purposely overmaps the I/O page. Conversely, /-IP informs INSTALL that the privileged task is over 12K and does not map the I/O page.[T]

**/LB**

Without arguments: TKB uses the input file as a library of relocatable object modules and searches to resolve undefined global references. Includes in task image any modules found in the library that resolve the undefined references. [I]

With arguments: [/LB:mod-1mod-2.....] TKB inserts only the modules named in the command, regardless of references, into the task image. [I]

**/LI[:bitmask]**

Causes the Task Builder to build a library shared region, a block of data or code that resides in memory and provides a means by which two or more tasks can share a single copy of commonly used subroutines. The *bitmask* parameter uses the same format as the mask for the EXTM\$ directive: bit 0 represents APR 0 and bit 1 represents APR 1. Use the /-HD switch with /LI.

**/MA**

Includes information from the input file in the memory allocation listing (when applied to an input file) or controls the display of information about the default library and shared regions (when applied to a memory allocation file). (Default is /MA for input file or /-MA for a memory allocation file.) [M,I]

**/MM[:n]**

Specifies that the system on which the task is to run has memory management hardware. (Defaults to /MM if host system has memory management, or to /-MM if it does not.) [T]

n Used with /-MM to specify the highest physical address in K-words of the task or system being built. Specify as decimal numbers 28 or 30.

**/MP**

Specifies that the input file describes the task's overlay (tree) structure; the input file is an ODL file. [I]

**/MU**

Specifies to TKB that the task is a multiuser task.

**/NM**

Tells the Task Builder not to print diagnostic messages. [T]

**/PI**

Specifies that only position-independent code of data is in the shared region. [T,S]

**/PM**

Produces a Postmortem Dump (PMD) if the task is terminated with an synchronous system trap (SST) abort operation. [T]

**/PR:n**

Specifies that the task has privileged access. /AC overrides /PR:n if applied to the same file; n specifies base relocation register (0, 4, or 5; default is 5). [T]

**/RO**

Enables recognition of the memory-resident overlay operator (!) in the overlay descriptor file (/MP). (Default is /RO.) [T]

**/SB**

Selects the slow mode of the Task Builder. [T]

- /SE**  
Specifies that the task can receive messages by means of the Executive SEND directive. (Default is /SE.) [T]
- /SG**  
Allocates task program sections alphabetically by access code (RW followed by RO). [T]
- /SH**  
Produces a short form of the memory-allocation file without the file contents section. [M]
- /SL**  
Specifies that the task is slaved to an initiating task. Slave task runs under the UIC and TI: of the sending task. (Applies only to systems with multiuser protection.) [T]
- /SP**  
Lists the memory-allocation file on the printer via the spooler. (Default is /SP.) [M]
- /SQ**  
Builds program sections in the task image in the order in which they are named, rather than in alphabetical order. (Cannot be used with FORTRAN I/O handling modules or File Control Services (FCS) modules from SYSLIB.) [T]
- /SS**  
Extracts a global symbol definition from the input file if the global symbol table has a matching undefined reference. [I]
- /TR**  
Specifies that the task can be traced. [T]
- /WI**  
Lists the memory-allocation file in 132-column (wide) format. (Default is /WI.) [M]

**/XH**

Informs TKB that the task is to have an external header.

**/XT:n**

Terminates the building of the task after n error diagnostics are detected; n can be octal or decimal (decimal must be specified with a decimal point, for example, 8.).

## Options

**[H]**

Option is of interest to high-level language programmers.

**[M]**

Option is of interest to MACRO-11 programmers.

**[H,M]**

Option is of interest to both high-level language and MACRO programmers.

Names used for option input can be six characters long, from the Radix-50 character set (A-Z, 0-9, and \$).

**ABORT = n**

Terminates the current task-build operation and restarts the Task Builder for another. (The n satisfies the option syntax; it means nothing.) **[H,M]**

**ABSPAT = segname:address:value1...:value8**

Patches the task image from a base address. Also patches the I-space part of an I- and D-space task. Eight values may be specified. **[M]**

**ACTFIL = filemax (decimal integer)**

Specifies the number of files that a task can have open simultaneously (the default is 4). **[H]**

**ASG = devicename:un1...:un8**

Assigns a logical unit number or numbers (LUN) in octal to the specified physical device or devices. **[H,M]**

**CLSTR = library\_1,library\_2,...,library\_n:accesscode[:baseAPR]  
[:bitmask]**

Declares a cluster or group of system-owned resident libraries or commons (from 2 to 6) to be accessed by the task and all to be residing at the same virtual address space in the task. The *bitmask* parameter uses the same format as the mask for the EXTM\$ directive: bit 0 represents APR 0 and bit 1 represents APR 1. [H,M]

switch    Read-only or read-write access for the task (RO or RW)

apr        Which APR is to be used as the starting APR for the task

**CMPRT = name**

Declares completion routine for supervisor-mode library. [H,M]

**COMMON = name:access-code[:apr]**

Declares that the task accesses a system-owned resident common area. Causes the common to be mapped with D-space APRs. The common can contain only data when linked to I- and D-space tasks. [H,M]

**DSPPAT = segname:address:value1 . . . :value8**

Patches the task image from a base address. Also patches the D-space part of an I- and D-space task. Eight values may be specified.

**EXTSCT = psectname:extension**

If the program section has the concatenated attribute, this option extends the size of the named program section by the number of octal bytes specified in the extension. If the program section has the overlay attribute, it is extended only if the extension value exceeds the length of the section. [H,M]

**EXTTSK = n**

Extends the D-space portion of an I- and D-space task. Extends the task memory allocation by the length n (in decimal words in the range  $0 < n < 65,535$ ) when it is installed in a system-controlled partition. The extension is rounded to the closest 32-word boundary. The default is the extension to the total task size as specified by the PAR option length parameter. [H,M]

**FMTBUF = max-format (decimal integer)**

Specifies the number of characters (in decimal bytes) by the longest format specification to be compiled at run time. The default is 132.

[M]

**GBLDEF = symbol-name:symbol-value**

Defines the named global symbol as having a value in the range of 0 to 177777<sub>8</sub>. [M]

**GBLINC = symbolname,symbolname...,symbolname**

Specifies the symbols to be included as undefined references in the symbol table file of a shared resident library. [M]

**GBLPAT = segname:symname[+/-offset]:val1...:val8**

Patches the task image from the location addressed by the global symbol plus or minus the octal offset value through eight words. All values are octal. [M]

**GBLREF = symbol-name:symbol-value**

Declares the named symbol as a global symbol reference originating in the root segment of the task. [H,M]

**GBLXCL = symbolname:symbolname:...:symbolname**

Specifies the symbols that are to be excluded from the symbol definition file of a resident library. [H,M]

**IDENT = name**

Changes the identification of the task from the one originally specified. [H,M]

**LIBR = name:accesscode[:baseAPR][:bitmask]**

Declares that the task accesses a system-owned resident library. Causes the library to be mapped with both I-space and D-space APRs when linked to an I- and D-space task. The *bitmask* parameter uses the same format as the mask for the EXTMS\$ directive: bit 0 represents APR 0 and bit 1 represents APR 1. [H,M]

**MAXBUF = max-record**

Specifies the maximum allowable record buffer size (in decimal bytes) in any file processed by the task. [H]

**ODTV = symbol-name:vector-length**

Declares the named global symbol to be the address of the On-line Debugging Tool (ODT) synchronous system trap (SST) vector. The global symbol must be defined in the main root segment. [M]

**PAR = name[:base:length]**

Identifies the partition for which the task is built. For a mapped system, a size of 0 implies a system-controlled partition, and a nonzero size implies a user-controlled partition. Base and length do not have to be expressed if the partition resides on the host system. The default is PAR = GEN. [H,M]

**PRI = priority**

Sets the priority at which the task executes; can be overridden when the task is installed. The priority is a decimal integer between 1 and 250. [H,M]

**RESCOM = filespec/access-code[:apr]**

Declares that the task accesses a user-owned resident common. Causes the common to be mapped with D-space APRs. When linked to I-and D-space tasks, the common can contain data only. [H,M]

**RESLIB = filespec/accesscode[:baseAPR][:bitmask]**

Declares that the task accesses a user-owned resident library. Causes the library to be mapped with both I-space and D-space APRs when linked to an I- and D-space task. The *bitmask* parameter uses the same format as the mask for the EXTM\$ directive: bit 0 represents APR 0 and bit 1 represents APR 1. [H,M]

**RESSUP=filespec/[-]accesscode[:apr]**

Declares task's intention to access a resident supervisor-mode library. The SW access code specifies read-write access in a task that links to a supervisor-mode library that is mapped to supervisor d-space with the MSDS\$ directive. The supervisor-mode library must be installed with /RON=NO, the default. The SV access code provides read-only access. [H,M]

**RNDSEG = segname**

Declares task's intention to round the size of a named segment up to the nearest APR boundary while building a resident library. [H,M]

**ROPAR = parname**

Declares partition in which read-only portion of multiuser task is to reside. [H,M]

**STACK = stacksize**

Declares the maximum size of the stack required by your task.

**SUPLIB = name:[-]accesscode[:apr]**

Declares task's intention to access a system-owned supervisor-mode library. The SW access code specifies read-write access in a task that links to a supervisor-mode library that is mapped to supervisor D-space with the MSDS\$ directive. The supervisor-mode library must be installed with /RON=NO, the default. The SV access code provides read-only access. [H,M]

**TASK = taskname**

Names the task. [H,M]

**TSKV = symbol-name:vector-length**

Declares a global symbol to be the address of the task synchronous system trap (SST) vector. [M]

**UIC = [g,m]**

Declares the UIC for time-based initiation of a task. The default is the UIC under which the Task Builder is running. [H,M]

**UNITS = max-units**

Declares the number of logical units used by the task (a decimal number in the range of 0 to 250). The default is 6. [H,M]

**VARRAY = ovr**

Declares task's intention to access a virtual array directly without passing arguments to subroutine. [H]

## Task Builder (TKB) Switches and Options

**VSECT = psectname:base>window[:physical-length]**

Specifies the virtual base address, length of virtual memory address space (window), and length of physical memory allocated to the named program section. [H,M]

**WWDWS = n**

Declares the number (0-7) of extra address windows required by the task. The number specified equals the number of simultaneously mapped regions that the task will use. [H,M]

---

# Executive Directive Summary



## EXECUTIVE DIRECTIVE SUMMARY

### Abort Task

ABRT\$

#### **FORTRAN Call:**

CALL ABORT (tsk[,ids])

tsk = Name of task to be aborted (Radix-50)

ids = Directive status

#### **Macro Call:**

ABRT\$ tsk

tsk = Name of task to be aborted (Radix-50)

### Assign Channel

ACHN\$

#### **FORTRAN Call:**

CALL ACHN ([mod],[itbmsk],lun,fsbuf,fssz[,idsw])

mod = Optional modifier to be matched against the logical name within a table. Ordinarily, no value will be specified to allow any logical name in the table to be found.

itbmsk = Inhibit mask to prevent a logical table from being searched. The following symbol definitions, when set, prevent a particular table from being searched:

System (IN.SYS) = 10

Group (IN.GRP) = 4

Session (IN.SES) = 20

Task (IN.TSK) = 1

- lun = Logical unit number (LUN) to be assigned
- fsbuf = Address of file specification buffer
- fssz = Size (in bytes) of the file specification buffer
- idsw = Integer to receive Directive Status Word

**Macro Call:**

ACHN\$ [mod],[tbmsk],lun,fsbuf,fssz

- mod = Optional modifier to be matched against the logical name within a table. Ordinarily, no value will be specified to allow any logical name in the table to be found.
- tbmsk = Inhibit mask to prevent a logical table from being searched. The following symbol definitions, when set, prevent a particular table from being searched:
  - System (IN.SYS) = 10
  - Group (IN.GRP) = 4
  - Session (IN.SES) = 20
  - Task (IN.TSK) = 1
- lun = Logical unit number (LUN) to be assigned
- fsbuf = Address of file specification buffer
- fssz = Size (in bytes) of the file specification buffer

**Alter Priority**

**ALTP\$**

**FORTRAN Call:**

CALL ALTPRI ([tsk],[ipri],[ids])

- tsk = Active task name
- ipri = A 1-word integer value equal to the new priority, from 1 to 250<sub>10</sub>
- ids = Directive status

**Macro Call:**

ALTP\$ [tsk][,pri]

tsk = Active task name

pri = New priority, from 1 to 250<sub>10</sub>

**Assign LUN****ALUN\$****FORTRAN Call:**

CALL ASNLUN (lun,dev,unt[,ids])

lun = Logical unit number (LUN)

dev = Device name (format: 1A2)

unt = Device unit number

ids = Directive status

**Macro Call:**

ALUN\$ lun,dev,unt

lun = Logical unit number (LUN)

dev = Device name (two uppercase characters)

unt = Device unit number

**AST Service Exit (\$\$ form recommended)****ASTX\$\$****FORTRAN Call:**

Neither the FORTRAN language nor the ISA standard permits direct linking to system-trapping mechanisms; therefore, this directive is not available to FORTRAN tasks.

**Macro Call:**

ASTX\$\$ [err]

err = Error routine address

**Attach Region**

**ATRG\$**

**FORTTRAN Call:**

CALL ATRG (irdb[,ids])

irdb = An 8-word integer array containing a Region  
Definition Block (RDB)

ids = Directive status

**Macro Call:**

ATRG\$ rdb

rdb = Region Definition Block (RDB) address

**Cancel Mark Time Requests**

**CMKT\$**

**FORTTRAN Call:**

CALL CANMT ([efn][,ids])

efn = Event flag number (EFN)

ids = Directive status

**Macro Call:**

CMKT\$ [efn,ast,err]

efn = Event flag number (EFN)

ast = Mark time asynchronous system trap (AST) address

err = Error routine address

**Connect to Interrupt Vector**

**CINT\$**

**FORTTRAN Call:**

Not supported

**Macro Call:**

**CINT\$** vec,base,isr,edir,pri,ast

- vec = Interrupt vector address—Must be in the range 60<sub>8</sub> to highest vector specified during SYSGEN, inclusive, and must be a multiple of 4
- base = Virtual base address for kernel APR5 mapping of the interrupt service routine (ISR), and enable/disable interrupt routines
- isr = Virtual address of the interrupt service routine (ISR), or 0 to disconnect from the interrupt vector
- edir = Virtual address of the enable/disable interrupt routine
- pri = Initial priority at which the interrupt service routine (ISR) is to execute
- ast = Virtual address of an asynchronous system trap (AST) routine to be entered after the fork-level routine queues an AST

**Clear Event Flag****CLEF\$****FORTTRAN Call:**

**CALL CLREF** efn[,ids]

- efn = Event flag number (EFN)
- ids = Directive status

**Macro Call:**

**CLEF\$** efn

- efn = Event flag number (EFN)

**Create Logical Name**

**CLOG\$ CLON\$**

**FORTRAN Call:**

CALL CRELOG ([mod],itbnum,lns,lnssz,iens,ienssz[,idsw])

CALL CRELON ([mod],itbnum,lns,lnssz,iens,ienssz[,idsw])

The CRELON and CLON\$ are the preferred calls to use on the RSX-11M-PLUS and Micro/RSX operating systems. The CRELOG and CLOG\$ calls are provided for compatibility with the P/OS operating system.

- |        |   |  |
|--------|---|--|
| mod    | = | Modifier of the logical name within a table; if not specified, the nonzero value reserved by the system (LB.LOC = 1 or LB.LOG = 2) is placed in the Directive Parameter Block (DPB); if specified, the values can range from 0 to 255 but should normally correspond to the values used by the system. |
| itbnum | = | Number of the logical name table in the lower byte and the status values in the upper byte, as follows:  |
|        |   | LT.SYS 0 System logical name table   |
|        |   | LT.GRP 1 Group logical name table  |
|        |   | LT.SES 4 Session logical name table  |
|        |   | LT.TSK 3 Task logical name table   |
|        |   | LS.TRM 1 Terminal status. Iterative translations will not proceed beyond this logical name.  |
|        |   | LS.PRIV 2 Privileged status. Only privileged tasks may delete this logical name.   |
| lns    | = | Character array containing the logical name string   |
| lnssz  | = | Size (in bytes) of the logical name string   |

- iens = Character array containing the equivalence string to be created
- ienssz = Size (in bytes) of the data area for the equivalence string
- idsw = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

CLOG\$ [mod], <prmlst> ,lns,lncsz,ens,enssz

CLON\$ [mod], <prmlst> ,lns,lncsz,ens,enssz

- mod = Modifier of the logical name within a table. If not specified, the nonzero value reserved by the system (LB.LOC = 1 or LB.LOG = 2) is placed in the Directive Parameter Block (DPB). If specified, values can range from 0 to 255 but should normally correspond to the values used by the system.

<prmlst> = <[tbnm][,status]>

The angle brackets are not required when only tbnm is specified.

tbnm = Number of the logical name table, as follows:

LT.SYS	0	System logical name table
LT.GRP	1	Group logical name table
LT.SES	4	Session logical name table
LT.TSK	3	Task logical name table

status = Logical status definition value, as follows:

LT.TRM	1	Terminal status. Iterative translations will not proceed beyond this logical name.
LT.PRIV	2	Privileged status. Only privileged tasks may delete this logical name.

lms = Character array containing the logical name string

lmsz = Size (in bytes) of the logical name string

ems = Character to contain the equivalence name string

emsz = Size (in bytes) of the equivalence name string

**Connect****CNCT\$****FORTRAN Call:**

CALL CNCT (rtname,[iefn],[iast],[iesb],[iparm],[ids])

- rtname = Name (Radix-50) of the offspring task to be connected
- iefn = Event flag to be set when the offspring task exits or emits status
- iast = Name of an asynchronous system trap (AST) routine to be called when the offspring task exits or emits status
- iesb = Name of an 8-word status block to be written when the offspring task exits or emits status, as follows:
  - Word 0 = Offspring task exit status
  - Word 1-7 = Reserved
- iparm = Name of a word to receive the status block address when an AST occurs
- ids = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

CNCT\$ tname,[efn],[east],[esb]

- tname = Name (Radix-50) of the offspring task to be connected
- efn = The event flag to be cleared on issuance and set when the offspring task exits or emits status
- east = Address of an asynchronous system trap (AST) routine to be called when the offspring task exits or emits status

esb = Address of an 8-word status block to be written when the offspring task exits or emits status, as follows:  
Word 0 = Offspring task exit status  
Word 1-7 = Reserved

### Checkpoint Common Region

CPCR\$

#### **FORTRAN Call:**

CALL CPCR (name[,ids])

name = Name (Radix-50) of the common region to be checkpointed

ids = Directive status

#### **Macro Call:**

CPCR\$ name

name = Name (Radix-50) of the common region to be checkpointed

### Create Address Window

CRAW\$

#### **FORTRAN Call:**

CALL CRAW (iwdb[,ids])

iwdb = An 8-word integer array containing a Window Definition Block (WDB)

ids = Directive status

#### **Macro Call:**

CRAW\$ wdb

wdb = Window Definition Block (WDB) address

**Create Group Global Event Flags****CRGF\$****FORTRAN Call:**

CALL CRGF ([group][,ids])

- group = Group number for the flags to be created—  
if not specified, the task's protection User  
Identification Code (UIC) (H.CUIC+1) in the  
task's header is used
- ids = Integer to receive the Directive Status Word  
(DSW)

**Macro Call:**

CRGF\$ [group]

- group = Group number for the flags to be created—  
if not specified, the task's protection UIC  
(H.CUIC+1) in the task's header is used

**Create Region****CRRG\$****FORTRAN Call:**

CALL CRRG (irdb[,ids])

- irdb = An 8-word integer array containing a Region  
Definition Block (RDB)
- ids = Directive status

**Macro Call:**

CRRG\$ rdb

- rdb = Region Definition Block (RDB) address

## Create Virtual Terminal

CRVT\$

### FORTRAN Call:

CALL CRVT ([iast],[ioast],[iaast],[imlen],iparm[,ids])

- iast = Asynchronous system trap (AST) address at which input requests from offspring tasks are serviced
- ioast = Asynchronous system trap (AST) address at which output requests from offspring tasks are serviced
- iaast = Asynchronous system trap (AST) address at which the parent task may be notified of the completion of successful offspring attach and detach requests to the virtual terminal unit
- imlen = Maximum buffer length allowed for offspring I/O requests
- iparm = Address of 3-word buffer to receive information from the stack when an AST occurs
- ids = Integer to receive the Directive Status Word (DSW)

### Macro Call:

CRVT\$ [iast],[oast],[aast],[mlen]

- iast = Asynchronous system trap (AST) address at which input requests from offspring tasks are serviced
- oast = Asynchronous system trap (AST) address at which output requests from offspring tasks are serviced

- aast = Asynchronous system trap (AST) address at which the parent task may be notified of the completion of successful offspring attach and detach requests to the virtual terminal unit (if this parameter is not specified, no notification of attaches and detaches is returned to the parent task)
- mten = Maximum buffer length allowed for offspring I/O requests

**Cancel Time-Based Initiation Requests**

**CSRQ\$**

**FORTRAN Call:**

CALL CANALL (tsk[,ids])

tsk = Task name

ids = Directive status

**Macro Call:**

CSRQ\$ tsk

tsk = Task name

**Declare Significant Event (\$\$ form recommended)**

**DECL\$\$**

**FORTRAN Call:**

CALL DECLAR ([,ids])

ids = Directive Status

**Macro Call:**

DECL\$\$ [,err]

err = Error routine address

**Delete Logical Name**

**DLOG\$ DLON\$**

**FORTRAN Call:**

CALL DELLOG ([mod],itbnum,[lns],[lnssz],[idsw])

CALL DELLON ([mod],itbnum,[lns],[lnssz],[idsw])

DELLON and DLON\$ are the preferred calls to use on the RSX-11M-PLUS and Micro/RSX operating systems. The DELLOG and DLOG\$ calls are provided for compatibility with the P/OS operating system.

- mod = Modifier of the logical name within a table.  
If not specified, the nonzero value reserved by the system (LB.LOC = 1 or LB.LOC =2) is placed in the Directive Parameter Block (DPB).  
If specified, the values can range from 0 to 255 but should normally correspond to the values used by the system
- itbnum = Number of the logical name table, as follows:
  - System (LT.SYS) = 0
  - Group (LT.GRP) = 1
  - Session (LT.SES) = 4
  - Task (LT.TSK) = 3
- lns = Character array name containing the logical name string
- lnssz = Size (in bytes) of the logical name string
- idsw = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

DLOG\$ [mod],tbnum,[lns],[,lnssz]

DLON\$ [mod],tbnum[,lns,lnssz]

mod = Modifier value of the logical name within a table; if not specified, the nonzero value reserved by the system (LB.LOC = 1 or LB.LOG = 2) is placed in the Directive Parameter Block (DPB); if specified, the value can range from 0 to 255 but should normally correspond to the values used by the system.

tbnum = Logical name table number, as follows:

System (LT.SYS) = 0

Group (LT.GRP) = 1

Session (LT.SES) = 4

Task (LT.TSK) = 3

lns = Character array containing the address of the logical name string to be deleted

lnssz = Size (in bytes) of the logical name string

**Disable AST Recognition (\$\$ form recommended)****DSAR\$\$****FORTRAN Call:**

CALL DSASTR [(ids)]

ids = Directive status

**Macro Call:**

DSAR\$\$ [err]

err = Error routine address

**Disable Checkpointing (\$S form recommended)**

**DSCP\$S**

**FORTRAN Call:**

CALL DISCKP [(ids)]

ids = Directive status

**Macro Call:**

DSCP\$S [err]

err = Error routine address

**Detach Region**

**DTRG\$**

**FORTRAN Call:**

CALL DTRG (irdb[,ids])

irdb = An 8-word integer array containing a Region Definition Block (RDB)

ids = Directive status

**Macro Call:**

DTRG\$ rdb

rdb = Region Definition Block address (RDB)

**Eliminate Address Window**

**ELAW\$**

**FORTRAN Call:**

CALL ELAW (iwdb[,ids])

iwdb = An 8-word integer array containing a Window Definition Block (WDB)

ids = Directive Status

**Macro Call:**

ELAW\$ wdb

wdb = Window Definition Block (WDB) address

**Eliminate Group Global Event Flags**

**ELGF\$**

**FORTRAN Call:**

CALL ELGF ([group],[ids])

group = Group number of flags to be eliminated

ids = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

ELGF\$ [group]

group = Group number of flags to be eliminated

**Eliminate Virtual Terminal**

**ELVT\$**

**FORTRAN Call:**

CALL ELVT (inum,[ids])

inum = Virtual terminal unit number

ids = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

ELVT\$ unum

unum = Unit number of the virtual terminal to be eliminated

**Emit Status**

**EMST\$**

**FORTTRAN Call:**

CALL EMST ([rtname],istat[,ids])

rtname = Name of task connected to issuing task to which the status is to be emitted

istat = A 16-bit quantity to be returned to the connected task

ids = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

EMST\$ [tname],status

tname = Name of a task connected to the issuing task to which the status is to be emitted

status = A 16-bit quantity to be returned to the connected task

**Enable AST Recognition (\$\$ form recommended)**

**ENAR\$\$**

**FORTTRAN Call:**

CALL ENASTR [(ids)]

ids = Directive status

**Macro Call:**

ENAR\$\$ [err]

err = Error routine address

**Enable Checkpointing (\$S form recommended)**

**ENCP\$S**

**FORTRAN Call:**

CALL ENACKP [(ids)]

ids = Directive status

**Macro Call:**

ENCP\$S [err]

err = Error routine address

**Exit If**

**EXIF\$**

**FORTRAN Call:**

CALL EXITIF (efn[,ids])

efn = Event flag number (EFN)

ids = Directive status

**Macro Call:**

EXIF\$ efn

efn = Event flag number (EFN)

**Task Exit (\$S form recommended)**

**EXIT\$S**

**FORTRAN Call:**

CALL EXIT (istat)

istat = A 16-bit quantity to be returned to the parent task

**Macro Call:**

EXIT\$\$ [err]

err = Error routine address

**Exit with Status**

**EXST\$**

**FORTRAN Call:**

CALL EXST (istat)

istat = A 16-bit quantity to be returned to parent task

**Macro Call:**

EXST\$ status

status = A 16-bit quantity to be returned to parent task

**Extend Task**

**EXTK\$ EXTM\$**

**FORTRAN Call:**

CALL EXTTSK ((inc)[,ids])

inc = A positive or negative number equal to the number of 32-word blocks by which the task size is to be extended or reduced (if omitted, task size defaults to installed task size)

ids = Directive status

**Macro Calls:**

EXTK\$ [inc]

EXTM\$ [inc],mask

inc = A positive or negative number equal to the number of 32-word blocks by which the task size is to be extended or reduced (if omitted, task size defaults to installed task size)

mask = Mask of active page registers (APRs) to be protected. Bit 0 represents APR0 and bit 1 represents APR1.

### Test for Specified System Feature

FEAT\$

#### FORTRAN Call:

CALL FEAT (isym[,ids])

isym = Symbol for the specified system feature

ids = Directive status

#### Macro Call:

FEAT\$ sym

sym = Symbol for the specified system feature, as listed in Table 1

**Table 1: System Feature Symbols**

Symbol	Value	Meaning
FE\$EXT	1	22-bit extended memory support (bit 1)
FE\$MUP	2	Multiuser protection support
FE\$EXV	3	Executive is supported to 20K words
FE\$DRV	4	Loadable driver support
FE\$PLA	5	PLAS support
FE\$CAL	6	Dynamic checkpoint space allocation
FE\$PKT	7	Preallocation of I/O packets
FE\$EXP	8.	Extend Task directive support
FE\$LSI	9.	Processor is an LSI-11
FE\$OFF	10.	Parent/offspring tasking support

(continued on next page)

**Table 1 (Cont.): System Feature Symbols**

<b>Symbol</b>	<b>Value</b>	<b>Meaning</b>
FE\$FDT	11.	Full-duplex terminal driver support
FE\$X25	12.	X.25 CEX is loaded
FE\$DYM	13.	Dynamic memory allocation supported
FE\$CEX	14.	Communications Executive is loaded
FE\$MXT	15.	MCR exit after each command mode
FE\$NLG	16.	Logins disabled
FE\$DAS	17.	Kernel data space supported (bit 17.)
FE\$LIB	18.	Supervisor-mode libraries support
FE\$MP	19.	System supports multiprocessing
FE\$EVT	20.	System supports event trace feature
FE\$ACN	21.	System supports CPU accounting
FE\$SDW	22.	System supports shadow recording
FE\$POL	23.	System supports secondary pools
FE\$WND	24.	System supports secondary pool file windows
FE\$DPR	25.	System has a separate directive partition
FE\$IRR	26.	Install, run, and remove support
FE\$GGF	27.	Group global event flag support
FE\$RAS	28.	Receive/send data packet support
FE\$AHR	29.	Alternate header refresh area support
FE\$RBN	30.	Round-robin scheduling support
FE\$SWP	31.	Executive level disk swapping support
FE\$STP	32.	Event flag mask is in the TCB (1=YES)
FE\$CRA	33.	System spontaneously crashed (1=YES) (bit 33.)

(continued on next page)

**Table 1 (Cont.): System Feature Symbols**

<b>Symbol</b>	<b>Value</b>	<b>Meaning</b>
FE\$XCR	34.	System crashed from XDT (1=YES)
FE\$EIS	35.	System requires extended instruction set
FE\$STM	36.	System has Set System Time directive
FE\$UDS	37.	System supports user data space
FE\$PRO	38.	System supports secondary pool prototype TCBs
FE\$XHR	39.	System supports external task headers
FE\$AST	40.	System has AST support
FE\$11S	41.	RSX-11S system
FE\$CLI	42.	System supports multiple CLIs
FE\$TCM	43.	System has separate terminal driver pool
FE\$PMN	44.	System supports pool monitoring
FE\$WAT	45.	System has watchdog timer support
FE\$RLK	46.	System supports RMS record locking
FE\$SHF	47.	System supports shuffler task
FE\$CXD	49.	Comm Exec is deallocated (non-I/D only) (bit 49.)
FE\$XT	50.	System is a P/OS system (1=YES)
FE\$ERL	51.	System supports error logging
FE\$PTY	52.	System supports parity memory
FE\$DVN	53.	System supports decimal version numbers
FE\$LCD	54.	System supports loadable crash drivers
FE\$NIM	55.	System supports deleted fixed task images
FE\$CHE	56.	System supports disk data caching
FE\$LOG	57.	System supports extended logical names

(continued on next page)

**Table 1 (Cont.): System Feature Symbols**

<b>Symbol</b>	<b>Value</b>	<b>Meaning</b>
FE\$NAM	58.	System supports named directories
FE\$FMP	59.	System supports Fast Map directive
FE\$DCL	60.	DCL is default CLI
FE\$DDS	61.	Named directory mode is default
FE\$ACD	62.	System supports ACDs
HF\$UBM	-1.	Processor has UNIBUS map (1=YES) (bit 1)
HF\$EIS	-2.	Processor has extended instruction set
HF\$QB	- 3.	Processor has a Q-bus backplane
HF\$DSP	-4.	Processor supports separate I/D space
HF\$CIS	-8.	Processor supports commercial instruction set
HF\$FPP	-16.	Processor has no floating-point unit (1=YES)
HF\$NVR	-17.	PRO-300 nonvolatile RAM present (1=YES) (bit 17.)
HF\$INV	-18.	Nonvolatile RAM present (1=YES)
HF\$CLK	-19.	PRO-300 clock is present
HF\$ITF	-20.	Invalid time format in nonvolatile RAM
HF\$PRO	-21.	Hardware system is a PRO-3xx
HF\$BRG	-32.	PRO-300 bridge module present

**File Specification Scanner****FSS\$****FORTRAN Call:**

CALL FSS (fsbuf,fssz,prsbk,prssz,[reserv][,idsw])

fsbuf = Array containing the file specification buffer

fssz = Size (in bytes) of the file specification buffer

prsblk = Array containing the parse block  
 prssz = Size (in bytes) of the parse block  
 reserv = Reserved parameter (must not be specified)  
 idsw = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

FSS\$ fsbuf,fssz,prsblk,prssz[,reserv]

fsbuf = Address of the file specification buffer  
 fssz = Size (in bytes) of the file specification buffer  
 prsblk = Address of the parse block  
 prssz = Size (in bytes) of the parse block  
 reserv = Reserved parameter (must be blank)

**Get Command for Command Interpreter****GCCI\$****FORTRAN Call:**

CALL GTCMCI (icbf,icbfl,[iibuf],[iibfl],[iaddr],[incp],[ids])

icbf = Name of a byte to receive the command  
 icbfl = Integer containing the size of the icbf array in bytes  
 iibuf = Name of an integer array to receive the optional information buffer  
 iibfl = Name of an integer containing the length of the optional information buffer. If you specify a length shorter than the information buffer, as much information as will fit in the specified length is returned

- iaddr = Name of an integer that contains the address in pool of the command desired (this address was obtained by a previous call to GTCMCI with GC.CND specified)
- incp = Name of an integer containing a value indicating the action to take if there is no command queued, as follows:
  - GC.CCS (000) = Return with Carry set (default)
  - GC.CEX (001) = Force command line interpreter (CLI) to exit instead of returning
  - GC.CST (002) = Force CLI to stop instead of returning
  - GC.CND (200) = Copy command into buffer, but do not dequeue it from the list
- ids = Integer to receive the Directive Status Word (DSW).

### Get Command Interpreter Information

GCIIS

#### FORTRAN Call:

CALL GETCII (ibuf,ibfl,[icli],[idev],[iunit][,ids])

- ibuf = Name of an integer array to receive the CLI information
- ibfl = Length (in bytes) of the integer array to receive the CLI information
- icli = Name of a 2-word array element containing the Radix-50 name of the command line interpreter (CLI)

idev	=	Name of an integer containing the ASCII name of terminal (default = TI:)
iunit	=	Name of an integer containing the octal unit number of terminal
ids	=	Directive status

**Macro Call:**

GCII\$ buf,buf1,cli,[dev],[unit]

buf	=	Address of buffer to receive information
buf1	=	length of information buffer
cli	=	Name (Radix-50) of the command line interpreter (CLI) on which information is requested
dev	=	ASCII name of terminal whose CLI should be used (default is TI:)
unit	=	Octal unit number of terminal

**Get Default Directory****GDIR\$****FORTRAN Call:**

CALL GETDDS (mod,iens,ienssz,[irsize],[idsw])

mod	=	Modifier for the GDIR\$ directive; specify one of the following values: 0           = Get task default GD.LOG     = Get terminal default
iens	=	Character array containing the default directory string
ienssz	=	Size (in bytes) of the default directory string
irsize	=	Buffer address of the returned default directory string size
idsw	=	Integer to receive the Directive Status Word (DSW)

**Macro Call:**

**GDIR\$** [mod],ens,enssz[,rsize]

**mod** = Modifier for the GDIR\$ directive; specify one of the following values:

0 = Get task default

GD.LOG = Get terminal default

**ens** = Buffer address of the default directory string

**enssz** = Size (in bytes) of the default directory string buffer

**rsize** = Buffer address to which the size of the default directory string is returned

**Get Information**

**GIN\$**

**FORTRAN Call:**

Not supported

**Macro Call:**

**GIN\$** functioncode arg[s]

**Function Codes and Arguments**

**GI.APR—Get System APRs**

Returns information on the contents of the Page Address Registers (PARs) and Page Description Registers (PDRs) for all modes and spaces present on the host system.

**GIN\$** GI.APR,buf,siz

**GI.APR** GIN\$ function code (9)

**buf** Address of 97-word buffer to receive the Active Page Register (APR) information

**siz** Buffer size in words

**Note**

Bits set in the first buffer word indicate the sets of buffer words that are valid.

**GI.DEF—Set Task Default UIC**

Sets the default User Identification Code (UIC) for the requesting task. If the task is not privileged, only the default UIC is changed. If the task is privileged, both the default and protection UICs are modified.

**Macro Call:**

GIN\$ GI.DEF,uic

GI.DEF GIN\$ function code (2)

uic User Identification Code

**Note**

If an immediate expression is used for the UIC, it must be enclosed in double angle brackets ( < <> > ).

**GI.DEV—Get Device Information**

Returns information about a particular device. If the high bit in the flags byte (the upper byte of the 4th parameter word) is clear, logical name tables are checked; otherwise, no check of logical assignments is made. Regardless, physical device databases are checked and any redirection assignments are followed.

**Macro Calls:**

GIN\$ GI.DEV,buf,siz,dev,unt

GI.DEV GIN\$ function code (6)

buf Address of buffer to receive the unit information

siz Buffer size in words

dev Device name (if zero, use task's TI:)

unt Device unit number (if the high bit in the flags byte is clear, follow assignments)

GIN\$ GI.DVJ,buf,siz,dev,unt

GI.DVJ GIN\$ function code (18)

buf Address of buffer to receive the unit information

<b>siz</b>	Buffer size is 1 word
<b>dev</b>	Device name (if blank, use task's TI:)
<b>unt</b>	Device unit number (if the high bit in the flags byte is clear, follow assignments)

### Notes

1. If the task has the slave attribute, logical assignments are not checked regardless of the setting of the high bit in the flags byte.
2. Optional information is returned only if there is room in the buffer and the information is available.

### GI.FMK—Get Feature Mask Words

Returns the system Executive feature mask, the hardware feature mask, the system base level, the system type, and the system version words to the requesting task.

#### Macro Call:

GIN\$ GI.FMK,buf,siz

GI.FMK GIN\$ function code (3)

buf Address of 9-word buffer to receive the information

siz Buffer size in words

#### Note

The system type is returned if the buffer is 15<sub>10</sub> words or longer.

### GI.GAS—Get Assigned Device Name

Searches the assignment list for logical assignments of the specified terminal. When the specified assignment is found, the name of the device to which the assignment applies is returned to the task.

**Macro Call:**

GIN\$	GI.GAS,buf,siz,dev,unt,udev,unum
GI.GAS	GIN\$ function code (0)
buf	Address of 6-word buffer to receive logical unit number (LUN) information
siz	Buffer size in words
dev	Device name
unt	Device unit number
udev	Device name for which this assignment holds (if zero, get global assignment)
unum	Unit number of terminal for which this assignment holds (if high bit set, get login assignment)

**GI.QMC—Queue MCR Command Line**

Queues a command line to the MCR CLI on the task's host terminal.

GIN\$	GI.QMC,buf,siz
GI.QMC	GIN\$ function code (4)
buf	Address of buffer containing the MCR command line
siz	Buffer size in words

**Notes**

1. The command buffer to be queued should be terminated by a carriage return or escape character.
2. If the command buffer is not terminated by a carriage return or escape character, the buffer is copied up to the length of an MCR command buffer. This may cause unpredictable results.

**GI.REN—Rename Task**

Renames the issuing task to the supplied task name. The new name is checked for uniqueness and, if unique, the issuing task is renamed.

**Macro Call:**

GIN\$ GI.REN,nam1,nam2

GI.REN GIN\$ function code (8)

nam1 Radix-50 task name, first half

nam2 Radix-50 task name, second half

**Notes**

1. If an immediate Radix-50 expression is used for the task name, it must be enclosed in double angle brackets ( < <> > ).
2. Tasks may rename to normally invalid task names such as all blanks. This should be avoided, because the CLI directive cannot abort such tasks.
3. Tasks that receive DECnet connections or send data packets should not use this directive.

**GI.SPR—Set Task Privilege**

The Set Task Privilege (GI.SPR) function requests the setting or clearing of the task privilege bit (T3.PRV) in the issuing task's Task Control Block (TCB). The previous state of the bit is saved in T4.PRV.

**Macro Call:**

GIN\$ GI.SPR,flg

GI.SPR GIN\$ function code (7)

flg New privilege bit in bit 0

**Note**

The privilege bit may be set only if it was originally set, then cleared.

**GI.TSK—Find and Return Task Information**

Returns information on a task which may have its Task Control Block (TCB) in secondary or primary pool.

GIN\$ GI.TSK,buf,siz,nam1,nam2

GI.TSK GIN\$ function code (10)  
 buf Address of buffer to receive the task information  
 siz Buffer size in words  
 nam1 First half of Radix-50 task name  
 nam2 Second half of Radix-50 task name

### Notes

1. If an immediate Radix-50 expression is used for the task name, it must be enclosed in double angle brackets ( < <> > ).
2. If the task name is in the form ...XXX, the multiuser task XXXTnn is searched. If the task is not found, the prototype task is searched.
3. If the task name is of form XXX\$\$\$, only the prototype task is searched.
4. If the task name is limited to three characters and a task is not found, an additional search is made for a multiuser task or prototype task.
5. Optional information is returned only if there is room in the buffer.

### GI.UAB—Get User Account Block

Moves the contents of a User Account Block (UAB) to a user buffer.

GIN\$ GI.UAB,buf,siz,dev,unt

GI.UAB GIN\$ function code (5)  
 buf Address of buffer to receive the UAB information  
 siz Buffer size in words  
 dev Device name (if zero, use task's TI:)  
 unt Device unit number

## Notes

1. The buffer size must be a minimum of  $\langle B.ULEN/2 \rangle$  words.
2. The format of the UAB is subject to change. Offsets into the returned buffer should be defined by using the system macro ACNDF\$.

### GI.UIC—Get System UIC Information

Returns the system User Identification Code (UIC), the library UIC, the task's current and protection UICs, and the issuing terminal (TI) login UIC. If more space is available, the current terminal UIC, the terminal command line interpreter (CLI), the system name, the network UIC, and the system size in 32-word blocks are also returned.

#### Macro Call:

GIN\$ GI.UIC,buf,siz

GI.UIC GIN\$ function code (1)

buf Address of 5- or 32-word buffer to receive the information

siz Buffer size in words

### GI.UPD—Update UICs and Default Directory

Takes the default User Identification Code (UIC) and the protection UIC from the Unit Control Block (UCB) of the terminal and copies them into the header of the task. If the default directory of the task and the default directory of the terminal are different, GI.UPD sets the default of the task directory to the same default as the terminal directory. Then, it jumps to \$SFUIC.

GIN\$ GI.UPD,buf,siz

GI.UPD GIN\$ function code (17)

buf Address of 5- or 32-word buffer to receive the information

siz Buffer size in words

**Note**

The buffer size must be a minimum of 32 words for the optional information to be received.

**Get LUN Information****GLUN\$****FORTRAN Call:**

CALL GETLUN (lun,dat[,ids])

lun = Logical unit number (LUN)

dat = A 6-word integer array to receive the LUN information

ids = Directive status

**Macro Call:**

GLUN\$ lun,buf

lun = Logical unit number (LUN)

buf = Address of 6-word buffer that will receive the LUN information

**Get MCR Command Line****GMCR\$****FORTRAN Call:**

CALL GETMCR (buf[,ids])

buf = An 80-byte array to receive the command line

ids = Directive status

**Macro Call:**

GMCR\$

## Get Mapping Context

**GMCX\$**

### **FORTRAN Call:**

**CALL GMCX (imcx[,ids])**

- imcx** = An integer array to receive the mapping context. The size of the array is  $8*n+1$ , where  $n$  is the number of window blocks in the task's header. (The maximum size is  $8*24+1=193$  on RSX-11M systems.)
- ids** = Directive status

### **Macro Call:**

**GMCX\$ wvec**

- wvec** = The address of a vector of  $n$  window definition blocks (WDBs), followed by a terminator word;  $n$  is the number of window blocks in the task's header.

## Get Partition Parameters

**GPRT\$**

### **FORTRAN Call:**

**CALL GETPAR ([prt],buf[,ids])**

- prt** = Partition name
- buf** = A 3-word integer array to receive partition parameters
- ids** = Directive status

### **Macro Call:**

**GPRT\$ [prt],buf**

- prt** = Partition name
- buf** = Address of 3-word buffer

**Get Region Parameters****GREG\$****FORTRAN Call:**

CALL GETREG ([rid],buf[,ids])

- rid = Region id
- buf = A 3-word integer array to receive region parameters
- ids = Directive status

**Macro Call:**

GREG\$ [rid],buf

- rid = Region id
- buf = Address of 3-word buffer

**Get Sense Switches (\$S form recommended)****GSSW\$\$****FORTRAN Call:**

CALL READSW (isw)

- isw = Integer to receive the console switch settings

The following FORTRAN call SSWTCH allows a program to read the state of a single switch:

CALL SSWTCH (ibt,ist)

- ibt = The switch to be tested (0-15)
- ist = Test results where:
  - 1 = Switch on
  - 2 = Switch off

**Macro Call:**

GSSW\$\$ [err]

- err = Error routine address

**Get Time Parameters**

**GTIM\$**

**FORTRAN Call:**

CALL GETTIM (ibfl[,ids])

ibfl = An 8-word integer array

ids = Directive status

**Macro Call:**

GTIM\$ buf

buf = Address of 8-word buffer

**Get Task Parameters**

**GTSK\$**

**FORTRAN Call:**

CALL GETTSK (buf[,ids])

buf = An 18-word integer array to receive the task parameters

ids = Directive status

**Macro Call:**

GTSK\$ buf

buf = Address of 18-word buffer

**Inhibit AST Recognition (\$\$ form recommended)**

**IHAR\$\$**

**FORTRAN Call:**

CALL INASTR [(ids)]

ids = Directive status

**Macro Call:**

IHAR\$S [err]

err = Error routine address

**Map Address Window****MAP\$****FORTRAN Call:**

CALL MAP (iwdb[,ids])

iwdb = An 8-word integer array containing a Window Definition Block (WDB)

ids = Directive status

**Macro Call:**

MAP\$ wdb

wdb = Window Definition Block (WDB)

**Mark Time****MRKT\$****FORTRAN Call:**

CALL MARK (efn,tmg,tnt[,ids])

efn = Event flag number (EFN)

tmg = Time interval magnitude

tnt = Time interval unit

ids = Directive status

The ISA standard call for delaying a task for a specified time interval is also included:

CALL WAIT (tmg,tnt,ids)

tmg = Time interval magnitude

tnt = Time interval unit

ids = Directive status

**Macro Call:**

MRKT\$ [efn],tmg,tnt[,ast]

- efn = Event flag number (EFN)
- tmg = Time interval magnitude
- tnt = Time interval unit
- ast = Asynchronous system trap (AST) entry point address

**Map Supervisor D-Space**

**MSDS\$**

**FORTRAN Call:**

Not supported

**Macro Call:**

MSDS\$ mask

- mask = A 7-bit mask with one bit corresponding to each supervisor-mode D-space Active Page Register (APR). If the bit is set, the APR is mapped to supervisor-mode I-space. If the bit is clear, the APR is mapped to user-mode D-space. The 7 bits are specified in bits 8 to 14 of the mask word.

**Move to/from User/Supervisor I/D-Space**

**MVT\$**

**FORTRAN Call:**

Not supported

**Macro Call:**

$$\text{MVT\$ } \text{action,addr} \left\{ \begin{array}{l} \text{,buf} \\ \text{,val} \end{array} \right\}$$

**action** = One of the following:  
           MV.TUI    Move to user I-space  
           MV.TUD    Move to user D-space  
           MV.TSI    Move to supervisor I-space  
           MV.TSD    Move to supervisor D-space  
           MV.FUI    Move from user I-space  
           MV.FUD    Move from user D-space  
           MV.FSI    Move from supervisor I-space  
           MV.FSD    Move from supervisor D-space

**addr**    = Address of the location in the task

**buf**     = Buffer to receive the value fetched (for the move-from operations)

**val**     = Value to be stored in the location (for the move-to operations)

**Parse FCS****PFC\$****FORTRAN Call:**

CALL PRSFCS ([mod],[itbmsk],[lun],prbuf,prsz,rbuf,rssz,[rslen],  
 [prblk,prssz],[dfnbk,dfnsz],[rsmask],[idsw])

- mod** = Modifier of the logical name within a table; if not specified, the nonzero value reserved by the system (LB.LOC = 1 or LB.LOG = 2) is placed in the Directive Parameter Block (DPB); if specified, the values can range from 0 to 255 but should normally correspond to the values used by the system.
- Specifying one of these values means that matches in the logical table are based on the exact value. Not specifying a value means that the system looks for the first matching logical block, regardless of the modifier value.
- itbmsk** = Inhibit mask to prevent a logical table from being searched. When specified according to the values in the following table, this parameter prevents a particular logical name table from being searched:
- |         |          |   |    |
|---------|----------|---|----|
| System  | (IN.SYS) | = | 10 |
| Group   | (IN.GRP) | = | 4  |
| Session | (IN.SES) | = | 20 |
| Task    | (IN.TSK) | = | 1  |
- lun** = Logical unit number (LUN) to be assigned
- prbuf** = Array containing the primary file specification buffer; prbuf and prsz must both be specified or both omitted; if omitted, a comma between their positions must be present unless no other parameters follow
- prsz** = Size (in bytes) of the primary file specification buffer; prbuf and prsz must both be specified or both omitted; if omitted, a comma between their positions must be present unless no other parameters follow
- rsbuf** = Array containing the resulting file specification buffer
- rssz** = Size (in bytes) of the resulting file specification buffer

<code>rslen</code>	=	Integer to receive the resulting string size
<code>prsbk</code>	=	Array containing the parse block
<code>prssz</code>	=	Size (in bytes) of the parse block
<code>dfnbk</code>	=	Array containing the default name block; <code>dfnbk</code> and <code>dfnsz</code> must both be specified or both omitted; if omitted, a comma between their positions must be present unless no other parameters follow
<code>dfnsz</code>	=	Size of the default name block; <code>dfnbk</code> and <code>dfnsz</code> must both be specified or both omitted; if omitted, a comma between their positions must be present unless no other parameters follow
<code>rsmsk</code>	=	Mask of fields in the resulting string to suppress before returning the string. The bits currently defined are the same as those for the flag word in the parse block. The bits are <code>FS\$NOD</code> , <code>FS\$DEV</code> , <code>FS\$DIR</code> , <code>FS\$NAM</code> , <code>FS\$TYP</code> , and <code>FS\$VER</code> . If the bit <code>FS\$NDF</code> is set, the device is not defaulted to and the LUN is not assigned. ( <code>FS\$NDF</code> has no meaning for the <code>FSS\$</code> directive.)
<code>idsw</code>	=	Integer to receive the Directive Status Word (DSW)

**Macro Call:**

```
PFCS$ [mod],[tbmsk],[lun],prbuf,prsz,rbuf,rssz,[rslen],[prsbk],
      [prssz],[dfnbk],[dfnsz],[rsmsk]
```

- mod** = Modifier of the logical name within a table; if not specified, the nonzero value reserved by the system (LB.LOC = 1 or LB.LOG = 2) is placed in the Directive Parameter Block (DPB); if specified, the values can range from 0 to 255 but should normally correspond to the values used by the system.  
Specifying one of these values indicates that matches in the logical table are based on the exact value. Not specifying a value indicates that the system will look for the first matching logical block, regardless of the modifier value.
- tbmsk** = Inhibit mask to prevent a logical table from being searched. When set, the following symbol bit definitions prevent a particular table from being searched:
- |         |        |      |
|---------|--------|------|
| System  | IN.SYS | = 10 |
| Group   | IN.GRP | = 4  |
| Session | IN.SES | = 20 |
| Task    | IN.TSK | = 1  |
- lun** = Logical unit number (LUN) to be assigned
- prbuf** = Address of the primary file specification buffer
- prsz** = Size (in bytes) of the primary file specification buffer
- rdbuf** = Address of the resulting file specification buffer
- rssz** = Size (in bytes) of the resulting file specification buffer
- rslen** = Address of a word to receive the resulting string size
- prsbk** = Address of the parse block
- prssz** = Size (in bytes) of the parse block

dfnbk = Address of the default name block

dfnsz = Size of the default name block

rmsk = Mask of fields in the resulting string to suppress before returning the string. The bits currently defined are the same as those for the flag word in the parse block. The bits are FS\$NOD, FS\$DEV, FS\$DIR, FS\$NAM, FS\$TYP, and FS\$VER. If the bit FS\$NDF is set, the device is not defaulted to and the LUN is not assigned. (FS\$NDF has no meaning for the FSS\$ directive.)

**Parse RMS****PRMS\$****FORTRAN Call:**

CALL PRSRMS ([mod],[itbmsk],[lun],prbuf,prsz,rbuf,rssz,[rslen],[prsbk,prssz],[dfbuf,dfsz],[rsmask],[idsw])

mod = Modifier of the logical name within a table; if not specified, the nonzero value reserved by the system (LB.LOC = 1 or LB.LOG = 2) is placed in the Directive Parameter Block (DPB); if specified, the values can range from 0 to 255 but should normally correspond to the values used by the system.

Specifying one of these values indicates that matches in the logical table are based on the exact value. Not specifying a value indicates that the system will look for the first matching logical block, regardless of the modifier value.

- itbmsk = Inhibit mask to prevent a logical table from being searched. The following symbol bit definitions, when set, prevent a particular table from being searched:
- System IN.SYS = 10
  - Group IN.GRP = 4
  - Session IN.SES = 20
  - Task IN.TSK = 1
- lun = Logical unit number (LUN) to be assigned
- prbuf = Array containing the primary file specification buffer; prbuf and prsz must both be specified or both omitted; if omitted, a comma between their positions must be present unless no other parameters follow
- prsz = Size (in bytes) of the primary file specification buffer; prbuf and prsz must both be specified or both omitted; if omitted, a comma between their positions must be present unless no other parameters follow
- rsbuf = Array containing the resulting file specification buffer
- rssz = Size (in bytes) of the resulting file specification buffer
- rslen = Integer to receive the resulting string size
- prblk = Array containing the parse block
- prsz = Size (in bytes) of the parse block
- dfbuf = Address of the default file specification buffer; dfbuf and dfsz must both be specified or both omitted; if omitted, a comma between their position must be present unless no other parameters follow

- dfsz = Size (in bytes) of the default file specification buffer; dfbuf and dfsz must both be specified or both omitted; if omitted, a comma between their positions must be present unless no other parameters follow
- rsmask = Mask of fields in the resulting string to suppress before returning the string. The bits currently defined are the same as those for the flag word in the parse block. The bits are FS\$NOD, FS\$DEV, FS\$DIR, FS\$NAM, FS\$TYP, and FS\$VER. If the bit FS\$NDF is set, the device is not defaulted to and the LUN is not assigned. (FS\$NDF has no meaning for the FSS\$ directive.)
- idsw = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

PRMS\$ [mod],[tbmask],[lun],prbuf,prsz,rbuf,rssz,[rslen],[prsbk],[prssz],[dfbuf],[dfsz],[rsmask]

- mod = Modifier of the logical name within a table; if not specified, the nonzero value reserved by the system (LB.LOC = 1 or LB.LOG = 2) is placed in the Directive Parameter Block (DPB); if specified, the values can range from 0 to 255 but should normally correspond to the values used by the system.

Specifying one of these values indicates that matches in the logical table are based on the exact value. Not specifying a value indicates that the system will look for the first matching logical block, regardless of the modifier value.

- tbmsk** = Inhibit mask to prevent a logical table from being searched. The following symbol bit definitions, when set, prevent a particular table from being searched:
- System      IN.SYS    = 10
  - Group       IN.GRP    = 4
  - Session     IN.SES    = 20
  - Task        IN.TSK    = 1
- lun**        = Logical unit number (LUN) to be assigned
- prbuf**     = Address of the primary file specification buffer
- prsz**     = Size (in bytes) of the primary file specification buffer
- rsbuf**     = Address of the resulting file specification buffer
- rssz**     = Size (in bytes) of the resulting file specification buffer
- rslen**    = Address of a word to receive the resulting string size
- prblk**     = Address of the parse block
- prsz**     = Size (in bytes) of the parse block
- dfbuf**     = Address of the default specification buffer
- dfsz**     = Size (in bytes) of the default specification buffer
- rsmask**   = Mask of fields in the resulting string to suppress before returning the string. The bits currently defined are the same as those for the flag word in the parse block. The bits are FS\$NOD, FS\$DEV, FS\$DIR, FS\$NAM, FS\$TYP, and FS\$VER. If the bit FS\$NDF is set, the device is not defaulted to and the LUN is not assigned. (FS\$NDF has no meaning for the FSS\$ directive.)

**Queue I/O Request****QIO\$****FORTRAN Call:**

CALL QIO (fnc,lun,[efn],[pri],[isb],[prl],[ids])

- fnc = I/O function code
- lun = Logical unit number (LUN)
- efn = Event flag number (EFN)
- pri = Priority (ignored, but parameter must be present in call)
- isb = A 2-word integer array to receive final I/O status
- prl = A 6-word integer array containing device-dependent parameters to be placed in parameter words 1 to 6 of the Directive Parameter Block (DPB). Fill in this array by using the GETADR routine.
- ids = Directive status

**Macro Call:**

QIO\$ fnc,lun,[efn],[pri],[isb],[ast],[prl]

- fnc = I/O function code
- lun = Logical unit number (LUN)
- efn = Event flag number (EFN)
- pri = Priority (ignored, but Q.IDPR byte must be present in DPB)
- isb = Address of I/O status block
- ast = Address of asynchronous system trap (AST) service routine entry point
- prl = Parameter list of the form <p1,...p6>

**Que I/O Request and Wait****QIOW\$****FORTTRAN Call:**

CALL WTQIO (fnc,lun,[efn],[pri],[isb],[prl],[ids])

- fnc = I/O function code
- lun = Logical unit number (LUN)
- efn = Event flag number (EFN)
- pri = Priority (ignored, but parameter must be present in call)
- isb = A 2-word integer array to receive final I/O status
- prl = A 6-word integer array containing device-dependent parameters to be placed in parameter words 1 to 6 of the Directive Parameter Block (DPB)
- ids = Directive status

**Macro Call:**

QIOW\$ fnc,lun,[efn],[pri],[isb],[ast],[prl]

- fnc = I/O function code
- lun = Logical unit number (LUN)
- efn = Event flag number (EFN)
- pri = Priority (ignored, but parameter must be present in DPB)
- isb = Address of I/O status block
- ast = Address of asynchronous system trap (AST) service routine entry point
- prl = Parameter list of the form <p1...p6>

**Receive Data or Stop****RCST\$****FORTRAN Call:**

CALL RCST ([rtname],ibuf[,ids])

rtname = Sender task name (if not specified, data may be received from any task)

ibuf = Address of 15-word buffer to receive the sender task name and data

ids = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

RCST\$ [tname],buf

tname = Sender task name (if not specified, data may be received from any task)

buf = Address of 15-word buffer to receive the sender task name and data

**Receive Data****RCVD\$****FORTRAN Call:**

CALL RECEIV ([tsk],buf[,ids])

tsk = Sender task name (if not specified, data may be received from any task)

buf = A 15-word integer array for received data

ids = Directive status

**Macro Call:**

RCVD\$ [tsk],buf

- tsk = Sender task name (if not specified, data may be received from any task)
- buf = Address of 15-word buffer

**Receive Data or Exit**

**RCVX\$**

**FORTRAN Call:**

CALL RECOEX ([tsk],buf[,ids])

- tsk = Sender task name (if not specified, data may be received from any task)
- buf = A 15-word integer array for received data
- ids = Directive status

**Macro Call:**

RCVX\$ [tsk],buf

- tsk = Sender task name (if not specified, data may be received from any task)
- buf = Address of 15-word buffer

**Read All Event Flags**

**RDAF\$**

**FORTRAN Call:**

A FORTRAN task can read only one event flag. The call is as follows:

CALL READEF (efn[,ids])

- efn = Event flag number (EFN)
- ids = Directive status

The Executive returns the status codes IS.SET (+02) and IS.CLR (00) for FORTRAN calls in order to report event-flag polarity.

**Macro Call:**

RDAF\$ buf  
 buf = Address of 4-word buffer

**Read Event Flag****RDEF\$****FORTTRAN Call:**

CALL READEF (iefn[,ids])  
 iefn = Integer containing an event flag number (EFN)  
 ids = Integer variable to receive the Directive Status Word (DSW)

The Executive returns the status codes IS.SET (+02) and IS.CLR (00) for FORTRAN calls in order to report event-flag polarity.

**Macro Call:**

RDEF\$ efn  
 efn = Event flag number (EFN)

**Read Extended Event Flags****RDXF\$****FORTTRAN Call:**

A FORTRAN task can read only one event flag. The call is:  
 CALL READER (efn[,ids])  
 efn = Event flag number (EFN)  
 ids = Directive status

The Executive returns the status codes IS.SET (+02) and IS.CLR (00) for FORTRAN calls in order to report event-flag polarity.

**Macro Call:**

RDXF\$ buf  
 buf = Address of 6-word buffer

**Recursive Translation of Logical Name****RLON\$ and RLOG\$**

(CALL RCTLON and RLON\$ are the preferred calls to use on RSX-11M-PLUS and Micro/RSX operating systems. CALL RCTLOG and RLOG\$ are provided for compatibility with Professional operating system (P/OS).)

**FORTRAN Call:**

CALL RCTLON ([mod],[itbmsk],[status],lms,lmsz,iens,iensz,  
[rsize],[rtbmod],[idsw])

CALL RCTLOG ([mod],[itbmsk],[status],lms,lmsz,iens,iensz,  
[rsize],[rtbmod],[idsw])

**mod** = Optional modifier to be matched against the logical name within a table. Ordinarily, no value will be specified to allow any logical name in table to be found.

**itbmsk** = Inhibit mask to prevent a logical table from being searched. When this parameter is specified, according to the values in the following table, the particular logical name table is not searched.

System      IN.SYS      = 10

Group        IN.GRP        = 4

Session      IN.SES        = 20

Task         IN.TSK        = 1

If no mask is specified (or a value of 0 is specified), the tables are searched in the following order: task, session, group, system. The tables are searched in this order for each iteration. The values remain constant for all iterations of a logical name translation.

<b>status</b>	=	Word to receive the logical status associated with the located logical name as shown in the following table.						
		<table> <tr> <td>LS.TRM</td> <td>1</td> <td>Terminal status. Indicates that the last logical name in the list required no further translation.</td> </tr> <tr> <td>LS.PRV</td> <td>2</td> <td>Privileged status. Only privileged tasks may delete the last logical name in the list.</td> </tr> </table>	LS.TRM	1	Terminal status. Indicates that the last logical name in the list required no further translation.	LS.PRV	2	Privileged status. Only privileged tasks may delete the last logical name in the list.
LS.TRM	1	Terminal status. Indicates that the last logical name in the list required no further translation.						
LS.PRV	2	Privileged status. Only privileged tasks may delete the last logical name in the list.						
<b>lms</b>	=	Character array containing the original logical name string						
<b>lmsz</b>	=	Size (in bytes) of the original logical name string						
<b>iem</b>	=	Character array buffer to receive the returned equivalence-name string						
<b>iemsz</b>	=	Size (in bytes) of the data area for the returned equivalence-name string						
<b>msz</b>	=	Word to receive the size of the equivalence-name string						
<b>tblmod</b>	=	Word to receive, in the lower byte, the table number and, in the higher byte, the modifier value of the located logical name						
<b>idsw</b>	=	Integer to receive the Directive Status Word (DSW)						

**Macro Call:**

**RLON\$** [mod],[tbmsk],[status],lms,lmsz,iem,iemsz,msz,[tblmod]

**RLOG\$** [mod],[tbmsk],[status],lms,lmsz,iem,iemsz,msz,[tblmod]

**mod** = Optional modifier to be matched against the logical name within a table. Ordinarily, no value will be specified to allow any logical name in table to be found.

- tbmsk** = Inhibit mask to prevent a logical table from being searched. The following symbol definitions, when set, prevent a particular table from being searched:
- System      IN.SYS    = 10
  - Group        IN.GRP    = 4
  - Session      IN.SES    = 20
  - Task         IN.TSK    = 1
- If no mask is specified (or a value of 0 is specified), the tables are searched in the following order: user, session, group, system. The tables are searched in this order for each iteration. The values remain constant for all iterations of a logical name translation.
- status** = Word to receive the logical status associated with the located logical name as follows:
- LS.TRM = Terminal status bit. Indicates the last logical name in list wanted no further translation.
  - LS.PRIV = Privileged status. Last logical name in list can be only deleted by a privileged task.
- lns** = Character array containing the original logical name string
- lnssz** = Size (in bytes) of the original logical name string
- ens** = Character array buffer to receive the returned equivalence-name string
- enssz** = Size (in bytes) of the data area for the returned equivalence-name string

**rsize** = Word to receive the size of the equivalence-name string  
**rtbmod** = Word to receive, in the lower byte, the table number and, in the higher byte, the modifier value of the located logical name

### Remove Affinity (\$S form recommended)

**RMAF\$S**

#### FORTRAN Call:

CALL RMAF [(ids)]

**ids** = Integer to receive the Directive Status Word (DSW)

#### Macro Call:

RMAF\$S

### Request and Pass Offspring Information

**RPOI\$**

#### FORTRAN Call:

CALL RPOI (tname,[iugc],[iumc],[iparen],[ibuf],[ibfl],[isc],[idnam],[iunit],[itask],[ocbad],[ids])

**tname** = Name of an array containing the actual name (in Radix-50) of the task to be requested and optionally chained to

**iugc** = Name of an integer containing the group code number for the User Identification Code (UIC) of the requested target chain task

**iumc** = Name of an integer containing the member code number for the UIC of the requested target chain task

**iparen** = Name of an array (or I\*4 integer) containing the Radix-50 name of the parent task. This is returned in the information buffer of the GTCMCI subroutine.

## Executive Directive Summary

<code>ibuf</code>	=	Name of an array that contains the command line text for the chained task												
<code>ibfl</code>	=	Name of an integer that contains the number of bytes in the command in the <code>ibuf</code> array												
<code>isc</code>	=	Flag byte controlling the actions of this directive request when executed. The bit definitions of this byte (only the low-order byte of the integer specified in the call is ever used) are as follows: <table><tr><td><code>RP.OEX</code></td><td>=</td><td>128</td><td>Force this task to exit on successful execution of the <code>RPOI\$</code> directive</td></tr><tr><td><code>RP.OAL</code></td><td>=</td><td>1</td><td>Pass all of this task's connections to the requested task. (The default is none.)</td></tr><tr><td><code>RP.ONX</code></td><td>=</td><td>2</td><td>Pass the first connection in the queue, if there is one</td></tr></table>	<code>RP.OEX</code>	=	128	Force this task to exit on successful execution of the <code>RPOI\$</code> directive	<code>RP.OAL</code>	=	1	Pass all of this task's connections to the requested task. (The default is none.)	<code>RP.ONX</code>	=	2	Pass the first connection in the queue, if there is one
<code>RP.OEX</code>	=	128	Force this task to exit on successful execution of the <code>RPOI\$</code> directive											
<code>RP.OAL</code>	=	1	Pass all of this task's connections to the requested task. (The default is none.)											
<code>RP.ONX</code>	=	2	Pass the first connection in the queue, if there is one											
<code>idnam</code>	=	Name of an integer containing the ASCII device name of the requested task's TI: (must be the name of a physical device)												
<code>iunit</code>	=	Name of an integer containing the unit number of the requested task's TI:												
<code>itask</code>	=	Name of an array containing the Radix-50 name the requested task is to run under. On RSX-11M-PLUS systems, any task may specify a new name for the requested task as long as the requested task is not a command line interpreter (CLI) task. This argument is valid only if the issuing task is a CLI task. The requested task (specified in the <code>tname</code> parameter) must be installed in the <code>...tsk</code> format.												

- ocbad = Name of an integer containing the internal pool address of the parent Offspring Control Block (OCB). This value may be obtained only in the information buffer of the GTCMCI subroutine, which only a CLI can issue; therefore, only a CLI can specify this argument.
- ids = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

RPOI\$ tname,,,,[ugc],[umc],[parent],[bufadr],[buflen],[sc],[dnam],  
[unit], [task],[ocbad]

- tname = Name of task to be chained to
- ugc = Group code for UIC of the requested task
- umc = Member code for UIC of the requested task
- parent = Name of issuing task's parent task whose connection is to be passed
- bufadr = Address of buffer to be given to the requested task
- buflen = Length of buffer to be given to requested task
- sc = Flag bits are as follows:
- RP.OEX - (200) Force issuing task to exit
  - RP.OAL - (1) Pass all connections (default is none)
  - RP.ONX - (2) Pass the first connection in the queue, if there is one
- dnam = ASCII device name for TI: (must be the name of a physical device)

## Executive Directive Summary

<b>unit</b>	=	Unit number of task's TI:
<b>task</b>	=	Radix-50 name of task to be started. On RSX-11M-PLUS systems, any task may specify a new name for the requested task as long as the requested task is not a CLI task. This argument is valid only if the issuing task is a CLI task. The requested task (specified in the tname parameter) must be installed in the ...tsk format
<b>ocbad</b>	=	Address of Offspring Control Block (OCB) to pass (CLIs only)

## Request Task

**RQST\$**

### FORTRAN Call:

CALL REQUES (tsk,[opt][,ids])

<b>tsk</b>	=	Task name
<b>opt</b>	=	A 4-word integer array, as follows:
<b>opt(1)</b>	=	Partition name, first half (ignored, but must be present)
<b>opt(2)</b>	=	Partition name, second half (ignored, but must be present)
<b>opt(3)</b>	=	Priority (ignored, but must be present)
<b>opt(4)</b>	=	User Identification Code (UIC)
<b>ids</b>	=	Directive status

### Macro Call:

RQST\$ tsk,[prt],[pri][,ugc,umc]

<b>tsk</b>	=	Task name
<b>prt</b>	=	Partition name (ignored, but must be present)

pri = Priority (ignored, but must be present)  
 ugc = UIC group code  
 umc = UIC member code

**Receive by Reference****RREF\$****FORTRAN Call:**

CALL RREF (iwdb,[isrb],[ids])

iwdb = An 8-word integer array containing a Window  
 Definition Block (WDB)  
 isrb = A 10-word integer array to be used as the  
 receive buffer  
 ids = Directive status

**Macro Call:**

RREF\$ wdb

wdb = Window Definition Block (WDB) address

**Receive by Reference or Stop****RRST\$****FORTRAN Call:**

CALL RRST (iwdb,[isrb],[ids])

iwdb = An 8-word integer array containing a Window  
 Definition Block (WDB)  
 isrb = A 10-word integer array to be used as the  
 receive buffer. If the call omits this parameter,  
 the contents of iwbd(8) are unchanged  
 ids = Directive status

**Macro Call:**

RRST\$ wdb

wdb = Window Definition Block (WDB) address

**Resume Task**

**RSUM\$**

**FORTRAN Call:**

CALL RESUME (tsk[,ids])

tsk = Task name

ids = Directive status

**Macro Call:**

RSUM\$ tsk

tsk = Task name

**Run Task**

**RUN\$**

**FORTRAN Call:**

CALL RUN (tsk,[opt],smg,snt,[rmg],[rnt][,ids])

tsk = Task name

opt = A 4-word integer array, as follows:

opt(1) = Partition name, first half  
(ignored, but must be present)

opt(2) = Partition name, second half  
(ignored, but must be present)

opt(3) = Priority (ignored, but must be  
present)

opt(4) = User Identification Code (UIC)

smg = Schedule delta magnitude

snt = Schedule delta unit (either 1, 2, 3, or 4)  
 rmg = Reschedule interval magnitude  
 rnt = Reschedule interval unit  
 ids = Directive status

The ISA standard call for initiating a task is also provided as shown next.

CALL START (tsk,smg,snt[,ids])

tsk = Task name  
 smg = Schedule delta magnitude  
 snt = Schedule delta unit (either 1, 2, 3, or 4)  
 ids = Directive status

#### Macro Call:

RUN\$ tsk,[prt],[pri],[ugc],[umc],smg,snt[,rmg,rnt]

tsk = Task name  
 prt = Partition name (ignored, but must be present)  
 pri = Priority (ignored, but must be present)  
 ugc = UIC group code  
 umc = UIC member code  
 smg = Schedule delta magnitude  
 snt = Schedule delta unit (either 1, 2, 3, or 4)  
 rmg = Reschedule interval magnitude  
 rnt = Reschedule interval unit

Specify Command Arrival AST

SCAA\$

#### FORTRAN Call:

Not supported

**Macro Call:**

**SCAA\$** [ast]

ast = Asynchronous system trap (AST) service routine entry point. Omitting this parameter disables command arrival ASTs for the issuing task until the directive is respecified.

**Supervisor Call (\$S form recommended)**

**SCAL\$S**

**FORTTRAN Call:**

Not supported

**Macro Call:**

**SCAL\$S** saddr,caddr[,err]

saddr = Address of the called supervisor-mode routine

caddr = Address of the completion routine for return to the caller

err = Address of error routine

**Set Command Line Interpreter**

**SCLI\$**

**FORTTRAN Call:**

**CALL SETCLI** (icli,idev,iunit[,ids])

icli = A 2-word array element containing the name of the command language interpreter (CLI) to which the terminal is to be set

idev = Integer containing the ASCII name of the terminal to be set (default = TI:)

iunit = Integer containing the unit number of terminal

ids = Directive status

**Macro Call:**

SCLI\$ cli,[dev],[unit]

- cli = Name of the command line interpreter (CLI) to which the terminal is to be set
- dev = ASCII name of the terminal to be set (default = TI:)
- unit = Unit number of terminal

**Send Data****SDAT\$****FORTRAN Call:**

CALL SEND (tsk,buf,[efn],[ids])

- tsk = Task name
- buf = A 13-word integer array of data to be sent
- efn = Event flag number (EFN)
- ids = Directive status

**Macro Call:**

SDAT\$ tsk,buf,[efn]

- tsk = Task name
- buf = Address of 13-word data buffer
- efn = Event flag number (EFN)

**Set Default Directory**

**SDIR\$**

**FORTRAN Call:**

**CALL SETDDS (mod,iens,ienssz[,idsw])**

- mod** = Modifier for the SDIR\$ directive;
  - 0** = Modify task default
  - SD.LOG** = Modify terminal default
  - SD.BYE** = Delete terminal default
  - SD.TI** = Set task default to terminal default
- iens** = Character array containing the default directory string
- ienssz** = Size (in bytes) of the default directory string
- idsw** = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

**SDIR\$** { mod  
ens,ienssz  
mod,ens,ienssz }

- mod** = Modifier for the SDIR\$ directive;
  - 0** = Modify task default
  - SD.LOG** = Modify terminal default
  - SD.BYTE** = Delete terminal default
  - SD.TI** = Set task default to terminal default

- ens = Buffer address of the default directory string; if not specified, the default directory string is deleted (ens and enssz must be selected to modify the default)
- enssz = Size (in bytes) of the default directory string (enssz must be selected to modify the default)

**Send, Request, and Connect****SDRC\$****FORTRAN Call:**

CALL SDRC (rtname,ibuf,[iefn],[iast],[iesb],[iparm],[ids])

CALL SDRCN (rtname,ibuf,[iefn],[iast],[iesb],[iparm],[ids])

- rtname = Target task name of the offspring task to be connected
- ibuf = Name of 13-word send buffer
- iefn = Event flag to be set when the offspring task exits or emits status
- iast = Name of an asynchronous system trap (AST) routine to be called when the offspring task exits or emits status (ignored for CALL SDRCN)
- iesb = Name of an 8-word status block to be written when the offspring task exits or emits status, as follows:
- Word 0 = Offspring-task exit status
  - Word 1 = Task Termination Notification Program (TKTN) abort code
  - Word 2-7 = Reserved
- iparm = Name of a word to receive the status block address when an AST occurs
- ids = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

**SDRC\$** tname,buf,[efn],[east],[esb]

- tname = Target task name of the offspring task to be connected
- buf = Address of a 13-word send buffer
- efn = Event flag to be cleared on issuance and when the offspring task exits or emits status
- east = Address of an asynchronous system trap (AST) routine to be called when the offspring task exits or emits status
- esb = Address of an 8-word status block to be written when the offspring task exits or emits status, as follows:
  - Word 0 = Offspring-task exit status
  - Word 1 = TKTN abort code
  - Word 2-7 = Reserved

**Send Data Request and Pass Offspring Control Block**

**SDRP\$**

**FORTRAN Call:**

**CALL SDRP** (task,ibuf,[ibfl],[iefn],[iflag],[iparen],[iocbad],[ids])

- task = Name of an array (REAL,INTEGER, 1\*4) that contains the Radix-50 name of target task
- ibuf = Name of an integer array containing data to be sent
- ibfl = Name of an integer containing number of words (integers) in the array to be sent. On RSX-11M-PLUS systems, this argument may be in the range of 1 to 255<sub>10</sub>. If this argument is not specified, a default value of 12<sub>10</sub> is assumed. This argument must be 13<sub>10</sub> or must be defaulted.

- iefn** = Name of an integer containing the number of the event flag to be set when this directive is executed successfully.
- iflag** = Name of an integer containing flag bits controlling execution of this directive. The flag bits are defined as follows:
- SD.REX** = 128 Force this task to exit upon successful execution of this directive
  - SD.RAL** = 1 Pass all connections to the requested task (default is pass none); if you specify this flag, do not specify the parent task name
  - SD.RNX** = 2 Pass the first connection in the queue, if there is one, to the requested task; if you specify this flag, do not specify the parent task name
- iparen** = Name of array containing the Radix-50 name of the parent task whose connection should be passed to the target task. The name of the parent task was returned in the information buffer of the GTCMCI subroutine.
- iocbad** = Name of an integer containing pool address of the Offspring Control Block (OCB) to pass. This value was returned in the information buffer of the GTCMCI subroutine. Only command line interpreter (CLI) tasks may specify this parameter
- ids** = Name of an integer to receive the contents of the Directive Status Word (DSW)

**Macro Call:**

**SDRP\$** task,bufadr,[buflen],[efn],[flag],[parent],[ocbad]

task = Name of task to be chained to

bufadr = Address of buffer to be given to the requested task

buflen = Length of buffer to be given to requested task

efn = Event flag number (EFN)

flag = Flag bits controlling execution of this directive (see iflag for the definitions of the bits)

parent = Name of issuing task's parent task whose connection is to be passed. If not specified, all connections or no connections are passed, depending on the flag bit

ocbad = Address of Offspring Control Block (OCB) to pass (CLIs only)

**Set Event Flag**

**SETF\$**

**FORTRAN Call:**

CALL SETEF (efn[,ids])

efn = Event flag number (EFN)

ids = Directive status

**Macro Call:**

SETF\$ efn

efn = Event flag number (EFN)

**Specify Floating Point Exception AST**

**SFPA\$**

**FORTRAN Call:**

Not supported

**Macro Call:**

SFPA\$ [ast]

ast = Asynchronous system trap (AST) service routine  
entry point address

**Send Message****SMSG\$****FORTRAN Call:**

CALL SMSG (itgt,ibuf,ibufL,iprm,iprml[,ids])

itgt = Name of an integer containing the target object  
 ibuf = Name of an integer array containing the data to  
be inserted into the formatted data packet  
 ibufL = Name of an integer containing length of the  
ibuf array  
 iprm = Name of an integer array containing any  
additional parameters  
 iprml = Name of an integer containing the number of  
parameters in the iprm array  
 ids = Name of an optional integer to receive the  
directive status

**Macro Call:**

SMSG\$ tgt,buf,len, &lt;pri,...,prn&gt;

tgt = Target identifier  
 buf = Address of optional data buffer  
 len = Length (in bytes) of optional data buffer

pri,...,prn = Target-specific (for the Error Logger)  
parameter list:  
SMSG\$ SM.SER,buf,len, <typ,sub,lun,mask>

typ = Error Logger packet code

sub = Error Logger packet subtype  
code

lun = Logical unit number (LUN) of  
device

msk = Control mask word

**Send Next Command**

**SNXC\$**

**FORTRAN Call:**

CALL SNXC ([idnam],[iunit],[ids])

idnam = Device name (ASCII); if not specified, TI: is  
used

iunit = Unit number of the terminal from which the  
command is to be sent

ids = Integer to receive the Directive Status Word  
(DSW)

**Macro Call:**

SNXC\$ [dnam],[unum]

dnam = Device name (ASCII); if not specified, TI: is  
used

unum = Unit number of the terminal from which the  
command is to be sent

**Specify Parity Error AST**

**SPEA\$**

**FORTRAN Call:**

Not supported

**Macro Call:**

SPEA\$ [ast]

ast = Asynchronous system trap (AST) service-routine  
entry-point address

**Suspend (\$S form recommended)****SPND\$\$****FORTRAN Call:**

CALL SUSPND [(ids)]

ids = Directive status

**Macro Call:**

SPND\$\$ [err]

err = Error routine address

**Specify Power Recovery AST****SPRA\$****FORTRAN Call:****To Establish an AST:**

EXTERNAL sub

CALL PWRUP sub

sub = Name of a subroutine to be executed upon power  
recover. The PWRUP subroutine will effect the  
following:

CALL sub (no arguments)

The subroutine is called as a result of a power  
recovery asynchronous system trap (AST), and  
therefore may be controlled at critical points by  
using the DSASTR (or INASTR) and ENASTR  
subroutine calls.

**To Remove an AST:**

CALL PWRUP

**Macro Call:**

SPRA\$ [ast]

ast = Asynchronous system trap (AST) service-routine entry-point address

**Spawn**

**SPWN\$**

**FORTRAN Call:**

CALL SPAWN (rtname,[iugc],[iumc],[iefn],[iast],[iesb],[iparm],[icmlin],[icmlen],[iunit],[dnam],[ids])

CALL SPAWNN (rtname,[iugc],[iumc],[iefn],[iast],[iesb],[iparm],[icmlin],[icmlen],[iunit],[dnam],[ids])

rtname = Name (Radix-50) of the offspring task to be spawned

iugc = Group code number for the User Identification Code (UIC) of the offspring task

iumc = Member code number for the UIC of the offspring task

iefn = Event flag to be set when the offspring task exits or emits status

iast = Name of an asynchronous system trap (AST) routine to be called when the offspring task exits or emits status (ignored for CALL SPAWNN)

iesb = Name of an 8-word status block to be written when the offspring task exits or emits status:

Word 0 = Offspring-task exit status

Word 1 = TKTN abort code

Words 2-7 = Reserved

iparm = Name of a word to receive the status block address when the AST occurs

icmlin	=	Name of a command line to be queued for the offspring task
icmlen	=	Length of the command line (255 <sub>10</sub> ) characters maximum
iunit	=	Unit number of terminal to be used as the TI: for the offspring task (if the optional dnam parameter is not specified, this parameter must be the unit number of a virtual terminal created by the issuing task; if a value of 0 is specified, the TI: of the issuing task is propagated)
dnam	=	Device name mnemonic (must be the name of a physical device)
ids	=	Integer to receive the Directive Status Word (DSW)

**Macro Call:**

SPWN\$	tname,,,[ugc],[umc],[efn],[east],[esb],[cmdlin,cmdlen],[unum],[dnam]	
tname	=	Name (Radix-50) of the offspring task to be spawned
ugc	=	Group code number for the UIC of the offspring task
umc	=	Member code number for the UIC of the offspring task
efn	=	Event flag to be cleared on issuance and set when the offspring task exits or emits status
east	=	Address of an asynchronous system trap (AST) routine to be called when the offspring task exits or emits status

- esb = Address of an 8-word status block to be written when the offspring task exits or emits status:
  - Word 0 = Offspring-task exit status
  - Word 1 = TKTN abort code
  - Words 2-7 = Reserved
- cmdlin = Address of a command line to be queued for the offspring task
- cmdlen = Length of the command line (maximum length is 255<sub>10</sub>)
- unum = Unit number of terminal to be used as the TI: for the offspring task (if the optional dnam parameter is not specified, this parameter must be the unit number of a virtual terminal created by the issuing task; if a value of 0 is specified, the TI: of the issuing task is propagated)
- dnam = Device name mnemonic (must be the name of a physical device)

**Specify Receive Data AST**

**SRDA\$**

**FORTRAN Call:**

Neither the FORTRAN language nor the ISA standard permits direct linking to system-trapping mechanisms. Therefore, this directive is not available for FORTRAN tasks.

**Macro Call:**

SRDA\$ [ast]

- ast = Asynchronous system trap (AST) service-routine entry-point address

**Specify Requested Exit AST****SREA\$ and SREX\$****FORTTRAN Call:**

CALL SREA (ast[,ids])

CALL SREX (ast,ipblk,ipblk[,dummy][,ids])

- ast = Name of the externally declared asynchronous system trap (AST) subroutine
- ipblk = Name of an integer array to receive the trap-dependent parameters
- ipblk1 = Number of parameters to be returned into the ipblk array
- dummy = Reserved for future use
- ids = Name of an optional integer to receive the Directive Status Word (DSW)

**Macro Call:**

SREA\$ [ast]

SREX\$ [ast][,dummy]

- ast = Asynchronous system trap (AST) service-routine entry-point address
- dummy = Reserved for future use

**Send by Reference****SREF\$****FORTTRAN Call:**

CALL SREF (tsk,[efn],iwdb,[isrb][,ids])

- tsk = A single-precision floating-point variable containing the name of the receiving task in Radix-50 format
- efn = Event flag number (EFN)

- iwdb = An 8-word integer array containing a Window Definition Block (WDB)
- isrb = An 8-word integer array containing additional information. (If specified, the address of isrb is placed in iwdb<sub>8</sub>; if isrb is omitted, the contents of iwdb<sub>8</sub> remain unchanged.)
- ids = Directive status

**Macro Call:**

SREF\$ task,wdb[,efn]

- task = Receiver task name
- wdb = Window Definition Block (WDB) address
- efn = Event flag number (EFN)

**Specify Receive-by-Reference AST**

**SRRA\$**

**FORTRAN Call:**

Neither the FORTRAN language nor the ISA standard permits direct linking to system-trapping mechanisms. Therefore, this directive is not available for FORTRAN tasks.

**Macro Call:**

SRRA\$ [ast]

- ast = Asynchronous system trap (AST) service-routine entry-point address

**Set Affinity**

**STAF\$**

**FORTRAN Call:**

CALL STAF (iaff[,ids])

- iaff = Affinity mask word
- ids = Integer to receive Directive Status Word (DSW)

**Macro Call:**

STAF\$ [cp!ub!ub...]

cp = Central processing unit (CPU) selected (A–D)

ub = UNIBUS run or runs selected (E–T)

**Set System Time Directive****STIM\$****FORTRAN Call:**

CALL SETTIM (ibufn[,ibufp][,ids])

ibufn = An 8-word integer array—new time specification buffer

ibufp = An 8-word integer array—previous time buffer

ids = Directive status

**Macro Call:**

STIM\$ bufn,[bufp]

bufn = Address of new 8-word time-specification buffer

bufp = Address of 8-word buffer to receive the previous system time parameters

**Stop for Logical OR of Event Flags****STLO\$****FORTRAN Call:**

CALL STLOR (ief1,ief2,ief3, . . . ief(n))

ief1 . . . ief(n) = List of event flag numbers (EFNs)

**Macro Call:**

STLO\$ grp,msk

grp = Desired group of event flags

msk = A 16-bit mask word

**Stop (\$S form recommended)**

**STOP\$S**

**FORTRAN Call:**

CALL STOP [(ids)]

ids = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

STOP\$S

**Stop for Single Event Flag**

**STSE\$**

**FORTRAN Call:**

CALL STOPFR (iefn[,ids])

iefn = Event flag number (EFN)

ids = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

STSE\$ efn

efn = Event flag number (EFN)

**Specify SST Vector Table for Debugging Aid**

**SVDB\$**

**FORTRAN Call:**

Neither the FORTRAN language nor the ISA standard permits direct linking to system-trapping mechanisms. Therefore, this directive is not available for FORTRAN tasks.

**Macro Call:**

SVBD\$ [adr][,len]

adr = Address of synchronous system trap (SST) vector table

len = Length of (that is, number of entries in) table in words

**Specify SST Vector Table for Task****SVTK\$****FORTTRAN Call:**

Neither the FORTRAN language nor the ISA standard permits direct linking to system-trapping mechanisms. Therefore, this directive is not available for FORTRAN tasks.

**Macro Call:**

SVTK\$ [adr][,len]

adr = Address of synchronous system trap (SST) vector table

len = Length of (that is, number of entries in) table in words

**Switch State****SWST\$****FORTTRAN Call:**

Not supported

**Macro Call:**

SWST\$ base,addr

base = The base virtual address within the task for mapping the subroutine through APR5

addr = Virtual address of the subroutine to be executed in system state by the directive

**Test for Specified Task Feature****TFEA\$****FORTTRAN Call:**

CALL TFEA (isym[,ids])

isym = Symbol for the specified task feature

ids = Directive status

**Macro Call:**

TFEA\$ sym

sym = Symbol for the specified task feature, as listed in Table 2

**Table 2: Task Feature Symbols**

Symbol	Value	Meaning
T2\$WFR	1	Task in Wait-for state (1=YES)
T2\$WFA	2	Saved T2\$WFR on AST in progress
T2\$SPN	3	Task suspended (1=YES)
T2\$SPA	4	Saved T2\$SPN on AST in progress
T2\$STP	5	Task stopped (1=YES)
T2\$STA	6	Saved T2\$SPN [STP?] on AST in progress
T2\$ABO	7	Task marked for abort (1=YES)
AT2\$AFF	9.	Task is installed with affinity
T2\$SIO	10.	Task stopped for buffered I/O
T2\$SEF	12.	Task stopped for event flag or flags (1=YES)
T2\$REX	13.	Requested exit AST specified
T2\$CHK	14.	Task not checkpointable (1=YES)
T2\$DST	15.	AST recognition disabled (1=YES)

(continued on next page)

**Table 2 (Cont.): Task Feature Symbols**

<b>Symbol</b>	<b>Value</b>	<b>Meaning</b>
T2\$AST	16.	AST in progress (1=YES)
T3\$GFL	17.	Group global event flag lock
T3\$SWS	18.	Reserved for use by Software Services
T3\$CMD	19.	Task is executing a CLI command
T3\$MPC	20.	Mapping change with outstanding I/O
T3\$NET	21.	Network protocol level
T3\$ROV	22.	Task has resident overlays
T3\$CAL	23.	Task has checkpoint space in image
T3\$NSD	24.	Task does not allow Send Data
T3\$RST	25.	Task is restricted (1=YES)
T3\$CLI	26.	Task is a command line interpreter
T3\$SLV	27.	Task is a slave task (1=YES)
T3\$MCR	28.	Task requested as external MCR function
T3\$PRV	29.	Task is privileged (1=YES)
T3\$REM	30.	Remove task on exit (1=YES)
T3\$PMD	31.	Dump task on synchronous abort (0=YES)
T3\$ACP	32.	Ancillary Control Processor (1=YES)
T4\$SNC	33.	Task uses commons for synchronization
T4\$DSP	34.	Task was built for user I/D space
T4\$PRV	35.	Task was privileged, but has cleared T3.PRV with GIN\$ (may be resent with GIN\$ if T4\$PRV set)
T4\$PRO	36.	TCB is (or should be) a prototype

(continued on next page)

**Table 2 (Cont.): Task Feature Symbols**

Symbol	Value	Meaning
T4\$LDD	37.	Task's load device has been dismounted
T4\$MUT	38.	Task is a multiuser task
T4\$CTC	39.	Task has been processed by GIN\$ ^C abort
T4\$FMP	40.	Task has fast-mapping header extension

**Translate Logical Name****TLON\$ and TLOG\$**

CALL TRALON and TLON\$ are the preferred calls to use on RSX-11M-PLUS and Micro/RSX systems. CALL TRALOG and TLOG\$ are provided for compatibility with the Professional operating system (P/OS).

**FORTRAN Call:**

CALL TRALON ([mod],[tbmsk],[status],l<sub>ns</sub>,l<sub>nssz</sub>,e<sub>ns</sub>,i<sub>enssz</sub>,  
[rsize],[rtbmod],[status],[idsw])

CALL TRALOG ([mod],[tbmsk],[status],l<sub>ns</sub>,l<sub>nssz</sub>,e<sub>ns</sub>,i<sub>enssz</sub>,  
[rsize],[rtbmod],[status],[idsw])

mod = Modifier of the logical name within a table; if not specified, the nonzero value reserved by the system (LB.LOC = 1 or LB.LOG = 2) is placed in the Directive Parameter Block (DPB); if specified, the values can range from 0 to 255 but should normally correspond to the values used by the system.

- tbmsk** = Inhibit mask to prevent a logical name table from being searched. When specified according to the values in the following table, this parameter prevents the logical name table from being searched:
- |         |          |     |
|---------|----------|-----|
| System  | (LT.SYS) | = 0 |
| Group   | (LT.GRP) | = 1 |
| Session | (LT.SES) | = 4 |
| Task    | (LT.TSK) | = 3 |
- If no mask is specified, the tables are searched in the following order: task, session, group, system.
- status** = Word to receive the logical status word, as follows:
- |         |     |   |
|---------|-----|---|
| LS.TRM  | = 1 | Terminal status bit. Indicates the last logical name in list wanted no further translation. |
| LS.PRIV | = 2 | Privileged status. Last logical name in list can only be deleted by a privileged task.      |
- lns** = Character array containing the logical name string
- lnssz** = Size (in bytes) of the logical name string
- ens** = Character array buffer to receive the returned equivalence-name string
- ienssz** = Size (in bytes) of the data area for the returned equivalence-name string

- rsize** = Word to receive the size of the returned equivalence name
- rtbmod** = Word to receive, in the lower byte, the table number and, in the higher byte, the modifier value of the located logical name
- idsw** = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

**TLON\$** [mod],[tbmsk],[status],lns,lnssz,ens,enssz,[rsize],[rtbmod]

**TLOG\$** [mod],[tbmsk],[status],lns,lnssz,ens,enssz,[rsize],[rtbmod]

- mod** = Optional modifier to be matched against the logical name within a table; specific values restricted to LB.LOC or LB.LOG

- tbmsk** = Inhibit mask to prevent a logical table from being searched. The following symbol definitions, when set, prevent a particular table from being searched:

System      IN.SYS      = 10

Group        IN.GRP       = 4

Session     IN.SES     = 20

Task         IN.TSK       = 1

If no mask is specified, the tables are searched in the following order: task, session, group, system.

- status** = Word to receive the logical status word, as follows:

**LS.TRM** = 1      Terminal status bit. Indicates the last logical name in list wanted no further translation.

**LS.PRIV** = 2      Privileged status. Last logical name in list can only be deleted by a privileged task.

<code>lns</code>	=	Character array containing the original logical name string
<code>lnssz</code>	=	Size (in bytes) of the original logical name string
<code>ens</code>	=	Character array buffer to contain the returned equivalence string
<code>enssz</code>	=	Size (in bytes) of the data area for the returned equivalence name string
<code>rsiz</code>	=	Word to receive the size of the returned equivalence name; this size is always the actual size of the equivalence name regardless of the string size specified with <code>enssz</code>
<code>rtbmod</code>	=	Word to receive, in the lower byte, the table number and, in the higher byte, the modifier value of the located logical name

### Unlock Group Global Event Flags (\$\$ form recommended) `ULGF$$`

#### **FORTRAN Call:**

`CALL ULGF [(ids)]`

`ids` = Directive status

#### **Macro Call:**

`ULGF$$ [err]`

`err` = Error routine address

**Unmap Address Window**

**UMAP\$**

**FORTRAN Call:**

**CALL UNMAP** (iwdb[,ids])

**iwdb** = An 8-word integer array containing a Window Definition Block (WDB)

**ids** = Directive status

**Macro Call:**

**UMAP\$** wdb

**wdb** = Window Definition Block (WDB) address

**Unstop Task**

**USTP\$**

**FORTRAN Call:**

**CALL USTP** ([rtname][,ids])

**rtname** = Name of task to be unstopped. (If not specified, CALL USTP will use the issuing task as its default.)

**ids** = Integer to receive directive status information

**Macro Call:**

**USTP\$** [tname]

**tname** = Name of task to be unstopped. (If not specified, USTP\$ will use the issuing task as its default.)

**Variable Receive Data****VRCD\$****FORTRAN Call:**

CALL VRCD ([task],bufadr,buflen[,ids])

- task = Sender task name
- bufadr = Array containing data to be sent [must be word aligned (INTEGER\*2)]
- buflen = Length of buffer (in words)
- ids = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

VRCD\$ [task],bufadr[,buflen],[ti]

- task = Sender task name
- bufadr = Buffer address
- buflen = Buffer size (in bytes)
- ti = TI: indicator (ignored)

**Variable Receive Data or Stop****VRCS\$****FORTRAN Call:**

CALL VRCS ([task],bufadr[,buflen][,ids])

- task = Sender task name
- bufadr = Array containing data to be sent [must be word aligned (INTEGER\*2)]
- buflen = Length of buffer
- ids = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

VRCX\$ [task],bufadr[,buflen],[ti]

task = Sender task name  
bufadr = Buffer address  
buflen = Buffer size (in bytes)  
ti = TI: indicator (ignored)

**Variable Receive Data or Exit**

**VRCX\$**

**FORTRAN Call:**

CALL VRCX ([task],bufadr[,buflen][,ids])

task = Sender task name  
bufadr = Array containing data to be sent [must be word aligned (INTEGER\*2)]  
buflen = Length of buffer  
ids = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

VRCX\$ [task],bufadr[,buflen],[ti]

task = Sender task name  
bufadr = Buffer address  
buflen = Buffer size (in words)  
ti = TI: indicator (ignored)

**Variable Send Data****VSDA\$****FORTRAN Call:**

CALL VSDA (task,bufadr,[buflen],[efn],[idsw])

- task = Receiver task name
- bufadr = Address of the buffer to receive the sender task name and data (must be word aligned (INTEGER\*2))
- buflen = Length of buffer (in words)
- efn = Event flag number (EFN)
- idsw = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

VSDA\$ task,bufadr,[buflen],[efn],[spri],[ti]

- task = Receiver task name
- bufadr = Buffer address
- buflen = Buffer size (in words)
- efn = Event flag number (EFN)
- spri = Send priority (ignored)
- ti = TI: indicator (ignored)

**Variable Send, Request, and Connect**

**VSRC\$**

**FORTRAN Call:**

CALL VSRC (rtname,ibuf,[ibuflen],[iefn],[iast],[iesb],[iparm][,idsw])  
 CALL VSRCN (rtname,ibuf,[ibuflen],[iefn],[iast],[iesb],[iparm][,idsw])

- rtname = Target task name of the offspring task to be connected
- ibuf = Name of send buffer
- ibuflen = Length of buffer
- iefn = Event flag to be set when the offspring task exits or emits status
- iast = Name of an asynchronous system trap (AST) routine to be called when the offspring task exits or emits status (ignored for CALL VSRCN)
- iesb = Name of an 8-word status block to be written when the offspring task exits or emits status:
  - Word 0 = Offspring-task exit status
  - Word 1 = TKTN abort code
  - Words 2-7 = Reserved
- iparm = Name of a word to receive the status block address when an AST occurs
- idsw = Integer to receive the Directive Status Word (DSW)

**Macro Call:**

**VSRC\$** tname,buf[,buflen],[efn],[east],[esb]

- tname = Target task name of the offspring task to be connected
- buf = Address of send buffer
- buflen = Length of buffer
- efn = The event flag to be cleared on issuance and set when the offspring task exits or emits status
- east = Address of an asynchronous system trap (AST) routine to be called when the offspring task exits or emits status
- esb = Address of an 8-word status block to be written when the offspring task exits or emits status:
- Word 0 = Offspring-task exit status
  - Word 1 = TKTN abort code
  - Words 2-7 = Reserved

**Wait for Significant Event (\$\$ form recommended)****WSIG\$\$****FORTTRAN Call:**

CALL WFSNE

**Macro Call:**

**WSIG\$\$** [err]

- err = Error routine address

**Wait for Logical OR of Event Flags**

**WTLO\$**

**FORTTRAN Call:**

CALL WFLOR (ef1,ef2,ef3...,efn)

CALL WFLORS (idsw,ef1,ef2,ef3...,efn)

idsw = Integer to receive the Directive Status Word (DSW)

ef1...efn = List of event flag numbers (EFNs) taken as the set of flags to be specified in the directive

**Macro Call:**

WTLO\$ grp,msk

grp = Desired group of event flags

msk = A 16-bit flag mask word

**Wait for Single Event Flag**

**WTSE\$**

**FORTTRAN Call:**

CALL WAITFR (efn[,ids])

efn = Event flag number (EFN)

ids = Directive status

**Macro Call:**

WTSE\$ efn

efn = Event flag number (EFN)

## DIRECTIVE ERROR CODES

Directives in the Directive Status Word (DSW) return the following error codes. The complete abbreviation for these codes is IE.xxx. Only partial abbreviations (xxx) are included in this list. The octal error number listed is the low-order byte of the complete word value (two's complement of the decimal).

Abbreviation	Error (Decimal)	Number (Octal)	Meaning
.UPN	- 1	377	Insufficient dynamic storage
.INS	- 2	376	Specified task not installed
.PTS	- 3	375	Partition too small for task
.UNS	- 4	374	Insufficient dynamic storage for send
.ULN	- 5	373	Unassigned logical unit number (LUN)
.HWR	- 6	372	Device handler not resident
.ACT	- 7	371	Task not active
.ITS	- 8	370	Directive inconsistent with task state
.FIX	- 9	367	Task already fixed/unfixed
.CKP	-10	366	Issuing task not checkpointable
.TCH	-11	365	Task is checkpointable
.RBS	-15	361	Receive buffer too small
.PRI	-16	360	Privilege violation
.RSU	-17	357	Resource in use
.NSW	-18	356	No swap space available
.ILV	-19	355	Illegal vector specified
.ITN	-20	354	Illegal table number
.LNF	-21	353	Logical name not found

## Directive Error Codes

Abbreviation	Error (Decimal)	Number (Octal)	Meaning
.AST	-80	260	Directive issued/not issued from asynchronous system trap (AST)
.MAP	-81	257	Illegal mapping specified
.IOP	-83	255	Window has I/O in progress
.ALG	-84	254	Alignment error
.WOV	-85	253	Address window allocation overflow
.NVR	-86	252	Invalid region ID
.NVW	-87	251	Invalid address window ID
.ITP	-88	250	Invalid TI: parameter
.IBS	-89	247	Invalid send buffer size (greater than 255 <sub>10</sub> )
.LNL	-90	246	LUN locked in use
.IUI	-91	245	Invalid User Identification Code (UIC)
.IDU	-92	244	Invalid device or unit
.ITI	-93	243	Invalid time parameters
.PNS	-94	242	Partition/region not in system
.IPR	-95	241	Invalid priority (greater than 250 <sub>10</sub> )
.ILU	-96	240	Invalid logical unit number (LUN)
.IEF	-97	237	Invalid event flag (number)
.ADP	-98	236	Part of Directive Parameter Block (DPB) out of user's space
.SDP	-99	235	Directive Identification Code (DIC) or DPB size invalid

For additional information, refer to the *RSX-11M/M-PLUS and Micro/RSX Executive Reference Manual*.

## I/O ERROR CODES

The following table lists RSX-11M-PLUS I/O error codes. Only partial abbreviations (xxx) are listed; the complete abbreviation is IE.xxx. The octal number listed is the low-order byte of the complete word value (two's complement of the decimal number).

Abbreviation	Error (Decimal)	Number (Octal)	Meaning
.BAD	- 1	377	Bad parameters
.IFC	- 2	376	Invalid function code
.DNR	- 3	375	Device not ready
.VER	- 4	374	Parity error on device
.ONP	- 5	373	Hardware option not present
.SPC	- 6	372	Illegal user buffer
.DNA	- 7	371	Device not attached
.DAA	- 8	370	Device already attached
.DUN	- 9	367	Device not attachable
.EOF	-10	366	End-of-file (EOF) detected
.EOV	-11	365	End-of-volume (EOV) detected
.WLK	-12	364	Write attempted to locked unit
.DAO	-13	363	Data overrun
.SRE	-14	362	Send/receive failure
.ABO	-15	361	Request terminated
.PRI	-16	360	Privilege violation
.RSU	-17	357	Shareable resource in use
.OVR	-18	356	Illegal overlay request
.BYT	-19	355	Odd byte count (or virtual address)
.BLK	-20	354	Logical block number (LBN) too large

Abbreviation	Error (Decimal)	Number (Octal)	Meaning
.MOD	-21	353	Invalid Universal Digital Controller (UDC) module number
.CON	-22	352	UDC connect error
.NOD	-23	351	Caller's nodes exhausted
.DFU	-24	350	Device full
.IFU	-25	347	Index file full
.NSF	-26	346	No such file
.LCK	-27	345	Locked from read/write access
.HFU	-28	344	File header full
.WAC	-29	343	Accessed for write
.CKS	-30	342	File header checksum failure
.WAT	-31	341	Attribute control list format error
.RER	-32	340	File processor device read error
.WER	-33	337	File processor device write error
.ALN	-34	336	File already accessed on logical unit number (LUN)
.SNC	-35	335	File ID, file number check
.SQC	-36	334	File ID, sequence number check
.NLN	-37	333	No file accessed on LUN
.CLO	-38	332	File was not properly closed
.NBF	-39	331	Open—No buffer space available for file
.RBG	-40	330	Illegal record size
.NBK	-41	327	File exceeds space allocated, no blocks
.ILL	-42	326	Illegal operation on File Descriptor Block (FDB)

Abbreviation	Error (Decimal)	Number (Octal)	Meaning
.BTP	-43	325	Bad record type
.RAC	-44	324	Illegal record access bits set
.RAT	-45	323	Illegal record attribute bits set
.RCN	-46	322	Illegal record number—too large
.ICE	-47	321	Internal consistency error
.2DV	-48	320	Rename—two different devices
.FEX	-49	317	Rename—a new file name already in use
.BDR	-50	316	Bad directory file
.RNM	-51	315	Cannot rename old file system
.BDI	-52	314	Bad directory syntax
.FOP	-53	313	File already open
.BNM	-54	312	Bad file name
.BDV	-55	311	Bad device name
.BBE	-56	310	Bad block on device
.DUP	-57	307	Enter—duplicate entry in directory
.STK	-58	306	Not enough stack space (File Control Services (FCS) or file control processor (FCP))
.FHE	-59	305	Fatal hardware error on device
.NFI	-60	304	File ID was not specified
.ISQ	-61	303	Illegal sequential operation
.EOT	-62	302	End-of-tape (EOT) detected
.BVR	-63	301	Bad version number
.BHD	-64	300	Bad file header
.OFL	-65	277	Device off line

Abbreviation	Error (Decimal)	Number (Octal)	Meaning
.BCC	-66	276	Block check, cyclic redundancy check (CRC), or framing error
.ONL	-67	275	Device on line
.NNN	-68	274	No such node
.NFW	-69	273	Path lost to partner
.DIS	-69	273	Path lost to partner
.BLB	-70	272	Bad logical buffer
.TMM	-71	271	Too many outstanding messages
.NDR	-72	270	No dynamic space available
.URJ	-73	267	Connection rejected by user
.NRJ	-74	266	Connection rejected by network
.EXP	-75	265	File expiration date not reached
.BTF	-76	264	Bad tape format
.NNC	-77	263	Not ANSI "D" format byte count
.NDA	-78	262	No data available
.NLK	-79	261	Task not linked to specified ICS/ICR interrupts
.NST	-80	260	Specified task not installed
.AST	-80	260	No asynchronous system trap (AST) specified in connect
.FLN	-81	257	Device off line when offline request was issued
.IES	-82	256	Invalid escape sequence
.PES	-83	255	Partial escape sequence
.ALC	-84	254	Allocation failure
.ULK	-85	253	Unlock error

Abbreviation	Error (Decimal)	Number (Octal)	Meaning
.WCK	-86	252	Write-check failure
.NTR	-87	251	Task not triggered
.REJ	-88	250	Transfer rejected by receiving central processing unit (CPU)
.FLG	-89	247	Event flag already specified
.DSQ	-90	246	Disk quota exceeded
.IQU	-91	245	Inconsistent qualifier usage
.RES	-92	244	Circuit reset during operation
.TML	-93	243	Too many links to task
.NNT	-94	242	Not a network task
.TMO	-95	241	Timeout on request
.CNR	-96	240	Connection rejected
.UKN	-97	237	Unknown name
.SIZE	-98	236	Unable to size device
.MII	-99	235	Media inserted incorrectly
.SPI	-100	234	Spindown ignored
.FER	-101	233	Forced error mark encountered
.IRR	-102	232	Insufficient resources at remote node
.SUI	-103	231	Service in use
.PIO	-104	230	Deaccess failed due to pending I/O
.CBE	-105	227	Compare buffer error

For additional information, see the *RSX-11M-PLUS and Micro/RSX I/O Operations Reference Manual* or the *RSX-11M-PLUS and Micro/RSX I/O Drivers Reference Manual*.



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# System Management Tools



## ERROR LOGGING SYSTEM

The Error Logging System records information about errors and events that occur on system hardware for immediate action or for later analysis and reporting. The system consists of four tasks:

- The Error Logger (ERRLOG)
- The Error Log Interface (ELI)
- The Report Generator (RPT)
- The Control File Language Compiler (CFL)

This section describes the ELI commands that run ERRLOG and the RPT commands that generate error log reports.

### ELI Commands

The general format for an ELI command is shown next.

#### Format

```
[filespec][device1[...devicen]]/switch1[/...switchn]
```

#### Parameters

##### filespec

Specifies a device mnemonic or the name of an error log file, backup file, or file to append to the current error log file.

##### switches

Specifies switches to set, change, or display the ERRLOG operation. You must specify at least one switch on each ELI command line.

### Using ELI Defaults

If you want to use only the ERRLOG defaults and start logging, use the following ELI command line:

```
>
```

This command starts ERRLOG, using LB:[1,6]LOG.ERR as the error log file and LB:[1,6]BACKUP.ERR as the backup file. It also starts error limiting on the error log devices.

## Switches

**APPEND** filespec/AP

Appends the specified file to the current error log file. Logging must be active for this switch to work.

**BACKUP** filespec/BA

Sets the name for a backup file to the next highest version of the file named. This file is used if the primary error log file becomes unusable.

**HARD ERROR LIMIT** device(s)/HL:n

Sets limit (n) for hard (unrecoverable) errors on a device or devices. If limiting is turned on and the hard error limit is reached, logging of hard errors for that device stops.

**LIMITING** /LIM

Starts the use of error limiting, using either default limits or those limits set with ELI switches.

**LOGGING** [filespec]/LOG

Begins Error Logger operation, turns on error limiting, and, if you specify a file name, overrides the default name of the error log file (LB:[1,6]LOG.ERR).

**NOLIMITING** /NOLIM or /-LIM

Stops the use of error limiting.

**NOLOGGING** /NOLOG or /-LOG

Stops Error Logger operation and turns off error limiting.

**RESET** device(s)/RE

Resets the QIO and error counts on the specified devices to 0. You may specify up to 14 devices.

**SHOW** [device(s)]/SH

Displays error logging information for the specified devices or, if you do not specify device names, for all error logging devices on the system. Also displays information about the current operating status of the error logging system.

**SOFT ERROR LIMIT device(s)/SL:n**

Sets limits (n) for soft (recoverable) errors on a device or devices. If limiting is turned on and the soft error limit is reached, logging of soft errors for that device stops.

**SWITCH filespec/SW**

Copies the current error log file to the file specified and begins logging in that file.

**RPT COMMANDS**

The general format for an RPT command is shown next.

**Format**

```
[reportfile][/switch(es)]=[inputfile][/switches]
```

**Parameters****reportfile**

Specifies the name of the listing file that contains the Error Log Report.

**switches**

Specifies optional switches to control how RPT selects and formats information from the error log file. You can use the switches with either the output report file specification or the input file specification.

**Default**

>

The default command line selects the following RPT switches:

```
/F[ORMAT]:B[RIEF]
/T[YPE]:A[LL]
/DA[TE]:RANGE:*. *
/P[ACKET]:*. *
/D[EVICE]:ALL
/W[IDTH]:W[IDE]
/S[UMMARY]:N[ONE]
```

## Switches

**DATE** /DA:argument

### Arguments

P[REVIOUS]:ndays

R[ANGE]:start:end

T[ODAY]

Y[ESTERDAY]

Allows you to select packets based on the date of their occurrence.

**DEVICE** /DE:argument

### Arguments

(devicename(s))

A[LL]

Allows you to select packets for a particular device, for more than one device, or for all the devices on the system.

**FORMAT** /F:argument

### Arguments

B[RIEF]

F[ULL]

N[ONE]

R[EGISTERS]

Allows you to specify the desired format for the packet-by-packet report.

**PACKET NUMBER** /PA:bbbb.xxx(:bbbb.xxx)

Allows you to select a packet or range of packets by specifying the packet identification number. The value bbbb is the block number and xxx is the record number. A packet specified as \* indicates open ended.

**REPORT** /R:argument

### Arguments

D[AY]

MONTH

WEEK

SYSTEM  
userstring

Invokes a predefined string of switches for RPT to use. The qualifier can be one of the Digital-defined strings or a user-defined switch string.

The Digital-defined strings and their switches are as follows:

SYSTEM /FO:BR/TY:A/DA:RA:\*/PA:\*/WI:WI/SU:(H,E)  
/FO:BR/TY:A/DA:PRE:7/WI:WI/SU:(H,E)  
WEEK /FO:BR/TY:A/DA:PRE:31/WI:WI/SU:(H,E)  
MONTH /FO:FULL/TY:A/DA:TODAY/WI:WI/SU:ALL

DAY

**SERIAL NUMBER** /SE:argument

#### Arguments

D[RIVE]:number  
P[ACK]:number

Selects packets based on drive or pack serial number.

**SUMMARY** /SU:summary\_type

#### Qualifiers

HISTORY  
ERROR  
GEOMETRY  
ALL  
NONE

Allows you to select the type of summary reports that RPT generates. You cannot use the multiple summary syntax to specify more than one keyword if one of the keywords is ALL or NONE. That is, /SU:(ALL) is legal but /SU:(ALL,ERROR) is not. The default is /SU:NONE.

**TYPE** /T:argument

#### Arguments

A[LL]  
C[ONTROL]  
E[RRORS]  
M[EMORY]

## Error Logging System

PE[RIPHERAL]  
PR[ROCESSOR]  
S[YSTEM\_INFO]

Selects packets based on packet type or types.

**VOLUME LABEL** /V:volumeLabel

Selects packets based on volume label.

**WIDTH** /W:argument

### Arguments

N[ARROW]  
W[IDE]

Selects the width of the report RPT creates (80 or 132 characters).

Many RPT switches accept lists of qualifiers. The format for these lists is shown next.

### Format

/switch:(qualifier1,qualifier2...)

## RECONFIGURATION SERVICES

Reconfiguration is the process of physically and logically connecting and disconnecting various system resources. The reconfiguration services allow you to bypass failed devices and isolate your system from the effects of faulty hardware.

### **BUILD BUILD**

Creates a command sequence in an internal buffer that, if executed, duplicates the current system configuration.

### **CLEAR CLEAR**

Erases the command sequence created with the BUILD command (but not the file created with the LIST command) that is stored in the internal buffer by CON.

### **DISPLAY DISPLAY [keyword(s)] [FOR string]**

#### **Keywords**

ALL  
ATTRIBUTES  
CONTROLLERS  
FULL  
UNITS

Displays the configuration and status of the hardware devices in the current system.

### **ESTATUS ESTATUS**

Emits the current status of a specific device.

### **HELP HELP**

Displays the help text for CON.

### **IDENT IDENT**

Displays the current versions of CON and HRC and the date and time the two tasks were built.

**LINK LINK UBx TO CPx**  
 (Multiprocessor systems only.) Logically connects a port of a switched bus run to a processor.

**LIST LIST [filespec]**  
 Displays the results from a BUILD command or puts the command sequence into a specified file. A file type of CMD is recommended because that is the default type for an indirect command file.

**OFFLINE OFFLINE device-spec 1[,device-spec2...,device-specn]**  
 Removes a device without context from the active set of devices in the current configuration.

**OFFLINE MEMORY OFFLINE MEMORY memory-box**  
 (Multiprocessor systems only.) Removes the MKA11 memory box with the highest addresses from the system. Note that you must first ensure that tasks are not using the memory in the memory box.

**ONLINE ONLINE device-spec 1[,device-spec2...,device-specn]**  
 Attempts to place a device logically on line.

**ONLINE MEMORY ONLINE MEMORY memory-box**  
 (Multiprocessor systems only.) Adds an MKA11 memory box to the online configuration. Note that you must expand the partition structure to use the additional memory.

**SET SET controller option=value**

Options	Comments
CSR	
VEC	
TIMER	Multiprocessor only
ALARM	Multiprocessor only

Alters the control and status register (CSR) or interrupt vector address values of a device (and, on multiprocessor systems, activates or inhibits the sanity timer and its alarm).

**SWITCH SWITCH UBx TO CPx**

(Multiprocessor systems only.) Logically disconnects a port of a switched bus run from a processor and then connects the port to another processor. The command is equivalent to a LINK command followed by an UNLINK command.

**UNLINK UNLINK UBx**

(Multiprocessor systems only.) Logically disconnects a port of a switched bus run from its respective processor.

CON also accepts two switches, /HE and /NOMSG. These switches are used alone in the CON command line. Their functions are as follows:

**CON /HE CON /HE**

Displays the help text for CON.

**CON /NOMSG CON /NOMSG**

Suppresses all information displays and error messages returned by CON. You must exit from and then reenter CON to have the messages displayed again.

# RESOURCE ACCOUNTING

Resource Accounting provides a transaction file of system usage information.

**START/ACCOUNTING [parameter1]...[parameterN]**

## Parameters

CRASH\_REASON:yes/no  
EXTEND\_SIZE:value  
FILE:filespec  
POOL\_RESERVE:value  
SCAN\_RATE:value  
STATISTICS\_SCAN[:rate]  
SYSTEM\_STATISTICS:yes/no  
TASK:yes/no

The START/ACCOUNTING command starts up the Resource Accounting subsystem. Note that the SYSLOG and ...ACC task must be installed before you enter this command.

**SET ACCOUNTING[[/]parameter1]...[[/]parameterN]**

## Parameters

/EXTEND\_SIZE:value  
/FILE:filespec  
/SCAN\_RATE:value  
/STATISTICS\_SCAN:value  
/TASK:yes/no

Changes the value of parameters specified when Resource Accounting was started with the START/ACCOUNTING command or previously modified with a SET command. Separate the optional parameters with slashes. Default values for the parameters are determined by the START/ACCOUNTING command or by previous SET ACCOUNTING commands.

**STOP/ACCOUNTING reason**

## Reasons

CLEAN\_UP  
MAINTENANCE  
REBOOT  
SCHEDULED\_SHUTDOWN

SHUTUP  
OTHER

Performs the shutdown procedure for Resource Accounting.

**SHOW ACCOUNTING/INFORMATION [parameter]**

**Parameters**

ttnn:  
CO:  
SYS  
TASK=taskname

Displays accounting information. Nonprivileged users can display only their own accounting data. Privileged users can display any accounting data.

**SHOW ACCOUNTING/TRANSACTION\_FILE [:inputfilespec]  
outputfilespec**

Displays the transaction file on a terminal or writes it to another file.

**SHOW ACCOUNTING/DATATRIEVE [:transfilespec] outfilespec**

Converts a transaction to a file that is readable by DATATRIEVE-11. You can then write your own Resource Accounting report generator by using DATATRIEVE-11.



**DESELECT**    **DESELECT ddnn:**

Deselects a device from the list of devices to be tested.

**ERRORLIMIT**    **ERRORLIMIT n**

Sets the maximum number of errors that IOX tolerates between interval reports before terminating testing on a device.

**EXECUTE**    **EXECUTE taskname commandstring**

Directs a command line to the operating system for execution.

**EXIT**    **EXIT**

Terminates IOX processing and exits from IOX.

**FILES11**    **FILES11 ddnn: [command=qualifier] ...**

#### Commands

COMPAREDATA

ERRORLIMIT

INTERLEAVE

RANDOM

TEMPORARYFILE

Selects a device with a mounted Files-11 volume for an I/O exercise that preserves the contents and structure of the volume.

**HELP**    **HELP**

Displays a summary of IOX commands at your terminal.

**INTERLEAVE**    **INTERLEAVE number**

Sets the number of blocks to be skipped before IOX writes the next buffer of data for disk testing (applies only to sequential testing, which you determine with the RANDOM command).

**LOGFILE**    **LOGFILE YES/NO**

Determines whether IOX directs activity and error reports to your terminal or to a log file.

**PARAMETERLIST    PARAMETERLIST**

Displays current default parameters, IOX buffer space statistics, and device-dependent parameters for devices you have selected for testing.

**PATTERN    PATTERN [patternnumber]**

Sets or displays the pattern that IOX writes and reads during an exercise.

**PRINTSUMMARY    PRINTSUMMARY**

Displays summary reports that summarize IOX activity between the last interval report and the time you enter the command.

**PROCEED    PROCEED**

Exits Interactive Mode, enters Execution Mode, and checks for IOX activity.

**RANDOM    RANDOM option**

Directs IOX to select either random or sequential blocks for disk testing.

**RANGE    RANGE ddnn: [minimum:maximum]**

Sets or displays the minimum and maximum block numbers for non-file-structured testing on the specified disk.

**RECORDS    RECORDS recordcount**

Specifies the number of records to be exercised on magnetic tapes and cassettes.

**REPORTERRORS    REPORTERRORS YES/NO**

Enables or disables error reports.

**RESTART    RESTART**

Reinvokes IOX without exiting to the operating system.

**RETRIES    RETRIES YES/NO**

Determines (for magnetic tapes and non-file-structured disks) whether an I/O driver repeats an I/O operation after the driver receives errors during the operation.

**RUNTIME**    **RUNTIME minutes**

Sets the length of time (in minutes) that IOX exercises the unit or units you have selected for testing.

**SELECT**    **SELECT ddu: [command=qualifier] ...****Commands**

BADBLOCKS  
 BUFFERSIZE  
 COMPAREDATA  
 DENSITY  
 ERRORLIMIT  
 INTERLEAVE  
 LOOPBACK  
 RANDOM  
 RANGE  
 RECORDS  
 RETRIES  
 VOLUMECHECK  
 WRITECHECK

Selects a unit with a mounted non-file-structured scratch volume for an I/O exercise that destroys the contents of the volume.

**SPY**    **SPY [ddnn:]**

Displays status information on devices being tested.

**START**    **START**

Starts exercising units that you have selected for testing.

**SUMMARYTIME**    **SUMMARYTIME minutes**

Determines how often (in minutes) IOX will output interval reports.

**TEMPORARYFILE**    **TEMPORARYFILE filesize**

Sets the size of the temporary file that IOX uses for testing Files-11 disks with the FILES11 command.

**VERIFY**    **VERIFY ddnn: [command=qualifier] ...****Commands**

BUFFERSIZE  
 ERRORLIMIT  
 INTERLEAVE

RANDOM  
RANGE  
RETRIES

Selects a mounted disk for a non-file-structured exercise that reads buffers of data without writing on the volume or performing data comparisons. The contents of the volume are preserved.

**VOLUMECHECK**    **VOLUMECHECK YES/NO**

Enables or disables checking of disks, which are mounted as non-file-structured volumes, for a home block and Files-11 structure.

**WAIT**    **WAIT YES/NO**

Determines whether or not IOX waits for an event flag while an exercise is in progress.

**WRITECHECK**    **WRITECHECK YES/NO**

Determines whether or not I/O drivers check write requests to non-file-structured disks.

## SHADOW RECORDING

Shadow Recording (SHA) backs up all new data as it is written to a Files-11 disk. It creates two identical sets of disks called a *shadowed pair*. You can shadow more than one pair of disks, but shadowed disk pairs cannot overlap.

### SHADOW SHA command parameterlist

#### Commands

ABORT ddnn:  
CONTINUE ddnn: TO ddx:  
DISPLAY  
START ddnn: TO ddx:  
STOP ddnn:

The SHADOW (SHA) command invokes the Shadow Recording control task. The parameter ddnn: specifies the primary volume, and ddx: specifies the secondary volume (which must be mounted as foreign).

## QUEUE MANAGER

The commands listed in Table 3 set up the Queue Manager (QMG) subsystem.

**Table 3: Queue Manager Command Summary**

DCL Command	MCR Command	Function
INITIALIZE	QUE	
/QUEUE	/CR	Creates, names, and initializes a queue.
/PROCESSOR	/SP	Creates, names, and initializes a processor (print or batch) or despooler.
DELETE		
/QUEUE	/DEL:Q	Deletes a queue by name.
/PROCESSOR	/UNSP	Deletes a processor or despooler by name. Sets a device unspooled.
ASSIGN		
/QUEUE	/AS:	Establishes a path from a queue to a processor.
DEASSIGN		
/QUEUE	/DEA	Eliminates the path from a queue to a processor.
STOP		
/ABORT	/KIL	Deletes an active job on a processor.
/PROCESSOR	/STO	Stops a processor.

(continued on next page)

**Table 3 (Cont.): Queue Manager Command Summary**

<b>DCL Command</b>	<b>MCR Command</b>	<b>Function</b>
/QUEUE	/STO:QUE	Stops queues.
/QUEUE /MANAGER	/STO:QMG	Stops QMG and deletes all processors.
START		
/QUEUE	/STA:QUE	Starts a queue.
/PROCESSOR	/STA	Starts a processor or despooler.
/QUEUE /MANAGER	/STA:QMG	Starts QMG and initializes default queues. Creates the queue file LB0:[1,7]QUEUE.SYS. Clears all queue assignments.

## CONSOLE LOGGING

The commands listed in Table 4 control Console Logging.

**Table 4: Summary of Console Logging Commands**

Command	Description
SET /COLOG	Displays the current console terminal and log file assignments.
SET /COLOG=ON	Starts Console Logging.
SET /COLOG=OFF	Stops Console Logging.
SET /COLOG/COT[ERM][=ttnn:]	Enables the console terminal or changes the console terminal assignment.
SET /COLOG/NOC[OTERM]	Disables the console terminal.
SET /COLOG/LOG[FILE][=filespec]	Enables the console log file or changes the log file assignment.
SET /COLOG/NOLOGFILE	Disables the log file.

## SYSTEM USER FILE DIRECTORIES

Table 5 lists directories that are used by the system.

**Table 5: System User File Directories**

UFD	Usage
[1,1]	System and macro object module libraries
[1,2]	System message and help files
[1,3]	Lost files found by the File Structure Verification Utility (VFY)
[1,4]	Postmortem and snapshot dumps
[1,6]	Error Logging and Resource Accounting files
[1,7]	Spooling queue file and transparent listing file
[1,11]	Work space for system maintenance
[1,24]	Object module libraries, task-build command files for mapped tasks, and overlay descriptor files for privileged tasks
[1,34]	Executive and task map files
[1,54]	Executive and system tasks
[200,1]	Sample files for system introduction
[200,2]	Field service files



---

RMS-11



## RMSBCK UTILITY SUMMARY

The RMS-11 File Back-Up Utility (RMSBCK) transfers the contents of an RMS-11 file to another file, on another device, to maintain the file should the original file be lost or damaged.

The command line for the RMSBCK utility is as follows:

```
outfile[/switch...]=infile[/switch...][,infile[/switch...]]...
```

Type HELP or a question mark (?) for a help message. See the *RSX-11M/M-PLUS RMS-11 Utilities* manual for more information.

The RMSBCK switches are as follows:

### Global Switches

**/ID**

Identifies the current version. Default: Provides no identification.

**/[NO]QU**

Enables or disables query mode. Default: Enables query mode.

**/SL[:file-spec]**

Provides summary listing to terminal or in file, if specified. Default: Provides no summary.

### Output File Switches

**/NV**

Creates a new version of the disk output file if a file currently exists with the same version number as the input file (the default).

**/RA**

Performs read-after-write data integrity checking. Default: Does no read-after-write checking.

**/RC**

Performs check-after-writing data integrity checking. Default: Does no check-after-writing.

**/RW**

Rewinds magnetic tape before writing. Default: Does not rewind magnetic tape.

**/SU**

Supersedes existing file. Default: Does not supersede file.

**Input File Switches**

**/CD:dd-mmm-yy[:v]**

Backs up files based on creation date: specify **v** as **A** to back up all files created after the date specified or as **B** to back up all files created before the date specified. If **v** is not specified, all files created on the date specified will be backed up. Default: Performs no date checking.

**/RD:dd-mmm-yy[:v]**

Backs up files based on revision date: specify **v** as **A** to back up all files revised after the date specified or as **B** to back up all files revised before the date specified. If **v** is not specified, all files revised on the date specified will be backed up. Default: Performs no date checking.

## RMSCNV UTILITY SUMMARY

The RMS-11 File Conversion Utility (RMSCNV) reads records from an RMS-11 file of any organization and loads them into another RMS-11 file of any organization.

The command line for the RMSCNV utility is as follows:

```
[outfile[/switch...]=]infile[/switch...]
```

Type HELP or a question mark (?) for a help message. See the *RSX-11M/M-PLUS RMS-11 Utilities* manual for more information.

The RMSCNV switches are as follows:

### Global Switches

**/AP**

Appends records to an existing sequential file. Default: Does not append.

**/BL:[n]**

Sets magnetic tape block size. Default: Uses 512 bytes.

**/CA:[filespec]**

Creates an output file with the attributes of the existing input file. Default: Output file must exist or RMSCNV creates a sequential file.

**/EO**

Converts CTRL/Z end-of-file (EOF) character in an ASCII stream file to null and pads the file with nulls to the physical EOF. Default: Assumes null-filled stream file.

**/ER[:filespec]**

Continues processing when RMSCNV encounters an exception record in the input file that cannot be written to the output file. If you specify a file, RMSCNV writes the exception records to that file. If you do not specify a file, by default the primary key of each exception record will be issued to the terminal. Default, if you do not specify /ER, RMSCNV will stop processing upon encountering the first exception record and will issue an error message indicating the type of exception record.

**/FO:x**

Sets output file organization, where x is S, R, or I. Default: Uses sequential (S) organization.

**/ID**

Identifies the current version. Default: Provides no identification.

**/IM**

Processes files in block mode. Default: Uses standard RMS-11 access modes.

**/KN:["]keyname["]**

Reads an indexed file by using the key of reference specified by keyname. Default: Reads file using primary key.

**/KR:n**

Reads an indexed file by using the key of reference specified by n. Default: Reads file by using primary key (0).

**/LO**

Honors bucket fill size when filling buckets in an indexed file. Default: Fills buckets to capacity.

**/MA**

Uses mass-insertion mode and sequential PUT operations. Default: No mass insertion; uses random PUT operations.

**/ML:n**

Explicitly sets limit of buffer allocation. Default: RMSCNV calculates the amount of memory available for allocation.

**/PD[:[#]["]x["]**

Pads input records to output record length, if necessary. Default: Does not pad records.

**/SL[:filespec]**

Provides summary listing to terminal or in file, if specified. Default: Does not provide summary.

**/SU**

Supersedes existing sequential file. Default: Does not supersede existing file.

**/TR**

Truncates input records to output record length, if necessary. Default: Does not truncate records.

**/WF**

Writes or reads fixed-control area. Default: Ignores fixed-control area.

## RMSDES UTILITY SUMMARY

The RMS-11 File Design Utility (RMSDES) allows you to design and create sequential, relative, and indexed files.

The command line for the RMSDES utility is as follows:

```
DES filename[.typ] [kind]
```

See the *RSX-11M/M-PLUS RMS-11 Utilities* manual for more information. The following sections list the RMSDES attribute settings and commands.

### Attribute Settings

Section Keyword	Attribute Keyword and Variable	Default
System	TARGET <sup>1</sup> argument	
	Argument must be one of the following: RSX RSTS	User's system
	SOURCE <sup>1, 2</sup>	User's system
	FILE PLACEMENT <sup>1</sup> logical	NO
File	NAME string	FILE.DAT
	ORGANIZATION argument	
	Argument must be one of the following: SEQUENTIAL RELATIVE INDEXED	SEQUENTIAL
	CLUSTER_SIZE number	0 blocks
	ALLOCATION number	0 blocks
	EXTENSION number	0 blocks
	BUCKET_SIZE number	1 block

<sup>1</sup>Informational attribute

<sup>2</sup>Cannot be set by user: automatically notes the user's source system

Section Keyword	Attribute Keyword and Variable	Default
	PROTECTION string	System protection
	OWNER string	User's User Identification Code (UIC)
	MAGTAPE_BLOCK_SIZE number	512 bytes
	MAGTAPE_REWIND logical	NO
	MAX_RECORD_NUMBER number	0 records
	CONTIGUOUS logical	NO
	SUPERSEDE logical	NO
Record	SIZE number	0 bytes
	FORMAT argument	
	Argument must be one of the following: VARIABLE STREAM FIXED VFC	VARIABLE
	CONTROL_FIELD_SIZE number	2 bytes
Record	BLOCK_SPAN logical	YES
	CARRIAGE_CONTROL argument	
	Argument must be one of the following: CARRIAGE_RETURN FORTRAN PRINT NONE	CARRIAGE_RETURN
Key n <sup>3</sup>	NAME string	No name

<sup>3</sup>You must specify a number (n) for each key, key segment, or area that you define.

Section Keyword	Attribute Keyword and Variable	Default
	TYPE argument	
	Argument must be one of the following:	
	STRING	STRING
	BIN2	
	BIN4	
	INT2	
	INT4	
	DECIMAL	
	NULL_KEY logical	NO
	NULL_VALUE argument	
	Argument must be one of the following:	
	An ASCII character	(Space)
	A decimal number	
	DUPLICATES logical	NO (primary key) YES (alternate key)
	SEGN_POSITION <sup>3</sup> number	Byte 0
	SEGN_LENGTH <sup>3</sup> number	0 bytes
Key n <sup>3</sup>	CHANGES logical	YES (alternate key)
	DATA_FILL number	100
	DATA_AREA number	Area 0
	INDEX_FILL number	100
	LEVEL1_INDEX_AREA number	Area 0
	INDEX_AREA number	Area 0
Area n <sup>3</sup>	ALLOCATION number	0 blocks
	EXTENSION number	0 blocks
	BUCKET_SIZE number	1 block

<sup>3</sup>You must specify a number (n) for each key, key segment, or area that you define.

Section Keyword	Attribute Keyword and Variable	Default
	CONTIGUOUS logical	NO
	POSITION argument	
	Argument must be one of the following:	
	NONE	NONE
	VIRTUAL number	
	LOGICAL number	
	EXACT_POSITIONING logical	NO

## Commands

### CLEAR ALL

Restores all attribute values in all sections to their default values.

### CLEAR section ALL

Restores all attribute values in the specified section to their default values.

### CLEAR section attribute

Restores the specified attribute value in the specified section to its default value.

### CREATE [filename[.typ]]

Creates an empty data file that has the attribute values specified in the design buffer. For indexed files in which areas are not defined, RMSDES prompts for whether areas are to be defined by default.

If you do not specify a file name and file type, the file will have those specified in the design buffer. If you did not specify a file name and a file type in the design buffer, the file will be created as FILE.DAT.

### < CTRL/Z >

Terminates RMSDES without saving the design or creating an empty data file.

**< ESC >**

In response to any prompt, returns the RMSDES utility prompt and preserves all attribute values in the design buffer.

**EXIT filename[.typ]**

Stores the file design in the description file specified in the command line and terminates RMSDES. The default file type is DES. To supersede an existing description file, use the EXIT\_SUPERSEDE command.

**EXIT\_SUPERSEDE filename[.typ]**

Stores the file design in the description file specified in the command line, superseding any existing file by the same name, and terminates RMSDES. The default file type is DES.

**GET filename[.typ][kind]**

Reads the file design specified in a description file and sets the appropriate attribute values in the design buffer. Reads the attribute values of a data file and sets the appropriate attribute values in the design buffer. The default file type is DES. If the file is a data file, the kind (DAT) of file must be specified.

**HELP**

Lists all available help topics and gives instructions for displaying the text.

**HELP command**

Displays help text for the specified command.

**HELP COMMANDS**

Lists all valid commands.

**HELP SECTIONS**

Lists all available help topics for all sections and gives instructions for displaying the text.

**HELP section**

Displays help text for the specified section and lists all available help topics for all attributes in the specified section.

**HELP section attribute**

Displays help text for the specified attribute in the specified section.

**?**

Displays help text for the section, attribute, or value for which you are being prompted. Note also that you can type a question mark (?) instead of HELP for any form of the HELP command.

**QUIT**

Terminates RMSDES, without storing the design or creating an empty data file.

**SAVE filename[.typ]**

Stores the file design in the description file specified in the command line. The default file type is DES. To supersede an existing description file, use the SAVE command.

**SAVE\_SUPERSEDE filename[.typ]**

Stores the file design in the description file specified in the command line, superseding any existing file by the same name. The default file type is DES.

**SET ALL**

Prompts for setting all attribute values in all sections. For indexed files in which areas are not defined, prompts for whether areas are to be defined by default.

**SET section ALL**

Prompts for setting all attribute values in the specified section.

**SET section attribute value**

Sets the specified attribute value in the specified section.

**SHOW ALL**

Displays all attribute values in all sections.

**SHOW section ALL**

Displays all attribute values in the specified section.

**SHOW section attribute**

Displays the specified attribute value in the specified section.

**SHOW ID**

Identifies the current level and patch version of RMSDES.

## RMSDSP UTILITY SUMMARY

The RMS-11 File Display Utility (RMSDSP) produces a concise description of any RMS-11 file, including back-up files.

The command line for the RMSDSP utility is as follows:

```
[outfile=]infile[/switch...][,infile[/switch...]]...
```

Type HELP or a question mark (?) for a help message. See the *RSX-11M/M-PLUS RMS-11 Utilities* manual for more information.

The RMSDSP switches are as follows:

### Global Switches

**/BP**

Lists contents of back-up files. Default: Provides basic display only.

**/BR**

Provides a brief display of attributes. Default: Provides basic display of indexed-file and container-file attributes and characteristics.

**/FU**

Provides detailed display for indexed files or back-up files. Default: Provides basic display only.

**/ID**

Identifies the current version. Default: Provides no identification.

**/SU**

Supersedes the existing output file with the same name and version number of the specified output file. Default: Does not supersede an existing file.

## RMSIFL UTILITY SUMMARY

The RMS-11 Indexed File Load Utility (RMSIFL) reads records from an RMS-11 file of any organization and loads them into an indexed file.

The command line for the RMSIFL utility is as follows:

```
outfile[/switch...]=infile[/switch...]
```

Type HELP or a question mark (?) for a help message. See the *RSX-11M/M-PLUS RMS-11 Utilities* manual for more information. The RMSIFL switches are as follows:

### Global Switch

**/ID**

Identifies the current version. Default: Provides no identification.

### Output File Switches

**/ER[:filespec]**

Writes primary keys of exception records to terminal if no file is specified or writes exception records to the specified file. Default: Writes primary keys of exception records to terminal.

**/NOER[:S]**

Stops processing if input record is incompatible. Default: Writes primary keys of exception records to terminal.

**/LO**

Honors bucket fill size. Default: Fills buckets to capacity.

**/PD[:[#]x]**

Pads input records to output record length. Default: Handles input records as exception records if different lengths.

**/TR**

Truncates input records to output record length. Default: Handles input records as exception records if different lengths.

### **Input File Switches**

**/DE:dv1:[dv2:...dv5:]**

Reassigns devices for sort work files. Default: Creates and uses sort work files on SY:.

**/KR:n**

Uses key of reference number. Default: Uses primary key (0).

**/NOSO**

Does not sort records before loading. Default: Sorts records in input file before loading.

## RMSRST UTILITY SUMMARY

The RMS-11 File Restoration Utility (RMSRST) restores files that were backed up using RMSBCK and produces standard RMS-11 files as output, so your programs can access them.

The command line for the RMSRST utility is as follows:

```
outfile[/switch...]=infile[/switch...][,infile[/switch...]...]
```

Type HELP or a question mark (?) for a help message. See the *RSX-11M/M-PLUS RMS-11 Utilities* manual for more information. The RMSRST switches are as follows:

### Global Switches

**/ID**

Identifies the current version. Default: Provides no identification.

**/[NO]CV**

Enables or disables file version number conversion. Default: For RMSBCK Version 2.0 or later, conversion is enabled and /NOCV will disable it. For RMSBCK tapes prior to Version 2.0, conversion is disabled and /CV will enable it.

**/[NO]QU**

Enables or disables query mode. Default: Enables query mode.

**/SL[:filespec]**

Provides summary listing to terminal or in file, if specified. Default: Provides no summary.

### Output File Switches

**/FR**

Changes protection code. Default: Uses original protection.

**/NV**

Creates the next higher version number of the file if the expanded input file has the same version number as an existing output file (the default).

**/RA**  
Performs read-after-writing data integrity checking. Default: Performs no read-after-writing checking.

**/RC**  
Performs check-after-writing data integrity checking. Default: Performs no check-after-writing checking.

**/SU**  
Supersedes existing files. Default: Does not supersede existing files.

### **Input File Switches**

**/BD:dd-mmm-yy**  
Restores disk files based on back-up date. Default: Performs no date checking.

**/OA:[uic]**  
Restores files based on original account (UIC). Note that in this case, the square brackets are required syntax. Default: Applies no account criterion.

**/SE:filespec or /SE:(filespec1, filespec2[,...,filespec10])**  
Restores specified files from container file. Default: Restores all files on container file.

## RMS-11 COMPLETION CODES AND FATAL ERROR CODES

The following sections list completions that are returned in the STS and STV fields of file access blocks (FABs) and record access blocks (RABs), and fatal error completions.

For more information on these codes, see Appendix A of the *RSX-11M/M-PLUS RMS-11 Macro Programmer's Guide*.

### Completion Codes

SU\$SUC	Operation succeeded	Octal:	000001
		Decimal:	1
SU\$DUP	Inserted record has duplicate key	Octal:	000002
		Decimal:	2
SU\$IDX	Error updating index	Octal:	000003
		Decimal:	3
ER\$ACC	File access error	Octal:	177740
		Decimal:	-32
ER\$ACT	Activity precludes operation	Octal:	177720
		Decimal:	-48
ER\$AID	Bad value in AID field	Octal:	177700
		Decimal:	-64
ER\$ALN	Bad mask in ALN field	Octal:	177660
		Decimal:	-80
ER\$ALQ	Bad value in ALQ field	Octal:	177640
		Decimal:	-96
ER\$ANI	Bad ANSI-format magnetic tape file	Octal:	177620
		Decimal:	-112
ER\$AOP	Bad mask in AOP field	Octal:	177600
		Decimal:	-128
ER\$ATR	Error reading attribute	Octal:	177540
		Decimal:	-160

## RMS-11 Completion Codes and Fatal Error Codes

ER\$ATW	Error writing attributes	Octal:	177520
		Decimal:	-176
ER\$BKS	Bad value in BKS field	Octal:	177500
		Decimal:	-192
E\$BKZ	Bad value in BKZ field	Octal:	177460
		Decimal:	-208
ER\$BOF	Beginning-of-file found	Octal:	177430
		Decimal:	-232
ER\$BPA	Bad address in BPA field	Octal:	177420
		Decimal:	-240
ER\$BPS	Bad value in BPS field	Octal:	177400
		Decimal:	-256
ER\$CCR	RAB already in use	Octal:	177340
		Decimal:	-288
ER\$CHG	Illegal record key change	Octal:	177320
		Decimal:	-304
ER\$CHK	Bad bucket header	Octal:	177300
		Decimal:	-320
ER\$CLS	File processor error	Octal:	177260
		Decimal:	-336
ER\$COD	Bad code in COD field	Octal:	177240
		Decimal:	-352
ER\$CRE	File processor error	Octal:	177220
		Decimal:	-368
ER\$CUR	Undefined current-record context	Octal:	177200
		Decimal:	-384
ER\$DAN	Bad value in DAN field	Octal:	177140
		Decimal:	-416
ER\$DEL	Record having RFA deleted	Octal:	177120
		Decimal:	-432
ER\$DEV	Bad device specification	Octal:	177100
		Decimal:	-448

## RMS-11 Completion Codes and Fatal Error Codes

ER\$DFW	File processor error	Octal:	177070
		Decimal:	-456
ER\$DIR	Bad directory specification	Octal:	177060
		Decimal:	-464
ER\$DME	Pool exhausted	Octal:	177040
		Decimal:	-480
ER\$DNA	Bad address in DNA field	Octal:	177030
		Decimal:	-488
ER\$DNF	No such directory	Octal:	177020
		Decimal:	-496
ER\$DNR	Device not ready	Octal:	177000
		Decimal:	-512
ER\$DPE	Device positioning error	Octal:	176770
		Decimal:	-520
ER\$DTP	Bad code in DTP field	Octal:	176760
		Decimal:	-528
ER\$DUP	Duplicate key not allowed	Octal:	176740
		Decimal:	-544
ER\$ENT	File processor error	Octal:	176720
		Decimal:	-560
ER\$ENV	Feature not in selected RMS-11 environment	Octal:	176700
		Decimal:	-576
ER\$EOF	End-of-file reached	Octal:	176660
		Decimal:	-592
ER\$ESA	Bad address in ESA field	Octal:	176650
		Decimal:	-600
ER\$ESL	Bad value in ESL field	Octal:	176644
		Decimal:	-604
ER\$ESS	ESS field value too small	Octal:	176640
		Decimal:	-608
ER\$EXP	File expiration date not yet reached	Octal:	176630
		Decimal:	-616

RMS-11 Completion Codes and Fatal Error Codes

ER\$EXT	File processor error	Octal:	176620
		Decimal:	-624
ER\$FAC	FAC field forbids operation	Octal:	176560
		Decimal:	-656
ER\$FAL	Operation not supported by remote node	Octal:	176550
		Decimal:	-664
ER\$FEX	File already exists	Octal:	176540
		Decimal:	-672
ER\$FID	Bad value in FID field	Octal:	177530
		Decimal:	-680
ER\$FLG	Bad mask in FLG field	Octal:	176520
		Decimal:	-688
ER\$FLK	File locked by another task	Octal:	176500
		Decimal:	-704
ER\$FNA	Bad address in FNA field	Octal:	176470
		Decimal:	-712
ER\$FND	File processor error	Octal:	176460
		Decimal:	-720
ER\$FNF	File not found	Octal:	176440
		Decimal:	-736
ER\$FNM	Bad file name	Octal:	176420
		Decimal:	-752
ER\$FOP	Bad mask in FOP field	Octal:	176400
		Decimal:	-768
ER\$FUL	Device or file full	Octal:	176360
		Decimal:	-784
ER\$IAN	Bad value in IAN field	Octal:	176340
		Decimal:	-800
ER\$IDX	Index not initialized	Octal:	176320
		Decimal:	-816
ER\$IFI	Bad value in IFI field	Octal:	176300
		Decimal:	-832

RMS-11 Completion Codes and Fatal Error Codes

ER\$IMX	Too many extended attribute blocks (XABs) of same type	Octal:	176260
		Decimal:	-848
ER\$IOP	Illegal operation for file	Octal:	176220
		Decimal:	-880
ER\$IRC	Illegal record found in sequential file	Octal:	176200
		Decimal:	-896
ER\$ISI	Bad value in ISI field	Octal:	176160
		Decimal:	-912
ER\$KBF	Bad address in KBF field	Octal:	176140
		Decimal:	-928
ER\$KEY	Bad key	Octal:	176120
		Decimal:	-944
ER\$KRF	Bad value in KRF field	Octal:	176100
		Decimal:	-960
ER\$KSZ	Bad value in KSZ field	Octal:	176060
		Decimal:	-976
ER\$LAN	Bad value in LAN field	Octal:	176040
		Decimal:	-992
ER\$LBL	Bad magnetic tape label	Octal:	176020
		Decimal:	-1008
ER\$LBY	Logical channel busy	Octal:	176000
		Decimal:	-1024
ER\$LCH	Bad value in LCH field	Octal:	175760
		Decimal:	-1040
ER\$LEX	Extension not needed	Octal:	175750
		Decimal:	-1048
ER\$LOC	Bad value in LOC field	Octal:	175740
		Decimal:	-1056
ER\$MEM	Memory address rollover	Octal:	175710
		Decimal:	-1080
ER\$MKD	File processor error	Octal:	175700
		Decimal:	-1088

RMS-11 Completion Codes and Fatal Error Codes

ER\$MRN	Bad value in MRN field or bad record number	Octal:	175660
		Decimal:	-1104
ER\$MRS	Bad value in MRS field	Octal:	175640
		Decimal:	-1120
ER\$NAE	Unmappable network access error	Octal:	175630
		Decimal:	-1128
ER\$NAM	Bad address in NAM field	Octal:	175620
		Decimal:	-1136
ER\$NEF	Context not end-of-file (EOF)	Octal:	175600
		Decimal:	-1152
ER\$NET	Network link lost	Octal:	175570
		Decimal:	-1160
ER\$NMF	No more matching files	Octal:	175554
		Decimal:	-1172
ER\$NOD	Bad node name	Octal:	175550
		Decimal:	-1176
ER\$NPK	No primary key for indexed file	Octal:	175540
		Decimal:	-1184
ER\$ORD	Ordering of XABs illegal	Octal:	175500
		Decimal:	-1216
ER\$ORG	Bad mask in ORG field	Octal:	175460
		Decimal:	-1232
ER\$PLG	Error reading file prologue	Octal:	175440
		Decimal:	-1248
ER\$PLV	File prologue version level unsupported	Octal:	175430
		Decimal:	-1256
ER\$POS	Bad value in POS field	Octal:	175420
		Decimal:	-1264
ER\$PRM	Bad file date read	Octal:	175400
		Decimal:	-1280
ER\$PRV	Privilege violation	Octal:	175360
		Decimal:	-1296

## RMS-11 Completion Codes and Fatal Error Codes

ER\$RAC	Bad mask in RAC field	Octal:	175320
		Decimal:	-1328
ER\$RAT	Bad mask in RAT field	Octal:	175300
		Decimal:	-1344
ER\$RBF	Bad address in RBF field	Octal:	175260
		Decimal:	-1360
ER\$RER	File processor error	Octal:	175240
		Decimal:	-1376
ER\$REX	Record already exists	Octal:	175220
		Decimal:	-1392
ER\$RFA	Bad value in RFA field	Octal:	175200
		Decimal:	-1408
ER\$RFM	Bad code in RFM field	Octal:	175160
		Decimal:	-1424
ER\$RLK	Record locked	Octal:	175140
		Decimal:	-1440
ER\$RMV	File processor error	Octal:	175120
		Decimal:	-1456
ER\$RNF	No such record	Octal:	175100
		Decimal:	-1472
ER\$RNL	Record not locked	Octal:	175060
		Decimal:	-1488
ER\$ROP	Bad mask in ROP field	Octal:	175040
		Decimal:	-1504
ER\$RPL	File processor error	Octal:	175020
		Decimal:	-1520
ER\$RRV	Bad internal pointer	Octal:	175000
		Decimal:	-1536
ER\$RSL	Bad value in RSL field	Octal:	174754
		Decimal:	-1556
ER\$RSS	Bad value in RSS field	Octal:	174750
		Decimal:	-1560

## RMS-11 Completion Codes and Fatal Error Codes

ER\$RST	Bad address in RSA field	Octal:	174744
		Decimal:	-1564
ER\$RSZ	Bad value in RSZ field	Octal:	174740
		Decimal:	-1568
ER\$RTB	Record too big for user buffer	Octal:	174720
		Decimal:	-1584
ER\$RVU	Internal pointer corrupted	Octal:	174710
		Decimal:	-1592
ER\$SEQ	Sequential insertion records not in order	Octal:	174700
		Decimal:	-1600
ER\$SHR	Bad mask in SHR field	Octal:	174660
		Decimal:	-1616
ER\$SIZ	Bad value in SIZ field	Octal:	174640
		Decimal:	-1632
ER\$SUP	Operation not supported over network	Octal:	174610
		Decimal:	-1656
ER\$SYS	System error	Octal:	174600
		Decimal:	-1664
ER\$TRE	Index error	Octal:	174560
		Decimal:	-1680
ER\$TYP	Bad file extension	Octal:	174540
		Decimal:	-1696
ER\$UBF	Bad address in UBF field	Octal:	174520
		Decimal:	-1712
ER\$UIN	Field value rejected by file access listener (FAL)	Octal:	174510
		Decimal:	-1720
ER\$USZ	Bad value in USZ field	Octal:	174500
		Decimal:	-1728
ER\$VER	Bad file version number	Octal:	174460
		Decimal:	-1744
ER\$WCD	Illegal wildcard in merged string	Octal:	174430
		Decimal:	-1768

## RMS-11 Completion Codes and Fatal Error Codes

ER\$WER	File processor error	Octal:	174420
		Decimal:	-1776
ER\$WLK	Device write-locked	Octal:	174410
		Decimal:	-1784
ER\$WPL	File processor error	Octal:	174400
		Decimal:	-1792
ER\$XAB	Bad address in XAB field	Octal:	174360
		Decimal:	-1808
ER\$XTR	Extraneous data in file specification	Octal:	174340
		Decimal:	-1824

### Fatal Error Codes

ER\$ACT	Illegal concurrent operation	Octal:	177720
		Decimal:	-48
ER\$AST	Illegal operation at asynchronous system trap (AST) level	Octal:	177560
		Decimal:	-144
ER\$BUG	Error in RMS-11 internal data	Octal:	177360
		Decimal:	-272
ER\$CPB	Bad parameter block	Octal:	177230
		Decimal:	-360
ER\$FAB	Bad file access block (FAB)	Octal:	176600
		Decimal:	-640
ER\$LIB	Resident library not available	Octal:	175744
		Decimal:	-1052
ER\$MAP	Error in internal buffer mapping data	Octal:	175720
		Decimal:	-1072
ER\$RAB	Bad record access block (RAB)	Octal:	175340
		Decimal:	-1312

---

# Reference Information



## ASCII CHARACTER SET

Octal Code	Character						
000	NUL	040	SP	100	@	140	
001	SOH	041	!	101	A	141	a
002	STX	042	"	102	B	142	b
003	ETX	043	#	103	C	143	c
004	EOT	044	\$	104	D	144	d
005	ENQ	045	%	105	E	145	e
006	ACK	046	&	106	F	146	f
007	BEL	047	'	107	G	147	g
010	BS	050	(	110	H	150	h
011	HT	051	)	111	I	151	i
012	LF	052	*	112	J	152	j
013	VT	053	+	113	K	153	k
014	FF	054	,	114	L	154	l
015	CR	055	-	115	M	155	m
016	SO	056	.	116	N	156	n
017	SI	057	/	117	O	157	o
020	DLE	060	0	120	P	160	p
021	DC1	061	1	121	Q	161	q
022	DC2	062	2	122	R	162	r
023	DC3	063	3	123	S	163	s
024	DC4	064	4	124	T	164	t
025	NAK	065	5	125	U	165	u
026	SYN	066	6	126	V	166	v
027	ETB	067	7	127	W	167	w

ASCII Character Set

Octal Code	Character						
030	CAN	070	8	130	X	170	x
031	EM	071	9	131	Y	171	y
032	SUB	072	:	132	Z	172	z
033	ESC	073	;	133	[	173	{
034	FS	074	<	134	\	174	
035	GS	075	=	135	]	175	}
036	RS	076	>	136	^	176	~
037	US	077	?	137	-	177	DEL

## RADIX-50 CONVERSION TABLE

To convert 1 to 3 characters to their Radix-50, 6-digit octal equivalent, add the appropriate octal codes from the following table, based on the positions (that is, first, second, or third) of the characters in the string.

---

<b>Character Set</b>	<b>First Character Code</b>	<b>Second Character Code</b>	<b>Third Character Code</b>
Space	000000	000000	000000
A	003100	000050	000001
B	006200	000120	000002
C	011300	000170	000003
D	014400	000240	000004
E	017500	000310	000005
F	022600	000360	000006
G	025700	000530	000007
H	031000	000500	000010
I	034100	000550	000011
J	037200	000620	000012
K	042300	000670	000013
L	045400	000740	000014
M	050500	001010	000015
N	053600	001060	000016
O	056700	001130	000017
P	062000	001200	000020
Q	065100	001250	000021
R	070200	001320	000022
S	073300	001370	000023

Radix-50 Conversion Table

<b>Character Set</b>	<b>First Character Code</b>	<b>Second Character Code</b>	<b>Third Character Code</b>
T	076400	001440	000024
U	101500	001510	000025
V	104600	001560	000026
W	107700	001630	000027
X	113000	001700	000030
Y	116100	001750	000031
Z	121200	002020	000032
\$	124300	002070	000033
.	127400	002140	000034
Unused	132500	002210	000035
0	135600	002260	000036
1	140700	002330	000037
2	144000	002400	000040
3	147100	002450	000041
4	152200	002520	000042
5	153300	002570	000043
6	160400	002640	000044
7	163500	002710	000045
8	166600	002760	000046
9	171700	003030	000047

## OCTAL/DECIMAL CONVERSION TABLE

Bits	Octal	Decimal	Octal to Decimal
15	10000	32768	For each position of the octal value, locate the octal digit and its decimal equivalent in the conversion table. Add the decimal equivalents to obtain the decimal value.  Example: $53702_8 = ?_{10}$ $n_8 = n_{10}$  $50000 = 20480$ $3000 = 1536$  $700 = 448$  $0 = 0$ $2 = 2$  $53702_8 = 22466_{10}$
	0	0	
	70000	28672	
	60000	24576	
	50000	20480	
	40000	16384	
	30000	12288	
	20000	8192	
	10000	4096	
	0	0	
14	7000	3584	
	6000	3072	
	5000	2560	
	4000	2048	
	3000	1536	
	2000	1024	
	1000	512	
	0	0	
	700	488	
	600	384	
11	500	320	
	400	256	
	300	192	
	200	128	
	100	64	
	0	0	
	70	56	
	60	48	
	50	40	
	40	32	
8	30	24	
	20	16	
	10	8	
	0	0	
	7	7	
	6	6	
	5	5	
	4	4	
	3	3	
	2	2	
7	1	1	
	0	0	
	0	0	
	0	0	
	0	0	
	0	0	
	0	0	
	0	0	
	0	0	
	0	0	

### Decimal to Octal

Locate in the conversion table the decimal value closest to but not exceeding the decimal value to be converted. Record the octal equivalent. Subtract the table decimal value from the decimal value to be converted. Repeat the process until the subtraction balance equals 0. Add the octal equivalents to obtain the octal value.

Example:  $22466_{10} = ?_8$   
 $n_{10} = n_8$

		22466
20480	=	50000
		<u>-20480</u>
		1986
1536	=	3000
		<u>-1536</u>
		450
448	=	700
		<u>-448</u>
		2
2	=	2
		<u>-2</u>
22466 <sub>10</sub>	=	53702 <sub>8</sub>
		<u>0</u>

## STANDARD FILE TYPES

RSX-11M-PLUS uses the standard 3-letter file types used by all Digital-supplied software. These names indicate the actual contents of the files. Although any combination of three letters can be used, Digital recommends that the standard types be used whenever possible. (Compilers and other system programs that refer to these file types look for the standard name as a default. For example, if the command FOR ADD=ADD is issued, the FORTRAN IV compiler looks for ADD.FTN; but if the file is named ADD.FOR, the compiler reports that there is no such file.)

Type	File Contents
BAS	A BASIC-11 language source program
BLD	Indirect command files used as input to SYSGEN
B2S	A BASIC-PLUS-11 language source program
CBL	A COBOL language source program
CDA	Crash dump binary file
CFS	Error logging control file string
CLB	Indirect Command Processor command library
CMD	MCR or task commands (an indirect command file)
CMF	Preprocessed indirect command file
CNF	An error logging language source file
CRF	Cross-reference processor symbol table file
COR	A Source Language Input Program (SLP) correction file
DAT	File containing data (as opposed to a program)
DIR	Directory file
DMP	File Dump Utility (DMP) output file
ERR	Error Logger output file
FTN	FORTTRAN IV or FORTTRAN-77 language source file
HLP	Help file

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Type	File Contents
ICF	An error logging intermediate form file output from Control File Language (CFL) compiler
LOG	Batch or console log file
LST	A listing file
MAC	A MACRO-11 source program
MAP	A Task Builder (TKB) memory allocation map
MLB	A macro library
OBJ	An object program (output from either the MACRO-11 assembler or a compiler)
ODL	A Task Builder (TKB) overlay descriptor
OLB	An object module library
PAT	Correction file used by assembler to create a patched object module
PMD	Postmortem or snapshot dump file
POB	Patched object module used by the Object Module Patch Utility (PAT)
SML	The System Macro Library
STB	Symbol table file
SYM	An error logging symbol file
SYS	A bootable system image or other system file
TMP	A temporary file
TSK	A task image file
TXT	A text file
ULB	A universal file library

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## NOTES

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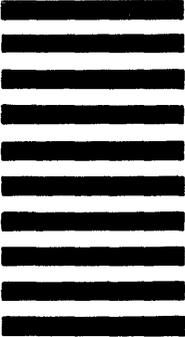
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