

# TOPS-20 Monitor Calls Quick Reference Guide

AV-P173A-TM

December, 1982

This guide provides a brief description of all of the TOPS-20 monitor calls and many of the blocks in the monitor's data base. It is intended for use by experienced MACRO-20 programmers who require a reminder of calling sequences and function codes. MACRO-20 programmers who require a more detailed description of the monitor calls should use the *TOPS-20 Monitor Calls Reference Manual*; those who desire a more introductory discussion on the use of monitor calls should refer to the *TOPS-20 Monitor Calls User's Guide*.

**OPERATING SYSTEM:** TOPS-20, V5.1

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CONVENTIONS

<u>B<sub>n</sub></u> or <u>B<sub>n-m</sub></u>	Bit <u>n</u> or bits <u>n</u> through <u>m</u> ; bit positions are always decimal
(enabled <u>priv</u> )	Designates a capability that must be enabled for the specified function to be legal
filespec	Designates a complete TOPS-20 file specification
IPCF	IPCF capability required
<u>underline</u>	Designates a variable argument, as in 1B <u>n</u>
MNT	MAINTENANCE capability required
mss.	Milliseconds
number	Designates an octal number
number.	Designates a decimal number
number.number	Designates a floating point number
OPR	OPERATOR capability required
OWGBP	A One Word Global Byte Pointer; see Pointer Formats for format
( <u>priv</u> )	Designates a capability that must exist for the specified function to be legal, but need not be enabled
R-U	The data is or should be right-justified in the specified field
<value>,,<value>	The left and right half-word (18-bit) values of a full-word (36-bit) value
WHL	WHEEL capability required

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MONITOR CALLS FUNCTIONAL ORGANIZATION

Accounting Functions

GACCT	Reads a job's account
GACTF	Reads a file's account
LOGIN	Logs a job into the system
SACTF	Sets a file's account
USAGE	Writes entries into the system's accounting file
VACCT	Validates an account

File Functions

ACCES	Allows access to a directory
BKJFN	Backspaces file's pointer
CHFDB	Changes a File Descriptor Block
CHKAC	Checks access to a file
CLOSF	Closes a file
CLZFF	Closes a process' files
CRLNM	Creates a logical name
DELDF	Expunges deleted files
DELF	Deletes a file
DELNF	Retains specified number of generations of file
DIRST	Translates directory or user number to a string
FFFP	Finds first free file page
FFUFD	Finds first used file page
GACTF	Reads a file's account
GFUST	Reads the author or last writer name string
GNJFN	Assigns a JFN to the next file
GPJFN	Returns primary JFN's
GTADB	Reads a File Descriptor Block
GTJFN	Assigns a JFN to a file
GTSTS	Reads file's status
INLNM	Writes logical names
JFNS	Translates a JFN to a string
LNMTS	Translates logical name to string
OPENF	Opens a file
RCDIR	Translates directory name to number
RCUSR	Translates user name to number
RFBSZ	Reads file's byte size
RFPTR	Reads file's pointer
RFTAD	Reads file's time and dates
RLJFN	Releases a JFN
RNAMEF	Renames a file
SACTF	Sets a file's account
SFBSZ	Sets file's byte size
SFPTR	Sets file's pointer
SFTAD	Sets file's time and dates
SFUST	Changes the author or last writer name string
SIZEF	Obtains file's length
SPJFN	Sets primary JFN's
STSTS	Sets file's status
SWJFN	Transposes two JFN's
UFPGS	Updates file's pages

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WILD%      Compares a wild filespec against a non-wild  
            filespec

I/O Functions

BIN            Reads the next byte  
BOUT          Writes the next byte  
DUMPI        Reads data in unbuffered data mode  
DUMPO        Writes data in unbuffered data mode  
FLIN         Reads a floating-point number  
FLOUT        Writes a floating-point number  
NIN          Reads a number  
NOUT         Writes a number  
PSOUT        Writes string to primary output designator  
PBIN         Reads byte from primary input designator  
PBOUT        Output byte to primary output designator  
PMAP         Maps pages  
RDTTY        Reads data from primary input designator  
RIN          Reads a byte nonsequentially  
ROUT         Writes a byte nonsequentially  
RSCAN        Reads and outputs rescan buffer  
SIN          Reads a string  
SOUT         Writes a string  
SINR         Reads a record  
SOUTR        Writes a record  
SMAP%        Maps sections  
TEXTI        Reads data from terminal or file

Information Functions

ERSTR        Translates an error code to a string  
ESOUT        Returns an error string  
GETAB        Returns a word from a system table  
GETER        Returns the last error condition  
GETJI        Returns job information for specified job  
GETNM        Returns the program name being used by the job  
GJINF        Returns job information for current job  
GTAD         Returns the system's date  
GTDAL        Returns the disk allocation of a directory  
GTRPI        Returns the paging trap information  
GTRPW        Returns the trap words  
HPTIM        Returns the high-precision clock values  
RUNTM        Returns the runtime of a job or process  
SYSGT        Returns values for a system table  
TIME         Returns the time since the system was restarted

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Device Control Functions

ASND	Assigns a device
ATACH	Attaches controlling terminal to a job
CFIBF	Clears terminal's input buffer
CFOBF	Clears terminal's output buffer
DEVST	Translates a device designator to a string
DIBE	Dismisses until terminal input buffer is empty
DOBE	Dismisses until terminal output buffer is empty
DTACH	Detaches controlling terminal from a job
DVCHR	Returns device characteristics
GDSKC	Returns disk usage
GDSTS	Returns the device status
GTTYP	Returns terminal type number
LPINI	Loads VFU or translation RAM
MSTR	Performs structure-dependent functions
MTOPR	Performs device-dependent functions
MTU%	Performs functions for logical tape devices
RELD	Releases a device
RFCOC	Returns control character output control words
RFMOD	Returns the JFN mode word
RFPOS	Returns current position of the terminal
SDSTS	Sets the device status
SFCOC	Sets control character output control words
SFMOD	Sets program-related fields in the JFN mode word
SFPOS	Sets position of the terminal's cursor
SIBE	Skips if input buffer is empty
SOBE	Skips if output buffer is empty
SOBF	Skips if output buffer is full
SPOOL	Defines and initializes input spooling
STDEV	Translates a string to a device designator
STPAR	Sets device-related fields in the JFN mode word
STTYP	Sets terminal type number
TLINK	Controls terminal linking

Software Interrupt System Functions

AIC	Activates interrupt channels
ATI	Assigns terminal code to channel
CIS	Clears the interrupt system
DEBRK	Dismisses current interrupt
DIC	Deactivates interrupt channels
DIR	Disables the interrupt system
DTI	Deassigns terminal code
EIR	Enables the interrupt system
GTRPW	Returns trap words
IIC	Initiates interrupts on specific channels in a process
RCM	Reads activated channel word mask
RIR	Reads the interrupt table addresses for a single-section program
RIRCM	Reads inferior reserved channel mask
RTIW	Reads terminal interrupt word
RWM	Reads waiting channel word mask

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SCTTY Changes source of terminal interrupts  
SIR Sets the interrupt table addresses for a single-section process  
SIRCM Sets inferior reserved channel mask  
SKPIR Skips if the interrupt system is enabled  
STIW Sets terminal interrupt word  
XGTPW% Returns page-fail words  
XRIR% Reads the interrupt table addresses for a multiple-section program  
XSIR% Sets the interrupt table addresses for a multiple-section process

Process/Capability Handling Functions

ADBRK Controls address breaks  
CFORK Creates inferior process  
DISMS Dismisses process for specified amount of time  
EPCAP Enables process capabilities word  
FFORK Freezes one or more processes  
GFRKH Gets process handle  
GFRKS Gets current process structure  
HALTF Halts a process  
HFORK Halts an inferior process  
KFORK Kills one or more processes  
PRARG Sets or returns process argument block  
RESET Resets and initializes current process  
RFACS Returns process' accumulators  
RFORK Resumes one or more processes  
RFRKH Releases process handles  
RFSTS Returns process' status  
RMAP Obtains a handle on a page in a process  
RPACS Returns accessibility of page  
RPCAP Returns process capabilities word  
RSMAP% Returns information about the mapping of one section of a process  
RTFRK Returns the handle of a process suspended because of a monitor call intercept  
RWSET Releases working set  
SFACS Sets process' accumulators  
SFORK Starts a process in section zero  
SPACS Sets accessibility of page  
SPLFK Splices a process structure  
TFORK Sets and removes monitor call intercepts  
UTFRK Resumes a process suspended because of a monitor call intercept  
WAIT Dismisses process until interrupt occurs  
WFORK Waits for process to terminate  
XSFRK% Starts a process in a non-zero section



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Save File Handling Functions

GCVEC	Gets compatibility package entry vector
GDVEC	Gets RMS entry vector
GET	Obtains a saved file
GEVEC	Gets process entry vector of a single-section program
SAVE	Saves a process as nonsharable
SCVEC	Sets compatibility package entry vector
SDVEC	Sets RMS entry vector
SEVEC	Sets the entry vector for a single-section program
SFRKV	Starts process using its entry vector
SSAVE	Saves a process as sharable
XGVEC%	Gets process entry vector for a multiple-section program
XSFRK%	Starts a process using a user-supplied, global PC
XSVEC%	Sets the entry vector for a multiple-section program

Date/Time Conversion Functions

GTAD	Gets current date and time in internal format
IDCNV	Converts from day, month, year to internal date and time
IDTIM	Inputs date and time, converting to internal format
IDTNC	Inputs date and time without converting to internal format
ODCNV	Converts from internal date and time to day, month, year
ODTIM	Outputs date and time, converting from internal format to text
ODTNC	Outputs date and time in internal format

Archive/Virtual Disk Functions

ARCF	Performs archive/virtual-disk operations
CRDIR	Creates or modifies a directory
DELDF	Expunges deleted files
DELNF	Retains specified number of generations of file
GTJFN	Assigns a JFN to a file
GNJFN	Assigns a JFN to the next file
JFNS	Translates a JFN to a string
OPENF	Opens a file
RFTAD	Reads file's time and dates
SETJB	Sets job parameters
SFTAD	Sets file's time and dates
SMON	Sets monitor flags
TMON	Reads monitor flags

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Privileged Functions

NOTE: Calls marked with an asterisk (\*) require privileges for specific functions only.

ACCES*	Accesses a directory
ALLOC	Allocates a device to a particular job
ARCF*	Performs archive/virtual-disk operations
ASNSQ	Assigns ARPANET special message queue
ATACH*	Attaches job to new controlling terminal
BOOT	Performs functions required for loading front-end software
CRDIR*	Creates or modifies a directory
CRJOB*	Creates a new job
DELDF*	Expunges deleted files
DEL*	Deletes files
DIAG	Reserves and releases hardware channels
DSKAS	Assigns specific disk addresses
DSKOP	Allows hardware address specification in disk transfers
ENQ*	Places a request in ENQ/DEQ resource queue
ENQC*	Returns status of a resource
FLHST	Flushes an ARPANET host
GACCT*	Returns job account information
GIVOK%	Allows/denies access to a protected system resource
GTDIR*	Returns directory information
HALTF*	Halts a process
HSYS	Halts the monitor
LGOUT*	Logs a job out
LPINI	Loads line-printer VFU
MDDT%	Enters MDDT program
MRECV*	Retrieves IPCF message
MSEND*	Sends IPCF message
MSFRK	Starts a process in monitor mode
MSTR*	Performs structure-related functions
MTALN	Associates magtape drive with logical unit number
MTOPR*	Performs device-related functions
MTU%	Performs MT-device functions
MUTIL*	Performs IPCF functions
NODE*	Performs DECnet functions
NTMAN%*	Performs DECnet network management functions
PEEK	Reads monitor data
PLDCK	Locks physical pages
PMCTL	Controls physical memory
RCVOK%	Services GETOK% requests
SETJB*	Sets job parameters
SFTAD*	Sets file date/time
SFUST*	Sets file author
SJPRI	Sets job priority
SKED%*	Manipulates scheduler data base
SMON	Sets monitor flags
SNOOP	Performs system performance analysis
SPOOL	Performs spooling-related functions
SPRIW	Sets process priority
STAD*	Sets system date/time

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STI*	Simulates terminal input
SYERR	Places information in the System Error file
TTMSG*	Sends a message to a terminal
USAGE	Makes entries in accounting file
USRIO	Places program in user I/O mode
UTEST	Monitors executed instructions

TOPS-20 MONITOR CALLS

ACCES JSYS 552

FUNCTION

Gives a particular type of access to a given directory.

RESTRICTIONS

Requires WHEEL or OPERATOR capability for some functions.

CALLING SEQUENCE

AC1: BO(AC%CON) Connect job to directory  
      B1(AC%OWN) Give job owner access to directory  
      B2(AC%REM) Relinquish owner access to directory  
      B18-35 Length of argblk  
AC2: Address of argblk

RETURNS +1: Always

ARGUMENT BLOCK

Word	Symbol	Meaning
0	.ACDIR	36-bit directory number or byte pointer to ASCIZ string containing full directory name
1	.ACPSW	Byte pointer to ASCIZ string containing password of specified directory
2	.ACJOB	Job # or -1 for current job (WHL/OPR if not -1)

ADBRK JSYS 570

FUNCTION

Controls address breaks.

RESTRICTIONS

Not available on KS-10 hardware.

CALLING SEQUENCE

AC1: <function code>,,<process handle>  
AC2: Address of location at which to break (.ABSET only)  
AC3: Flags (.ABSET only)  
      BO(AB%RED) Break on read reference  
      B1(AB%WRT) Break on write reference  
      B2(AB%XCT) Break on execute reference

RETURNS +1: Always, with  
      AC2: Address of break location  
      AC3: Flags (.ABRED only)  
          BO(AB%RED) Break set for read  
          B1(AB%WRT) Break set for write  
          B2(AB%XCT) Break set for execute

FUNCTION CODES

Code	Symbol	Meaning
0	.ABSET	Set address break
1	.ABRED	Read address break
2	.ABCLR	Clear address break
3	.ABGAD	Return address of break instruction

AIC JSYS 131

FUNCTION

Activates specific software interrupt channels.

CALLING SEQUENCE

AC1: Process handle

AC2: 36-bit word (1B<sub>n</sub> activates channel <sub>n</sub>)

RETURNS +1: Always

ALLOC JSYS 520

FUNCTION

Allocates a device to a job or to the device pool.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: Function code (.ALCAL)

AC2: Device designator

AC3: Job # to allocate designated device,  
-1 to deallocate designated device, or  
-2 to assign device to monitor's resource allocator

RETURNS +1: Failure, error code in AC1  
+2: Success

ARCF JSYS 247

FUNCTION

Performs archive and virtual disk operations.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability for some functions.

CALLING SEQUENCE

AC1: JFN

AC2: Function code

AC3: Function-specific argument

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ARCF

RETURNS +1: Always

FUNCTION CODES

Code	Symbol	Function
0	.ARRAR	Set/clear user request for archival AC3: 0(.ARCLR) to clear; 1(.ARSET) to set
1	.ARRIV	Set/clear system request for file migration AC3: 0(.ARCLR) to clear; 1(.ARSET) to set
2	.AREXM	Set/clear exemption from involuntary migration (enabled WHL/OPR) AC3: 0(.ARCLR) to clear; 1(.ARSET) to set
3	.ARRFR	Request that contents of file be restored to disk AC3: 1B0(AR%NMS) Don't send msg when restored 1B1(AR%WAT) Wait for file
4	.ARDIS	Discard tape information for file AC3: 1B0(AR%CR1) Clear run 1 information 1B1(AR%CR2) Clear run 2 information
5	.ARSST	Set tape information for file; (enabled WHL/OPR) AC3: Pointer to argblk
6	.ARRST	Restore file to disk; (enabled WHL/OPR) AC3: JFN for a DUMPER temporary file
7	.ARGST	Get tape information for file AC3: Pointer to argblk
10	.ARRFL	Retrieve for file failed; (WHL/OPR)
11	.ARNAR	Set/clear resist involuntary migration AC3: 0(.ARCLR) to clear; 1(.ARSET) to set

Argument Block for Functions .ARSST and .ARGST

Word	Symbol	Contents
0	.AROFL	Flags B0(AR%01) Set information for run 1 B1(AR%02) Set information for run 2 B2(AR%0FL) Delete content of disk file when done B3(AR%ARC) Archive the file B4(AR%CRQ) Clear archive and/or migration requests
1	.ARTP1	Tape 1 identification
2	.ARSF1	<tape 1 saveset number>.,.<tape 1 file number>
3	.ARTP2	Tape 2 identification
4	.ARSF2	<tape 2 saveset number>.,.<tape 2 file number>
5	.ARODT	Time/date of tape write in internal format
6	.ARPSZ	Number of pages in file

ASND JSYS 70

FUNCTION

Assigns a device to the caller

CALLING SEQUENCE

AC1: Device designator

RETURNS +1: Failure, error code in AC1  
+2: Success

ASNSQ JSYS 752

FUNCTION

Assigns a special message queue to a job.

RESTRICTIONS

For ARPANET systems only; requires enabled NET WIZARD capability.

CALLING SEQUENCE

AC1: Mask

AC2: Header value

RETURNS +1: Failure, error code in AC1  
+2: Success, special message queue assigned with queue handle in AC1

ATACH JSYS 116

FUNCTION

Detaches the specified job from its controlling terminal (if any) and optionally attaches it to a new controlling terminal.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability for some functions.

CALLING SEQUENCE

AC1: B0(AT%CCJ) Generate a CTRL/C interrupt to attached job  
B1(AT%NAT) Do not attach job  
B2(AT%TRM) Attach job to terminal specified in AC4  
B18-35(AT%JOB) Job # of desired job  
AC2: Logged-in user number of job to be attached  
AC3: Byte pointer to ASCIZ password string  
AC4: Number of terminal to be attached to specified job

RETURNS +1: Failure, error code in AC1  
+2: Success

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ATI

ATI JSYS 137

FUNCTION

Assigns a terminal code to a software interrupt channel.

CALLING SEQUENCE

AC1: <terminal interrupt code>,,<channel number>

RETURNS +1: Always

ATNVT JSYS 274

FUNCTION

Creates the Network Virtual Terminal (NVT) connection.

RESTRICTIONS

For ARPANET systems only

CALLING SEQUENCE

AC1: Flags,,<JFN of opened receive connection>  
B2(AT%NTP) Indicates new (1) or old (0) TELNET  
protocol

AC2: JFN of opened send connection

RETURNS +1: Failure, with error code in AC1  
+2: Success, with NVT-specific terminal  
designator in AC1

BIN JSYS 50

FUNCTION

Inputs the next byte from the specified source.

CALLING SEQUENCE

AC1: Source designator

RETURNS +1: Always, with the byte right-justified in AC2  
or 0 indicating EOF.

BKJFN JSYS 42

FUNCTION

Backs up the source designator's pointer by one byte.

RESTRICTIONS

Cannot be used with DECNET devices SRV: or DCN:.

CALLING SEQUENCE

AC1: Source designator



RETURNS +1: Failure, error code in AC1  
+2: Success; updated byte pointer in AC1, if pertinent

BOOT JSYS 562

FUNCTION

Performs basic maintenance and utility functions required for loading and dumping communications software.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: Function code  
AC2: Address of argblk

RETURNS +1: Always

FUNCTION CODES

KS-10 Processor Functions

Code	Symbol	Meaning/Argblk
0	.BTRM	Put line in MDP mode; activate front end bootstrap ROM
1	.BTLDS	Load secondary bootstrap program into front end 0 .BTPRT Line number 1 Not used; must be zero
2	.BTLDD	Load front-end memory using previously loaded secondary or tertiary bootstrap program 0 .BTDTE Line number 1 Not used; must be zero 2 Not used; must be zero 3 Not used; must be zero 4 .BTCNT Number of bytes to transfer 5 .BTLPT Pointer to data to be loaded
4	.BTIPR	Generate and link DDCMP Station Table; start up lines/terminals not previously known to system 0 .BTPRT Drop, <line number> 1 .BTPRV Protocol version number to use
5	.BTPR	Stop protocol currently running on front end or line 0 .BTPRT Line number
6	.BTSTS	Return status type of protocol running on front end to specified DTE or line, and name of adjacent DECNET node for this front end 0 .BTPRT Line number 1 .BTCOD Returned protocol version type; or -1 if no protocol is running
10	.BTRMP	Read MDP message from front end using previously loaded secondary or tertiary

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 BOOT

```

bootstrap program
0 .BTPRT Line number
1 Not used; must be zero
2 Not used; must be zero
3 Not used; must be zero
4 .BTCNT Number of bytes to transfer
5 .BTMPT Pointer to MOP message
destination
11 .BTKML Load KMC11, or CRAM, DRAM, and 4 UNIBUS
registers
0 .BTKMC KMC11 address
1 .BTKER <error flags>,,<bad data word>
(16 bit)
BO(BT%CVE) CRAM verify error
B1(BT%DVE) DRAM verify error
B2(BT%RVE) Register verify
error
2 .BTKCC Count of CRAM data
3 .BTKCP Pointer to CRAM data (16-bit)
4 .BTKDC Count of DRAM data
5 .BTKDP Pointer to DRAM data (8-bit)
6 .BTKRC Count of register data
7 .BTKRP Pointer to register data
(16-bit)
8 .BTKSA If 1B0, B18-35 contain start
address
BO(BT%KSA) Right half >0; start
KMC11
12 .BTKMD Dump KMC11, or CRAM, DRAM, and registers if
space provided
0 .BTKMC KMC11 address
1 Not used; must be zero
2 .BTKCC Count of CRAM data
3 .BTKCP Pointer to CRAM data (16-bit)
4 .BTKDC Count of DRAM data
5 .BTKDP Pointer to DRAM data (8-bit)
6 .BTKRC Count of register data
7 .BTKRP Pointer to register data
(16-bit)
13 .BTRLC Return line counters
0 .BTPRT Port number
1 .BTZTM Time since counters were last
zeroed
2 .BTSCC # of status counts to return
3 .BTSCP Pointer to area for status
counters
4 .BTRCC # of receive counts to return
5 .BTRCP Pointer to area for receive
counters
6 .BTTC C # of transmit counts to return
7 .BTTCP Pointer to area for transmit
counters
14 .BTCLI Convert line ID to port number
0 .BTPRT Port number
15 .BTCPN Convert NSP port number to line ID
0 .BTPRT Port number

```

16	.BTSTA	Set station's polling state to activate/deactivate terminal polling (Requires VT62)
	0 .BTPRT	Drop,,<line number>
	1 .BTCOD	Flags
		0 .BTACTION Set line active
		1 .BTIDL Set line idle
17	.BTSSP	Set start-up priority value (Requires VT62)
	0 .BTPRT	Line number
	1 .BTSPR	Start priority count
20	.BTSTP	Set polling priority (Requires VT62)
	0 .BTPRT	Drop,,<line number>
	1 .BTPRI	Priority value: 1 (high) to 5
21	.BTSDD	Send a DDCMP message
	0 .BTPRT	Drop,,<line number>
	1 .BTMSG	Address of or byte pointer to message
	2 .BTLEN	Byte count of message
22	.BTRDD	Receive a DDCMP message; .BTLEN is set to zero if queue is empty
	0 .BTPRT	Line number
	1 .BTMSG	Address of or byte pointer to buffer
	2 .BTLEN	Size of user buffer
		Returned in .BTLEN:
		1BO(BT%CTL) +
		.BTSUP (1) - station came up
		.BTSDW (2) - station went down
		.BTCMP (3) - transmit complete
		.BTSSF (4) - start-up failed
23	.BTCHN	Set interrupt channel
	0 .BTPRT	Drop,,<line number>
	1 .BTCOD	Software interrupt channel
24	.BTSLS	Set type of line service for synchronous communications lines
	0 .BTPRT	Drop,,<line number>
	1 .BTCOD	Define protocol

KL-10 Processor Functions

Code	Symbol	Meaning/Argblk
0	.BTROM	Put line in MDP mode; activate front end bootstrap ROM
	0 .BDTE	DTE-20 number
	1 .BTERR	Error flags on failure (RET)
1	.BTLDS	Load secondary bootstrap program into front end
	0 .BDTE	DTE-20 number
	1 .BTERR	Error flags on failure (RET)
	2 .BTSEC	Address of bootstrap to load
2	.BTL0D	Load front-end memory using previously loaded secondary or tertiary bootstrap program
	0 .BDTE	DTE-20 number
	1 .BTERR	Error flags on failure (RET)
	2	Not used; must be zero
	3 .BTFLG	User-supplied flag word
		BO(BT%BEL) Send to -11 doorbell

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				after setup
		4	.BTCNT	Number of bytes to transfer
		5	.BTLPT	Pointer to data to be loaded
3	.BTDMP			Dump front-end memory using ROM bootstrap program
		0	.BDTE	DTE-20 number
		1	.BTERR	Error flags on failure (RET)
		2		Not used; must be zero
		3		Not used; must be zero
		4	.BTCNT	Number of bytes to transfer
		5	.BDPT	Pointer to dump data destination
4	.BTIPR			Initialize front end protocol
		0	.BDTE	DTE-20 number
		1	.BTPRV	Protocol version number to use
5	.BTTPR			Stop protocol currently running on front end or line
		0	.BDTE	DTE-20 number
6	.BTSTS			Return status type of protocol running on front end to specified DTE or line, and name of adjacent DECNET node for front end
		0	.BDTE	DTE-20 number
		1	.BTCOD	Returned protocol version type; or -1 if no protocol is running
7	.BTBEL			Block until signal to TOPS-20 is initiated by front end
		0	.BDTE	DTE-20 number
10	.BTRMP			Read data from front end using previously loaded secondary or tertiary bootstrap program
		0	.BDTE	DTE-20 number
		1	.BTERR	Error flags on failure (RET)
		2		Not used; must be zero
		3	.BTFLG	User-supplied flag word BO(BT%BEL) Send doorbell after transfer
		4	.BTCNT	Maximum # of bytes to transfer
		5	.BTMPT	Pointer to data destination
14	.BTCLI			Convert line ID to port number
		1	.BTLID	Pointer to ASCIZ line ID
15	.BTCPN			Convert NSP port number to line ID
		1	.BTLID	Pointer to ASCIZ line ID
16	.BTD60			Send message to or receive message from DN60 front end using .VND60 protocol (Requires DN60 on KL-10 Model B)
		0	.BT6DTE	DTE number
		1	.BT6ERR	Error flags (RET)
		30	D6%BDP	Byte pointer is bad
		31	D6%ARD	-11 attempted to send data
		32	D6%TRS	DTESRV timed out waiting for response header from -11
		33	D6%TDI	DTESRV timed out waiting for data from -11
		34	D6%TPD	DTESRV timed out

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waiting for DTE to  
be free  
35 D6%NT6 -11 is not running  
DN60 protocol  
2 .BT6HBC B0-17 DN60 header byte count  
.BT6HDR B18-35 DN60 header address  
3 .BT6DBC Number of bytes of data  
4 .BT6PTR Pointer to first byte of data  
5 .BT6TMR Time request was made (RET)  
6 .BT6TAS Time DTE was assigned (RET)  
7 .BT6THQ Time TOPS-20 queued header to  
DTE (RET)  
10 .BT6TRD Time  
11 .BT6TDD Time  
12 .BT6TFR Time TOPS-20 satisfied request

BOUT JSYS 51

FUNCTION

Outputs a byte sequentially to the specified destination.

CALLING SEQUENCE

AC1: Destination designator

AC2: Byte to be output, right-justified

RETURNS +1: Always

CACCT JSYS 4

FUNCTION

Changes the account for the current job.

RESTRICTIONS

In non-zero sections, DWGBPs must specify 7-bit bytes.

CALLING SEQUENCE

AC1: Byte pointer to the new account string;  
in section 0, may contain <5B2+<account number>B35>

RETURNS +1: Failure, error code in AC1  
+2: Success, updated byte pointer in AC1

CFIBF JSYS 100

FUNCTION

Clears the designated file input buffer.

CALLING SEQUENCE

AC1: Source designator

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RETURNS +1: Always

CFDBF JSYS 101

FUNCTION

Clears the designated file output buffer

CALLING SEQUENCE

AC1: Destination designator

RETURNS +1: Always

CFORK JSYS 152

FUNCTION

Creates a process inferior to the calling process.

CALLING SEQUENCE

AC1: BO(CR%MAP) Make inferior process' map same as  
current process' map  
B1(CR%CAP) Make inferior process' capabilities  
same as current process'  
B3(CR%ACS) Set inferior process' ACs from block  
whose address is in AC2  
B4(CR%ST) Set PC of inferior process to value in  
B18-35 of AC1 and start process  
B18-35(CR%PCV) PC value for inferior process if CR%ST  
is on  
AC2: Address of optional 20 word block containing AC values  
for inferior process

RETURNS +1: Failure, error code in AC1  
+2: Success, relative process handle in AC1

CHFDB JSYS 64

FUNCTION

Changes words in the File Descriptor Block for the specified  
file.

CALLING SEQUENCE

AC1: BO(CF%NUD) Don't wait for disk copy of directory  
to be updated  
B9-17(CF%DSP) Index into FDB of word to be changed  
B18-35(CF%JFN) JFN for a disk file  
AC2: Mask indicating bits to be changed; -1 if changing a  
count value in AC3  
AC3: New values for changed bits corresponding to mask  
given in AC2

RETURNS +1: Always

CHKAC JSYS 521

FUNCTION

Checks if a user is allowed access to files in a given directory.

RESTRICTIONS

In non-zero sections, DWGBPs must specify 7-bit bytes.

CALLING SEQUENCE

AC1: Flags, <length of argblk>

BO(CK%JFN) JFN in word .CKAUD of the argblk

AC2: Address of argblk

RETURNS +1: Failure, error code in AC1

+2: Success, access check is completed, with AC1 containing -1 if access is allowed or 0 if access is not allowed

ARGUMENT BLOCK

Word	Symbol	Meaning
0	.CKAAC	Code of desired access to files
1	.CKALD	Byte pointer to username string, or 36-bit user number
2	.CKACD	Byte pointer to directory name string, or 36-bit directory number of user's connected directory
3	.CKAEC	Enabled capabilities of user
4	.CKAUD	Byte pointer to directory name string, or 36-bit directory number of directory being accessed; if BO(CK%JFN) is on, contains JFN for file being accessed
5	.CKAPR	Protection of files being accessed; (not required if a JFN is supplied in word .CKAUD)

ACCESS CODES

Code	Symbol	Meaning
0	.CKARD	Read existing files
1	.CKAWR	Write existing files
2	.CKAEX	Execute existing files
3	.CKAAP	Append to existing files
4	.CKADL	Obtain directory listing of existing files
6	.CKADR	Read the directory
10	.CKACN	Connect to the directory
11	.CKACF	Create files in the directory

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CIS JSYS 141

FUNCTION

Clears the software interrupt system for the current process.

RETURNS +1: Always

CLOSF JSYS 22

FUNCTION

Closes a specific file or all files.

CALLING SEQUENCE

AC1: BO(CO%NRJ) Do not release the JFN  
B6(CZ%ABT) Abort any output operations currently being done  
B7(CZ%NUD) Do not update copy of directory on disk  
B18-35(CO%JFN) JFN of file being closed

RETURNS +1: Failure, error code in AC1  
+2: Success

CLZFF JSYS 34

FUNCTION

Closes all files and/or releases all JFNs at or below a specified process.

CALLING SEQUENCE

AC1: BO(CZ%NIF) Do not close files of inferior processes  
B1(CZ%NSF) Do not close files of this process  
B2(CZ%NRJ) Do not release JFNs  
B3(CZ%NCL) Do not close any files; only release nonopen JFNs  
B4(CZ%UNR) Unrestrict files opened with restricted access for specified process  
B5(CZ%ARJ) Wait until file can be closed, close it, and release JFNs  
B6(CZ%ABT) Abort any output operations currently being done  
B7(CZ%NUD) Do not update copy of directory on disk  
B18-35(CZ%PRH) Process handle

RETURNS +1: Always



COMND JSYS 544

FUNCTION

Parses one or more fields of a command that is either typed by a user or contained in a file.

CALLING SEQUENCE

AC1: Address of the command state block

AC2: Address of first alternate function descriptor block

RETURNS +1: Always (unless a reparse is needed and the right half of .CMFLG is nonzero), with  
 AC1: Flags,,<address of command state block>  
 AC2: Data obtained for field; or error code if field could not be parsed (CM%NOP is on)  
 AC3: B0-17 Address of function descriptor block given  
 B18-35 Address of function descriptor block used

COMMAND STATE BLOCK

Word	Symbol	Meaning
0	.CMFLG	<flag bits>,,<reparse dispatch address>
1	.CMIOJ	<input JFN>,,<output JFN>
2	.CMRTY	Byte pointer to beginning of the prompting text
3	.CMBFP	Byte pointer to beginning of the user's input
4	.CMPTR	Byte pointer to beginning of next field to be parsed
5	.CMCNT	Count of space remaining in buffer after .CMPTR pointer
6	.CMINC	Count of number of unparsed characters in buffer after .CMPTR pointer
7	.CMABP	Byte pointer to atom buffer containing last field parsed by COMND
10	.CMABC	Size of atom buffer in bytes
11	.CMGJB	Address of 16 word, writable GTJFN argblk

Settable Bits in Word .CMFLG of the Command State Block

Bit	Symbol	Meaning
6	CM%RAI	Convert lowercase input to uppercase
7	CM%XIF	"@" is punctuation, not indirect file designator
8	CM%WKF	Begin parsing after each field is terminated without waiting for action character (CRLF, ESC, CTRL/F, ?)

FUNCTION DESCRIPTOR BLOCK

Word	Symbol	Meaning
0	.CMFNP	Function code and pointer to next function descriptor block
	B0-8(CM%FNC)	Function code
	B9-17(CM%FFL)	Function-specific flags
	B18-35(CM%LST)	Address of next function descriptor block; or 0

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		if last
1	.CMDAT	Data for the specific function, if any
2	.CMHLP	Byte pointer to help text for this field
3	.CMDEF	Byte pointer to default string for this field
4	.CMBRK	Address of 4-word break mask that specifies which characters terminate a field

FUNCTIONS FOR WORD .CMFNP OF THE FUNCTION DESCRIPTOR BLOCK

Code	Symbol	Meaning
0	.CMKEY	Parse a keyword
1	.CMNUM	Parse a number
2	.CMNOI	Parse a guide word string
3	.CMSWI	Parse a switch
4	.CMIFI	Parse an input filespec
5	.CMOFI	Parse an output filespec
6	.CMFIL	Parse a general (arbitrary) filespec
7	.CMFLD	Parse an arbitrary field
10	.CMCFM	Wait for user to confirm command with CRLF
11	.CMDIR	Parse a directory name
12	.CMUSR	Parse a user name
13	.CMCMA	Parse a comma
14	.CMINI	Initialize the command line
15	.CMFLT	Parse a floating-point number
16	.CMDEV	Parse a device name
17	.CMTXT	Parse input text up to next carriage return, place text in atom buffer, and return
20	.CMTAD	Parse a date and/or time field according to setting of bits CM%IDA and CM%ITM
21	.CMQST	Parse a quoted string up to terminating quote
22	.CMUQS	Parse an unquoted string up to one of the specified break characters
23	.CMTOK	Parse input and compare it with a given string
24	.CMNUX	Parse a number and terminate on 1st nonnumeric character
25	.CMACT	Parse an account string
26	.CMNOD	Parse a network node name

Function-specific Flags in B9-B17 (CM%FFL) of Word .CMFNP

Bit	Symbol	Meaning
12	CM%NSF	Suffix is optional; functions .CMDEV and .CMNOD only
13	CM%BRK	Word .CMBRK of function descriptor block contains a pointer to a 4-word break mask
14	CM%PO	Field is parse only (no existence verification); functions .CMDEV, .CMDIR, .CMNOD, and .CMUSR only
15	CM%HPP	Byte pointer to program-supplied help message for field is in word 2 (.CMHLP) of function descriptor block
16	CM%DPP	Byte pointer to program-supplied default string for field is in word 3 (.CMDEF) of function descriptor block
17	CM%SDH	Suppress output of default help message if user types a question mark

ADDITIONAL DATA IN WORD .CMDAT OF THE FUNCTION DESCRIPTOR BLOCK

Function	Contents of Word .CMDAT
.CMKEY	Address of keyword symbol table whose entries point to argblks; B18-35 of Word 0 of argblk may contain flags: B33(CM%ABR) Keyword is abbreviation B34(CM%NOR) Do not recognize keyword B35(CM%INV) Make keyword invisible
.CMNUM	Radix of the number (from 2 to 10)
.CMNOI	Byte pointer to an ASCIZ string that contains the guide word
.CMSWI	Address of switch keyword table, whose entries point to argblks; B18-35 of Word 0 of argblk may contain flags: B33(CM%ABR) Keyword is abbreviation B34(CM%NOR) Do not recognize keyword B35(CM%INV) Make keyword invisible
.CMDIR	Data bits B0(CM%DWC) Allow wildcard characters in directory name
.CMTAD	<flag bits>, <address of 3-word block> B0(CM%IDA) Parse a date B1(CM%ITM) Parse a time B2(CM%NCI) Do not convert date/time to internal format
.CMUQS	Address of 4-word block of 128. break character mask bits
.CMTOK	Byte pointer to the given string
.CMNUX	The radix (from 2 to 10) of the number

DEFAULT HELP MESSAGES

Function	Message
.CMKEY (keyword)	ONE OF THE FOLLOWING if no keyword matches the currently typed field KEYWORD (NO DEFINED KEYWORDS MATCH THIS INPUT)
.CMNUM (number)	OCTAL NUMBER (radix 8) DECIMAL NUMBER (radix 10) A NUMBER IN BASE <u>nn</u> (radix <u>nn</u> )
.CMNOI (guide word)	None
.CMSWI (switch)	ONE OF THE FOLLOWING
.CMIFI (input file) }	Depending on flag settings for
.CMOFI (output file) }	GTJFN call, OUTPUT FILESPEC or
.CMFIL (any file) }	INPUT FILESPEC
.CMFLD (any field)	None
.CMCFM (confirm)	CONFIRM WITH CARRIAGE RETURN
.CMDIR (directory)	DIRECTORY NAME
.CMUSR (user)	USER NAME
.CMCMA (comma)	COMMA
.CMINI (initialize)	None
.CMFLT (floating point)	NUMBER
.CMDEV (device)	DEVICE NAME
.CMTXT (text)	TEXT STRING
.CMTAD (date)	Depending on bits set in .CMDAT,

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.CMQST (quoted)	DATE, TIME, or DATE AND TIME QUOTED STRING
.CMUQS (unquoted)	UNQUOTED STRING if "?" is a break character
.CMTOK (token)	None
.CMNUX (number)	Same as .CMNUM
.CMACT (account)	None
.CMNOD (node)	NODE NAME

Functions That Use Masks (Word .CMBRK)

Mask Symbol	Function	Changeable by User
KEYBO. - KEYB3.	.CMKEY	Yes
DEVBO. - DEVB3.	.CMDEV	Yes (if parse-only)
FLDBO. - FLDB3.	.CMFLD	Yes
EOLBO. - EOLB3.	.CMTXT	Yes
KEYBO. - KEYB3.	.CMSWI	Yes
User-specified	.CMDAT	Yes
USRBO. - USRB3.	.CMUSR	No
FILBO. - FILB3.	.CMFIL	No
FILBO. - FILB3.	.CMIFI	No
FILBO. - FILB3.	.CMOFI	No
internal	.CMNUM	No
FILBO. - FILB3.	.CMDIR	No
internal	.CMFLT	No
ACTBO. - ACTB3.	.CMACT	No

RETURNED BITS IN WORD .CMFLG OF THE FUNCTION DESCRIPTOR  
BLOCK

Bit	Symbol	Meaning
0	CM%ESC	ESC was typed by user as terminator for this field
1	CM%NOP	Field could not be parsed because it did not conform to specified function(s)
2	CM%EOC	Field was terminated with a carriage return
3	CM%RPT	Characters already parsed need to be reparsed because user edited them
4	CM%SWT	Switch field was terminated with a colon
5	CM%PFE	Previous field was terminated with an ESC

CRDIR JSYS 240

FUNCTION

Creates, changes, or deletes a directory entry.

RESTRICTIONS

Enabled WHEEL or OPERATOR capability required for some  
functions.

CALLING SEQUENCE

AC1: Byte pointer to ASCIZ string containing  
str:<directory>  
AC2: BO(CD%LEN) Set flags and length of argblk from  
values in word .CDLEN  
B1(CD%PSW) Set password from argblk

B2(CD%LIQ) Set working disk storage limit from argblk  
 B3(CD%PRV) Set capability bits from argblk  
 B4(CD%MOD) Set mode bits from argblk  
 B5(CD%LOQ) Set permanent disk storage limit from argblk  
 B6(CD%NUM) Set directory number from argblk  
 B7(CD%FPT) Set default file protection from argblk  
 B8(CD%DPT) Set directory protection from argblk  
 B9(CD%RET) Set default retention count from argblk  
 B10(CD%LLD) Set last LOGIN date from argblk  
 B11(CD%UGP) Set user groups from argblk  
 B12(CD%DGP) Set directory groups from argblk  
 B13(CD%SDQ) Set subdirectory quota from argblk  
 B14(CD%CUG) Set user groups assignable by directory from argblk  
 B15(CD%DAC) Set default account from argblk  
 B17(CD%DEL) Delete this directory entry  
 B18-35(CD%APB) Address of the argblk  
 AC3: Byte pointer to ASCIZ string containing password of directory

RETURNS +1: Always, with directory number in AC1

ARGUMENT BLOCK

Word	Symbol	Meaning
0	.CDLEN	<flag bits>,,<length of argblk>
	B0(CD%NSQ)	On restore, do not update superior directory's quotas (enabled WHL/OPR required)
	B1 (CD%NCE)	On restore or reconstruction, do not change directory parameters if directory currently exists (enabled WHL/OPR)
	B2(CD%NED)	Set default on-line expiration date from word .CDDNE
	B3(CD%FED)	Set default on-line expiration date from word .CDDFE
1	.CDPSW	Byte pointer to password string
2	.CDLIQ	Working disk storage quota
3	.CDPRV	Capabilities for this user
4	.CDMOD	Mode word
	B0(CD%DIR)	Directory is files-only
	B1(CD%ANA)	Obsolete
	B2(CD%RLM)	Repeat messages from file <SYSTEM>MAIL.TXT each time user logs in
	B7(CD%DAR)	File should be archived rather than migrated when on-line expiration date reached
5	.CDLOQ	Permanent disk storage quota
6	.CDNUM	Directory number (valid only when creating a directory)
7	.CDFPT	Default file protection (18 bits, R-J)
10	.CDDPT	Directory protection (18 bits, R-J)
11	.CDRET	Default generation retention count

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12	.CDLLD	Date of last login
13	.CDUGP	Address of user group list for this directory
14	.CDDGP	Address of directory group list
15	.CDSOQ	Maximum number of sub-directories allowed
16	.CDCUG	Address of user group list
17	.CDDAC	Byte pointer to default account string
20	.CDDNE	Default on-line expiration date and time
21	.CDDFE	Default off-line expiration date and time

DEFAULT ARGUMENTS

Bit	Symbol	Default Argument
2	CD%LIQ	250 working pages
3	CD%PRV	No special capabilities
4	CD%MOD	Directory name for login
5	CD%LOQ	250 permanent pages
6	CD%NUM	First unused directory number
7	CD%FPT	Default file protection to 777700
8	CD%DPT	Directory protection to 777700
9	CD%RET	Default file retention count to 1
10	CD%LLD	Never logged in
11	CD%UGP	No user groups
12	CD%DGP	No directory groups
13	CD%SDQ	No ability to create inferior directories
14	CD%GUG	No assignable user groups for inferior directories
15	CD%DAC	No default account

CRJOB JSYS 2

FUNCTION

Creates a new job and optionally logs it in.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability for some functions; in non-zero sections, OWGBPs must specify 7-bit bytes.

CALLING SEQUENCE

AC1: <flag bits>, ,0

AC2: Address of argblk

AC3: Job # of previously-created job if B17(CJ%DSN) is on in AC1

RETURNS +1: Failure, with error code in AC1  
+2: Success, with number of new job in AC1

Flag Bits in AC1

Bit	Symbol	Meaning
0	CJ%LDG	Log in the new job
1	CJ%NAM	Set user name and password from argblk
2-3	CJ%ACT	Account code for new job
	0 .CJUCA	Use current account of caller
	1 .CJUAA	Use account from the argblk
	2 .CJUAA	Use default account of caller

4	CJ%ETF	Place TOPS-20 command processor in top process of new job
5	CJ%FIL	Move the file pointed to by word .CJFIL of the argblk into a process in new job
6	CJ%ACS	Load ACs from the address in argument block; loaded only if the program being run is not the command processor
7	CJ%OWN	Maintain ownership of the new job
8	CJ%WTA	Do not start new job until it is attached to a terminal
9	CJ%NPW	Do not check password given when new job is logged in
10	CJ%NUD	Do not update LOGIN date for user logging in to new job
11	CJ%SPU	Set primary I/O designators from argblk before starting job
12	CJ%CAP	Set allowed capabilities of new job to be same as caller's currently enabled capabilities, until new job is logged in
13	CJ%CAM	Set allowed capabilities of new job to combination and function of capability mask in argblk and new job's user capabilities
14	CJ%SLD	Send IPCF message to PID supplied in argblk when new job is logged out
17	CJ%DSN	Release ownership of previously created job whose number is in AC3; if on, overrides all other bits set in AC1

ARGUMENT BLOCK

Word	Symbol	Meaning
0	.CJNAM	Byte pointer to ASCIZ user name string
1	.CJPSW	Byte pointer to ASCIZ password string
2	.CJACT	5B2 + account number or byte pointer to account string
3	.CJFIL	Byte pointer to name of file to be moved into a process of new job
4	.CJSFV	Offset in entry vector to use as start address of the file to which word .CJFIL points
5	.CJTYY	TTY designator of new job's controlling terminal
6	.CJTIM	Connect-time for new job before LGOUT is forced on it; 0 indicates no limit
7	.CJACS	Address of 16-word block to be loaded in new job's ACs if program other than Command Processor is being run
10	.CJEXF	Flag bits to be passed to Command Processor in top-level process of new job B0 Suppress herald printed by Command Processor B1 Move file to which word .CJFIL points into process whose handle is in PRARG block B2 Start process at offset in entry vector given in word .CJSFV after Command

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- Processor is initialized  
B3 Output text printed when LOGIN command is given
- 11 .CJPRI Primary input and output device designators for the inferior processes of the new job
  - 12 .CFCPU Run-time limit for new job
  - 13 .CJCAM Capability mask for new job; used only if CJ%CAM is set
  - 14 .CJSLO PID to which IPCF message is to be sent when new job is logged out

Format of IPCF Logout Message

Word	Contents
0	0,..IPCL0
1	<count of remaining words>.,.<# of job logged out>
2	Flags, reserved
	0 SP%BAT Job is controlled by batch
	1 SP%DFS Spooling is deferred
	2 SP%ELO Job executed LGOUT
	3 SP%FLO Job was forced to logout
	4 SP%OLO Job was logged out by another job
3	Job connect time
4	Job CPU time
5	TTY number of job at logout (-1 if detached)
6	Job # of job that did logout
7	Reserved
10	Most recent monitor call error code

CRLNM JSYS 502

FUNCTION

Defines or deletes a logical name assignment.

CALLING SEQUENCE

AC1: Function code

AC2: Byte pointer to the logical name

AC3: Byte pointer to the logical name definition string

RETURNS +1: Failure, error code in AC1  
+2: Success, updated byte pointer in AC3

FUNCTION CODES

Code	Symbol	Meaning
0	.CLNU1	Delete one logical name from the job
1	.CLNS1	Delete one logical name from the system
2	.CLNJA	Delete all logical names from the job
3	.CLNSA	Delete all logical names from the system
4	.CLNJB	Create a logical name for the job
5	.CLNSY	Create a logical name for the system



CVHST JSYS 276

FUNCTION

Converts a host number to a primary name.

RESTRICTIONS

For use with ARPANET systems only.

CALLING SEQUENCE

AC1: Destination for ASCIZ host name string

AC2: Host number

RETURNS +1: Failure  
+2: Success

CVSKT JSYS 275

FUNCTION

Converts a local socket number to absolute form.

RESTRICTIONS

For use with ARPANET systems only.

CALLING SEQUENCE

AC1: JFN

RETURNS +1: Failure, error code in AC1  
+2: Success, absolute socket number in AC2

DEBRK JSYS 136

FUNCTION

Dismisses the software interrupt routine in progress and resumes the process at the location specified by the PC stored in the priority level table.

RETURNS +1: Only if no software interrupt is currently in progress and if an ERJMP or ERCAL instruction follows the DEBRK

DELDF JSYS 67

FUNCTION

Reclaims disk space by expunging deleted disk files.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability for some functions.

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CALLING SEQUENCE

AC1: B0(DD%DTF) Delete temporary files (;T) also  
B1(DD%DNF) Delete nonexistent files that are not now  
open  
B2(DD%RST) Rebuild the symbol table  
B3(DD%CHK) Check internal consistency of directory  
AC2: Directory number

RETURNS +1: Always

DELF JSYS 26

FUNCTION

Deletes specified disk file and, if the file is closed,  
releases the JFN.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability for some  
functions.

CALLING SEQUENCE

AC1: B0(DF%NRJ) Do not release the JFN  
B1(DF%EXP) Expunge file and delete FDB entry in  
directory  
B2(DF%FGT) Expunge file but do not deassign its  
addresses; (enabled WHL/OPR)  
B3(DF%DIR) Delete and expunge a directory file;  
(enabled WHL/OPR)  
B4(DF%ARC) Allow a file with archive status to be  
deleted  
B5(DF%CND) Delete and expunge file but preserve  
filename and FDB (except for page count  
and page table address)  
B18-35(DF%JFN) JFN of the file being deleted

RETURNS +1: Failure, error code in AC1  
+2: Success, JFN is released unless B0(DF%NRJ) is  
on or file is open

DELNF JSYS 317

FUNCTION

Marks for deletion all but the specified number of  
generations of a disk file.

CALLING SEQUENCE

AC1: B0(DF%NRJ) Do not release the JFN  
B4(DF%ARC) Allow a file with archive status to be  
deleted  
B5(DF%CND) Delete and expunge file but preserve  
filename and FDB (except for page count  
and page table address)

B18-35 JFN of the file being deleted  
 AC2: Number of generations to retain

RETURNS +1: Failure, error code in AC1  
 +2: Success, with number of files deleted in AC2

DEQ JSYS 514

FUNCTION

Removes a request for a specific resource from the queue associated with that resource.

RESTRICTIONS

In non-zero sections, DWGBPs must specify 7-bit bytes.

CALLING SEQUENCE

AC1: Function code  
 AC2: Address of argblk

RETURNS +1: Failure, error code in AC1  
 +2: Success

FUNCTION CODES

Code	Symbol	Meaning
0	.DEQDR	Remove specified requests from queue; requires argblk
1	.DEQDA	Remove all requests for this process from queue
2	.DEQID	Remove all requests corresponding to specified request ID

ARGUMENT BLOCK FOR FUNCTION .DEQDR

Word	Symbol	Meaning
0	.ENQLN	B0-5 Header length B6-17 # of locks B18-35 Length of argblk
1	.ENQID	Not used; must be zero
2	.ENQLV	<flags & level number>,,[JFN][-1][-2][-3] B0(EN%SHR) Access to this resource is to be shared B1(EN%BLN) Ignore level number of resource B2(EN%NST) Allow ownership of this lock to be nested B3(EN%LTL) Allow a long-term lock on this resource B9-17(EN%LVL) Level number associated with this resource B18-35 JFN Associated file has standard protection; or -1 Resource accessible only by processes in job; or -2 Resource accessible by any job on system; or

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DEQ

-3 Resource accessible only by  
enabled WHL/OPR processes

3	.ENQUC	Pointer to string; or 5B2+33-bit user code
4	.ENQRS	<# of resources in pool>,,<# requested>; or 0,,<group number> if only one resource of specific type
5	.ENQMS	Address of a resource mask block
n-4		<flags & level number>,,[JFN][-1][-2][-3]
n-3		Pointer to string; or 5B2+33-bit user code
n-2		<# of resources in pool>,,<# requested> or 0,,<group number>
n-1		Address of a resource mask block

DEVST JSYS 121

FUNCTION

Translates the given device designator to its corresponding  
ASCIZ device name string (excluding colon).

CALLING SEQUENCE

AC1: Destination designator  
AC2: Device designator

RETURNS +1: Failure, error code in AC1  
+2: Success, updated byte pointer in AC1, if  
pertinent

DFIN JSYS 234

FUNCTION

Inputs a double-precision, floating-point number, rounding  
if necessary.

CALLING SEQUENCE

AC1: Source designator

RETURNS +1: Failure, error code in AC4 and updated string  
pointer in AC1, if pertinent  
+2: Success, double-precision, floating-point  
number in AC2 and AC3 and updated byte  
pointer in AC1, if pertinent

DFOUT JSYS 235

FUNCTION

Outputs a double-precision, floating-point number.

CALLING SEQUENCE

AC1: Destination designator  
AC2: 1st word of a normalized, double-precision,

floating-point number  
AC3: 2nd word of a normalized, double-precision,  
floating-point number  
AC4: Format control word

RETURNS +1: Failure, error code in AC4 and updated string  
pointer in AC1, if pertinent.  
+2: Success, updated byte pointer in AC1, if  
pertinent

DIAG JSYS 530

FUNCTION

Reserves/releases a channel and either a single device or  
all devices attached to that channel.

RESTRICTIONS

Requires enabled WHEEL, OPERATOR, or MAINTENANCE capability.

CALLING SEQUENCE

AC1: -<length of argblk>,,<address of argblk>

RETURNS +1: Failure, error code in AC1  
+2: Success

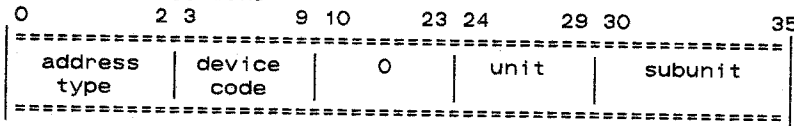
FUNCTION CODES

Code	Symbol	Meaning/Argblk
1	.DGACU	Assign channel and a single device; release device after time limit specified 0 Function code 1 Device address 2 Time limit in mss
2	.DGACH	Assign the channel and all devices 0 Function code 1 Device address
3	.DGRCH	Release channel and all assigned devices 0 Function code 1 Device address
4	.DGSCP	Set up channel program 0 Function code 1 Device address 2 Channel control word 0 3 Channel control word 1 n+2 Channel control word n
5	.DGRCP	Release channel program 0 Function code 1 Device address
6	.DGGCS	Return status of channel 0 Function code 1 Device address
100	.DGGEM	Get memory (for TGHA) 0 Function code 1 1st page in user address space

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 DIAG

- 2 1st physical memory page
- 3 Number of pages
- 4 User address of AR/ARX parity trap routines
- 101 .DGREM Release memory (for TGHA)
  - 0 Function code
- 102 .DGPDL Inform the monitor that a device previously unknown is now online
  - 0 Function code
  - 1 Primary channel number
  - 2 Primary unit number
  - 3 Primary controller number; -1 if no controller
  - 4 Alternate channel number
  - 5 Alternate unit number
  - 6 Alternate controller number; -1 if no controller

DEVICE ADDRESS WORD



DIBE JSYS 212

FUNCTION

Dismisses the process until the designated file input buffer is empty.

CALLING SEQUENCE

AC1: File designator

RETURNS +1: Always

DIC JSYS 133

FUNCTION

Deactivates the specified software interrupt channels.

AC1: Process handle

AC2: 36-bit word (1B<sub>n</sub> means deactivate channel n)

RETURNS +1: Always

DIR JSYS 130

FUNCTION

Disables the software interrupt system for a process.

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Always

DIRST JSYS 41

FUNCTION

Translates the specified 36-bit user or directory number to its corresponding string and writes it to the given destination.

CALLING SEQUENCE

AC1: Destination designator

AC2: User or directory number

RETURNS +1: Failure, with error code in AC1.  
+2: Success, string written to destination,  
updated string pointer, if pertinent, in AC1

DISMS JSYS 167

FUNCTION

Dismisses this process for the specified amount of time.

CALLING SEQUENCE

AC1: Number of mss. for which the process is to be dismissed

RETURNS +1: When the elapsed time is up

DOBE JSYS 104

FUNCTION

Dismisses the process until the designated file output buffer is empty.

CALLING SEQUENCE

AC1: Destination designator

RETURNS +1: Always

DSKAS JSYS 244

FUNCTION

Assigns or deassigns specific disk addresses.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: B0(DA%DEA) Deassign specified address  
B1(DA%ASF) Assign a free page near specified address  
B2(DA%CNV) Convert specified address according to setting of B3(DA%HWA)  
B3(DA%HWA) Specified address is a hardware address  
B4(DA%INI) Initialize a private copy of bit table  
B5(DA%WRT) Write private copy of bit table to new bit table file  
B18-35(DA%ADR) Disk address  
AC2: Device designator of structure; not required if DA%CNV is on in AC1

RETURNS +1: Failure, address already assigned or cannot be assigned  
+2: Success, address assigned in AC1

DSKOP JSYS 242

FUNCTION

Allows the process to reference physical disk addresses when performing disk transfers.

RESTRICTIONS

Requires WHEEL, OPERATOR, or MAINTENANCE capabilities enabled.

CALLING SEQUENCE

AC1: B0-1(DOP%AT) Field indicating the address type  
1(.DOPPU) for physical channel/unit addresses, with  
B2-6(DOP%CN) channel number  
B7-12(DOP%UN) unit number  
B13-35(DOP%UA) unit address  
2(.DOPSR) for structure or relative addresses, with  
B2-10(DOP%SN) structure designator  
0 PS:  
-1 structure designator in AC4  
B11-35(DOP%RA) relative address  
AC2: <control flags>, <number of words to transfer>  
B9(DOP%NF) Use channel/controller/unit #s in AC4  
B10(DOP%EO) Error if unit off-line  
B11(DOP%IL) Inhibit error logging



B12(DOP%IR) Inhibit error recovery  
B14(DOP%WR) Write data to disk; if off, read data  
from disk  
B18-35(DOP%CT) Word count  
AC3: Address in caller's address space from which data is  
read or into which data is written  
AC4: Device designator of structure if -1 in DOP%SN;  
physical channel, controller, and unit numbers if  
1B9(DOP%NF) with  
BO-11(DOP%C2) Channel number  
B12-23(DOP%K2) Controller number  
B13-35(DOP%U2) Unit number

RETURNS +1: Always, AC1 is nonzero if an error occurred,  
or zero if no error occurred.

DTACH JSYS 115

FUNCTION  
Detaches the controlling terminal from the current job.

RETURNS +1: Always

DTI JSYS 140

FUNCTION  
Deassigns a terminal interrupt code.

CALLING SEQUENCE  
AC1: Terminal interrupt code

RETURNS +1: Always

DUMPI JSYS 65

FUNCTION  
Reads data words into memory in unbuffered data mode.

RESTRICTIONS  
File must be open for data mode 17

CALLING SEQUENCE  
AC1: JFN  
AC2: BO(DM%NWT) Do not wait for completion of requested  
operation  
B18-35(DM%PTR) Address of command list in memory

RETURNS +1: Failure, error code in AC1, pointer to bad  
command in AC2  
+2: Success, pointer in AC2 updated to last

command

COMMAND LIST FORMAT

Entry	Meaning
IOWD <u>n</u> , <u>loc</u>	Causes <u>n</u> words to be transferred from file to locations <u>loc</u> through <u>loc+n</u> -1 of process address space
XWD 0, <u>y</u>	Causes next command to be taken from location <u>y</u>
0	Terminates the command list

DUMPO JSYS 66

FUNCTION

Writes data words from memory in unbuffered data mode.

RESTRICTIONS

File must be open for data mode 17

CALLING SEQUENCE

AC1: JFN	
AC2: BO(DM%NWT)	Do not wait for completion of requested operation
B18-35(DM%PTR)	Address of command list in memory

RETURNS +1: Failure, error code in AC1, pointer to bad command in AC2  
+2: Success, pointer in AC2 updated to last command

COMMAND LIST FORMAT

Entry	Meaning
IOWD <u>n</u> , <u>loc</u>	Causes <u>n</u> words to be transferred from file to locations <u>loc</u> through <u>loc+n</u> -1 of process address space
XWD 0, <u>y</u>	Causes next command to be taken from location <u>y</u>
0	Terminates command list

DVCHR JSYS 117

FUNCTION

Returns the characteristics of the specified device.

CALLING SEQUENCE

AC1: JFN or device designator

RETURNS +1: Always, with  
AC1: Device designator (even if JFN given)  
AC2: Device characteristics word  
AC3: <job # to which assigned>, <unit #>  
<job #>, -1 if no units  
-1, <[unit #][ -1]> if not assigned  
-2, <[unit #][ -1]> if assigned to

device allocator

DEVICE	CHARACTERISTICS	WORD
Bit	Symbol	Meaning
0	DV%OUT	Device can do output
1	DV%IN	Device can do input
2	DV%DIR	Device has a directory
3	DV%AS	Device is assignable with ASND
4	DV%MDD	Device has multiple directories
5	DV%AV	Device is available or assigned to this job
6	DV%ASN	Device is assigned by ASND
8	DV%MNT	Device is mounted
9-17	DV%TYP	Device type
	0	.DVDSK Disk
	2	.DVMTA Magtape
	7	.DVLPT Line printer
	10	.DVCDR Card reader
	11	.DVFE Front-end pseudo-device
	12	.DVTTY Terminal
	13	.DVPTY Pseudo-terminal
	15	.DVNUL Null device
	16	.DVNET ARPA network
	22	.DVDCN DECnet active component
	23	.DVSRV DECnet passive component
20-35	DV%MOD	Data mode in which device can be opened
	B20	DV%M17 Dump mode
	B27	DV%M10 Image mode
	B34	DV%M1 Small buffer mode
	B35	DV%MO Normal mode

EIR JSYS 126

FUNCTION

Enables the software interrupt system for a process.

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Always

ENQ JSYS 513

FUNCTION

Requests access to a specific resource by placing a request in the queue for that resource.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability for some functions. In non-zero sections, OWGBPs must specify 7-bit bytes.

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ENQ

CALLING SEQUENCE

AC1: Function code  
AC2: Address of argblk

RETURNS +1: Failure, error code in AC1  
+2: Success

FUNCTION CODES

Code	Symbol	Meaning
0	.ENQBL	Queue requests and block process until all requested locks are acquired
1	.ENQAA	Queue requests and acquire locks only if all requested resources are immediately available
2	.ENQSI	Queue requests
3	.ENQMA	Modify access of a previously queued request

ARGUMENT BLOCK

Word	Symbol	Meaning
0	.ENQLN	B0-5 Header length B6-17 # of locks B18-35 Length of argblk
1	.ENQID	<PSI channel number>,,<request ID>
2	.ENQLV	<flags & level number>,,<[JFN][-1][-2][-3]> B0(EN%SHR) Access to this resource is to be shared B1(EN%BLN) Ignore level number of resource B2(EN%NST) Allow ownership of this lock to be nested B3(EN%LTL) Allow a long-term lock on this resource B9-17(EN%LVL) Level number associated with this resource B18-35 JFN Associated file has standard protection -1 Resource accessible only by processes in job -2 Resource accessible by any job on system -3 Resource accessible only by enabled WHL/OPR processes
3	.ENQUC	Pointer to string or a 5B2+33-bit user code
4	.ENQRS	<# of resources in pool>,,<# requested> or 0,,<group number> if only one resource of type exists
5	.ENQMS	Address of a resource mask block
n-4		<flags & level number>,,[JFN][-1][-2][-3]
n-3		Pointer to string or 5B2+33-bit user code
n-2		<# of resources in pool>,,<# requested> or 0,,<group number>
n-1		Address of a resource mask block

ENQC JSYS 515

**FUNCTION**

Returns the current status of the given resource and obtains information about the state of the queues.

**RESTRICTIONS**

Requires enabled WHEEL or OPERATOR capability for some functions. In non-zero sections, OWGBPs must specify 7-bit bytes.

**CALLING SEQUENCE**

AC1: Function code  
AC2: Address of argblk  
AC3: Address of block for status information (.ENQCS only)

**RETURNS** +1: Failure, error code in AC1  
+2: Success

**FUNCTION CODES**

Code	Symbol	Meaning
0	.ENQCS	Returns status of specified resources
1	.ENQCG	Return ENQ/DEQ quota for specified job
2	.ENQCC	Change ENQ/DEQ quota for specified job (enabled WHL)
3	.ENQCD	Dump ENQ/DEQ locks and queue entries into argblk (enabled WHL)

**STATUS BLOCK**

Word	Meaning
0	Resource status flags
	BO(EN%QCE) Error has occurred in corresponding resource request; B18-35 contain error code
	B1(EN%QCO) Process owns the lock
	B2(EN%QCQ) Process is in queue waiting for this resource
	B3(EN%QCX) Lock has been allocated for exclusive access
	B4(EN%QCB) Process is in queue waiting for exclusive access to resource
	B9-17(EN%LVL) Level number of the resource
	B18-35(EN%JOB) Job # of lock owner
1	36-bit time stamp
2	<# of processes with lock>,,<request ID>

**ARGUMENT BLOCK**

Function	Word	Contents
.ENQCS		See ENQ JSYS for argblk
.ENQCG	0	<ignored>,,<job #>
.ENQCC	0	<new quota>,,<job #>
.ENQCD	0	Length of block
	n	Returned data

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ENQC

Data Returned by Function .ENQCD

Lock Data

Word	Symbol	Meaning
0	.ENQDF	B0-8 Flags B9-17 Level number B18-35 OFN, 40000+job #, -2, or -3
1	.ENQDR	<total resources in pool>,,<# remaining> or 0,,<group number>
2	.ENQDT	Time stamp of last request locked
3	.ENQDC	User code of lock or beginning of string

Queue Data

0	.ENQDF	B0-8 Flags B9-17 PSI channel B18-35 job # queue entry creator
1	.ENQDI	<group # or number requested>,,<request ID>

Flags Returned in Word 0 for Function .ENQCD

Bit	Symbol	Meaning
B0	EN%QCL	Block contains lock data (if off, queue data)
B1	EN%QCO	Process owns the lock
B2	EN%QCT	Lock contains a text string
B3	EN%QCX	Lock is for exclusive access
B4	EN%QCB	Process is blocked until exclusive access is available

EPCAP JSYS 151

FUNCTION

Enables the capabilities for the specified process.

CALLING SEQUENCE

AC1: Process handle  
AC2: Capabilities the process can enable  
AC3: Capabilities to enable

RETURNS +1: Always

ERSTR JSYS 11

FUNCTION

Translates a TOPS-20 error number to its corresponding text string and writes the string to the specified destination.

CALLING SEQUENCE

AC1: Destination designator  
AC2: <process handle>,,<error number>; -1 for most recent  
AC3: -<maximum number of bytes to transfer>,,0;  
or 0 for no limit

RETURNS +1: Failure, undefined error number  
+2: Failure, string size out of bounds or invalid

destination designator  
+3: Success

ESOUT JSYS 313

FUNCTION  
Outputs an error string.

CALLING SEQUENCE  
AC1: Byte pointer to ASCII error string

RETURNS +1: Always, with updated byte pointer in AC1

FFFFP JSYS 31

FUNCTION  
Finds the 1st free page in the specified file.

CALLING SEQUENCE  
AC1: <starting page number>,,JFN

RETURNS +1: Always, with  
AC1: JFN,,<page number>  
or -1 if there is no free page

FFORK JSYS 154

FUNCTION  
Freezes one or more processes.

CALLING SEQUENCE  
AC1: Process handle

RETURNS +1: Always

FFUFP JSYS 211

FUNCTION  
Finds the first used page of the file at or beyond the  
specified page number.

CALLING SEQUENCE  
AC1: JFN,,<starting page number>

RETURNS +1: Failure, error code in AC1  
+2: Success, page number in the right half of AC1

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FLHST

FLHST JSYS 277

FUNCTION

"Flushes" an ARPANET host, causing the NCP tables containing that host's status information to be purged of all information regarding previous partially terminated connections.

RESTRICTIONS

For ARPANET systems only. Requires enabled WHEEL, OPERATOR, or NET WIZARD capability.

CALLING SEQUENCE

AC1: Number of host to be flushed

RETURNS +1: Always

FLIN JSYS 232

FUNCTION

Inputs a floating-point number from the specified source.

CALLING SEQUENCE

AC1: Source designator

RETURNS +1: Failure, with  
AC1: Updated byte pointer, if pertinent  
AC3: Error code  
+2: Success, with  
AC1: Updated byte pointer, if pertinent  
AC2: Single-precision, floating-point number

FLOUT JSYS 233

FUNCTION

Outputs a floating-point number to the specified destination.

CALLING SEQUENCE

AC1: Destination designator

AC2: Normalized, single-precision, floating-point number

AC3: Format control word

RETURNS +1: Failure, with  
AC1: Updated byte pointer, if pertinent  
AC3: Error code  
+2: Success, with  
AC1: Updated byte pointer, if pertinent



GACCT JSYS 546

FUNCTION

Returns the current account for the specified job.

RESTRICTIONS

Requires enabled WHEEL, OPERATOR, or CONFIDENTIAL INFORMATION ACCESS capability.

CALLING SEQUENCE

AC1: Job #, or -1 for current job

AC2: Byte pointer to string for alphanumeric account designator (if any)

RETURNS +1: Always, with updated pointer to account string in AC2

GACTF JSYS 37

FUNCTION

Returns the account designator to which the specified file is being charged.

CALLING SEQUENCE

AC1: JFN

AC2: Byte pointer to string for account (if any)

RETURNS +1: Failure, error code in AC1  
+2: Success, updated byte pointer in AC2  
+3: Success, 5B2+account number returned in AC2

GCVEC JSYS 300

FUNCTION

Returns the entry vector and the UUD locations for the compatibility package.

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Always, with  
AC1: B0-17 Entry vector length  
B18-35 Entry vector address  
AC2: <UUD location>,,<PC location>

GDSKC JSYS 214

FUNCTION

Returns information on the given structure's disk usage and availability.

CALLING SEQUENCE

AC1: Device designator (structure) or DSK: for connected structure

RETURNS +1: Always, with  
AC1: Number of pages in use  
AC2: Number of pages available

GDSTS JSYS 145

FUNCTION

Returns the status of a device for user I/O.

CALLING SEQUENCE

AC1: JFN

RETURNS +1: Always, with  
AC2: Device-dependent status bits  
AC3: Device-dependant  
For magtape:  
<# of hardware bytes transferred>,,0  
For lineprinter:  
last value of page counter register or  
-1 if no page counter register  
For ARPANET network-connection files:  
AC2: Connection state (01-16) in BO-3  
AC3: Foreign host number (octal)  
AC4: Foreign socket number (octal)

GDVEC JSYS 542

FUNCTION

Returns the entry vector for the Record Management System (RMS).

RESTRICTIONS

Requires RMS software (currently available only with BASIC and COBOL).

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Always, with  
AC2: B0-17 Entry vector length  
B18-35 Entry vector address

GET JSYS 200

**FUNCTION**

Gets a save file, copying or mapping it into the process as appropriate, and updates the monitor's data base for the process by copying the entry vector and the list of program data vector addresses (PDVA's) from the save file.

**RESTRICTIONS**

Some functions require WHEEL or OPERATOR capability.

**CALLING SEQUENCE**

AC1: BO-17 Process handle  
 B19(GT%ADR) Use memory address limits given in AC2  
 B20(GT%PRL) Preload pages being mapped  
 B21(GT%NOV) Do not overlay existing pages; return error  
 B22(GT%ARG) If on, AC2 contains address of argblk  
 B24-35(GT%JFN) JFN of the save file  
 AC2: <lowest process page #>,,<highest process page #>  
 or address of argblk

**RETURNS** +1: Always

**ARGUMENT BLOCK**

Word	Symbol	Meaning
0	.GFLAG	Flags for remainder of argblk
	0	GT%LOW .GLOW contains lowest page number within process to use
	1	GT%HGH .GHIGH contains highest page number within process to use
	2	GT%BAS .GBASE contains the section number to use
	3	GT%CCH Clear system's program cache (WHL/OPR)
	4	GT%CSH Place in cache the program name being loaded into memory (WHL/OPR)
1	.GLOW	Lowest process page number into which file page gets loaded
2	.GHIGH	Highest process page number into which file page gets loaded
3	.GBASE	Section number into which file pages are loaded (single-section save files only)

GETAB JSYS 10

**FUNCTION**

Returns a word from the specified system table.

**RESTRICTIONS**

Requires GETAB capability (bit SC%GTB in process capability word).

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GETAB

CALLING SEQUENCE

AC1: <index into table>,,<table number>

RETURNS +1: Failure, error code in AC1  
+2: Success, 36-bit word from table in AC1

GETER JSYS 12

FUNCTION

Returns the most recent error condition encountered in a process.

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Always, with  
AC2: <process handle>,,<most recent error>

GETJI JSYS 507

FUNCTION

Obtains information about the specified job.

CALLING SEQUENCE

AC1: Job #; -1 for current job; or 400000+TTY number  
AC2: -<length of destination block>,,<address of block>  
AC3: Offset of 1st entry desired from job information table

RETURNS +1: Failure, error code in AC1  
+2: Success, with updated pointer in AC2 and requested entries stored in specified block

JOB INFORMATION TABLE

Word	Symbol	Meaning
0	.JIJNO	Job #
1	.JITNO	Job's terminal number; -1 if detached
2	.JIUNO	Job's user number
3	.JIDNO	Job's connected directory number
4	.JISNM	Subsystem name (SIXBIT)
5	.JIPNM	Program name (SIXBIT)
6	.JIRT	Runtime (in mss.)
7	.JICPJ	Controlling PTY job #; -1 if no PTY
10	.JIRTL	Runtime limit; -1 if no time limit
11	.JIBAT	If -1, job is controlled by batch
12	.JIDEN	Default magtape density
13	.JIPAR	Default magtape parity
14	.JIDM	Default magtape data mode
15	.JIRS	Default magtape record size in bytes
16	.JIDFS	If 1, deferred spooling in effect
17	.JILNO	Job's logged-in directory number
20	.JISRM	Byte pointer to destination for job's session remark

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GETJI

21	.JILLN	Date and time of user's last login before the current job
22	.JISRT	Job CPU time at start of last session
23	.JISCT	Console time at start of last session
24	.JIT20	0 if job is at EXEC level; -1 if at program level
25	.JISTM	Time when job was created; -1 if system time/date not set when job created
26	.JIBCH	Batch stream number and batch flags
	BO-1	OB%WTO Write-to-operator capabilities
		0 .OBALL WTO and WTOR
		1 .OBNWR No WTDR allowed
		2 .OBNDM No message allowed
	B10	OB%BSS OB%BSN contains batch-stream #
	B11-17	OB%BSN Batch-stream #
27	.JILLO	Logical location (node name)

GETNM JSYS 177

FUNCTION

Returns the name of the program currently being used by the job.

RETURNS +1: Always, with SIXBIT program name in AC1

GETOK% JSYS 574

FUNCTION

Requests access to the specified system resource from the installation's access-control program.

CALLING SEQUENCE

AC1: Function code  
AC2: Address of argblk  
AC3: Length of the argblk  
AC4: Job # or user number request is for

RETURNS +1: Always, with  
0 in Word 0 of status block if access granted  
1B18+error number in Word 0 of status block if request denied

FUNCTION CODES

Code	Symbol	Meaning/Argblk
1	.GOASD	Assign a device
		0 .GEERB Error block address
		1 .GEADD Device designator
2	.GDCAP	Enable capabilities (right half privileges only)
		0 .GEERB Error block address
		1 .GENCP New capability word
3	.GOCJB	Allow CRJOB JSYS to be executed

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GETOK%

		0	GEERB	Error block address
4	.GOLOG			Allow LOGIN
		0	.GEERB	Error block address
		1	.GELUN	User number
5	.GOCFK			Allow CFORK JSYS to be executed
		0	.GEERB	Error block address
		1	.GEFCT	# of forks already in use by job
6	.GOTBR			Allow setting of terminal baud rate
		0	.GEERB	Error block address
		1	.GELIN	Line number
		2	.GESPD	<input speed>, <output speed>
7	.GOLGO			Inform access-control program of a logout
		0	.GEERB	Error block address
		1	.GEUSD	Number of pages used
		2	.GEQUO	Directory quota
		3	.GERLG	Job # logging out; -1 if caller
10	.GOENQ			Allow setting of ENQ quota
		0	.GEERB	Error block address
		1	.GEEQU	Desired quota
		2	.GEEUN	Job #
11	.GOCRD			Allow directory creation
		0	.GEERB	Error block address
12	.GOSMT			Allow MOUNT of structure
		0	.GEERB	Error block address
		1	.GESDE	Device designator
13	.GOMDD			Allow entry to MDDT
		0	.GEERB	Error block address
14	.GOCLS			Set scheduler class for a job
		0	.GEERB	Error block address
		1	.GEJOB	Job #
		2	.GECLS	Class desired
15	.GOCLO			Set scheduler class at login
		0	.GEERB	Error block address
16	.GDMTA			MT: access request
		0	.GEERB	Error block address
		1	.GEACC	Access code from HDR1 label
		2	.GEUSN	User number
		3	.GEUNT	MT: unit number
		4	.GEACD	Desired access bits (FP%xxx)
		5	.GELTP	Label type (.LTxxx)
17	.GOACC			Allow ACCESS or CONNECT
		0	.GEERB	Error block address
		1	.GOACO	Flags from ACCES JSYS
		2	.GOAC1	Directory number
20	.GOOAD			Allow device assignment due to OPENF
		0	.GEERB	Error block address
		1	.GEADD	Device designator
21	.GODNA			Allow DECNET access
		0	.GEERB	Error block address
22	.GOANA			Allow ARPANET access
		0	.GEERB	Error block address
23	.GOATJ			Allow ATTACH
		0	.GOTJB	Target job #
		1	.GEADD	Source TTY number
400000+n				Customer-reserved functions

ERROR BLOCK FORMAT (RET)

Word	Symbol	Contents
0	.GESIZ	Count of words in block (including this word)
1	.GEERN	Error number
2	.GEPTR	Byte pointer to error string location
3	.GEBSZ	Maximum bytes user can accept in error string

GEVEC JSYS 205

FUNCTION

Returns the section-relative entry vector of the specified process.

RESTRICTIONS

Process must run in a single section of memory.

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Always, with entry vector word in AC2

GFRKH JSYS 164

FUNCTION

Gets a handle on a process that currently is not known to the calling process but is known to another process.

CALLING SEQUENCE

AC1: Handle of process that has handle on desired process  
AC2: Process handle relative to process in AC1 that refers to desired process

RETURNS +1: Failure, with error code in AC1  
+2: Success, with  
AC1: Relative handle of the desired process

GFRKS JSYS 166

FUNCTION

Returns the process structure of the current job from a given process downward.

RESTRICTIONS

Requires WHEEL or OPERATOR capability for some functions.

CALLING SEQUENCE

AC1: Process handle of the starting point  
AC2: BO(GF%GFH) Return relative process handles for each process  
B1(GF%GFS) Return status for each process

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AC3: -<word count in PSB>,,<address of PSB>

RETURNS +1: Failure, error code in AC1  
+2: Success, all process handles are returned

GFUST JSYS 550

FUNCTION

Returns the name of either the author of the file or the user who last wrote to the file.

CALLING SEQUENCE

AC1: <function code>,,JFN  
AC2: Pointer to author/user string

RETURNS +1: Always, with an updated byte pointer in AC2

FUNCTION CODES

Code	Symbol	Meaning
0	.GFAUT	Return name of author of file
1	.GFLWR	Return name of user who last wrote to file

GIVOK% JSYS 576

FUNCTION

Allows a privileged access-control program to permit or refuse a user program's access to a specified system resource.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: Request number (from RCVOK% message)  
AC2: 0 to permit request  
1B18 + error number to refuse request  
AC3: Pointer to ASCIZ message string (80. characters maximum); or 0

RETURNS +1: Always

GJINF JSYS 13

FUNCTION

Returns information pertaining to the current job.

RETURNS +1: Always, with  
AC1: User number under which job is running  
AC2: Directory number to which job is connected



AC3: Job #  
AC4: TTY # attached to job; or -1 if none

GNJFN JSYS 17

FUNCTION

Assigns the JFN to the next file in a group of files that have been specified with wildcard characters.

CALLING SEQUENCE

AC1: Indexable file handle returned by GTJFN (flags,,JFN)

RETURNS +1: Failure; occurs on 1st call to GNJFN with no flags indicating wildcard fields on in B18-35 of AC1 (JFN released if no more files in group)  
+2: Success, same JFN is assigned to next file in group, with  
AC1: B13 GN%STR Structure changed  
B14 GN%DIR Directory changed  
B15 GN%NAM Name changed  
B16 GN%EXT File type changed

GPUJFN JSYS 206

FUNCTION

Returns the primary JFNs of the specified process.

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Always, with  
AC2: B0-17 Primary input JFN  
B18-35 Primary output JFN

GTAD JSYS 227

FUNCTION

Returns the current date in the internal system format.

RETURNS +1: Always, with  
AC1: Day,,<fraction of day> or  
-1 if system date not set

GTDAL JSYS 305

FUNCTION

Returns the disk allocation for the specified directory.

CALLING SEQUENCE

AC1: Directory number; -1 for connected directory

RETURNS

+1: Always, with

AC1: Working storage limit for directory

AC2: Number of pages being used

AC3: Permanent storage limit for directory

GTDIR JSYS 241

FUNCTION

Returns information about the given directory.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: Directory number; or 0 for system default settings

AC2: Address of block to store directory information

AC3: Byte pointer to password string

RETURNS

+1: Always, with updated byte pointer in AC3

ARGUMENT BLOCK (RET)

Word	Symbol	Meaning
0	.CDLEN	Length of argblk; defaults to 15
1	.CDPSW	Byte pointer to password string
2	.CDLIQ	Working disk storage quota
3	.CDPRV	Capabilities for this user
4	.CDMOD	Mode word
	BO(CD%DIR)	Directory is files-only
	B1(CD%ANA)	Obsolete
	B2(CD%RLM)	Repeat messages from file <SYSTEM>MAIL.TXT each time user logs in
	B7(CD%DAR)	File should be archived rather than migrated when on-line expiration date reached
5	.CDLOQ	Permanent disk storage quota
6	.CDNUM	Directory number
7	.CDFPT	Default file protection (18 bits, R-J)
10	.CDDPT	Directory protection (18 bits, R-J)
11	.CDRET	Default generation retention count
12	.CDLLD	Date of last login
13	.CDUGP	Address of user group list for this directory
14	.CDDGP	Address of directory group list
15	.CDSOQ	Maximum number of sub-directories allowed
16	.CDCUG	Address of user group list
17	.CDDAC	0

20 .CDDNE Default on-line expiration date and time  
21 .CDDFE Default off-line expiration date and time

GTFDB JSYS 63

FUNCTION

Returns some or all of the file descriptor block (FDB) for the specified file.

CALLING SEQUENCE

AC1: JFN  
AC2: <# of FDB words to read>,,<offset of 1st word desired>  
AC3: Address of block for returned data

RETURNS +1: Always

GTHST JSYS 273

FUNCTION

Obtains information about ARPANET hosts.

RESTRICTIONS

For ARPANET systems only

CALLING SEQUENCE

AC1: Function code  
AC2: Function-specific argument  
AC3: Function-specific argument  
AC4: Function-specific argument

RETURNS +1: Failure, error code in AC1  
+2: Success, data returned in ACs

FUNCTION CODES

Code	Symbol	Function
0	.GTHSZ	Returns host table sizes Returns AC2: -<number host names>,,0 AC3: -<length of HSTSTS table>,,0 AC4: Local host number (in 32-bit Internet format)
1	.GTHIX	Returns name string associated with host Arguments AC2: Byte pointer to destination for name string AC3: Index into name table (returned by GETAB) Returns AC2: Updated byte pointer AC3: Host number AC4: Host status; if name is a nickname, HS%NCK is on

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- 2 .GTHNS Returns primary name for given host number  
 Arguments  
 AC2: Byte pointer to destination for primary name  
 AC3: Host number  
 Returns  
 AC2: Updated byte pointer  
 AC3: Host number  
 AC4: Host status
- 3 .GTHSN Translates specified host name string to its host number  
 Arguments  
 AC2: Byte pointer to host name string  
 Returns  
 AC2: Updated byte pointer  
 AC3: Host number  
 AC4: Host status
- 4 .GTHHN Returns current status of given host  
 Arguments  
 AC3: Host number  
 Returns  
 AC4: Host status
- 5 .GTHHI Returns host number and host status  
 Arguments  
 AC3: Index into HSTSTS (returned by GETAB)  
 Returns  
 AC3: Host number  
 AC4: Host status

FLAGS IN HOST STATUS WORD

Bits	Symbol	Meaning
1B0	HS%UP	Host is up
1B1	HS%VAL	Valid status
B2-4	HS%DAY	Day when up if currently down
B5-9	HS%HR	Hour
B10-13	HS%MIN	5 minute interval
B14-17	HS%RSN	Reason
1B18	HS%SRV	Host is server
1B19	HS%USR	Host is user
1B20	HS%NCK	Nickname
B21-26	HS%STY	System type mask
1B27	HS%NEW	RAS, RAR, RAP, etc

System Type Flags (HS%STY)

Bits	Symbol	Meaning
1B26	.HS10X	TENEX
2B26	.HSITS	ITS
3B26	.HSDEC	TOPS-10
4B26	.HSTIP	TIP
5B26	.HSMTIP	MTIP
6B26	.HSELF	ELF
7B26	.HSANT	ANTS
10B26	.HSMLT	MULTICS
11B26	.HST20	TOPS-20
12B26	.HSUNX	UNIX

GTJFN JSYS 20

FUNCTION

Returns a JFN for the specified file. The short form accepts the filespec from a string in memory or from a file, but not from both; the long form accepts the filespec from either memory or a file (if both are provided, the string in memory is used first).

CALLING SEQUENCE

AC1: Flags,,generation (short form)  
O,,<address of argblk> (long form)  
AC2: Source designator from which to obtain filespec (short form)  
Byte pointer to ASCIZ filespec string; or 0 if none (long form)

RETURNS +1: Failure, error code in AC1  
+2: Success, with  
AC1: Flags,,JFN  
AC2: Updated byte pointer, if pertinent

GTJFN FLAG BITS

Bit	Symbol	Meaning
0	GU%FOU	File is to be assigned next higher generation
1	GU%NEW	File must not exist (no effect on a parse-only JFN)
2	GU%OLD	File must exist (no effect on a parse-only JFN)
3	GU%MSG	Print message after filespec if user types ESC; possible messages: !NEW FILE! !NEW GENERATION! !OLD GENERATION! !OK! !CONFIRM!
4	GU%CFM	Require confirmation from user (if GU%FNS is on) to verify filespec
5	GU%TMP	File specified is a temporary file
6	GU%NS	Search only the 1st specification in a multiple logical name assignment for file
7	GU%ACC	JFN cannot be accessed by inferior processes
8	GU%DEL	Consider deleted files when searching for file
9-10	GU%JFN	Associate JFN in word 10 (.GUJFN) of argblk with filespec according to value (long form only) 0(.GJDNU) Ignore JFN supplied 2(.GJERR) Assign JFN supplied; return error if not available 3(.GJALT) Assign JFN supplied; assign alternate if not available
11	GU%IFG	Allow use of wildcards in fields of filespec
12	GU%DFG	Associate JFN with filespec string only, not file
13	GU%FLG	Return flags in the left half of AC1 if

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		successful
14	GJ%PHY	Ignore job-wide logical names
15	GJ%XTN	Argblk contains more than 10 words (long form only)
16	GJ%FNS	If on, AC2 contains <input JFN>,,<output JFN> if off, AC2 contains byte pointer to ASCIZ filespec string (short form only)
17	GJ%SHT	Must be on for short form GTJFN; must be off for long form GTJFN
18-35		Generation of file or one of:
	0(.GJDEF)	Use next higher generation if 1BO(GJ%FOU); use highest existing generation if OBO(GJ%FOU)
	-1(.GJNHG)	Use next higher generation if none supplied
	-2(.GJLEG)	Use lowest existing generation
	-3(.GJALL)	Use all generations and assign JFN to 1st file in group (GJ%IFG must be set)

ARGUMENT BLOCK (Long Form Only)

Word	Symbol	Meaning
0	.GJGEN	Flags,,<generation>
1	.GJSRC	<input JFN>,,<output JFN>
2	.GJDEV	Byte pointer to ASCIZ default device string; or 0 for user's connected structure
3	.GJDIR	Byte pointer to ASCIZ default directory string; or 0 for user's connected directory
4	.GJNAM	Byte pointer to ASCIZ default filename string; if 0, string in AC2 or input JFN must supply filename
5	.GJEXT	Byte pointer to ASCIZ default file type string; or 0 for null file type
6	.GJPRO	Byte pointer to ASCIZ default protection string; or 0 for default directory protection or protection of next lower generation
7	.GJACT	Byte pointer to ASCIZ default account string; or 0 for user's LOGIN account (unless changed)
10	.GJJFN	JFN to associate with filespec if GJ%JFN is set in word 0 (.GJGEN)
11	.GJF2	Flags,,<count of remaining words in block> if GJ%XTN is set in word 0 (.GJGEN) (OPT)
	B0(G1%RND)	Return if filename buffer empty and user attempts to delete character
	B2(G1%NLN)	Filenames limited to 6 characters, file types to 3 characters; generation, temporary status, protection, and account fields not allowed in string or input data
	B3(G1%RCM)	Return confirmation message in destination buffer
	B4(G1%RIE)	Return if input buffer empty, and user attempts to delete character

	B5(G1%IIN)	Consider invisible files when searching for file
	B6(G1%SLN)	Prohibit expansion of logical names
12	.GJCPP	Byte pointer to destination string for copy of user's typescript
13	.GJPCP	Number of bytes available in destination string; if 0, 130 bytes assumed
14	.GJRTY	Byte pointer to CTRL/R buffer
15	.GJBFP	Obsolete
16	.GJATR	Pointer to filespec attribute block

ATTRIBUTE BLOCK (Long Form Only)

Word	Contents
0	Count of words in block (including this word)
1	Byte pointer to argument string
1+n	Byte pointer to argument string

ATTRIBUTE VALUES (Long Form Only)

Keyword	Attribute Value
A:	Installation-defined account string
BDATA:	DECnet binary optional data
BLOCK-LENGTH:	Magnetic-tape block length (in bytes)
BPASSWORD:	DECnet binary password
CHARGE:	DECnet account string
DATA:	DECnet optional data
EXPIRATION-DATE:	Magnetic-tape expiration date
FORMAT:	Magnetic-tape record format
	F Fixed-length records
	D Variable-length records
	S Spanned records
	U Binary files with 36-bit words
OFF-LINE	NONE - display-only keyword
P:	File protection value (octal)
PASSWORD:	DECnet password string
POSITION:	File sequence number for positioning magnetic-tape
RECORD-LENGTH:	Magnetic-tape record length (in bytes)
T	NONE - display-only keyword
USERID:	DECnet user ID string

Flags Returned in AC1

Bit	Symbol	Meaning
0	GJ%DEV	Device field of filespec contained wildcards
1	GJ%UNT	Unit field of filespec contained wildcards
2	GJ%DIR	Directory field of filespec contained wildcards
3	GJ%NAM	Filename field of filespec contained wildcards
4	GJ%EXT	File type field of filespec contained wildcards
5	GJ%VER	Generation field of filespec contained wildcards
6	GJ%UHV	File used has highest generation
7	GJ%NHV	File used has next higher generation
8	GJ%ULV	File used has lowest generation

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9	GJ%PRD	Protection field of filespec was given
10	GJ%ACT	Account field of filespec was given
11	GJ%TFS	Filespec is for temporary file
12	GJ%GND	Deleted files were not considered when assigning JFNs
17	GJ%INV	Invisible files were not considered when assigning JFNs

GTRPI JSYS 172

FUNCTION

Returns paging trap information for the specified process.

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Always, with  
AC1: # of pager traps since process started  
AC2: # of page faults since process started  
AC3: Time spent (in mss) in page routines since process started

GTNCP% JSYS 272

FUNCTION

Obtains information about the NCP.

RESTRICTIONS

For ARPANET systems only

CALLING SEQUENCE

AC1: Function code  
AC2: Function-specific argument  
AC3: Function-specific argument  
AC4: Function-specific argument

RETURNS +1: Failure, error code in AC1  
+2: Success, data returned in AC's

FUNCTION CODES

Code	Symbol	Function
0	.GTNSZ	Returns negative number of NCP connections Returns AC2: -<# of NCP connections>,,0 AC3: -<# of NVTs>,,<line # of 1st NVT>
1	.GTNIX	Returns status of connection number Arguments AC2: Connection number AC3: 30-bit address of data block AC4: -<block length>,,<index of 1st item> Returns Data in data block



2 .GTNNI Return status of NVT line number (input connection)  
Arguments  
AC2: NVT line number (input)  
AC3: 30-bit address of data block  
AC4: -<block length>,,<index of 1st item>  
Returns  
Data in data block

3 .GTNNO Return status of NVT connection (output connection)  
Arguments  
AC2: NVT line number (output)  
AC3: 30-bit address of data block  
AC4: -<block length>,,<index of 1st item>  
Returns  
Data in data block

4 .GTNJF Return status of network-connection JFN  
Arguments  
AC2: JFN  
AC3: 30-bit address of data block  
AC4: -<block length>,,<index of 1st item>  
Returns  
Data in data block

FORMAT OF RETURNED DATA BLOCK

Word	Symbol	Contents
0	.NCIDX	NCP connection index
1	.NCFHS	Foreign host
2	.NCLSK	Local socket
3	.NCFSK	Foreign socket
4	.NCFSM	State of connection
5	.NCLNK	Link
6	.NCNVT	NVT, or -1 if none
7	.NCSIZ	Byte size of connection
10	.NCMSG	Message allocation
11	.NCBAL	Bit allocation
12	.NCDAL	Desired allocation
13	.NCBTC	Bits transferred
14	.NCBPB	Bytes per buffer
15	.NCCLK	Time-out countdown
16	.NCSTS	Connection status

GTRPW JSYS 171

FUNCTION

Returns the trap words.

CALLING SEQUENCE

AC1: Process handle

RETURNS

+1: Always, with  
AC1: Status word from last memory trap or 0  
if no traps  
AC2: Last monitor call that had an error

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STATUS WORD

Bit	Meaning
B0(PF%USR)	Page failure - user mode reference
B5(PF%WRT)	Page failure - write reference
B14(TSW%RD)	Trap status - read (always on)
B15(TSW%WT)	Trap status - write (same setting as B5)
B16(TSW%EX)	Trap status - execute (always on)
B17(TSW%MN)	Trap status - monitor mode reference
B18-B35	Address of reference that caused trap

GTSTS JSYS 24

FUNCTION

Returns the status of a file associated with a JFN.

CALLING SEQUENCE

AC1: O,,JFN

RETURNS

+1: Always, with  
AC2: status: OB10, if JFN illegal

JFN STATUS WORD

Bit	Meaning
B0(GS%OPN)	File is open
B1(GS%RDF)	File is open for read access
B2(GS%WRF)	File is open for write access
B3(GS%XCF)	File is open for execute access
B4(GS%RND)	File is open for non-append access
B7(GS%LNG)	File is longer than 512 pages
B8(GS%EOF)	Last read was past end of file
B9(GS%ERR)	File may be in error
B10(GS%NAM)	Filespec is associated with this JFN
B11(GS%AST)	JFN is parse-only
B12(GS%ASG)	JFN is currently being assigned
B13(GS%HLT)	I/O errors are considered terminating conditions
B17(GS%FRK)	JFN is restricted
B18(GS%PLN)	If on, file line numbers are passed during input; if 0, line numbers are stripped before input
B32-B35(GS%MOD)	Data mode of the file

GTTYP JSYS 303

FUNCTION

Returns the terminal type number for the specified terminal line.

CALLING SEQUENCE

AC1: Terminal designator

RETURNS

+1: Always, with

AC2: Terminal type number  
AC3: B0-17 # of input buffers to allocate  
B18-35 # of output buffers to allocate

HALTF JSYS 170

FUNCTION

Halts the current process and any inferior processes of the current process. Sets B1-17(RF%STS) in the Process Status Word to 2(.RFHLT).

HFORK JSYS 162

FUNCTION

Halts one or more inferior processes.

CALLING SEQUENCE

AC1: Process handle (inferior processes only)

RETURNS +1: Always

HPTIM JSYS 501

FUNCTION

Returns the value of one of the high precision system clocks.

CALLING SEQUENCE

AC1: Number of the clock to read

RETURNS +1: Failure, error code in AC1  
+2: Success, with  
AC1: Value of specified clock

CLOCKS

Code	Symbol	Meaning
0	.HPELP	Elapsed time since system startup
1	.HPRNT	CPU runtime for this process

HSYS JSYS 307

FUNCTION

Initiates an orderly shutdown of timesharing.

RESTRICTIONS

Requires enabled WHEEL, OPERATOR, or MAINTENANCE capability.

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CALLING SEQUENCE

AC1: Shutdown time with date and time in internal format  
AC2: Date/time (internal format) when system will resume; 0  
if unknown

RETURNS +1: Failure, error code in AC1  
+2: Success, shutdown procedure initiated

IDCNV JSYS 223

FUNCTION

Converts separate numbers for the local year, month, day,  
and time into internal date and time format.

CALLING SEQUENCE

AC2: Year,,month  
AC3: <day of month>,,0  
AC4: BO(IC%DSA) Apply daylight savings according to  
setting of B1(IC%ADS)  
B1(IC%ADS) Apply daylight savings if BO(IC%DSA) is  
on  
B2(IC%UTZ) Use time zone in B12-17; if off, use  
local zone  
B3(IC%JUD) Number in B18-35 of AC2 is in Julian  
day format  
B12-17(IC%TMZ) Time zone if B2(IC%UTZ) is on  
B18-35(IC%TIM) Local time in seconds since midnight

RETURNS +1: Failure, error code in AC1  
+2: Success, with  
AC2: Internal date and time  
AC3: B0 and B2 On for compatibility  
with ODCNV  
B1(IC%ADS) Daylight savings was  
applied  
B12-17(IC%TMZ) Time zone used

IDTIM JSYS 221

FUNCTION

Inputs the date and time and converts them to internal date  
and time format.

CALLING SEQUENCE

AC1: Source designator  
AC2: Format option flags

RETURNS +1: Failure, with  
AC1: Updated byte pointer  
AC2: Error code  
+2: Success, with  
AC1: Updated byte pointer

AC2: Date and time in internal format

IDTIM Option Flags

B1(IT%NNM) Month may not be numeric; ignore B2-3  
 B2(IT%SNM) 2nd number in date is month  
 B3(IT%ERR) Return error if order of day and month does not agree with setting of B2(IT%SNM)  
 B7(IT%NIS) Seconds cannot be included in time specification  
 B8(IT%AIS) Seconds (preceded by colon) must be included in time specification  
 B9(IT%NAC) Colon cannot be used to separate hours and minutes  
 B10(IT%AAC) Colon must be used to separate hours and minutes  
 B11(IT%AMS) If B7-10 off, interpret time specification containing one colon as hhmm:ss  
 B12(IT%AHM) If B7-10 off, interpret time specification containing one colon as hh:mm; return error if first field too large  
 B14(IT%N24) Do not allow time specification in 24-hour format; require AM/PM specification  
 B15(IT%NTM) Do not allow time specification to include AM, PM, NOON, or MIDNIGHT  
 B16(IT%NTZ) Do not allow time zone specification

IDTNC JSYS 231

FUNCTION

Inputs the date and/or time and converts it into separate numbers for the local year, month, day, or time.

CALLING SEQUENCE

AC1: Source designator  
 AC2: Format option flags

RETURNS

+1: Failure, with  
 AC1: Updated byte pointer  
 AC2: error code  
 +2: Success, with  
 AC1: updated byte pointer  
 If date was input  
 AC2: Year, month  
 AC3: <day of month>, <day of week>  
 If time was input  
 AC4: BO(IC%DAS) On if IT%NTI was set, or if IT%NDA was set and a time zone was input  
 B1(IC%ADS) On if daylight savings time zone was input, or if IT%NTI was set  
 BO(IC%UTZ) On if IT%NTI was set, or if IT%NDA was set

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	and a time zone was input
B3(IC%JUD)	On if a number in Julian day format was input
B12-17(IC%TMZ)	Time zone supplied, or local time zone
B18-35(IC%TIM)	Time as seconds since midnight

IDTNC Option Flags

B0(IT%NDA)	Do not input date and ignore B1-3; if off, date required
B1(IT%NNM)	Month may not be numeric; ignore B2-3
B2(IT%SNM)	2nd number in date is month
B3(IT%ERR)	Return error if order of day/month does not match setting of B2(IT%SNM)
B6(IT%NTI)	Do not input time and ignore B7-16; if off, time required
B7(IT%NIS)	Seconds cannot be included in time specification
B8(IT%AIS)	Seconds (preceded by colon) must be included
B9(IT%NAC)	Colon cannot be used to separate hours and minutes
B10(IT%AAC)	Colon must be used to separate hours and minutes
B11(IT%AMS)	If B7-10 off, interpret time specification containing one colon as hhmm:ss
B12(IT%AHM)	If B7-10 off, interpret time specification containing one colon as hh:mm; return error if 1st field too large
B14(IT%N24)	Do not allow time specification in 24-hour format; require AM/PM specification
B15(IT%NTM)	Do not allow time specification to include AM, PM, NOON, or MIDNIGHT
B16(IT%NTZ)	Do not allow time zone specification

IIC JSYS 132

FUNCTION

Initiates software interrupts on the specified channels in a process.

CALLING SEQUENCE

AC1: Process handle

AC2: 36-bit word (1B<sub>n</sub> initiates interrupt on channel n)

RETURNS +1: Always

INLNM JSYS 503

FUNCTION

Returns a logical name that is defined either for this job or for the system.

CALLING SEQUENCE

AC1: BO-17 Function code  
B18-35 Index into table of defined logical names  
AC2: Byte pointer to string for logical name

RETURNS +1: Failure, error code in AC1  
+2: Success, updated byte pointer in AC2

FUNCTION CODES

Code	Symbol	Meaning
0	.INLJB	List logical names defined for this job
1	.INLSY	List logical names defined for system

JFNS JSYS 30

FUNCTION

Returns the filespec currently associated with the JFN.

CALLING SEQUENCE

AC1: Destination designator for ASCIZ filename string  
AC2: Indexable file handle; or pointer to filename string  
AC3: Format control bits for string; or 0

RETURNS +1: Always, with updated byte pointer in AC1

FORMAT CONTROL VALUES

Value	Symbol	Meaning
0	.JSNOF	Do not output this field
1	.JSAOF	Always output this field
2	.JSSSD	Suppress this field if system default

FORMAT CONTROL FIELDS

Field	Meaning
B0-2(JS%DEV)	Output for device field
B3-5(JS%DIR)	Output for directory field
B6-8(JS%NAM)	Output for filename field (2 is illegal)
B9-11(JS%TYP)	Output for file type field (2 is illegal)
B12-14(JS%GEN)	Output for generation number field
B0-14(JS%SPC)	Output for all filespec fields named above
B15-17(JS%PRO)	Output for protection field
B18-20(JS%ACT)	Output for account field
B21(JS%TMP)	Return ;T if appropriate
B22(JS%SIZ)	Return size of file in pages
B23(JS%CDR)	Return creation date
B24(JS%LWR)	Return date of last write
B25(JS%LRD)	Return date of last read
B26(JS%PTR)	AC2 contains pointer to the string being returned

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B27(JS%ATR) Return filespec attributes if appropriate  
B28(JS%AT1) Return specification attribute referenced  
in AC4  
B29(JS%OFL) Return the "OFF-LINE" attribute  
B32(JS%PSD) Punctuate the size and date fields  
B33(JS%TBR) Tab before all fields returned, except for  
1st field  
B34(JS%TBP) Tab before all fields (except 1st) with  
value 1 or 2  
B35(JS%PAF) Punctuate all fields from device through ;T

KFORK JSYS 153

FUNCTION

Kills one or more processes, releasing memory, PSB, and  
JFNs.

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Always, unless current process attempts to  
kill itself

LGOUT JSYS 3

FUNCTION

Kills the specified job and appends an accounting entry to  
the accounting data file, unless job did not login.

RESTRICTIONS

WHEEL or OPERATOR required to logout job other than current  
job, job logged in under same username, or PTY job  
controlled by current job.

CALLING SEQUENCE

AC1: Number of job to be logged out, or -1 for current job

RETURNS +1: Failure, error code in AC1  
+2: Success

LMST JSYS 504

FUNCTION

Translates a logical name to its original definition string.

CALLING SEQUENCE

AC1: Function code

AC2: Pointer to logical name string (without colon)

AC3: Pointer to string for original logical name definition



RETURNS +1: Failure, error code in AC1  
+2: Success, updated byte pointer in AC3

FUNCTION CODES

Code	Symbol	Meaning
0	.LNSJB	Obtain job-wide definition of logical name
1	.LNSSY	Obtain system-wide definition of logical name

LOGIN JSYS 1

FUNCTION

Logs a job into the system.

RESTRICTIONS

In non-zero sections, DWGBPs must specify 7-bit bytes.

CALLING SEQUENCE

AC1: 36-bit user number for login  
AC2: Pointer to beginning of password string  
AC3: 5B2!<account number>B35 or pointer to account string  
(maximum of 39 characters read)

RETURNS +1: Failure, error code in AC1  
+2: Success, with  
AC1: Date and time of last login  
AC2: Updated byte pointer  
AC3: Updated byte pointer

LPINI JSYS 547

FUNCTION

Loads the direct access Vertical Formatting Unit (VFU) or translation Random Access Memory (RAM) for the line printer.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: JFN of file containing VFU or RAM  
AC2: <status bits>,<function code>  
AC3: Unit number of line printer

RETURNS +1: Always

STATUS BITS

Bit	Symbol	Meaning
B0	MO%LCP	Line printer is lowercase

FUNCTION CODES

Code	Symbol	Meaning
32	.MOLVF	Load VFU from file indicated by JFN
34	.MOLTR	Load translation RAM from file indicated by

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JFN

MDDT% JSYS 777

FUNCTION

Transfers control to the MDDT program while preserving the context of the process that issued the MDDT% JSYS.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

METER% JSYS 766

FUNCTION

Returns the value of the execution accounting meter or the memory reference accounting meter.

RESTRICTIONS

Not available on KS-10 hardware.

CALLING SEQUENCE

AC1: Function code

RETURNS +1: Always, with 59-bit value in AC2 and AC3

FUNCTION CODES

Code	Symbol	Meaning
1	.MERE	Read process execution accounting meter doubleword; returns EBOX busy time (number of EBOX ticks)
2	.MERMA	Read process memory-reference accounting meter doubleword; returns count of MBOX references (number of MBOX ticks)

DOUBLE-WORD FORMAT

AC2		AC3				
High Order Part		0	Low Order Part	Reserved		
0	35	0	1	23	24	35

MRECV JSYS 511

FUNCTION

Retrieves an IPCF (Inter-Process Communication Facility) message from the process's input queue.

RESTRICTIONS

Requires enabled WHEEL, OPERATOR or IPCF capability.

**CALLING SEQUENCE**

AC1: Length of packet descriptor block  
AC2: Address of packet descriptor block

**RETURNS** +1: Failure, error code in AC1  
+2: Success, with  
AC1: B0-17 Length of next entry in queue  
B18-35 Flags from next packet or 0 if queue empty

**FORMAT OF PACKET DESCRIPTOR BLOCK**

Word	Symbol	Meaning
0	.IPCFL	Flags
1	.IPCFS	PID of sender (RET)
2	.IPCFR	PID of receiver; -1 for any PID in process; -2 for any PID in job
3	.IPCFF	<length of message>., <destination address>
4	.IPCFD	User number of sender (RET)
5	.IPCFC	Enabled capabilities of sender (RET)
6	.IPCSD	Number of sender's connected directory (RET)
7	.IPCAS	Account string of sender (RET)
10	.IPCLL	Byte pointer for destination of sender's node (optional)

**FLAGS FOR WORD .IPCFL OF PACKET DESCRIPTOR BLOCK**

Bit	Symbol	Meaning
B0	IP%CFB	Do not block process if no messages in queue; if set, error return if no messages
B1	IP%CFB	Use PID referenced in word .IPCFS as sender's PID
B2	IP%CFR	Use PID referenced in word .IPCFR as receiver's PID
B3	IP%CFD	Allow one send request above quota
B4	IP%TTL	Truncate message if larger than space reserved
B5	IP%CPD	Create PID for sender and return in word .IPCFS
B6	IP%JWP	Make created PID job wide (ignored unless IP%CPD set)
B7	IP%NOA	Do not allow other processes to use created PID (ignored unless IP%CPD set)
B18	IP%CFP	Packet is privileged (requires IPCF)
B19	IP%CFV	Packet is page of data
B21	IP%INT	Reserved
B22	IP%EPN	18-bit page number in word .IPCFF

MSEND JSYS 510

**FUNCTION**

Sends an IPCF (Inter-Process Communication Facility) message to a specific PID or to <SYSTEM>INFO.

**RESTRICTIONS**

Some functions require WHEEL, OPERATOR, or IPCF capability

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enabled.

CALLING SEQUENCE

AC1: Length of packet descriptor block  
AC2: Address of packet descriptor block

RETURNS +1: Failure, error code in AC1  
+2: Success

FORMAT OF PACKET DESCRIPTOR BLOCK

Word	Symbol	Meaning
0	.IPCFL	Flags
1	.IPCFS	PID of sender; address of PID if IP%CFS or IP%CFR is set in word .IPCFL; or 0 if no PID exists for sender (RET if creating a PID)
2	.IPCFR	PID of receiver; 0 if receiver is <SYSTEM>INFO
3	.IPCFF	<message length>, <message starting address>

FLAGS FOR WORD .IPCFL OF PACKET DESCRIPTOR BLOCK

Bit	Symbol	Meaning
B0	IP%CFB	Do not block process if no messages in queue; if set, error return if no messages
B1	IP%CFS	Use PID referenced in word .IPCFS as sender's PID
B2	IP%CFR	Use PID referenced in word .IPCFR as receiver's PID
B3	IP%CFD	Allow one send request above quota
B4	IP%TTL	Truncate message if larger than space reserved
B5	IP%CPD	Create PID for sender and return in word .IPCFS
B6	IP%JWP	Make created PID job wide (ignored unless IP%CPD set)
B7	IP%NOA	Do not allow other processes to use created PID (ignored unless IP%CPD set)
B18	IP%CFP	Packet is privileged (requires IPCF)
B19	IP%CFV	Packet is page of data
B21	IP%INT	Reserved
B22	IP%EPN	18-bit page number in word .IPCFF

FLAGS RETURNED IN WORD .IPCFL

Bit	Symbol	Meaning
B20	IP%CFZ	Zero-length message was sent; packet consists of only packet descriptor block
B24-29	IP%CFE	Error code field for <SYSTEM>INFO errors
15	.IPCPI	Insufficient privileges
16	.IPCUF	Invalid function
67	.IPCSN	<SYSTEM>INFO needs name
72	.IPCFF	<SYSTEM>INFO free space exhausted
74	.IPCBP	PID has no name or is invalid
75	.IPCDN	Duplicate name has been specified
76	.IPCNN	Unknown name has been specified

77 .IPCEN Invalid name has been specified

B30-32 IP%CFC System and sender code (enabled IPCF to set)

1 .IPCCC Sent by <SYSTEM>IPCF

2 .IPCCF Sent by system-wide <SYSTEM>INFO

3 .IPCCP Sent by receiver's <SYSTEM>INFO

B33-35 IP%CFM Special messages field (enabled WHL)

1 .IPCEN Process's input queue contains undeliverable packet

FORMAT OF REQUEST PACKET TO <SYSTEM>INFO

Word	Symbol	Meaning
0	.IPCIO	<user-defined code>,,<<SYSTEM>INFO function>
1	.IPCII	PID to receive copy of <SYSTEM>INFO's response
2	.IPCII	Function-specific argument

<SYSTEM>INFO FUNCTION CODES

Function	Argument	Meaning
.IPCII	Name	Return PID associated with specified name in word .IPCII
.IPCIG	PID	Return name associated with specified PID in word .IPCII
.IPCII	ASCIZ name	Assign specified name to PID of process making request
.IPCII	ASCIZ name	Same as .IPCII function
.IPCII	PID	Inform PID when PID in word .IPCII is deleted (WHL/OPR)
.IPCIS		Disassociate all PIDs with names (not available to user programs)

MSFRK JSYS 312

FUNCTION

Starts a process in monitor mode.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability, or execution from monitor mode.

AC1: Process handle

AC2: PC word: <user mode flags>,,<virtual address>

RETURNS +1: Always

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MSTR JSYS 555

FUNCTION

Performs various structure-dependent functions.

RESTRICTIONS

Some functions require enabled WHEEL, OPERATOR, or MAINTENANCE capability.

CALLING SEQUENCE

AC1: <length of argblk>,,<function code>

AC2: Address of argblk

RETURNS +1: Always, with some functions returning data in argblk

FUNCTION CODES

Code	Symbol	Privileges	Meaning
0	.MSRNU	WH/OPR/MNT	Return status of next disk unit
1	.MSRUS	WH/OPR/MNT	Return status of given disk unit
2	.MSMNT	WH/OPR	Mount structure
3	.MSDIS	WH/OPR	Dismount structure
4	.MSGSS	--	Return status of structure
5	.MSSSS	WH/OPR	Change status of structure
6	.MSINI	WH/OPR	Initialize structure
7	.MSIMC	--	Increment job's mount count for structure
10	.MSDMC	--	Decrement job's mount count for structure
11	.MSGSU	--	Return job #s of structure users
12	.MSHOM	WH/OPR	Modify home block of structure
13	.MSICF	--	Increment fork's mount count for structure
14	.MSDCF	--	Decrement fork's mount count for structure
15	.MSOFL	WH/OPR	Receive interrupt when disk comes on-line
16	.MSIIC	WH/OPR	Ignore increment check for structure use

ARGUMENT BLOCKS

Function	Word	Symbol	Meaning
.MSRNU	0	.MSRCH	Channel number (0-7)
	1	.MSRCT	Controller number
	2	.MSRUN	Unit number (0-7)
.MSRST	3	.MSRST	Returned software status of unit
		B0(MS%MNT)	Unit part of mounted structure
		B2(MS%DIA)	Unit in on-line diagnostics
		B3(MS%OFL)	Unit is off-line
		B4(MS%ERR)	Unit has read error
		B5(MS%BBB)	Unit has bad BAT block
	B6(MS%HBB)	Unit has bad HOME block	

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		B7(MS%WLK)	Unit is write locked
		B9-17(MS%TYP)	Type of disk unit
		1 .MSRP4	RPO4
		5 .MSRP5	RPO5
		6 .MSRP6	RPO6
		7 .MSRP7	RPO7
		11 .MSRM3	RMD3
		24 .MSR20	RP20
	4	.MSRSN	Byte pointer to ASCIZ structure name string
	5	.MSRSA	Byte pointer to ASCIZ structure alias string
	6	.MSRNS	<unit #>.,<# units in structure>
	7	.MSRSW	Number of pages for swapping on the structure
	10-12	.MSRUI	Unit ID (3 words of 11-formatted ASCII)
	13-15	.MSROI	Owner ID (3 words of 11-formatted ASCII)
	16-20	.MSRFI	File system ID (3 words of 11-formatted ASCII)
	21	.MSRSP	Number of sectors per page
	22	.MSRSC	Number of sectors per cylinder
	23	.MSRPC	Number of pages per cylinder
	24	.MSRCU	Number of cylinders per unit
	25	.MSRSU	Number of sectors per unit
	26	.MSRBT	Number of bit words in bit table per cylinder
	27	.MSRSE	Serial number of CPU for which structure is used in booting system
.MSRUS	0-27	Same as .MSRNU	
.MSMNT	0	.MSTNM	Pointer to ASCIZ string for structure name
	1	.MSTAL	Pointer to ASCIZ string for structure alias
	2	.MSTFL	Flags, <# units in structure>
		BO(MS%NFH)	Do not fix bad HOME blocks
		B1(MS%NFB)	Do not fix bad BAT blocks
		B2(MS%XCL)	Mount structure for exclusive use by job
		B3(MS%IGN)	Ignore correctable errors in bit table and root directory
	3	.MSTUI	3 words of data for each unit in structure
		0 .MSTCH	Channel # of unit
		1 .MSTCT	Controller # of unit
		2 .MSTUN	Unit # of unit
.MSDIS	0	.MSDNM	Device designator, or pointer to ASCIZ structure alias string
.MSGSS	0	.MSGSN	Device designator, or pointer to ASCIZ structure alias string
	1	.MSGST	Returned status word
		BO(MS%PS)	Structure is public

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		B1(MS%DIS)	Structure is being dismounted
		B2(MS%DOM)	Structure is domestic
		B3(MS%PPS)	Structure is PS:
		B4(MS%INI)	Structure is being initialized
		B5(MS%LIM)	Directory size on structure limited to 30 pages
		B6(MS%NRS)	Structure is non-regulated
	2	.MSGNU	Number of units in structure
	3	.MSGMC	Mount count for this structure
	4	.MSGFC	Open file count for this structure
	5	.MSGSI	Pointer to ASCIZ string for structure's physical ID
.MSSSS	0	.MSSSN	Device designator, or pointer to ASCIZ structure alias string
	1	.MSSST	Word containing new values for bits being changed
	2	.MSSMW	Mask containing bits being changed
		B1(MS%DIS)	Structure is being dismounted
		B2(MS%DOM)	Structure is domestic
		B6(MS%NRS)	Structure is non-regulated
		B7(MS%RWS)	Read-after-write checking in swapping area
		B8(MS%RWD)	Read-after-write checking in data area
.MSINI	0	.MSINM	Byte pointer to ASCIZ structure name string
	1	.MSIAL	Byte pointer to ASCIZ string containing alias of structure
	2	.MSIFL	BO(MS%NFH) Do not fix bad HOME block
		B1(MS%NFB)	Do not fix bad BAT block
		B2(MS%XCL)	Mount structure for exclusive use by job
		B3(MS%IGN)	Ignore errors in bit table and root directory
		B12-17(MS%FCN)	Function
		1 .MSCRE	Create new file system
		2 .MSRRD	Reconstruct root directory
		3 .MSWHB	Write new HOME blocks
		4 .MSRIX	Rebuild index table
		B18-35(.MSINU)	# of units in structure
	3-5	.MSISU	3 words of data for each unit in



			structure	
		0	.MSICH	Channel # of unit
		1	.MSICT	Controller # of unit
		2	.MSIUN	Unit # of unit
	6		.MSIST	Status word (reserved)
	7		.MSISW	Number of pages for swapping on structure
	10		.MSIFE	Number of pages for front-end file system
	11-13		.MSIUI	Unit ID (3 words of ASCII)
	14-16		.MSIOI	Owner ID (3 words of ASCII)
	17-21		.MSIFI	File system ID (3 words of ASCII; reserved)
	22		.MSIFB	Number of pages for file BOOTSTRAP.BIN
	23		.MSISN	Serial number of CPU for which structure is used in booting system
.MSIMC	0		.MSDEV	Device designator, or pointer to ASCIZ structure alias string
	1		.MSJOB	Number of job (if not current job) whose mount count is to be incremented; (optional; enabled WHL/OPR)
.MSDMC	0		.MSDEV	Device designator, or pointer to ASCIZ structure alias string
	1		.MSJOB	Number of job (if not current job) whose mount count is to be decremented; (optional; enabled WHL/OPR)
.MSGSU	0		.MSUAL	Device designator, or pointer to ASCIZ structure alias string
	1		.MSUFL	<flag bits>, ,0 B0(MS%GTA) Return users who have accessed structure B1(MS%GTM) Return users who have incremented mount count B2(MS%GTC) Return users who are connected to structure
.MSHOM	0		.MSHNM	Device designator or pointer to ASCIZ structure alias string
	1		.MSHOF	Offset specifying which word should be changed
	2		.MSHVL	Value for new bits
	3		.MSHMK	Mask showing which bits should be changed
.MSICF	0		.MSDEV	Device designator, or pointer to ASCIZ structure alias string
.MSDCF	0		.MSDEV	Device designator, or pointer to ASCIZ structure alias string
.MSOFL	0		.MSCHN	Place process on software interrupt channel; if -1, deassign previously assigned channel

DATA RETURNED BY FUNCTION .MSGSU

Word	Symbol	Meaning
1	.MSUFL	<flag bits from call>, ,<# of items returned>

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2 .MSUU1 <flag bits for job>,,<job #>  
 n+1 <flag bits for job>,,<job #>  
 BO(MS%GTA) Job accessed structure  
 B1(MS%GTM) Job incremented mount count for  
                   structure  
 B2(MS%GTC) Job connected to structure

11-Formatted ASCII  
 0 2 9 10 17 20 28 29 35  
 =====  
 |XX| CHAR 1 | CHAR 0 |XX| CHAR 3 | CHAR 2 |  
 -----  
 |XX| CHAR 5 | CHAR 4 |XX| CHAR 7 | CHAR 6 |  
 -----  
 |XX| CHAR 9 | CHAR 8 |XX| CHAR 11 | CHAR 10|  
 =====

MTALN JSYS 774

FUNCTION

Associates a given magtape drive with the specified logical unit number.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: <drive type>,,<logical unit # of magtape>  
 AC2: Decimal serial number of magtape drive

RETURNS +1: Always

MTOPR JSYS 77

FUNCTION

Performs various device-dependent control functions.

RESTRICTIONS

Some functions require enabled WHEEL or OPERATOR capability; or ARPAnet or DECnet software.

CALLING SEQUENCE

AC1: JFN of device  
 AC2: Function code  
 AC3: Function arguments or address of argblk  
 AC4: Function arguments (if required)

RETURNS +1: Always, with  
           AC2: Requested data  
           AC3: Requested data or updated byte pointer

ARPANET FUNCTION CODES

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Code	Symbol	Meaning/Arguments
20	.MOACP	If connection in RFCR state, send RFC to accept
21	.MOSND	If connection in buffered send mode, send all currently buffered bytes
22	.MDSIN	Send INS/INR command
23	--	Simulate CLS F.S.M. action
24	.MOAIN	Assign interrupt channels for change of state or INS/INR message receipt AC3: B0-5 INS/INR PSI channel B12-17 State change PSI channel
25	--	If input, send allocate message; if output, wait for allocate message
26	--	Setup 1st I/D buffer and send allocate without requiring user I/D

DECnet FUNCTION CODES

Code	Symbol	Meaning/Arguments
24	.MOACN	Allow network task to enable interrupt channels for some tasks AC3: B0-8(MO%CDN) Connect event pending B9-17(MO%INA) Interrupt message available B18-26(MO%DAV) Data available
Values for AC3 fields		
	<u>nn</u>	# of channel to be enabled: 0 to 5, 23. to 35.
	.MOCIA	Clear interrupt
	.MONCI	No change
25	.MORLS	Return logical link status AC3: <flag bits>,,<disconnect code> (RET) B0(MO%CON) Link is connected B1(MO%SRV) Link is a server B2(MO%WFC) Link waiting for connection B3(MO%WCC) Link waiting for connect confirmation B4(MO%EOM) Link has entire message to be read B5(MO%ABT) Link has been aborted B6(MO%SYN) Link has been closed normally B7(MO%INT) Link has interrupt message available B8(MO%LWC) Link has been previously connected
Disconnect codes		
	0 .DCX0	No special error
	1 .DCX1	Resource allocation failure
	2 .DCX2	Destination node does not exist
	3 .DCX3	Node shutting down
	4 .DCX4	Destination process does not exist
	5 .DCX5	Invalid name field
	6 .DCX6	Destination process queue

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			overflow
	7	.DCX7	Unspecified error
	8	.DCX8	Third party aborted link
	9	.DCX9	User abort (asynchronous disconnect)
	11	.DCX11	Undefined error code
	21	.DCX21	Connect initiate with illegal destination address
	22	.DCX22	Connect confirm with illegal destination address
	23	.DCX23	Connect initiate or confirm with zero source address
	24	.DCX24	Flow control violation
	32	.DCX32	Too many connections to node
	33	.DCX33	Too many connections to destination process
	34	.DCX34	Access not permitted
	35	.DCX35	Logical link services mismatch
	36	.DCX36	Invalid account
	37	.DCX37	Segment size too small
	38	.DCX38	Process aborted
	39	.DCX39	No path to destination node
	40	.DCX40	Link aborted due to data loss
	41	.DCX41	Destination process does not exist
	42	.DCX42	Confirmation of disconnect initiate
	43	.DCX43	Image data field too long
26	.MORHN	Return ASCII host node name at other end of logical link	
		AC3: Pointer to string for host name (8-bit)	
27	.MORTN	Return unique task name associated with this end of logical link	
		AC3: Pointer to string for task name (8-bit)	
30	.MORUS	Return source task user identification supplied in connect initiate message	
		AC3: Pointer to string for user ID (8-bit)	
31	.MORPW	Return source task's password supplied in connect initiate message	
		AC3: Pointer to string for password (8-bit)	
32	.MORAC	Return account string supplied by source task in connect initiate message	
		AC3: Pointer to string for account (8-bit)	
33	.MORDA	Return optional data supplied in connect/disconnect messages	
		AC3: Pointer to string for data (8-bit)	
34	.MORCN	Return object type used by source task to address connection	
35	.MORIM	Read interrupt message	

		AC3: Byte pointer to receiving buffer (8-bit)
36	.MOSIM	Send interrupt message AC3: Byte pointer to message (8-bit)
37	.MOROD	Return unique identification of source task AC4: Count of bytes in message (16 maximum) AC3: Pointer to string for source task object-descriptor (8-bit)
40	.MOCLZ	Reject connection either implicitly or explicitly AC2: <reject code>,,.MOCLZ AC3: Pointer to string for returned data (8-bit) AC4: Count of bytes in data string (16 maximum)
41	.MOCC	Accept connection either implicitly or explicitly AC3: Pointer to string for returned data AC4: Count of bytes in data string (16 maximum)
42	.MORSS	Return maximum segment size that can be sent over this link; (illegal unless link in run state)
43	.MOANT	Attach network terminal
44	.MOSNH	Set network host AC3: Address of argblk 0 Count including this word 1 .SHTTY ID of TTY controlling local job 2 .SHESC Flags,,<ASCII escape char> SH%LPM Local page mode

FRONT-END FUNCTION CODES

Code	Symbol	Meaning/Arguments
3	.MOEOF	Flush TOPS-20 buffers and send all data to front end AC3: 0 Flush buffers and send EOF to FE #0 Flush buffers only
4	.MODTE	Assign specified device to DTE controller on front end (enabled WHL/OPR) AC3: Device type (WHL/OPR)

MTA/MT FUNCTION CODES

Code	Symbol	Meaning/Arguments
0	.MQCLE	Clear any error flags from previous MTOPR
1	.MORREW	Rewind tape; if labeled, mount 1st volume in set and position at BOT
2	.MOSDR	Set direction of tape motion for reading (unlabeled only) AC3: 0 Read forwards 1 Read backwards
3	.MOEOF	Write tape mark
4	.MOSDM	Set hardware data mode for tape data transfer AC3: Hardware data mode
5	.MOSRS	Set record size AC3: Record size in bytes

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6	.MOFWR	Advance one record in read direction
7	.MOBKR	Back up one record from read direction
10	.MOEOT	Advance to EOT (unlabeled) or EOY (labeled)
11	.MORUL	Rewind and unload tape (illegal for MOUNTed tapes)
12	.MORDN	Return density
13	.MOERS	Erase tape gap (unlabeled only)
14	.MORDM	Return hardware data mode
15	.MORRS	Return record size
16	.MOFWF	Advance to next tape mark
17	.MOBKF	Backup to last tape mark or BOT
20	.MOSPR	Set parity AC3: Desired parity 0 .SUPRO Odd parity 1 .SUPRE Even parity
21	.MORPR	Return parity
22	.MONRB	Return number of bytes remaining in current record
23	.MOFOU	Force output of partial records during sequential write
24	.MOSDN	Set density (unlabeled only) AC3: Desired density
25	.MOINF	Return tape information AC3: Address of argblk 0 .MOICT Word count not including this word 1 .MOITP MTA type code 2 .MOIID MTA reel ID 3 .MOISN LH Channel/controller/unit RH Serial # 4 .MOIRD Number of reads done 5 .MOIWT Number of writes done 6 .MOIRC Record number from BOT 7 .MOIFC Number of files on tape 10 .MOISR Number of soft read errors 11 .MOISW Number of soft write errors 12 .MOIHR Number of hard read errors 13 .MOIHW Number of hard write errors 14 .MOIRF Number of frames read 15 .MOIWF Number of frames written
26	.MORDR	Return read direction AC3: 0 Forwards 1 Backwards
27	.MOSID	Set reel ID of mounted tape (enabled WHL/OPR) AC3: 36-bit reel ID
30	.MOIEL	Set error logging for tape AC3: 0 Log errors ≠0 Do not log errors
31	.MONOP	Wait for all activity to stop
32	.MOLOC	Identify 1st volume in MOUNT request or next volume for volume switch (WHL/OPR) AC3: Pointer to argblk 0 .MOCNT Word count 1 .MOMTN MT unit # to associate with MTA 2 .MOLBT Label type

```

3   .MODNS Density
4   .MOAVL Address of volume labels
5   .MONVL # of volume labels at
    .MOAVL
6   .MOCVN Volume number in volume set
7   .MOVSN SIXBIT file set identifier
37  .MOSTA Return current magtape status
    AC3: Address of argblk
    0   .MOCNT Word count including this
        word
    1   .MODDN Density flags (RET)
        B1(SJ%CP2) 200 BPI
        B2(SJ%CP5) 556 BPI
        B3(SJ%CP8) 800 BPI
        B4(SJ%C16) 1600 BPI
        B5(SJ%C62) 6250 BPI
    2   .MODDM Data mode flags (RET)
        B1(SJ%CMC) Core dump
        B2(SJ%CM6) SIXBIT
        B3(SJ%CMA) ANSI ASCII
        B4(SJ%CM8) Industry
                    compatible
        B5(SJ%CMH) High density
                    mode
    3   .MOTRK Recording track flags (RET)
        B1(SJ%7TR) 7-track drive
        B2(SJ%9TR) 9-track drive
    4   .MOCST Tape status flags (RET)
        B0(SJ%OFS) Off-line
        B1(SJ%MAI) Maintenance
                    mode enabled
        B2(SJ%MRQ) Maintenance
                    mode requested
        B3(SJ%BOT) Beginning of
                    tape
        B4(SJ%REW) Rewinding
        B5(SJ%WLK) Write locked
    5   .MODVT Device type (RET)
40  .MOOFL Enable interrupts for on-line/off-line
        transition (WHL/OPR)
42  .MOPST Set interrupt channel to indicate
        availability of UHL(BOV)/UTL(EOV) labels
        AC3: PSI channel; -1 to clear
43  .MORVL Rewind current labeled tape volume
44  .MOVLS Switch volumes for unlabeled multi-volume set
        AC3: Address of argblk
        0   Word count including this word
        1   Flags,,<function code>
            1 .VSMNV Mount absolute volume #
            2 .VSFST Mount 1st volume in set
            3 .VSLST Mount last volume in set
            4 .VSMRV Mount relative volume #
            5 .VSFSL Force volume switch
                (labeled only)
        2   Volume number (if required)
45  .MONTR Set translate flag (EBCDIC ==> ASCII; labeled

```

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		only)
		AC3: 0 Clear translate flag #0 Set translate flag
46	.MORDL	Read user header labels
		AC3: Pointer to string for label
47	.MOWUL	Write user header or trailer labels (labeled only)
		AC3: Byte pointer to label contents (must be 76 bytes)
50	.MORLI	Read available fields from volume and header labels
		AC3: Pointer to argblk
		0 Word count
		1 Label type (RET)
		1 .LTUNL unlabeled
		2 .LTANS ANSI
		3 .LTEBC EBCDIC
		4 .LTT20 TOPS-20
		2 Byte pointer to string for volume name
		3 Byte pointer to string for owner name
		4 Tape format (RET)
		5 Record length (RET)
		6 Block length (RET)
		7 Creation date (RET)
		10 Expiration date (RET)
		11 Byte pointer to string for file name
		12 Generation number (RET)
		13 Version number (RET)
		14 Form-control value (RET)
		SP No line format characters
		A FORTRAN format control characters
		M All necessary line format characters
		X Data in stream mode
51	.MOSMV	Value for form-control field in HDR2 label
		AC3: Mode
		0 .TPFST X
		1 .TPFCP M
		2 .TPFFC A
		3 .TPFNC Space
52	.MOSDS	Set deferred volume switch (labeled only)

PLPT FUNCTION CODES

Code	Symbol	Meaning/Arguments
27	.MOPSI	Enable software interrupt on nonfatal device conditions
		AC3: Address of argblk
		0 Word count including this word
		1 Interrupt channel number
		2 Flags
		BO(MD%MSG) Suppress CTY device



		messages
31	.MONOP	Wait for all activity to stop
32	.MOLVF	Load line printer's VFU from file referenced in argblk AC3: Address of argblk 0 Word count including this word 1 JFN of file containing VFU
33	.MORVF	Read name of current VFU file in monitor's data base AC3: Address of argblk 0 Word count including this word 1 Pointer to string for ASCIZ name 2 Number of bytes in string
34	.MOLTR	Load line printer's translation RAM from file referenced in argblk AC3: Address of argblk 0 Word count including this word 1 JFN of file containing translation RAM
35	.MORTR	Read name of current translation RAM file in monitor's data base AC3: Address of argblk 0 Word count including this word 1 Pointer to string for ASCIZ name 2 Number of bytes in string
36	.MOSTS	Set status of line printer AC3: Address of argblk 0 Word count including this word 1 Software status word BO(MO%LCP) Printer is lowercase B12(MO%EOF) Set MO%EOF when all data printed B14(MO%SER) Clear software error condition 2 Value for page counter register
37	.MORST	Read line printer status AC3: Address of argblk 0 Word count including this word 1 Status word BO(MO%LCP) Printer is lowercase B1(MO%RLD) FE has been reloaded B10(MO%FER) Fatal hardware error occurred B12(MO%EOF) All data sent has been printed B13(MO%IDP) Output in progress B14(MO%SER) Software error occurred B15(MO%HE) Hardware error occurred B16(MO%OL) Printer is off-line B17(MO%FNX) Printer does not exist B30(MO%RPE) RAM parity error occurred B31(MO%LVU) Printer has optical VFU

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B33(MO%LVF) VFU error occurred  
 B34(MO%LCI) Character interrupt occurred  
 B35(MO%LPC) Page counter register overflowed  
 2 Value of page counter register  
 40 .MOFLD Flush any output not yet printed

PCDP FUNCTION CODES

Code	Symbol	Meaning/Arguments
27	.MOPSI	Enable software interrupt on nonfatal device conditions AC3: Address of argblk 0 Word count including this word 1 Interrupt channel number 2 Flags BO(MO%MSG) Suppress CTY device messages
37	.MORST	Read card punch status AC3: Address of argblk 0 Word count including this word 1 Status word B10(MO%FER) Fatal error condition B12(MO%EOF) All pending output processed B13(MO%IOP) Output in progress B14(MO%SER) Software error occurred B15(MO%HE) Hardware error occurred B16(MO%OL) Card punch is off-line B17(MO%FNX) Punch doesn't exist B32(MO%HEM) Hopper empty or stacker full B33(MO%SCK) Stack check B34(MO%PCK) Pick check B35(MO%RCK) Read check

PCDR FUNCTION CODES

Code	Symbol	Meaning/Arguments
27	.MOPSI	Enable software interrupt on nonfatal device conditions AC3: Address of argblk 0 Word count including this word 1 Interrupt channel number 2 Flags BO(MO%MSG) Suppress CTY device messages
37	.MORST	Read card reader status AC3: Address of argblk 0 Word count including this word 1 Status word BO(MO%COL) Card reader is online B1(MO%RLD) FE has been reloaded B10(MO%FER) Fatal hardware error occurred

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B12(M0%EOF) Card reader at EOF  
 B13(M0%IOP) Input in progress  
 B14(M0%SER) Software error occurred  
 B15(M0%HE) Hardware error occurred  
 B16(M0%OL) Reader is off-line  
 B17(M0%FNX) Reader does not exist  
 B31(M0%SFL) Output stacker full  
 B32(M0%HEM) Input hopper empty  
 B33(M0%SCK) Stack check  
 B34(M0%PCK) Pick check  
 B35(M0%RCK) Read check

PTY FUNCTION CODES

Code	Symbol	Meaning/Arguments
24	.MOAPI	Assign PTY interrupt channels
		AC2: B0(M0%WFI) Enable waiting-for-input interrupt
		B1(M0%OIR) Enable output-is-ready interrupt
		B12-17(M0%SIC) Interrupt channel for PTY output
		B18-35 Function code
25	.MOPIH	Determine if PTY job needs input
26	.MOBAT	Set batch control bit
		AC3: 0 Job not under batch
		1 Job under batch

TTY FUNCTION CODES

Code	Symbol	Meaning/Arguments
25	.MOPIH	Determine if TTY job needs input
26	.MOSPD	Set terminal line speed
		AC2: B0(M0%RMT) Remote line (WHL/DPR)
		B1(M0%AUT) Remote autobaud line (WHL/DPR)
		B18-35 Function code
		AC3: <input speed>,,<output speed>
27	.MORSP	Return terminal line speed
30	.MDRLW	Return terminal page width
31	.MOSLW	Set terminal page width
		AC3: Page width
32	.MORLL	Return terminal page length
33	.MOSLL	Set terminal page length
		AC3: Page length
34	.MOSNT	Set terminal receive-system-messages code
		AC3: 0(.MOSMY) Allow messages
		1(.MOSMN) Refuse messages
35	.MORNT	Return terminal receive-system-messages code
36	.MOSIG	Set terminal input on inactive line code
		AC3: 0 Do not ignore input
		1 Ignore input
37	.MORBM	Read 128-character break mask
40	.MOSBM	Set 128-character break mask
		AC3: Address of argblk
		0 Word count not including this word

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		1-4 Break character mask
41	.MORFW	Return current value of field width
42	.MOSFW	Set field width AC3: Field width
43	.MOXOF	Set pause-at-end-of-page mode AC3: 0(.MOOFF) Disable pause-at-end-of- page mode 1(.MOONX) Enable pause-at-end-of-page mode
44	.MORXO	Read end-of-page mode
45	.MOSLC	Set terminal's line counter AC3: Line counter value
46	.MORLC	Read terminal's line counter
47	.MOSLM	Set line maximum AC3: Line maximum value
50	.MORLM	Read line maximum
51	.MOTPS	Assign terminal interrupt channels AC3: Address of argblk 0 Word count including this word 1 B0-17 Output PSI channel B18-35 Input PSI channel
52	.MOPCS	Set terminal pause/unpause characters AC3: <pause character>,<unpause character>
53	.MOPCR	Read terminal pause/unpause characters

MTU% JSYS 600

FUNCTION

Allows privileged programs to perform various utility functions for magnetic-tape MT: devices.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: Function code  
AC2: MT unit number  
AC3: Address of argblk

RETURNS +1: Always

FUNCTION CODES

Code	Symbol	Meaning/Arguments
1	.MTNNV	Declare volume switch error 0 .MTCNT Word count 1 .MTCOD Error code to return to user
2	.MTRAL	2 .MTPTR Byte pointer to operator response Read labels 0 .MTCNT Word count 1 .MTVL1 Byte pointer to area for VOL1 label 2 .MTVL2 Byte pointer to area for VOL2 label 3 .MTHD1 Byte pointer to area for HDR1 label 4 .MTHD2 Byte pointer to area for HDR2 label
3	.MTASI	Return assignment information

0 .MTCNT Word count  
1 .MTPHU Returned MTA # associated with MT  
4 .MTCVV Clear volume ID for specified MT

MUTIL USYS 512

FUNCTION

Performs various IPCF (Inter-Process Communication Facility) functions.

RESTRICTIONS

Some functions require WHEEL, OPERATOR, or IPCF capability enabled.

CALLING SEQUENCE

AC1: Length of argblk  
AC2: Address of argblk

RETURNS +1: Failure, error code in AC1  
+2: Success, with requested data in argblk

ARGUMENT BLOCK

Word Contents  
0 Function code  
1-n Function-specific arguments

FUNCTION CODES

Code	Symbol	Meaning/Arguments
1	.MUENB	Enable specified PID to receive packets 1 PID
2	.MUDIS	Disable specified PID from receiving packets 1 PID
3	.MUGTI	Return PID associated with <SYSTEM>INFO 1 PID or job #
4	.MUCPI	Create private copy of <SYSTEM>INFO for job (enabled IPCF) 1 PID to be assigned to <SYSTEM>INFO 2 PID or job # creating private copy
5	.MUDES	Delete specified PID 1 PID
6	.MUCRE	Create PID for specified process or job 1 Flags, <process handle or job #> B6(IP%JWP) PID is job-wide B7(IP%NOA) PID is not available to other processes
7	.MUSSQ	Set send/receive quotas for specified PID (enabled IPCF) 1 PID 2 B18-26 New send quota B27-35 New receive quota
10	.MUCHO	Change job # associated with specified PID (enabled WHL) 1 PID 2 New job # or PID belonging to new job

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11	.MUFDJ	Return job # associated with specified PID 1 PID
12	.MUFJP	Return all PIDs associated with specified job 1 Job # or PID belonging to job
13	.MUFSQ	Return send/receive quotas for specified PID 1 PID
15	.MUFFP	Return all PIDs associated with same process as given PID 1 PID
16	.MUSPQ	Set maximum number of PIDs allowed for job (enabled IPCF) 1 Job # or PID 2 PID quota
17	.MUFPP	Return maximum number of PIDs allowed for job 1 Job # or PID
20	.MUQRY	Return Packet Descriptor Block for next packet in queue associated with specified PID 1 PID 2 -1 Next descriptor block for process -2 Next descriptor block for job
21	.MUAPF	Associate PID with specified process 1 PID 2 Process handle
22	.MUPIC	Place specified PID on software interrupt channel 1 PID 2 Channel number; -1 to remove PID
23	.MUDFI	Set PID of <SYSTEM>INFO (enabled IPCF) 1 PID of <SYSTEM>INFO
24	.MUSSP	Place specified PID into system PID table at offset (enabled WHL/OPR/IPCF) 1 Index into system PID table 2 PID
25	.MURSP	Return PID from system PID table 1 Index into system PID table
26	.MUMPS	Return system-wide maximum packet size
27	.MUSKP	Set PID to receive deleted PID messages 1 Source (subordinate) PID 2 Object (controller) PID
30	.MURKP	Return controlling PID for this subordinate PID 1 Source (subordinate) PID 2 Object (controller) PID (RET)

NIN JSYS 225

FUNCTION

Inputs an integer, with leading spaces ignored.

CALLING SEQUENCE

AC1: Source designator

AC3: Radix (2-10) of number being input

RETURNS +1: Failure, with

AC1: Updated byte pointer  
 AC3: Error code  
 +2: Success, with  
 AC1: Updated byte pointer  
 AC2: Number input

NODE JSYS 567

FUNCTION  
 Performs network utility functions.

RESTRICTIONS  
 Some functions require WHEEL, OPERATOR, or MAINTENANCE capability.

CALLING SEQUENCE  
 AC1: Function code  
 AC2: Address of argblk

RETURNS +1: Always

FUNCTION CODES

Code	Symbol	Meaning/Arguments
0	.NDSL N	Set local node name (WHL/OPR) 0 .NDNOD Byte pointer to ASCIZ node name
1	.NDGL N	Get local node name 0 .NDNOD Byte pointer to string for ASCIZ node name
2	.NDSNM	Set local node number (WHL/OPR) 0 .NDNOD Number to set (from 1 to .NDMAX)
3	.NDGNM	Get local node number 0 .NDNOD Local node number
4	.NDSL P	Set loopback port (KS-10 only; WHL/OPR/MNT) 0 .NDPRT NSP port number
5	.NDCL P	Clear loopback port (KS-10 only; WHL/OPR/MNT) 0 .NDPRT NSP port number
6	.NDFL P	Find loopback port (KS-10 only) 0 .NDPRT Flags,,<NSP port number> (RET) BO(ND%LPR) Loopback running B1(ND%LPA) Loopback port assigned
7	.NDSNT	Set node table (WHL/OPR) 0 .NDNND # of nodes in topology message 1 .NDMSK Address of topology message
10	.NDGNT	Get node table 0 .NDNND 0,,<word count> (1/node); On return <# returned nodes>,,<word count> 1 .NDCNT # of words in node block (RET) 2 .NDBK1 Addresses of n node blocks (1/returned node; RET)
11	.NDSIC	Set topology interrupt channel 0 .NDCHN Channel # for topology interrupts
12	.NDCIC	Clear topology interrupt channel
13	.NDGVR	Get NSP version number

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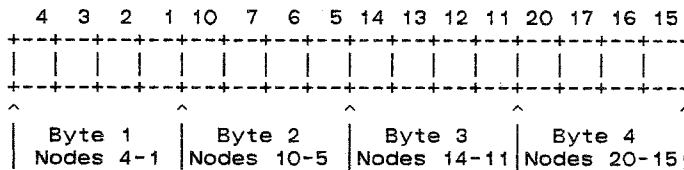
```

    0 .NDNVR  Number of versions (RET)
    1 .NDCVR  Address of block for NSP
              communications version
    2 .NDRVR  Address of block for NSP routing
              version
14  .NDGLI  Get line information
    0 .NDNLN  0,,<word count> (1/line);
              On return
              <# returned lines>,,<word count>
    1 .NDBK1  Addresses of n line blocks
              (1/returned line; RET)
15  .NDVfy  Verify node name
    0 .NDNOD  Byte pointer to ASCIZ node name
    1 .NDFLG  Flags returned by monitor
              BO(ND%EXM)  Node exactly matches
                          name in monitor's
                          database
16  .NDRNM  Return node name
    0 .NDNOD  Node number
    1 .NDCVR  Byte pointer to string for ASCIZ
              node name
  
```

NODE BLOCK

Word	Symbol	Contents
0	.NDNAM	Byte pointer to ASCIZ node name
1	.NDSTA	Node state: .NDSON On, add to table of reachable nodes if not there .NDSOF Off, remove from table if there
2	.NDNXT	Obsolete
3-4	--	ASCIZ node name (word 4 not returned if name .LE. 4 characters)

TOPOLOGY MESSAGE



Value	Meaning
00	Node not reachable
01	Reserved
10	Reachable Phase II node
11	Reachable Phase III node

NSP VERSION BLOCK

Word	Symbol	Contents
0	.NDVER	Version number
1	.NDECO	ECD number
2	.NDCST	Customer change order



LINE BLOCK		
Word	Symbol	Contents
0	.NDLNM	Line number
1	.NDLST	State of Line
	.NDLON	On
	.NDLOF	Off
	.NDLCN	Controller loopback
	.NDLCB	Cable loopback
	.NDLND	Byte pointer to ASCIZ remote node name

NOUT JSYS 224

FUNCTION  
 Outputs an integer number.

CALLING SEQUENCE  
 AC1: Destination designator  
 AC2: Number to be output  
 AC3: BO(NO%MAG) Output magnitude only  
       B1(NO%SGN) Output + before positive number  
       B2(NO%LFL) Output leading filler  
       B3(NO%ZRO) Output 0's as leading filler  
       B4(NO%OOV) Output on column overflow and return an error  
       B5(NO%AST) Output asterisks on column overflow  
       B11-17(NO%COL) Number of columns to output  
       B18-35(NO%RDY) Radix (2-36) of number being output

RETURNS +1: Failure, error code in AC3  
 +2: Success, updated byte pointer in AC1, if pertinent

NTMAN% JSYS 604

FUNCTION  
 Provides an interface between the DECnet-20 Network Management layer and lower layers of the Digital Network Architecture.

RESTRICTIONS  
 Requires WHEEL or OPERATOR capability.

CALLING SEQUENCE  
 AC1: Address of argblk

RETURNS +1 Always, with error code in AC1

ARGUMENT BLOCK		
Word	Symbol	Contents
0	.NTCNT	Word count including this word
1	.NTENT	Entity on which to perform function

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	0	.NTNOD	Node
	1	.NTLIN	Line
	2	.NTLOG	Logging
	3	.NTCKT	Circuit
	4	.NTMOD	Module
2	.NTEID	Byte pointer to entity ID	
3	.NTFNC	Function code	
	-2	.NTMAP	Map node number/node name
	-1	.NTREX	Return local node ID
	0	.NTSET	Set Parameter
	1	.NTCLR	Clear Parameter
	2	.NTZRO	Zero all counters
	3	.NTSHO	Show selected items
	4	.NTSZA	Show and zero all counters
	5	.NTRET	Return list of items
4	.NTSEL	Selection criterion for function	
		Selectors for .NTSHO	
	0	.NTSUM	Summary
	1	.NTSTA	Status
	2	.NTCHA	Characteristics
	3	.NTCDU	Counters
	4	.NTEVT	Event
		Selectors for .NTRET	
	-1	.NTKNO	Known items
	-2	.NTACT	Active items
	-3	.NTLOP	Loop
5	.NTQUA	Byte pointer to function qualifier	
6	.NTBPT	Byte pointer to parameter data buffer	
7	.NTBYT	Parameter data buffer length in bytes (functions .NTMAP, .NTRET, .NTREX, .NTSHO, and .NTSZA)	
10	.NTERR	Network management return code	

ODCNV JSYS 222

FUNCTION

Converts internal date and time format into separate numbers for local weekday, day, month, year, and time and does not convert the numbers to text.

CALLING SEQUENCE

AC2: Internal date/time, or -1 for current date/time  
 AC4: BO(IC%DSA) Apply daylight savings according to  
       B1(IC%ADS) Apply daylight savings if 1BO(IC%DSA)  
       B2(IC%UTZ) Use time zone in B12-B17(IC%TMZ)  
       B3(IC%JUD) Apply Julian day format  
       B12-17(IC%TMZ) Time zone to use if 1B2(IC%UTZ)

RETURNS

+1: Always, with  
 AC2: Year,,<numerical month> or  
       Year,,<Julian day> if IC%JUD  
 AC3: <day of month>,,<day of week> or  
       0,,<day of week> if IC%JUD

AC4: B0, B2	On for compatibility with IDCNV
B1(IC%ADS)	If daylight savings was applied
B3(IC%JUD)	If Julian day format was applied
B12-17(IC%TMZ)	Time zone used
B18-35(IC%TIM)	Local time in seconds since midnight

ODTIM JSYS 220

FUNCTION

Converts the internal date and/or time to text.

CALLING SEQUENCE

AC1: Destination designator  
AC2: Internal date/time, or -1 for current date/time  
AC3: Format option flags; or  
0 for format: dd-mmm-yy hh:mm:ss; or  
-1 for format: weekday, month day, year hh:mm:ss

RETURNS +1: Always, with updated byte pointer in AC1

FORMAT OPTION FLAGS

B0(OT%NDA)	Do not output date and ignore B1-8
B1(OT%DAY)	Output day of week according to B2(OT%FDY)
B2(OT%FDY)	Output full text for day of week
B3(OT%NMN)	Output month as numeric and ignore B4(OT%FMN)
B4(OT%FMN)	Output full text for month
B5(OT%4YR)	Output year as a 4-digit number
B6(OT%DAM)	Output day of month after month
B7(OT%SPA)	Output day month year with space delimiter; if 1B6(OT%DAM), output month day, year
B8(OT%SLA)	Output numeric date with slash delimiter; if OB7 and OB8, output day-month-year with dash delimiter
B9(OT%NTM)	Do not output time and ignore B10-13
B10(OT%NSC)	Do not output seconds
B11(OT%12H)	Output time in 12-hour format with AM or PM
B12(OT%NCO)	Output time without colon between hours and minutes
B13(OT%TMZ)	Output time with "-" and time zone
B17(OT%SCL)	Suppress columnization of date and time (omit leading spaces and zeros)

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ODTNC

ODTNC JSYS 230

FUNCTION

Outputs the date and/or the time as separate numbers for local year, month, day, or time.

CALLING SEQUENCE

AC1: Destination designator  
AC2: Year, , <numerical month>  
AC3: <day of month>, , <day of week>  
AC4: B1(IC%ADS) Apply daylight savings on output  
B12-17(IC%TMZ) Time zone desired  
B18-35(IC%TIM) Local time in seconds since midnight  
AC5: Format option flags

RETURNS +1: Always, with updated byte pointer in AC1

FORMAT OPTION FLAGS

B0(OT%NDA) Do not output date and ignore B1-8  
B1(OT%DAY) Output day of week according to B2(OT%FDY)  
B2(OT%FDY) Output full text for day of week  
B3(OT%NMN) Output month as numeric and ignore B4(OT%FMN)  
B4(OT%FMN) Output full text for month  
B5(OT%4YR) Output year as a 4-digit number  
B6(OT%DAM) Output day of month after month  
B7(OT%SPA) Output day month year with space delimiter;  
if 1B6(OT%DAM), output month day, year  
B8(OT%SLA) Output numeric date with slash delimiter; if  
OB7 and OB8, output day-month-year with dash  
delimiter  
B9(OT%NTM) Do not output time and ignore B10-13  
B10(OT%NSC) Do not output seconds  
B11(OT%12H) Output time in 12-hour format with AM or PM  
B12(OT%NCD) Output time without colon between hours and  
minutes  
B13(OT%TMZ) Output time with "-" and time zone (US zones  
and Greenwich Mean only)  
B17(OT%SCL) Suppress columnization of date and time (omit  
leading spaces and zeros)

OPENF JSYS 21

FUNCTION

Opens the given file.

CALLING SEQUENCE

AC1: O, , JFN  
AC2: B0-5(OF%BSZ) Byte size (maximum of 36.; 36. default)  
B6-9(OF%MOD) Data mode in which to open file  
B18(OF%HER) Halt on I/O, device, or data error  
B19(OF%RD) Allow read access  
B20(OF%WR) Allow write access  
B21(OF%EX) Allow execute access  
B22(OF%APP) Allow append access

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OPENF

B23(OF%RDU)	Allow unrestricted read access (illegal with OF%THW or OF%WR)
B25(OF%THW)	Allow thawed access
B26(OF%AWT)	Block and wait for access to be granted
B27(OF%PDT)	Do not update access dates of file
B28(OF%NWT)	Do not wait if access disallowed; return error
B29(OF%RTD)	Enforce restricted access
B30(OF%PLN)	Disable line number checking
B31(OF%DUD)	Suppress system updating of modified pages in memory to thawed files on disk unless CLOSF or UFPGS issued
B32(OF%OFL)	Open device even if off-line
B33(OF%FDT)	Force update of .FBREF (last read) in FDB and increment RH of .FBCNT (number of references)
B34(OF%RAR)	Wait if file off-line

RETURNS +1: Failure, error code in AC1  
+2: Success

PBIN JSYS 73

FUNCTION

Inputs the next sequential byte from the primary input designator.

RETURNS +1: Always, with the byte R-J in AC1

PBOUT JSYS 74

FUNCTION

Outputs a byte sequentially to the primary output designator.

CALLING SEQUENCE

AC1: Byte to be output, right-justified

RETURNS +1: Always

PDVOP% JSYS 603

FUNCTION

Manipulates program data vectors (PDVs), using program data vector addresses (PDVAs).

CALLING SEQUENCE

AC1: Function code

AC2: Address of argblk

AC3: Byte pointer to string in memory

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 PDVOP%

RETURNS +1: Always, with data returned in the data block,  
 and updated count in .POCT2 if needed

FUNCTION CODES

Code	Symbol	Meaning
0	.POGET	Return all PDVAs within range specified in argblk
1	.POADD	Add PDVAs specified in data block to system's database for process
2	.POREM	Remove PDVAs within range specified in argblk from system's data base for process
3	.PONAM	Return ASCIZ name of program referenced in word .PVNAM of PDV
4	.POVER	Return program version number from word .PVVER of PDV
5	.POLOC	Return all PDVAs of PDVs for program referenced in AC3

ARGUMENT BLOCK

Word	Symbol	Meaning
0	.POCT1	Number of words in argblk
1	.POPHD	Handle of desired process
2	.POCT2	# of words in data block; on return <# of words available>, <# of words returned>
3	.PODAT	Starting address of data block for returned data
4	.POADR	Starting address of memory range
5	.POADE	Ending address of memory range

FORMAT OF PROGRAM DATA VECTOR

Word	Symbol	Meaning
0	.PVCNT	Length of PDV including this word
1	.PVNAM	Pointer to ASCIZ program name string for this PDV
2	.PVSTR	Program starting address
3	.PVREE	Program reenter address
4	.PVVER	Program version number
5	.PVMEM	Address of block of memory containing length in Word 0 and memory map in remaining words
6	.PVSYM	Address of program symbol table
7	.PVCTM	Time at which program was compiled
10	.PVCVR	Version number of compiler
11	.PVLTM	Time at which program was loaded
12	.PVLVR	Version number of LINK
13	.PVMON	Address of monitor data block (not used currently)
14	.PVPRG	Address of program data block (not used currently)
15	.PVCST	Address of customer-defined data block

PEEK JSYS 311

FUNCTION

Transfers a block of words from the monitor to the user space.

RESTRICTIONS

Requires enabled WHEEL, OPERATOR, or MAINTENANCE capability.

CALLING SEQUENCE

AC1: <word count>, <1st virtual address of monitor>  
AC2: 1st user address

RETURNS +1: Failure, error code in AC1  
+2: Success

PLOCK JSYS 561

FUNCTION

Locks physical memory and places a designated section of the process's address space in memory.

RESTRICTIONS

Requires enabled WHEEL, OPERATOR, or MAINTENANCE capabilities.

CALLING SEQUENCE

AC1: Address of 1st page if locking; -1 if unlocking  
AC2: <process handle>, <# of 1st page>  
AC3: <control flags>, <repeat count>  
B0(LK%CNT) B18-35 of AC3 contain # of pages to lock  
B1(LK%PHY) AC1 contains 1st page desired  
B2(LK%NCH) Pages will not be cached  
B3(LK%AOL) Off-line pages are to be locked

RETURNS +1: Always

PMAP JSYS 56

FUNCTION

Maps one or more complete pages from a file to a process (Case I), from a process to a file (Case II), or from one process to another process (Case III); or unmaps pages from a process (Case IV) and deletes pages from a file (Case V).

CALLING SEQUENCE

AC1: JFN, <file page #> (Case I)  
<source process handle>, <process page #> (Cases II & III)  
-1 (Cases IV & V)  
AC2: <destination process handle>, <process page #> (Cases I & III)

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<destination JFN>,,<file page.#> (Case II)  
 <process handle>,,<process page #> (Case IV)  
 JFN,,<file page #> (Case V)

AC3: B0(PM%CNT) B18-35 contain repeat count  
 B2(PM%RD) Permit read access (Cases I - III only)  
 B3(PM%WR) Permit write access (Cases I - III  
 only)  
 B4(PM%EX) Reserved  
 B5(PM%PLD) Preload page being mapped (Cases I -  
 III only)  
 B9(PM%CPY) Create private copy of page (Cases I -  
 III only)  
 B10(PM%EPN) B18-35 of AC2 contain extended (18-bit)  
 process page number (Cases I - III  
 only)  
 B11(PM%ABT) Unmap page and discard changed contents  
 (Cases I - III only)  
 B18-35(PM%RPT) # of pages to map if 1B0(PM%CNT)

RETURNS +1: Always

PMCTL JSYS 560

FUNCTION

Controls physical memory, allowing a privileged program to  
 add or remove most pages of physical memory and to control  
 use of cache memory.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: Function code  
 AC2: Length of argblk  
 AC3: Address of argblk

RETURNS +1: Always

FUNCTION CODES

Code	Symbol	Meaning/Arguments
0	.MCRCE	Return status of cache memory 0 .MCCST If 1B35(MC%CEN), cache is enabled
1	.MCSCE	Set status of cache memory 0 .MCCST Enable cache if 1B35(MC%CEN)
2	.MCRPS	Return status of specified page 0 .MCPPN - count,,<physical page #> 1 .MCPST Returned page status 0 .MCPSA Page available 1 .MCPSS Page in transition 2 .MCPSD Page off-line (nonexistant) 3 .MCPSE Page off-line due to error
3	.MCSPS	Set status of specified page



0	.MCPN	Physical page number
1	.MCPST	Status for page
	0	.MCPSA Mark page available
	1	.MCPSS Mark page in transition
	2	.MCPSO Mark page off line (nonexistant)
	3	.MCPSE Mark page off line due to error
4	.MCRME	Return information about MOS memory errors
	0	.PMMTP <1B8!<count>B17>,,<controller #>
	1	.PMMRG Error register at error
	2	.PMMSY Syndrome of error
	3	.PMMBN Block number of error
	4	.PMMSB Spare bit number
	5	.PMMEA Error address
	6	.PMMSN 4 words of 32-bit PROM serial numbers

PPNST JSYS 557

FUNCTION

Translates a project-programmer number (PPN, a TOPS-10 36-bit directory designator) to its corresponding TOPS-20 string.

CALLING SEQUENCE

AC1: Destination designator  
AC2: Project-programmer number (36-bit)  
AC3: Byte pointer to structure name string for which given PPN applies

RETURNS +1: Always, with updated byte pointer in AC1

PRARG JSYS 545

FUNCTION

Returns or sets up an argument block for the specified process.

CALLING SEQUENCE

AC1: <function code>,,<process handle>  
AC2: Address of argblk  
AC3: Length of argblk

RETURNS +1: Always, with number of returned words in AC3

FUNCTION CODES

Code	Symbol	Meaning
1	.PRARD	Return arguments in argblk
2	.PRAST	Set arguments from argblk

ARGUMENT BLOCK

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PRARG

Word	Meaning
0	Number of argblks
1 - $n$	Argument pointers
$n+1$	Data

ARGUMENT POINTER

Bit	Contents
B0	1
B1-3	0
B4-6	Data structure type 0 Scalar or array without dope vector 1 Array with dope vector 3 Immediate (data in B18-35)
B7-12	Type code 00 Unspecified 02 Integer 04 Real 17 ASCIZ string
B13-17	0
B18-35	Data offset in block or data; -1 for last LOAD-class command

PSOUT JSYS 76

FUNCTION

Outputs a string sequentially to the primary output designator.

CALLING SEQUENCE

AC1: Byte pointer to ASCIZ string

RETURNS +1: Always, with updated byte pointer in AC1

RCDIR JSYS 553

FUNCTION

Translates the given directory string to its corresponding 36-bit directory number.

RESTRICTIONS

In non-zero sections, OWGBPs must specify 7-bit bytes.

CALLING SEQUENCE

AC1: <flag bits>, 0

AC2: Byte pointer to ASCIZ string (to obtain 36-bit directory number)  
JFN (to obtain directory number associated with file)  
36-bit user number (to obtain logged-in directory)  
36-bit directory number (to check validity)

AC3: 36-bit directory number (to use RCDIR to step through directory string with wildcards)

RETURNS +1: Always, with  
AC1: <flag bits>,,0  
AC2: Updated byte pointer (if pointer was  
supplied)  
AC3: 36-bit directory number

FLAGS SUPPLIED IN RCDIR CALL

Bit	Symbol	Meaning
B14	RC%PAR	Allow partial recognition on directory name
B15	RC%STP	Step to next directory in group and return number
B16	RC%AWL	Allow directory name to contain wildcards
B17	RC%EMO	Match given string exactly

FLAGS RETURNED FROM RCDIR CALL

Bit	Symbol	Meaning
B0	RC%DIR	Directory is files-only
B1	RC%ANA	Obsolete
B2	RC%RLM	User sees all messages from <SYSTEM>MAIL.TXT on login
B3	RC%NOM	No match was found for string
B4	RC%AMB	String given was ambiguous
B5	RC%NMD	No more directories in group
B6	RC%WLD	Directory name contained wildcards

RCM JSYS 134

FUNCTION

Returns the word mask of the activated interrupt channels  
for the specified process.

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Always, with  
AC1: 36-bit word (1B<sub>n</sub> indicates channel <sub>n</sub>  
activated)

RCUSR JSYS 554

FUNCTION

Translates the given user name string to its corresponding  
36-bit user number.

RESTRICTIONS

Directory may not be files-only.

CALLING SEQUENCE

AC1: <flag bits>,,0  
AC2: Byte pointer to ASCII username string  
AC3: 36-bit user number (if stepping to next username in  
group)

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RCUSR

RETURNS +1: Always, with  
AC1: <flag bits>,,0  
AC2: Updated byte pointer  
AC3: 36-bit user number

FLAGS SUPPLIED ON CALL

Bit	Symbol	Meaning
B14	RC%PAR	Allow partial recognition on username string
B15	RC%STP	Step to next username in group
B16	RC%AWL	Allow username to contain wildcards
B17	RC%EMO	Match given string exactly

FLAGS RETURNED FROM CALL

Bit	Symbol	Meaning
B1	RC%ANA	Obsolete
B2	RC%RLM	User sees all messages from <SYSTEM>MAIL.TXT on login
B3	RC%NOM	No match was found for string
B4	RC%AMB	String given was ambiguous
B5	RC%NMD	No more usernames in group
B6	RC%WLD	Username given contained wildcards

RCVIM JSYS 751

FUNCTION

Retrieves a message from the ARPANET special message queue.

RESTRICTIONS

For ARPANET systems only.

CALLING SEQUENCE

AC1: B0 If on, leader is 96-bit; if off, leader is 32-bit  
B1 If on, 32-bit data in each word of message (high-order); if off, 36-bit data in each word  
B18-35 Special queue header  
AC2: Address for storing extended message

RETURNS +1: Failure, error code in AC1  
+2: Success

RCVOK% JSYS 575

FUNCTION

Allows installation-supplied access-control program to service an approval request in the GETOK% request queue.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: Address of argblk  
AC2: Length of argblk

RETURNS +1: Always

ARGUMENT BLOCK (RET)

Word	Symbol	Contents
0	.RCFCJ	<GETOK% function code>,,<job # of requestor>
1	.RCUND	User number
2	.RCCDR	Connected directory
3	.RCRQN	Request number
4	.RCNUA	B0-17 # arguments passed to RCVOK% block B18-35 # user arguments in user block
5	.RCARA	Address of user arguments
6	.RCCAP	Capabilities enabled
7	.RCTER	Controlling terminal number; or -1 for detached job
10	.RCRJB	Requested job #
11		User arguments
11+n		..

RDTTY JSYS 523

FUNCTION

Reads input from the primary input designator into the caller's address space.

CALLING SEQUENCE

AC1: Byte pointer to string for input  
AC2: <flag bits>,,<# of bytes in string>  
0,,<# of bytes in string> to break on EDL only  
B0(RD%BRK) Break on CTRL/Z or ESC  
B1(RD%TOP) Break on CTRL/G, CTRL/L, CTRL/Z, ESC, CR, LF  
B2(RD%PUN) Break on punctuation:  
CTRL/A-CTRL/F CTRL/H-CTRL/I CTRL/K  
CTRL/N-CTRL/Q CTRL/S-CTRL/T  
CTRL/X-CTRL/Y  
ASCII codes 34-36, 40-57, 72-100, 133-140, 173-176  
B3(RD%BEL) Break on EDL (CRLF or LF only)  
B4(RD%CRF) Suppress CR and return LF only  
B5(RD%RND) Return if attempt to delete past beginning of input buffer  
B7(RD%RIE) Return if input buffer empty  
B9(RD%BEG) Return if attempt to edit past beginning of input buffer  
B10(RD%RAI) Convert lowercase input to uppercase  
B11(RD%SUI) Suppress CTRL/U indication  
AC3: Byte pointer to CTRL/R buffer; 0 if no reprompt text

RETURNS +1: Failure, error code in AC1  
+2: Success, with

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RDTTY

AC1: Updated byte pointer  
AC2: <flag bits>, <updated byte count>  
B12(RD%BTM) Break character terminated  
input  
B13(RD%BFE) Input buffer empty  
B14(RD%BLR) Backup limit for editing  
reached

RELD JSYS 71

FUNCTION

Releases one or all devices assigned to the job.

CALLING SEQUENCE

AC1: Device designator; -1 to release all assigned devices  
devices assigned to this job

RETURNS +1: Failure, error code in AC1  
+2: Success

RELSQ JSYS 753

FUNCTION

Deassigns the ARPANET special message queue, and discards  
all pending messages.

RESTRICTIONS

For ARPANET systems only.

CALLING SEQUENCE

AC1: Special queue handle (RET by ASNSQ); -1 to deassign  
all special queues

RETURNS +1: Always

RESET JSYS 147

FUNCTION

Closes all files at or below the current process and  
releases all JFNs; kills all inferior processes; clears the  
PSI for the current process; sets TT%WAK, TT%ECO, and .TTASI  
of the controlling terminal's JFN mode word; releases all  
PIDs of the current process; dequeues all ENQ requests for  
the current process, clears PA1050's entry vector; and,  
releases all process handles inferior to the current process  
or killed with KFORK.

RETURNS +1: Always

RFACS JSYS 161

FUNCTION

Returns the ACs of the specified process.

CALLING SEQUENCE

AC1: Process handle

AC2: Address of 20-word block to store AC values of  
specified process

RETURNS +1: Always

RFBSZ JSYS 45

FUNCTION

Returns the byte size for a specific opening of a file.

CALLING SEQUENCE

AC1: JFN

RETURNS +1: Failure, error code in AC1

+2: Success, byte size R-U in AC2

RFCOC JSYS 112

FUNCTION

Returns the control character output control (CCOC) words  
for the specified terminal.

CALLING SEQUENCE

AC1: File designator

RETURNS +1: Always, with CCOC words in AC2 and AC3

RFMOD JSYS 107

FUNCTION

Returns the JFN mode word associated with the specified  
file.

CALLING SEQUENCE

AC1: Source designator

RETURNS +1: Always, with mode word in AC2

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RFORK

RFORK JSYS 155

FUNCTION  
Resumes one or more processes that have been directly frozen.

CALLING SEQUENCE  
AC1: Process handle

RETURNS +1: Always

RFPOS JSYS 111

FUNCTION  
Returns the current position of the specified terminal's cursor.

CALLING SEQUENCE  
AC1: Device designator

RETURNS +1: Always, with  
AC2: <line number>,,<column number>  
0 if designator not terminal

RFPTR JSYS 43

FUNCTION  
Returns the current position of the specified file's pointer.

CALLING SEQUENCE  
AC1: JFN

RETURNS +1: Failure, error code in AC1  
+2: Success, byte number in AC2

RFRKH JSYS 165

FUNCTION  
Releases the specified process handle if the process is inferior to at least one other process in the job or has been killed with KFORK.

CALLING SEQUENCE  
AC1: Process handle; -1 for all

RETURNS +1: Failure, error code in AC1  
+2: Success



RFSTS JSYS 156

**FUNCTION**

Returns the status of the specified process.

**CALLING SEQUENCE**

AC1: 0,,<process handle> (short form)  
       flags,,<process handle> (long form)  
       B0 RF%LNG Long form call  
       B1-17 Unused, must be zero  
 AC2: Address of status return block (long form only)

**RETURNS**

+1: Always, with  
 AC1: Status word (short form only)  
 AC2: Process PC flags (short form only)  
 AC3: -1 if process deleted (short form only)

**PROCESS STATUS WORD**

Bit	Symbol	Meaning
B0	RF%FRZ	Process is frozen
B1-17	RF%STS	Status code for process
	0 .RFRUN	Process is runnable
	1 .RFIO	Process is dismissed for I/O
	2 .RFHLT	Process dismissed by HFORK or HALTF or never started
	3 .RFFPT	Process dismissed by forced process termination
	4 .RFWAT	Process dismissed waiting for another process to terminate
	5 .RFSLP	Process dismissed for specified amount of time
	6 .RFTRP	Process dismissed because intercepted by superior
	7 .RFABK	Process dismissed because address break encountered
B18-35	RF%SIC	Number of software interrupt channel causing forced process termination

**STATUS-RETURN BLOCK (Long Form Only)**

Word	Symbol	Meaning
0	.RFCNT	<returned word count>,,<max. words desired> (RH user specified)
1	.RFPSW	Process status word; -1 if unassigned process handle in AC1
2	.RFPFL	Process PC flags
3	.RFPPC	Process PC
4	.RFSFL	Status flag word
	B0 RF%EXD	Process is execute-only

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RFTAD

RFTAD JSYS 533

FUNCTION

Returns the dates and times associated with the specified file.

CALLING SEQUENCE

AC1: Source designator  
AC2: Address of argblk  
AC3: Length of argblk

RETURNS +1: Always, with dates returned in argblk

ARGUMENT BLOCK

Word	Symbol	Meaning
0	.RSWRT	Internal date and time file was last written
1	.RSCRV	Internal date and time file was created
2	.RSREF	Internal date and time file was last referenced
3	.RSCRE	System date and time of last write by monitor
4	.RSTDT	Tape-write date and time for archived or migrated files
5	.RSNET	Online expiration date and time
6	.RSFET	Offline expiration date and time

RIN JSYS 54

FUNCTION

Inputs a non-sequential (random) byte from the specified file.

RESTRICTIONS

Disk file only.

CALLING SEQUENCE

AC1: JFN  
AC3: Byte number within file

RETURNS +1: Always, with byte R-J in AC2; 0 if EOF

RIR JSYS 144

FUNCTION

Returns the channel and priority level table addresses for the specified process.

RESTRICTIONS

Process must run in section zero; for multiple-section processes use XRIR%.

CALLING SEQUENCE  
AC1: Process handle

RETURNS +1: Always, with  
AC2: <LEVTAB address>,,<CHNTAB address>  
0 if no SIR issued for process

RIRCM JSYS 143

FUNCTION  
Returns the mask for reserved software interrupt channels  
for the specified process.

CALLING SEQUENCE  
AC1: Process handle

RETURNS +1: Always, with channel mask in AC2

RLJFN JSYS 23

FUNCTION  
Releases the specified closed JFNs belonging to the current  
process or its inferiors.

CALLING SEQUENCE  
AC1: JFN; -1 for all JFNs

RETURNS +1: Failure, error code in AC1  
+2: Success

RMAP JSYS 61

FUNCTION  
Acquires a handle on a page in a process to determine the  
access allowed for that page.

CALLING SEQUENCE  
AC1: <process handle>,,<page # within process>

RETURNS +1: Always, with  
AC1: <process/file designator>,,<page #>  
-1 if page does not exist  
AC2: Access bits; 0 if page does not exist  
B2(RM%RD) Read access allowed  
B3(RM%WR) Write access allowed  
B4(RM%EX) Execute access allowed  
B5(RM%PEX) Page exists  
B9(RM%CPY) Copy-on-write access allowed

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RNAME

RNAME JSYS 35

FUNCTION

Renames an existing file.

CALLING SEQUENCE

AC1: Source file JFN

AC2: Destination file JFN

RETURNS

+1: Failure, error code in AC1

+2: Success, JFN in AC1 is released, and JFN in  
AC2 is associated with file under its new  
filespec

ROUT JSYS 55

FUNCTION

Outputs a byte nonsequentially (randomly) to the specified  
file.

RESTRICTIONS

For disk files only.

CALLING SEQUENCE

AC1: JFN

AC2: Byte to be output, right-justified

AC3: Destination byte number within file

RETURNS

+1: Always

RPACS JSYS 57

FUNCTION

Returns the accessibility of a page.

CALLING SEQUENCE

AC1: <process/file designator>.,.<process/file page number>

RETURNS

+1: Always, with

AC2: Flags

B2(PA%RD)	Read access allowed
B3(PA%WT)	Write access allowed
B4(PA%EX)	Execute access allowed
B5(PA%PEX)	Page exists
B6(PA%IND)	Indirect pointer
B9(PA%CPY)	Copy-on-write
B10(PA%PRV)	Private page
B20(P1%RD)	Read access allowed in 1st pointer
B21(P1%WT)	Write access allowed in 1st pointer
B22(P1%EX)	Execute access allowed in

B23(P1%PEX) 1st pointer  
Page exists in 1st pointer  
B27(P1%CPY) Copy-on-write in 1st  
pointer

RPCAP JSYS 150

FUNCTION

Returns the capabilities for the specified process.

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Always, with  
AC2: Capabilities possible for this process  
AC3: Capabilities enabled for this process

RSCAN JSYS 500

FUNCTION

Places a text string in, or reads a text string from, the job's rescan buffer (an area of storage in the Job Storage Block).

CALLING SEQUENCE

AC1: Byte pointer to new text string (1st call, to store string)  
0,,<function code> (2nd call, to read string)

RETURNS +1: Failure, error code in AC1  
+2: Success, with  
AC1: Updated pointer if one supplied, or  
Count of characters in rescan buffer,  
or 0 if rescan buffer empty

FUNCTION CODES

Code	Symbol	Meaning
0	.RSINI	Make rescan buffer available for input
1	.RSCNT	Return count of characters remaining in rescan buffer

RSMAP% JSYS 610

FUNCTION

Reads a section map, and provides information about the mapping of one section of a fork's memory.

CALLING SEQUENCE

AC1: <fork handle>,,<section number>

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RSMAP%

RETURNS +1: Always, with  
AC1: -1 if no current mapping;  
0 if mapping in private section;  
<fork handle>, <section #> if indirect  
or shared mapping to another fork's  
section; or JFN, <section #> if  
shared mapping to file section  
AC2: Access bits  
B2(SM%RD) Read access allowed  
B3(SM%WR) Write access allowed  
B4(SM%EX) Execute access allowed  
B5(PA%PEX) Section exists  
B6(SM%IND) Section created using  
indirect pointer

RTFRK JSYS 322

FUNCTION

Returns the handle of a process that was suspended because of a monitor call intercept and the monitor call that the process was attempting to execute.

RETURNS +1: Always, with  
AC1: Handle of process that generated  
interrupt  
AC2: JSYS instruction that caused process  
suspension

RTIW JSYS 173

FUNCTION

Reads the terminal interrupt word for the specified process or the entire job, and returns the terminal interrupt word mask.

AC1: BO(RT%DIM) Return mask for deferred terminal  
interrupts  
B18-35(RT%PRH) Process handle, or -5 for entire job

RETURNS +1: Always, with  
AC2: Terminal interrupt mask  
AC3: Deferred terminal interrupt mask

RUNTM JSYS 15

FUNCTION

Returns the run time of the specified process or of the entire job.

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Always, with  
AC1: Runtime (in mss) right-justified  
AC2: Divisor to convert mss to sec (1000)  
AC3: Console time (in mss)

RWM JSYS 135

FUNCTION

Returns the word mask for the interrupts waiting on software channels for the specified process.

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Always, with  
AC1: 36-bit word (1B<sub>n</sub> indicates pending interrupt on channel n)  
AC2: Status of interrupts in progress (1B<sub>n</sub> in LH indicates priority level n interrupt occurred in user code; 1B(18+n) in RH indicates priority level n interrupt occurred in monitor code)

RWSET JSYS 176

FUNCTION

Releases the working set by removing all of the current process's pages from its working set.

RETURNS +1: Always

SACTF JSYS 62

FUNCTION

Sets the account to which the specified file is to be charged.

RESTRICTIONS

In non-zero sections, DWGBPs must specify 7-bit bytes.

TOPS-20 Monitor Calls Quick Reference Guide  
SACTF

CALLING SEQUENCE

AC1: JFN

AC2: <5B2!<account number>B35>; or byte pointer to account string (maximum 39 characters)

RETURNS +1: Failure, error code in AC1  
+2: Success, updated byte pointer in AC2

SAVE JSYS 202

FUNCTION

Saves, in nonsharable format, pages of a process in the specified file.

RESTRICTIONS

Legal for single-section processes only.

CALLING SEQUENCE

AC1: <process handle>,,JFN

AC2: table entry; or 0,,<table pointer>

RETURNS +1: Always

TABLE FORMAT

Word Contents

0 to n <length of save area>,,<address of 1st word to save>

n+1 0

SCTTY JSYS 324

FUNCTION

Redefines the controlling terminal for the specified process and all of its inferiors.

RESTRICTIONS

Requires SC%SCT capability enabled in the process capability word for some functions; cannot be used to change the job's controlling terminal or the controlling terminal of the current process or its superiors.

CALLING SEQUENCE

AC1: <function code>,,<process handle>

AC2: Terminal designator

RETURNS +1: Always

FUNCTION CODES

Code	Symbol	Meaning
0	.SCTT	Return designator of given process's controlling terminal in AC2
1	.SCTE	Change given process's (and inferiors) controlling terminal to terminal designated



2 .SCRST in AC2 (SC%SCT)  
Reset given process's (and inferiors)  
controlling terminal to job's controlling  
terminal (SC%SCT)

SCVEC JSYS 301

FUNCTION

Sets the entry vector and the UUD locations for the  
compatibility package.

CALLING SEQUENCE

AC1: Process handle  
AC2: <entry vector length>,<entry vector address>;  
0 to merge compatibility package into caller's address  
space; or  
-1 to disable UUD simulation  
AC3: <UUD location>,,<PC location>

RETURNS +1: Always

COMPATIBILITY PACKAGE'S ENTRY VECTOR

Word	Symbol	Meaning
0	.SVEAD	Entry address for interpreting UUDs
1	.SVINE	Initial entry for setup and first UUD
2	.SVGET	Entry for GET share file routine (obsolete)
3	.SV40	Address to receive contents of location 40 on UUD call
4	.SVRPC	Address to receive return PC word on UUD call
5	.SVMAK	Entry for MAKE share file routine (obsolete)
6-7	.SVCST	2 word block for handling CTRL/C, START sequences between compatibility package and TOPS-20 Command Processor

SDSTS JSYS 146

FUNCTION

Sets the status of a device.

RESTRICTIONS

No-op for devices that do not have device-dependent status  
bits.

CALLING SEQUENCE

AC1: JFN  
AC2: New status bits

RETURNS +1: Always

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SDVEC

SDVEC JSYS 543

FUNCTION

Sets the entry vector for the Record Management System (RMS).

RESTRICTIONS

Requires RMS software (currently available only with BASIC and COBOL)

CALLING SEQUENCE

AC1: process handle

AC2: <entry vector length>,,<entry vector address>

RETURNS +1: Always

RECORD MANAGEMENT SYSTEM'S ENTRY VECTOR

Word	Symbol	Meaning
0	.SDEAD	Entry address for RMS calls
1	.SDINE	Initial entry for first RMS call
2	.SDVER	Pointer to RMS version block
3	.SDDMS	Address in which to store RMS call
4	.SDRPC	Address in which to store return PC word

SETER JSYS 336

FUNCTION

Sets the most recent error condition encountered by a process, stores it in the Process Storage Block.

CALLING SEQUENCE

AC1: Process handle

AC2: Error code to set

RETURNS +1: Always

SETJB JSYS 541

FUNCTION

Sets job parameters for the specified job.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability to set parameters for other than current job.

CALLING SEQUENCE

AC1: Jobno, or -1 for current job

AC2: Function code

AC3: Function value

RETURNS +1: Always

FUNCTION CODES

Code	Symbol	Function/Values
0	.SJDEN	Set default magtape density
1	.SJPAR	Set default for magtape parity 0 .SJPRO Odd parity 1 .SJPRE Even parity
2	.SJDm	Set default for magtape data mode
3	.SJRS	Set default for magtape record size (in bytes)
4	.SJDfs	Set spooling mode 0 .SJSPI Immediate mode spooling 1 .SJSPI Deferred mode spooling
5	.SJSRM	Set remark for current job session; pointer to remark in AC3
6	.SJT20	Indicate if job is at EXEC or program level -1 Job is at EXEC level 0 Job is at program level
7	.SJDfr	Set job default retrieval 0 .SURFA OPENF of off-line disk file should fail (default) 1 .SURWA OPENF of off-line disk file should wait for restoral
10	.SJBAT	Set batch flags and batch stream number BO-1(OB%WTO) Write to operator capability 0 .OBALL WTD & WTOR allowed 1 .OBNWR No WTR allowed 2 .OBNOM No message allowed B10(OB%BSS) OB%BSN contains batch stream # B11-17(OB%BSN) Batch stream #
11	.SJLLD	Set job logical location (node name)

SETNM JSYS 210

FUNCTION

Sets the private name of the program being used by the current job.

CALLING SEQUENCE

AC1: SIXBIT name used to identify program

RETURNS +1: Always

SETSN JSYS 506

FUNCTION

Sets either the system name or the private name of the program being used by the current job.

CALLING SEQUENCE

AC1: SIXBIT name to be used as system name  
AC2: SIXBIT name to be used as private name

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SETSN

RETURNS +1: Failure  
+2: Success

SEVEC JSYS 204

FUNCTION  
Sets the entry vector of the specified process.

RESTRICTIONS  
The process must run in only one section of memory.

CALLING SEQUENCE  
AC1: Process handle  
AC2: <entry vector length>,,<entry vector address>; or 0 to  
remove entry vector

RETURNS +1: Always

SFACS JSYS 160

FUNCTION  
Sets the ACs of the specified process.

CALLING SEQUENCE  
AC1: Process handle  
AC2: Address of 20 word block containing new AC values for  
process

RETURNS +1: Always

SFBSZ JSYS 46

FUNCTION  
Resets the byte size for a specific opening of a file.

CALLING SEQUENCE  
AC1: JFN  
AC2: Byte size, right-justified

RETURNS +1: Failure, error code in AC1  
+2: success

SFCOC JSYS 113

FUNCTION

Sets the control character output control (CCOC) for the specified terminal.

CALLING SEQUENCE

AC1: TTY designator

AC2: CCOC word

AC3: CCOC word

RETURNS +1: Always

SFMOD JSYS 110

FUNCTION

Sets the program-related modes (in the JFN mode word) for the specified terminal.

CALLING SEQUENCE

AC1: TTY designator

AC2: JFN mode word

RETURNS +1: Always

SFORK JSYS 157

FUNCTION

Starts the specified process; if the process is frozen, SFORK changes the PC but does not resume the process. On extended machines, the PC section number is obtained from the process entry vector.

RESTRICTIONS

Requires TOPS-20 Version 5 or later for extended addressing.

CALLING SEQUENCE

AC1: <flags>.,<process handle>  
1B0(SF%CON) Ignore address in AC2 and start process  
where halted

AC2: <flags>.,<process starting address> (PC of process  
being started)

RETURNS +1: Always

SFPOS JSYS 526

FUNCTION

Sets the position of the specified terminal's pointer.

CALLING SEQUENCE

AC1: TTY designator

AC2: <line number>,,<column number>

RETURNS +1: Always

SFPTR JSYS 27

FUNCTION

Sets the position of the specified file's pointer for subsequent I/O to the file.

CALLING SEQUENCE

AC1: JFN

AC2: Byte number to which pointer is to be set; -1 for current EOF

RETURNS +1: Failure, error code in AC1  
+2: Success

SFRKV JSYS 201

FUNCTION

Starts the specified process using the position given in its entry vector.

CALLING SEQUENCE

AC1: Process handle

AC2: Offset in entry vector of start address to use

RETURNS +1: Always

SFTAD JSYS 534

FUNCTION

Sets the dates and times associated with the specified file.

RESTRICTIONS

Some functions require enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: Source designator

AC2: Address of argblk

AC3: Length of argblk

RETURNS +1: Always

ARGUMENT BLOCK

Word	Symbol	Meaning
0	.RSWRT	Internal date/time file was last written (enabled WHL/OPR for >current)
1	.RSCRV	Internal date and time file was created (enabled WHL/OPR for >current)
2	.RSREF	Internal date and time file was last read (enabled WHL/OPR for >current)
3	.RSCRE	System date and time of last write by monitor (enabled WHL/OPR)
4	.RSTDT	Tape-write date and time of archived or migrated files (enabled WHL/OPR)
5	.RSNET	On-line expiration date and time (date/time or interval)
6	.RSFET	Offline expiration date and time (date/time or interval)

SFUST JSYS 551

FUNCTION

Sets the name of either the author of the file or the user who last wrote to the file.

RESTRICTIONS

Some functions require enabled WHEEL or OPERATOR capability, or caller must have write or owner access to specified file.

CALLING SEQUENCE

AC1: <function code>,,JFN  
AC2: Byte pointer to ASCIZ author/user name string

RETURNS +1: Always, with updated byte pointer in AC2

FUNCTION CODES

Code	Symbol	Meaning
0	.SFAUT	Set name of author of file
1	.SFLWR	Set name of user who last wrote file (enabled WHL/OPR)

SIBE JSYS 102

FUNCTION

Tests to see if the designated file input buffer is empty.

CALLING SEQUENCE

AC1: Source designator

RETURNS +1: if device is active terminal and input buffer not empty; or if device is not terminal, is open for read, and input buffer not empty

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AC2: Byte count remaining in input buffer  
+2: if device is non-active terminal  
AC2: Error code  
if device is active terminal and input buffer  
empty; if device not terminal and not open  
for read; or if device not terminal, is open  
for read, and input buffer empty  
AC2: 0

SIN JSYS 52

FUNCTION

Reads a string from the specified source.

CALLING SEQUENCE

AC1: Source designator  
AC2: Byte pointer address to store string  
  
AC3: 0 to read string that terminates with null byte  
+n to read string of n characters, or terminate on  
byte that matches contents of AC4  
-n to read string of n bytes  
AC4: Byte (R-J) on which to terminate input (if +n in AC3)

RETURNS +1: Always, with  
AC1: Updated byte pointer  
AC2: Updated byte pointer  
AC3: Updated count of bytes transferred

SINR JSYS 531

FUNCTION

Reads a record from the specified device; the calling  
program must specify the record size (SET TAPE RECORD-LENGTH  
of .MOSRS function of MTOPR); default record size is 1000  
bytes.

RESTRICTIONS

Will not read across record boundaries.

CALLING SEQUENCE

AC1: Source (device) designator  
AC2: Byte pointer to address to store record  
AC3: 0 to read record that terminates with null byte  
+n to read record of n characters, or terminate on  
byte that matches contents of AC4  
-n to read record of n bytes  
AC4: Byte (R-J) on which to terminate input (if +n in AC3)

RETURNS +1: Always, with  
AC1: Updated byte pointer  
AC2: Updated byte pointer



AC3: 0 if specified record size = actual  
record size (all bytes read)  
# of bytes read if specified  
record size > actual record size  
# of bytes requested if specified  
record size < actual record size;  
IOX10 returned and unread bytes  
discarded

SIR JSYS 125

FUNCTION

Sets the addresses of the channel and priority level tables for the specified process.

RESTRICTIONS

The process must run in section 0 of memory, with channel and priority level tables in that section. (Use XSIR% to set table addresses for multiple-section processes.)

CALLING SEQUENCE

AC1: Process handle  
AC2: LEVTAB, CHNTAB

RETURNS +1: Always

SIRCM JSYS 142

FUNCTION

Sets the mask for reserved software interrupt channels for the specified inferior process, causing conditions occurring on software channels that have the corresponding mask bit set to terminate or freeze the process, rather than generate an interrupt.

CALLING SEQUENCE

AC1: Inferior process handle  
AC2: Channel mask with bits set for reserved channels  
AC3: Deferred terminal interrupt word

RETURNS +1: Always

SIZEF JSYS 36

FUNCTION

Returns the length of an existing file.

CALLING SEQUENCE

AC1: JFN  
RETURNS +1: Failure, error code in AC1

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+2: Success, with  
AC2: File byte count (byte size from FDB)  
AC3: File page count

SJPRI JSYS 245

FUNCTION

Sets the scheduler priority control word.

RESTRICTIONS

This JSYS is reserved for DIGITAL. Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: Job #  
AC2: Priority word

RETURNS +1: Always

PRIORITY WORD

Bits	Contents
B0-17	Percentage of CPU resources (1 - 99%) guaranteed to job; 0 for no request
B18	System job flag (JP%SYS); higher priority than user jobs with guaranteed runtime
B24-29	Highest priority queue job may run in; 0 for no queue assignment request
B30-35	Lowest priority queue job may run in, specified as desired queue+1; 0 for no queue assignment request

SKED% JSYS 577

FUNCTION

Reads or modifies the monitor's scheduler data base.

RESTRICTIONS

Some functions require enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: Function code  
AC2: Address of argblk

RETURNS +1: Always

FUNCTION CODES

Code	Symbol	Function
1	.SKRBC	Read bias control knob setting
	0 .SACNT	Word count including this word
	1 .SAKNB	Bias control knob setting (RET)
2	.SKSBC	Set bias control setting (WHL/OPR)
	0 .SACNT	Word count including this word
	1 .SAKNB	Bias control setting (1-20)

3	.SKRCS	Read class parameters
	0 .SACNT	Word count including this word
	1 .SACLS	Class of job (RET)
	2 .SASHR	Share of CPU allocated to class (RET; $0.0 \leq n.n \leq 1.0$ )
	3 .SAUSE	Amount of CPU used by class (RET; $0.0 \leq n.n \leq 1.0$ )
	4 .SA1ML	1 min load avg for class (RET)
	5 .SA5ML	5 min load avg for class (RET)
	6 .SA15L	15 min load avg for class (RET)
4	.SKSCS	Set class parameters (WHL/OPR)
	0 .SACNT	Word count including this word
	1 .SACLS	Class of job
	2 .SASHR	Share of CPU allocated to class ( $0.0 \leq n.n \leq 1.0$ )
5	.SKICS	Start or stop class scheduler (WHL/OPR)
	0 .SACNT	Word count including this word
	1 .SACTL	Control flags B0(SK%ACT) Class by accounts B1(SK%WDF) Withhold windfall B2(SK%STP) Class scheduler off
6	.SKSCJ	Set job class (WHL/OPR for other than calling job)
	0 .SACNT	Word count including this word
	1 .SAJOB	Job #; -1 for calling job
	2 .SAJCL	Class of job
	3 .SAWA	Windfall allocation
7	.SKRJP	Read class parameters for a job
	0 .SACNT	Word count including this word
	1 .SAJSH	Job's share of CPU (RET; $0.0 \leq n.n \leq 1.0$ )
	2 .SAJUS	Job's current CPU use (RET; $0.0 \leq n.n \leq 1.0$ )
10	.SKBCR	Read class setting for batch jobs
	0 .SACNT	Word count including this word
	1 .SABCL	Batch class; -1 if none (RET)
11	.SKBCS	Set batch class (WHL/OPR)
	0 .SACNT	Word count including this word
	1 .SABCL	Batch class; -1 for none
12	.SKBBG	Run all batch jobs in "dregs" queue; illegal if class scheduling in use (WHL/OPR)
	0 .SACNT	Word count including this word
	1 .SADRG	0 don't run in dregs queue ≠0 run in dregs queue
13	.SKDDC	Reserved
14	.SKRCV	Read status
	0 .SACNT	Word count including this word
	1 .SACTL	Flags B0(SK%ACT) Class by accounts B1(SK%WDF) Withhold windfall B2(SK%STP) Class scheduler off B3(SK%DRG) Batch jobs being run in dregs queue

SKPIR JSYS 127

FUNCTION

Tests to see if the software interrupt system is enabled for the specified process, and performs a skip return if PSI enabled.

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Software interrupt system is off  
+2: Software interrupt system is on

SMAP% JSYS 767

FUNCTION

Maps one or more contiguous sections of memory.  
Maps one or more complete sections from a file to a process (Case I) or from a process to another process (Case II), creates new sections (Case III), or deletes sections from a process (Case IV).

CALLING SEQUENCE

AC1: JFN,,<file section number> (Case I)  
<fork handle>,,<section number> (Case II)  
0 (Case III)  
-1 (Case IV)  
AC2: <fork handle>,,<process section number> (Cases I-IV)  
AC3: 0,,<# (1-37) of contiguous sections to map> (Case IV)  
flags,,<# (1-37) of contiguous sections to map> (Cases I-III)  
B2(SM%RD) Allow read access (Cases I-III)  
B3(SM%WR) Allow write access (Cases I-III)  
B4(SM%EX) Allow execute access (Cases I-III)  
B6(SM%IND) Map using indirect section pointer  
(Case II-III)

RETURNS +1: Always

SMON JSYS 6

FUNCTION

Sets various flags and parameters in the monitor's data base.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability; some functions are for ARPANET systems only.

CALLING SEQUENCE

AC1: Function code  
AC2: New value for function

RETURNS +1: Always

FUNCTION CODES

Code	Symbol	Function
0	.SFFAC	Allow FACT file entries AC2: 1(SF%FAC) to set; 0 to clear
1	.SFCDE	CHECKD found errors AC2: 1(SF%CDE) to set; 0 to clear
2	.SFCDR	CHECKD is running AC2: 1(SF%CDR) to set; 0 to clear
3	.SFMST	Manual start in progress AC2: 1(SF%MST) to set; 0 to clear
4	.SFRMT	Allow remote LOGINS AC2: 1(SF%RMT) to set; 0 to clear
5	.SFPTY	Allow PTY LOGINS AC2: 1(SF%PTY) to set; 0 to clear
6	.SFCTY	Allow CTY LOGINS AC2: 1(SF%CTY) to set; 0 to clear
7	.SFDPR	Operator in attendance AC2: 1(SF%DPR) to set; 0 to clear
10	.SFLCL	Allow local LOGINS AC2: 1(SF%LCL) to set; 0 to clear
11	.SFBTE	Bit table errors found on startup AC2: 1(SF%BTE) to set; 0 to clear
12	.SFCRD	Users can change directory parameters AC2: 1(SF%CRD) to set; 0 to clear
13	.SFNVT	Allow ARPANET terminal LOGINS (ARPA) AC2: 1(SF%NVT) to set; 0 to clear
21	.SFUSG	Allow USAGE file entries AC2: 1(SF%USG) to set; 0 to clear
22	.SFFLO	Set full disk latency optimization (requires KL10-E revision level 2 and RH20 board M8555 revision level D) AC2: 1(SF%FLO) to set; 0 to clear
23	.SFMTA	Enable MOUNTR magtape allocation AC2: 1(SF%MTA) to set; 0 to clear
24	.SFMSO	Set system message level 0 AC2: 1(SF%MSO) to set; 0 to clear
25	.SFMS1	Set system message level 1 AC2: 1(SF%MS1) to set; 0 to clear
44	.SFNTN	Turn ARPANET on (ARPA) AC2: 1 to set; 0 to clear
45	.SFNDU	Reinitialize ARPANET if down (ARPA) AC2: 1 to set; 0 to clear
46	.SFNHI	Initialize ARPANET host table (ARPA) AC2: 1 to set; 0 to clear
47	.SFTMZ	Set local time zone AC2: time zone
50	.SFLHN	Set local ARPANET host number (ARPA) AC2: ARPANET host number
51	.SFAVR	Enable account validation AC2: 1 to set; 0 to clear
52	.SFSTS	Enable status reporting AC2: 1 to set; 0 to clear
53	.SFSOK	Set GETOK% defaults AC2: flags,,<GETOK% function code>

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BO(SF%EDK) 0 to disable access  
checking  
1 to enable access checking  
B1(SF%DOK) 0 to deny access if  
checking disabled  
1 to allow access if  
checking disabled

54 .SFMCY Set maximum offline expiration period  
AC2: expiration period in days

55 .SFRDU Update last access read time for directories  
AC2: 1 to set; 0 to clear

56 .SFACY Set maximum offline expiration period for  
archive files  
AC2: expiration period in days

57 .SFRTW Set no-retrieval-waits flag  
AC2: 1 to set; 0 to clear

60 .SFTDF Set tape mount controls  
AC2: BO(MT%UUT) 1 to unload unrecognizable  
tapes  
0 to treat unrecognizable  
tapes as unlabeled

61 .SFWSP Enable working set preloading  
AC2: 1 to set; 0 to clear

SNDIM JSYS 750

FUNCTION

Places a message in a previously assigned ARPANET special message queue.

RESTRICTIONS

For ARPANET systems only.

CALLING SEQUENCE

AC1: B0 If on, message contains 96-bit leader; if  
off, message contains 32-bit leader  
B1 If on, data in high-order 32 bits of each  
word of message; if off, data in all 36 bits  
of each word of message  
B18-35 Special queue header  
AC2: Address of extended message

RETURNS +1: Failure, error code in AC1  
+2: Success, message queued

See BBN Report #1822 for the format of the extended message.

SNOOP JSYS 516

FUNCTION

Performs system performance analysis.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: Function code  
 AC2: Function-specific argument  
 AC3: Function-specific argument  
 AC4: Function-specific argument

RETURNS +1: Failure, error code in AC1  
 +2: Success

FUNCTION CODES

Code	Symbol	Function/Arguments
0	.SNPLC	Declare and lock code into monitor's address space AC2: number of pages desired AC3: user page number of start of breakpoint routines to be locked On return AC2: monitor page # corresponding to user page #
1	.SNPLS	Lock swappable monitor
2	.SNPDB	Define a breakpoint AC2: Number of breakpoint AC3: Address in monitor space to be patched AC4: Instruction to be executed before patched instruction
3	.SNPIB	Insert all breakpoints and start analyzing
4	.SNPRB	Remove all breakpoints and stop analyzing
5	.SNPUL	Unlock and release all storage; remove all breakpoints
6	.SNPSY	Obtain address of monitor symbol AC2: Radix-50 symbol AC3: Radix-50 program name if local address desired; 0 to search entire symbol table On return AC2: Monitor address or value of symbol
7	.SNPAD	Obtain monitor symbol AC2: 36-bit value of symbol to be looked up in monitor's symbol table AC3: Radix-50 program name if local value desired; 0 to search entire symbol table On return AC2: Radix-50 symbol closest to and less than given value AC3: Difference between returned value and given value

SOBE JSYS 103

FUNCTION

Tests to see if the designated file output buffer is empty.

CALLING SEQUENCE

AC1: Destination designator

RETURNS +1: Output buffer is not empty  
AC2: number of bytes remaining in output  
buffer  
+2: Output buffer is empty  
AC2: 0  
Error return  
AC2: Error code

SOBF JSYS 175

FUNCTION

Tests to see if the designated file's output buffer is full.

CALLING SEQUENCE

AC1: File designator

RETURNS +1: Output buffer is not full  
AC2: Count of bytes in buffer  
Error return  
AC2: 0  
+2: Output buffer is full or error  
AC2: Count of bytes in buffer if no error

SOUT JSYS 53

FUNCTION

Writes a string to the specified destination.

CALLING SEQUENCE

AC1: Destination designator

AC2: Byte pointer to string to be written

AC3: 0 to write string that terminates with null byte

+n to write string of n characters, or terminate on  
byte that matches contents of AC4

-n to write string of n bytes

AC4: Byte (R-J) on which to terminate output (if +n in AC3)

RETURNS +1: Always, with  
AC1: Updated byte pointer  
AC2: Updated byte pointer  
AC3: Updated count of bytes transferred



SOUTR JSYS 532

FUNCTION

Writes a variable-length record to the specified device; the calling program must specify the record size (SET TAPE RECORD-LENGTH of .MOSRS function of MTOPR); default record size is 1000 bytes.

CALLING SEQUENCE

AC1: Destination designator  
AC2: Byte pointer to string to be written  
AC3: 0 to write record that terminates with null byte  
+n to write record of n characters, or terminate on byte that matches contents of AC4  
-n to write record of n bytes  
AC4: Byte (R-U) on which to terminate input (if +n in AC3)

RETURNS +1: Always, with  
AC2: Last non-zero byte written  
AC3: (# bytes written) - (# bytes requested)

SPACS JSYS 60

FUNCTION

Sets the accessibility of a page.

CALLING SEQUENCE

AC1: <process/file designator>,,<process/file page number>  
AC2: Access flags  
B2(PA%RD) Permit read access  
B3(PA%WT) Permit write access  
B4(PA%EX) Permit execute access  
B9(PA%CPY) Permit copy-on-write

SPJFN JSYS 207

FUNCTION

Sets the primary JFNs (.PRIIN and .PRIOU) for the specified process.

CALLING SEQUENCE

AC1: Process handle  
AC2: <primary input JFN>,,<primary output JFN>; or -1 in appropriate half to set to process's controlling terminal

RETURNS +1: Always

SPLFK JSYS 314

FUNCTION

Splices a process structure.

RESTRICTIONS

The new superior must be either the calling process or an inferior of it; the new inferior process must be an inferior of the calling process. The new superior and new inferior processes must not be the same process.

CALLING SEQUENCE

AC1: Process handle of new superior process  
AC2: Process handle of new inferior process

RETURNS

+1: Failure, error code in AC1  
+2: Success, with  
AC1: process handle of new superior  
AC2: process handle of new inferior

SPOOL JSYS 517

FUNCTION

Defines and initializes a device to be used for input spooling, or sets and reads the directory for a spooled device.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: <length of argblk>, <function code>  
AC2: Address of argblk

RETURNS

+1: Failure, error code in AC1  
+2: Success

FUNCTION CODES

Code	Symbol	Function/Arguments
0	.SPLDI	Define an input spooling device
		0 .SPLDV Device designator of input device
		1 .SPLNA Pointer to input file string
		2 .SPLGN Generation number of first file
1	.SPLSD	Set directory of spooled device (enabled WHL/OPR)
		0 .SPLDV Device designator of spooled device
		1 .SPLDR Directory number of user who opened spooled device
2	.SPLRD	Read directory of spooled device
		0 .SPLDV Designator of spooled device

SPRIW JSYS 243

FUNCTION

Sets the priority word for the specified process.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: Process handle

AC2: Priority word

RETURNS +1: Always

PRIORITY WORD

Bits	Contents
B0-17	Percentage of CPU resources (1 - 99%) guaranteed to job; 0 for no request
B18	System job flag (JP%SYS); higher priority than user jobs with guaranteed runtime
B24-29	Highest priority queue job may run in; 0 for no queue assignment request
B30-35	Lowest priority queue job may run in, specified as desired queue+1; 0 for no queue assignment request

SSAVE JSYS 203

FUNCTION

Creates a sharable, save-format file for the given JFN by copying (not sharing) pages from the given process.

CALLING SEQUENCE

AC1: <process handle>, ,JFN

AC2: One table entry; or 0, ,<table address>

AC3: 2nd word of 2-word table entry (if SS%EPN set); or 0

RETURNS +1: Always

TABLE ENTRY

Word	Contents
0	Flags:
	B0-17(SS%NNP) - (# of pages) in each group
	B18(SS%CPY) Allow copy-on-write access
	B19(SS%UCA) Limit access according to user's current page access ANDed with table word access
	B20(SS%RD) Allow read access
	B21(SS%WR) Allow write access
	B22(SS%EXE) Allow execute access
	B23(SS%EPN) Table entry is 2 words long; 2nd word contains page # of 1st page of group
	B27-35(SS%FPN) If OB23(SS%EPN), page # of 1st page in group; if 1B23(SS%EPN), 0
1	Page number of 1st page in group (for pages in

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2 non-zero section)  
0

STAD JSYS 226

FUNCTION

Sets the system's date.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability if the system's date is already set.

CALLING SEQUENCE

AC1: day,,<fraction of day>

RETURNS +1: Failure, error code in AC1  
+2: success

STCMP JSYS 540

FUNCTION

Compares two ASCIZ strings.

RESTRICTIONS

Alphabets are compared in upper case, regardless of case in string.

CALLING SEQUENCE

AC1: Byte pointer to test string  
AC2: Byte pointer to base string

RETURNS +1: always, with  
AC1: 0 if strings are equal; or flags  
BO(SC%LSS) Test string is less than  
base string  
B1(SC%SUB) Test string is subset of  
base string  
B2(SC%GTR) Test string is greater than  
base string  
AC2: Base byte pointer, pointing before 1st  
non-matching byte

STDEV JSYS 120

FUNCTION

Translates the given device name string to its corresponding device designator.

CALLING SEQUENCE

AC1: Byte pointer to device name string

RETURNS +1: Failure, error code in AC2  
+2: Success, device designator in AC2

STI JSYS 114

FUNCTION

Simulates terminal input.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability if specified terminal not assigned or opened by calling process, or is not accepting advice.

CALLING SEQUENCE

AC1: TTY designator

AC2: Character to be input, right-justified

RETURNS +1: Always

STIW JSYS 174

FUNCTION

Sets the terminal interrupt word for the entire job or a specific process.

RESTRICTIONS

Requires enabled SC%CTY capability in process capability word.

CALLING SEQUENCE

AC1: BO(ST%DIM) Set deferred terminal interrupt mask given in AC3

B18-35(ST%PRH) process handle  
AC2: Terminal interrupt word mask (1B<sub>n</sub> enables terminal code <sub>n</sub>)

AC3: Deferred terminal interrupt word mask (1B<sub>n</sub> defers terminal code <sub>n</sub>)

RETURNS +1: Always

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STO JSYS 246

FUNCTION

Simulates terminal output.

CALLING SEQUENCE

AC1: TTY designator

RETURNS +1: Always, with character right-justified in AC2

STPAR JSYS 217

FUNCTION

Sets the device-related modes for the specified terminal.

CALLING SEQUENCE

AC1: TTY designator

AC2: JFN mode word

RETURNS +1: Always

STPPN JSYS 556

FUNCTION

Translates the given directory name string to its corresponding project-programmer number (a TOPS-10 36-bit directory designator).

RESTRICTIONS

In non-zero sections, DWGBPs must specify 7-bit bytes.

CALLING SEQUENCE

AC1: JFN; 36-bit directory number; or byte pointer to ASCIZ directory name string

RETURNS +1: Always, with project-programmer number in AC2

STSTS JSYS 25

FUNCTION

Clears the status of a file.

CALLING SEQUENCE

AC1: O, JFN

AC2: Flags

B9(GS%ERR)

File may be in error

B13(GS%HLT)

I/O errors are terminating conditions

B17(GS%FRK)

JFN is restricted

RETURNS +1: Failure, error code in AC1

+2: success

STTYP JSYS 302

FUNCTION

Sets the terminal type number for the specified terminal line.

CALLING SEQUENCE

AC1: TTY designator  
AC2: TTY type

RETURNS +1: Always

SWJFN JSYS 47

FUNCTION

Swaps the association of two JFNs by exchanging all information cells of each JFN.

CALLING SEQUENCE

AC1: JFN  
AC2: Another JFN

RETURNS +1: Always

SWTRP% JSYS 573

FUNCTION

Provides a process with the ability to intercept arithmetic overflow or underflow conditions.

CALLING SEQUENCE

AC1: Process handle  
AC2: Function code  
AC3: Function-dependent argument

RETURNS +1: Always

FUNCTION CODES

Code	Symbol	Function/Arguments
0	.SWART	Set arithmetic trap location AC3: Address of arithmetic trap block; 0 to clear
1	.SWRAT	Read arithmetic trap location AC3: Trap block address; 0 if none set (RET)
2	.SWLUT	Set LUUD block address for non-zero sections AC3: LUUD address; 0 to clear
3	.SWRLT	Read LUUD block address AC3: LUUD address; 0 if none set (RET)

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LUUD BLOCK FORMAT

Offset	0	12	13	17	18	26	27	30	31	35
.ARPFL(0)	PC flags		0	opcode		AC	0			
.AROPC(1)	0	Location of LUUD +1								
.AREFA(2)	0	E of the LUUD								
.ARNPC(3)	0	New PC								
	0	5	6							35

SYERR JSYS 527

FUNCTION

Places information in the system error file.

RESTRICTIONS

Requires enabled WHEEL, OPERATOR, or MAINTENANCE capability.

CALLING SEQUENCE

AC1: Address of argblk

AC2: Length of argblk

RETURNS +1: Always

SYSGT JSYS 16

FUNCTION

Returns the table number, table length, and word 0 of the specified system table.

CALLING SEQUENCE

AC1: SIXBIT table name

RETURNS +1: Always, with

AC1: Word 0 of table

AC2: - <# of words in table>.,<table #>;

0 if table not found

TBADD JSYS 536

FUNCTION

Adds an entry to a standard-formatted command table used for user program command recognition.

CALLING SEQUENCE

AC1: Address of table

AC2: Entry to be added to table



RETURNS +1: Always, with address of new entry in AC1

TBDEL JSYS 535

FUNCTION

Deletes an entry from a standard-formatted command table used for user program command recognition.

CALLING SEQUENCE

AC1: Address of table

AC2: Address of entry to be deleted

RETURNS +1: Always

TBLUK JSYS 537

FUNCTION

Compares the specified string with strings indicated by a command table.

CALLING SEQUENCE

AC1: Address of table

AC2: Byte pointer to string to be compared with string in table

RETURNS +1: Always, with

- AC1: Address of entry that matches input string, or address where entry would be if in table
- AC2: Recognition flags
  - BO(TL%NDM) Input string has no match in table
  - B1(TL%AMB) Input string has more than one match in table
  - B2(TL%ABR) Input string is valid abbreviation
  - B3(TL%EXM) Input string has exact match in table
- AC3: Pointer to remainder of string in table if 1B2

COMMAND TABLE FORMAT

Word Contents

0 <# of remaining words>,,<max # of remaining words>  
1 - n <address of argblk>,,<available to user>

ARGUMENT BLOCK

Word Contents

0 If 0(B0-6) and 1B7(CM%FW), <flags>B18-35 and string begins in next word; if -0(B0-6) or 0B7, string starts in this word  
B34(CM%NDR) Do not recognize this string

1 Start of string if 0(B0-6) and 1B7(CM%FW) in word 0

TEXTI JSYS 524

FUNCTION

Reads input from a terminal or a file.

CALLING SEQUENCE

AC1: Address of argblk

RETURNS +1: Failure, error code in AC1  
 +2: Success, updated pointer in word .RDDBP, appropriate bits set in word .RDFLG, and updated count in word .RDDBC of argblk

ARGUMENT BLOCK

Word	Symbol	Contents
0	.RDCWB	Word count not including this word
1	.RDFLG	Flags
	B0(RD%BRK)	Break on CTRL/Z or ESC
	B1(RD%TOP)	Break on CTRL/G, CTRL/K, CTRL/L, CTRL/Z, ESC, CR, LF
	B2(RD%PUN)	Break on punctuation
	B3(RD%BEL)	Break on EOL (CRLF or LF only)
	B4(RD%CRF)	Suppress CR and return LF only
	B5(RD%RND)	Return if user tries to delete past beginning of buffer
	B6(RD%JFN)	JFNs in word .RDIOJ
	B7(RD%RIE)	Return if input buffer empty
	B8(RD%BEG)	Not used
	B9(RD%BEG)	Return when .RDBKL pointer is reached
	B10(RD%RAI)	Convert lowercase input to UPPERCASE
	B11(RD%SUI)	Suppress CTRL/U indication
	B12(RD%BTM)	Break character terminated input (RET)
	B13(RD%BFE)	Returned because user tried to delete past beginning of buffer (RET)
	B14(RD%BLR)	Backup limit for editing reached (RET)
2	.RDIOJ	Byte pointer to string; or <input JFN>, <output JFN>
3	.RDDBP	Byte pointer to destination string buffer
4	.RDDBC	Number of bytes in destination string
5	.RDBFP	Byte pointer to beginning of destination buffer
6	.RDRTY	Byte pointer to beginning of CTRL/R buffer
7	.RDBRK	Address of 4-word break character mask block
10	.RDBKL	Byte pointer to backup limit in destination buffer

TFORK JSYS 321

FUNCTION

Sets and removes monitor call intercepts (JSYS traps) for the given inferior processes.

RESTRICTIONS

Requires enabled WHEEL, OPERATOR, or MAINTENANCE capability for use on execute-only processes.

CALLING SEQUENCE

AC1: <function code>,,<process handle>

AC2: <interrupt channel>,,<size of monitor call bit table>  
(in bits)

AC3: Address of monitor call bit table

RETURNS +1: Always

FUNCTION CODES

Code	Symbol	Function
0	.TFSET	Set JSYS traps for given process (illegal for execute-only processes)
1	.TFRAL	Remove all JSYS traps for given process (illegal for execute-only processes)
2	.TFRTP	Remove JSYS traps indicated in monitor call bit table for given process (illegal for execute-only processes)
3	.TFSPS	Set interrupts on given software channel
4	.TFRPS	Return interrupt channel in left half of AC2
5	.TFTST	Test if caller is to be intercepted when it attempts to execute monitor calls; On return AC2: -1 intercept; 0 no intercept
6	.TFRES	Remove intercepts for all inferiors and clear assigned software channels
7	.TFUUD	Set JSYS traps for TOPS-10 UUDs for given process (illegal for execute-only processes)
10	.TFSJU	Set JSYS traps for both TOPS-10 UUDs indicated in monitor call bit table (illegal for execute-only processes)
11	.TFRUU	Remove JSYS traps for TOPS-10 UUDs

THIBR JSYS 770

FUNCTION

Blocks the current process for the specified elapsed time or until awakened by a TWAKE monitor call.

RESTRICTIONS

This call is temporary and may not be defined in future releases.

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THIBR

CALLING SEQUENCE

AC1: 0,,<maximum number of seconds to block>

RETURNS +1: Never  
+2: Always

TIME JSYS 14

FUNCTION

Returns the amount of time since the system was last restarted.

RETURNS +1: Always, with  
AC1: Time in milliseconds, right-justified  
AC2: 1000 (divisor for conversion to seconds)

TIMER JSYS 522

FUNCTION

Controls the amount of time either a process within a job or the entire job can run.

CALLING SEQUENCE

AC1: <process handle>,,<function code>  
AC2: Time at which to generate interrupt  
AC3: Software channel number on which to generate interrupt

RETURNS +1: Failure, error code in AC1  
+2: Success

FUNCTION CODES

Code	Symbol	Function/Arguments
0	.TIMRT	Set total runtime of entire job AC2: Total runtime in mss
1	.TIMEL	Set elapsed time for process AC2: Elapsed time in mss before interrupt
2	.TIMDT	Set exact time to generate interrupt for process AC2: Time of interrupt in internal format
3	.TIMDD	Remove any pending interrupts at given time AC2: Time of interrupt in internal format
4	.TIMBF	Remove any pending interrupts before given time AC2: Time of interrupt in internal format
5	.TIMAL	Remove all pending requests for given process

TLINK JSYS 216

**FUNCTION**  
Controls terminal linking.

**RESTRICTIONS**  
Some functions require enabled WHEEL or OPERATOR capability.

**CALLING SEQUENCE**

AC1: B0(TL%CRD) Clear link from remote to object  
designator  
B1(TL%CDR) Clear link from object to remote  
designator  
B2(TL%EDR) Establish link from object to remote  
designator  
B3(TL%ERO) Establish link from remote to object  
designator  
B4(TL%SAB) Examine B5(TL%ABS) to determine setting  
of object designator's accept link bit  
B5(TL%ABS) Set object designator's accept link bit  
B6(TL%STA) Examine B7(TL%AAD) to determine setting  
of object designator's accept advice  
bit  
B7(TL%AAD) Set object designator's accept advice  
bit  
B18-35(TL%OBJ) Object designator  
AC2: 0, <remote designator>

**RETURNS** +1: Failure, error code in AC1  
+2: Success

TMON JSYS 7

**FUNCTION**  
Returns various flags and parameters in the monitor's data  
base.

**CALLING SEQUENCE**

AC1: Function code  
AC2: Function-specific arguments

**RETURNS** +1: Always, with  
AC2: Value of function  
normally, 1 if set; 0 if clear

**FUNCTION CODES**

Code	Symbol	Function
0	.SFFAC	FACT file entries are allowed
1	.SFCDE	CHECKD found errors
2	.SFCDR	CHECKD is running
3	.SFMST	Manual start is in progress
4	.SFRMT	Remote LOGINs are allowed
5	.SFPTY	PTY LOGINs are allowed
6	.SFCTY	CTY LOGINs are allowed

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 TMON

7	.SFOPR	Operator is in attendance
10	.SFLCL	Local LOGINs are allowed
11	.SFBTE	Bit table errors found on startup
12	.SFCRD	Users can change nonprivileged directory parameters
13	.SFNVT	ARPANET terminal LOGINs are allowed
21	.SFUSG	USAGE file entries are allowed
22	.SFFLO	Disk latency optimization using RH20 backup register is enabled
23	.SFMTA	MOUNTR magtape allocation is enabled
24	.SFMSO	System message level 0 is enabled
25	.SFMS1	System message level 1 is enabled
44	.SFNTN	ARPANET is on
45	.SFNDU	ARPANET will be reinitialized if it is down
46	.SFNHI	ARPANET host table will be initialized
47	.SFTMZ	Local time zone
50	.SFLHN	ARPANET local host number
51	.SFAVR	Account validation is running
52	.SFSTS	Status reporting is enabled
53	.SFSOK	GETOK% defaults AC2: flags,,<GETOK% function code> BO(SF%EOK) 0 Access checking is disabled 1 Access checking is enabled B1(SF%DOK) 0 Access is denied if checking disabled 1 Access is allowed if checking disabled
54	.SFMCY	Maximum offline expiration period in days for ordinary files
55	.SFRDU	Update last access read time for directories
56	.SFACY	Maximum offline expiration period in days for archive files
57	.SFRTW	File-retrieval requests should fail
60	.SFTDF	Tape mount controls BO(MT%UUT) 1 unload unrecognizable tapes 0 treat unrecognizable tapes as unlabeled
61	.SFWSP	Enable working set preloading

TTMSG JSYS 775

FUNCTION

Sends a message to a specified terminal or to all terminals.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability to send to all terminals. Messages sent by privileged users may have a maximum of 581 characters; messages sent by non-privileged users may have a maximum of 526 characters. This call is temporary and may not be defined in future releases.

CALLING SEQUENCE

AC1: 400000 + TTY number; or -1 for all terminals  
AC2: Byte pointer to message string

RETURNS +1: Always

TWAKE JSYS 771

FUNCTION

Wakes the specified job that is blocked because of the execution of a THIBR call.

RESTRICTIONS

This call is temporary and may not be defined in future releases.

CALLING SEQUENCE

AC1: 0,,<number of job to be awakened>

RETURNS +1: Failure, error code in AC1  
+2: Success

UFPGS JSYS 525

FUNCTION

Updates pages of the specified file.

CALLING SEQUENCE

AC1: JFN,,<file page # of 1st page to be updated>  
AC2: Flags,,<# of sequential pages to update>  
BO(UF%NOW) Perform UFPGS without blocking

RETURNS +1: Failure, error code in AC1  
+2: Success

USAGE JSYS 564

FUNCTION

Controls accounting on the system by writing entries into the system's data file.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: Function code  
AC2: Function argument; or address of record descriptor block

RETURNS +1: Always

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USAGE

FUNCTION CODES

Code	Symbol	Function/Arguments
0	.USENT	Write entry into system's data file AC2: Address of record descriptor block
1	.USCLS	Close system's data file
2	.USCKP	Perform checkpoint of all jobs
3	.USLGI	Initialize checkpoint entry for job AC2: Address of record descriptor block
4	.USLGO	Terminate checkpoint entry for job and write entry to system's data file AC2: Address of record descriptor block
5	.USSEN	Terminate current session, write entry to system's data file, and initialize new checkpoint entry for job AC2: Address of record descriptor block
6	.USCKI	Set checkpoint time interval AC2: Time interval in minutes
7	.USENA	Install accounting data base into running monitor from PS:<SYSTEM>ACCOUNTS-TABLE.BIN
10	.USCAS	Change accounting shift
11	.USSAS	Set accounting shifts AC2: Pointer to argblk of format: 0 <# table entries>.,<max # entries> 1-n B0-6(US%DOW) Days-of-week entry in effect (0=Monday) B7-17 Not used, must be zero B18-35 Time in seconds since (US%SSM) midnight for accounting shift change
12	.USRAS	Read accounting shifts AC2: Pointer to argblk (see .USSAS for format)

USRID JSYS 310

FUNCTION

Places the user program into user I/O mode for executing various hardware I/O instructions.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

RETURNS +1: Failure, error code in AC1  
+2: Success, user IOT flag set



UTEST JSYS 563

FUNCTION

Provides a method for determining if every instruction in a section of monitor code actually gets executed.

RESTRICTIONS

Requires enabled WHEEL or OPERATOR capability.

CALLING SEQUENCE

AC1: <function code>,,<length of argblk>

AC2: Address of argblk

RETURNS +1: Always

FUNCTION CODES

Code	Symbol	Function
0	.UTSET	Start testing code
1	.UTCLR	Stop testing code and update bit map in argblk

ARGUMENT BLOCK

Word	Symbol	Contents
0	.UTADR	Address of beginning of code section to be tested
1	.UTLEN	Length of code section to be tested
2	.UTMAP	Start of bit map representing instructions to be tested in code section

UTFRK JSYS 323

FUNCTION

Resumes the execution of a process that was suspended because of a monitor call intercept.

CALLING SEQUENCE

AC1: Flags,,<process handle>

BO(UT%TRP) Cause failure return for suspended process

RETURNS +1: Always

VACCT JSYS 566

FUNCTION

Verifies accounts by validating the supplied account for the given user.

CALLING SEQUENCE

AC1: user number; directory number; or -1 for current user

AC2: Byte pointer to account string

RETURNS +1: Always, with updated pointer in AC2

WAIT JSYS 306

FUNCTION

Dismisses the current process indefinitely and does not return.

WFORK JSYS 163

FUNCTION

Causes the current process to wait for an inferior process to terminate.

CALLING SEQUENCE

AC1: Inferior process handle

RETURNS +1: Always, when specified processes terminates

WILD% JSYS 565

FUNCTION

Compares a possibly wild string against a non-wild string to see if the latter matches the wild string.

CALLING SEQUENCE

AC1: Flags, , <function code>

AC2: Wild argument: JFN or byte pointer to string

AC3: Non-wild argument: JFN or byte pointer to string

RETURNS +1: Always

FUNCTION CODES

Code	Symbol	Function
0	.WLSTR	Compare non-wild string against wild string AC1: BO(WL%LCD) Lowercase characters are distinct from uppercase On return AC1: 0 Strings matched BO(WL%NDM) If on, non-wild string did not match wild string B1(WL%ABR) If on, non-wild string is abbreviation of wild string
1	.WLJFN	Compare non-wild filespec against wild filespec On return AC1: 0 Filespecs matched B1(WL%DEV) Device field does not match B2(WL%DIR) Directory field does not match

B3(WL%NAM) Name field does not match  
B4(WL%EXT) File type does not match  
B5(WL%GEN) Generation number does not  
match

XGSEV% JSYS 614

FUNCTION

Gets an extended special entry vector that has been set to allow use of TOPS-10 Compatibility and RMS entry vectors in non-zero sections.

CALLING SEQUENCE

AC1: <vector type code>,,<fork handle>

RETURNS +1: Always, with  
AC2: Length of entry vector  
AC3: B0-5 Flags  
B6-35 Address of entry vector

XGTPW% JSYS 612

FUNCTION

Returns the page-fail words of a process that runs in more than one section of memory.

CALLING SEQUENCE

AC1: Process handle  
AC2: Address of argblk

RETURNS +1: Always

ARGUMENT BLOCK

Word	Contents
0	Length of block, including this word
1	0 On return Flags B0(PF%USR) Page failure on user-mode reference B1(PF%WTF) Page failure on write reference
2	0 On return Address that referenced page
3	0 On return
4	0 On return MUUD opcode and AC 30-bit effective address of MUUD

XGVEC% JSYS 606

FUNCTION

Returns the entry vector of a specified process which runs in more than one section of memory.

CALLING SEQUENCE

AC1: Process handle

RETURNS +1: Always, with  
AC2: Length of entry vector  
AC3: address of entry vector

XRIR% JSYS 601

FUNCTION

Reads the addresses of the channel and priority level tables for a process running in more than one section of memory.

CALLING SEQUENCE

AC1: Process handle  
AC2: Address of argblk

RETURNS +1: Always

ARGUMENT BLOCK

Word	Contents
0	Length of argblk, including this word
1	Address of interrupt level table
2	Address of channel table

XRMAP% JSYS 611

FUNCTION

Acquires a handle on a page in an extended process to determine the access allowed for that page.

CALLING SEQUENCE

AC1: <process handle>,,0  
AC2: Address of argblk

RETURNS +1: Always

ARGUMENT BLOCK

Word	Contents
0	Length of argblk, including this word
1	Number of pages in this group on which to return data On return <process/file designator>,,<page number> (page handle)
2	Number of first page in this group On return Access flags; or -1 if page non-existent

3 Address of block for returned data  
n Number of pages in this group on which to return data  
n+1 Number of first page in this group  
n+2 Address of block for returned data

ACCESS FLAGS

Bit	Symbol	Meaning
B2	RM%RD	Read access allowed
B3	RM%WR	Write access allowed
B4	RM%EX	Execute access allowed
B5	RM%PEX	Page exists
B9	RM%CPY	Copy-on-write access allowed

XSFRK% JSYS 605

FUNCTION

Starts the specified process in a non-zero section of memory.

CALLING SEQUENCE

AC1: Flags,,<process handle>  
BO(SF%CON) Continue process that has halted  
AC2: <PC flags>,,0  
AC3: Address to set PC to (ignored if SC%CON on)

RETURNS +1: Always

XSIR% JSYS 602

FUNCTION

Sets the addresses of the channel and priority level tables for a process running in one or more sections of memory.

CALLING SEQUENCE

AC1: Process handle  
AC2: Address of argblk

RETURNS +1: Always

ARGUMENT BLOCK

Word	Contents
0	Length of argblk, including this word
1	Address of interrupt level table
2	Address of channel table

TOPS-20 Monitor Calls Quick Reference Guide  
XSSEV%

XSSEV% JSYS 613

FUNCTION

Allows setting of extended special entry vector for use with  
TOPS-10 Compatibility Package and RMS entry vectors in  
non-zero sections.

CALLING SEQUENCE

AC1: <vector type code>, <fork handle>  
0 .XSEVC TOPS-10 Compatibility

1 .XSEVD RMS

AC2: Length of entry vector

AC3: B1(XS%EEV) Extended entry vector; if on, entry vector  
points to 2-word extended PC and extended  
format UUD word

B6-35 Address of entry vector

RETURNS +1: Always

XSVEC% JSYS 607

FUNCTION

Sets or clears the entry vector of a process that runs in  
one or more sections of memory.

CALLING SEQUENCE

AC1: Process handle

AC2: Length of entry vector; or 0 to clear

AC3: Address of entry vector

RETURNS +1: Always

CONTROL CHARACTER OUTPUT CONTROL (CCOC) WORD

ASCII Code	Wake-up Class	CCOC Word	Character or Control Character
0	C	1B1	CTRL/@ null,break
1	C	1B3	CTRL/A
2	C	1B5	CTRL/B
3	C	1B7	CTRL/C
4	C	1B9	CTRL/D
5	C	1B11	CTRL/E
6	C	1B13	CTRL/F
7	C	1B15	CTRL/G bell
10	F	1B17	CTRL/H backspace
11	P	1B19	CTRL/I horizontal tab
12	F	1B21	CTRL/J line feed
13	C	1B23	CTRL/K vertical tab
14	F	1B25	CTRL/L form feed
15	F	1B27	CTRL/M carriage return
16	C	1B29	CTRL/N
17	C	1B31	CTRL/O
20	C	1B33	CTRL/P
21	C	1B35	CTRL/Q
22	C	2B1	CTRL/R
23	C	2B3	CTRL/S
24	C	2B5	CTRL/T
25	C	2B7	CTRL/U
26	C	2B9	CTRL/V
27	C	2B11	CTRL/W
30	C	2B13	CTRL/X
31	C	2B15	CTRL/Y
32	C	2B17	CTRL/Z
33	all	2B19	ESCAPE (altmode)
34	C	2B21	CTRL/backslash
35	C	2B23	CTRL/right square bracket
36	C	2B25	CTRL/uparrow
37	F	2B27	CTRL/backarrow
40	P		SPACE
41	P		!
42	P		"
43	P		#
44	P		\$
45	P		%
46	P		&
47	P		'
50	P		(
51	P		)
52	P		*
53	P		+
54	P		,
55	P		-
56	P		.
57	P		/
60-71	A		0-9
72	P		:
73	P		;
74	P		<

TOPS-20 Monitor Calls Quick Reference Guide  
 CCDC Word

75	P	=
76	P	>
77	P	?
100	P	@
101-132	A	UPPERCASE LETTERS A-Z
133	P	[
134	P	\
135	P	]
136	P	^
137	P	_
140	P	accent grave
141-172	A	lowercase letters a-z
173(1)	P	{
174(1)	P	
175(1)	P	}
176(1)	P	~
177	all	DELETE (RUBOUT)

A	Alphanumeric character	0(00)	Ignore (send nothing)
C	Non-formatting CTRL/char	1(01)	Indicate by ^X
F	Formatting CTRL/char	2(10)	Send character code
P	Punctuation character	3(11)	Simulate format action

COMMUNICATIONS PROTOCOLS

Code	Symbol	Meaning
0	.VN2OF	RSX20F protocol
1	.VNMCB	MCB DECnet protocol
2	.VND60	DN60 (IBMCOM) protocol
	.VNDDC	DDCMP (DECnet) protocol
3	.VNMOP	MOP (DDCMP maintenance) protocol
4	.VNCNL	Controller loopback
5	.VNCBL	Cable loopback



DEVICE TYPES

Name	Description	Type	Symbol	Units
DSK:	disk structure	0	.DVDSK	no
MTA:	magtape	2	.DVMTA	yes
MT:	logical magtape	2	.DVMTA	yes
LPT:	spooled line printer	7	-	yes
PLPT:	physical line printer	7	.DVLPT	yes
CDR:	spooled card reader	10	-	yes
PCDR:	physical card reader	10	.DVCDR	yes
FE:	front-end pseudo-device	11	.DVFE	no
TTY:	terminal	12	.DVTTY	yes
PTY:	pseudo-terminal	13	.DVPTY	yes
NUL:	null device	15	.DVNUL	no
NET:	ARPA network	16	.DVNET	no
CDP:	spooled card punch	21	-	yes
PCDP:	physical card punch	21	.DVCDP	yes
DCN:	DECnet active component	22	.DVDCN	no
SRV:	DECnet passive component	23	.DVSRV	no

```

+-----+
| Device designator = <600000(.DVDES)+type>,,<unit number> |
| <600000(.DVDES)+type>,,-1 if no units |
| Terminal designator = 0,,<400000(.TTDES) + TTY number> |
+-----+

```

DIRECTORY PROTECTION FIELDS

Value	Symbol	Meaning
40	DP%RD	Directory access controlled by individual file access
10	DP%CN	Connecting to directory and changing protection/account allowed
4	DP%CF	Creating files in directory allowed

FILE PROTECTION FIELDS

Value	Symbol	Meaning
40	FP%RD	Read access
20	FP%WR	Write access
10	FP%EX	Execute access
4	FP%APP	Append access
2	FP%DIR	Directory listing access

TOPS-20 Monitor Calls Quick Reference Guide  
File Descriptor Block

FILE DESCRIPTOR BLOCK (FDB)

Word	Symbol	Contents
0	.FBHDR	FDB header word
		B0-28 Reserved for DIGITAL
		B29-35(FB%LEN) Length of this file's FDB
1	.FBCTL	B0(FB%TMP) File is temporary
		B1(FB%PRM) File is permanent
		B2(FB%NEX) File does not exist (no file type)
		B3(FB%DEL) File is deleted
		B4(FB%NXF) File does not exist (not yet closed)
		B5(FB%LNG) File is longer than 512 pages
		B6(FB%SHT) Reserved for DIGITAL
		B7(FB%DIR) File is a directory
		B8(FB%NOD) File is not to be backed-up
		B9(FB%BAT) File may have one or more bad pages
		B10(FB%SDR) Directory has subdirectories
		B11(FB%ARC) File has archive status
		B12(FB%INV) File is invisible
		B13(FB%OFF) File is offline
		B14-17(FB%FCF) File class field 0(.FBNRM) not RMS file 1(.FBRMS) RMS file
		B18(FB%NDL) File cannot be deleted
2	.FBEXL	Link to FDB of next file with same name but different type
3	.FBADR	Disk address of file index block
4	.FBPRT	File access code: 500000, <access flags>
5	.FBCRE	Date/time that file was closed after last write
6	.FBAUT	Pointer to file author string
7	.FBGEN	<generation #>, <internal directory #> if 187 of .FBCTL
10	.FBACT	Pointer to alphanumeric account designator string
11	.FBBYV	File I/O flags B0-5(FB%RET) Generation retention count B6-11(FB%BSZ) File byte size B14-17(FB%MOD) Data mode of last file open B18-35(FB%PGC) File page count
12	.FBSIZ	Number of bytes in file
13	.FBCRV	File creation date/time
14	.FBWRT	Date/time of last user write
15	.FBREF	Date/time of last non-write access
16	.FBCNT	<# of file writes>, <# of file references>
17	.FBBKO	Used by DUMPER
20	.FBEK1	Reserved for DIGITAL
21	.FBEK2	Reserved for DIGITAL
22	.FBBBT	Flags, <# file pages when deleted> B1(AR%RAR) User request for file archive B2(AR%RIV) System request for involuntary file migration

TOPS-20 Monitor Calls Quick Reference Guide  
File Descriptor Block

	B3(AR%NDL)	Do not delete contents of file when archiving
	B4(AR%NAR)	Resist involuntary migration
	B5(AR%EXM)	File exempt from involuntary migration
	B6(AR%1ST)	1st pass of archival-collection run in progress
	B7(AR%RFL)	Restore failed
	B10(AR%WRN)	Warn user of approaching on-line expiration
	B11-17(AR%RSN)	Reason file was moved offline .AREXP(1) File expired .ARRAR(2) Archiving was requested .ARRIR(3) Migration was requested
	B18-35(AR%PSZ)	0,,<# file pages when archived>
23	.FBNET	On-line expiration date/time
24	.FBUSW	User-settable word
25	.FBGNL	Address of FDB for next generation of file
26	.FBNAM	Pointer to filename block
27	.FBEXT	Pointer to file type block
30	.FBLWR	Pointer to user-who-last-wrote string
31	.FBTDT	Archive or collection tape-write date/time
32	.FBFET	Offline expiration date/time
33	.FBTP1	Tape ID for first archive or collection run
34	.FBSS1	<1st tape saveset #>,,<1st tape file #>
35	.FBTP2	Tape ID for second archive or collection run
36	.FBSS2	<2nd tape saveset #>,,<2nd tape file #>

FORK (PROCESS) HANDLES

Value	Symbol	Meaning
400000	.FHSLF	Current process
400000+n	--	Process n, inferior to current process (relative fork handle)
-1	.FHSUP	Superior process
-2	.FHTOP	Top-level process
-3	.FHSAI	Current process and all inferiors
-4	.FHINF	All inferiors of current process
-5	.FHJOB	All processes in job

FLOATING-POINT FORMAT CONTROL

Bit	Symbol	Meaning
B0-1	FL%SGN	Sign control for 1st field; 1st character position used for minus for negative numbers; for positive numbers, 1st character position defined according to: 0 .FLDIG 1st character is digit

TOPS-20 Monitor Calls Quick Reference Guide  
 Floating-Point Format Control

		1 .FLSPC	1st character is space
		2 .FLPLS	1st character is plus sign
		3 .FLSPA	1st character is space
B2-3	FL%JUS		Justification control for 1st field
		0 .FLLSP	Right justify with leading spaces
		1 .FLLZR	Right justify with leading 0's
		2 .FLLAS	Right justify with leading asterisks
		3 .FLTSP	Left justify with trailing spaces
B4	FL%DNE		Output at least 1 digit in 1st field
B5	FL%DOL		Prefix number with dollar sign (\$)
B6	FL%PNT		Output decimal point
B7-8	FL%EXP		3rd (exponent) field control
		0 .FLEXN	No exponent field
		1 .FLEXE	Output E as 1st character of exponent field
		2 .FLEXD	Output D as 1st character of exponent field
		3 .FLEXM	Output *10^ as 1st characters of exponent field
B9-10	FL%ESG		Exponent sign control; 1st character position used for minus for negative exponents; for positive exponents, 1st character position defined according to:
		0 .FLDGE	1st character after exponent prefix is digit
		1 .FLPLE	1st character after prefix is plus sign
		2 .FLSPE	1st character after prefix is space
		3 .FLDGT	1st character after exponent prefix is digit
B11	FL%DVL		Use free format on overflow of 1st field and expand exponent on overflow of 3rd field
B13-17	FL%RND		Digit position at which rounding will occur; if 0, rounding occurs at 12th digit; if 37, no rounding occurs
B18-23	FL%FST		Number of characters in 1st field, including \$ if FL%DOL set
B24-29	FL%SND		Number of characters in 2nd field
B30-35	FL%THD		Number of characters in 3rd field

I/O IDENTIFIERS

Symbol	LH,,RH	Meaning
--	0,,JFN	Job File Number (file handle)
.PRIIN	0,,100	Primary input designator
.PRIOU	0,,101	Primary output designator
.NULIO	0,,377777	Null designator
.TTDES	0,,400000	Universal terminal designator
.CTTRM	0,,777777	Process's controlling terminal
.DVDES	600000,,xxxxxx	Universal device designator
	777777,,address	Implicit byte pointer
	777777,,777777	Universal default

JFN MODE WORD

Bit	Symbol	Function
B0	TT%OSP	Output suppress control (1 = ignore output; 0 = allow output)
B1	TT%MFF	Has mechanical form feed
B2	TT%TAB	Has mechanical tab
B3	TT%LCA	Has lower case
B4-10	TT%LEN	Page length
B11-17	TT%WID	Page width
B18-23	TT%WAK	Wakeup control on:
	B18	not used
	B19	TT%IGN Ignore other TT%WAK bits
	B20	TT%WKF Formatting control character
	B21	TT%WKN Non-formatting control character
	B22	TT%WKP Punctuation character
	B23	TT%WKA Alphanumeric character
B24	TT%ECO	Echo on
B25	TT%ECM	Echo mode
B26	TT%ALK	Accept links
B27	TT%AAD	Accept advice
B28-29	TT%DAM	Terminal data mode
	00	.TTBIN No translation
	01	.TTASC Translate both echo and output
	10	.TTATD Translate output only
	11	.TTATE Translate echo only
B30	TT%UOC	Upper case output control
	0	Do not indicate
	1	Indicate by 'X'
B31	TT%LIC	Lower case input control
	0	No conversion
	1	Convert lower to upper
B32-33	TT%DUM	Duplex mode
	00	.TTFDX Full duplex
	01	Reserved for DIGITAL
	10	.TTHDX Character half duplex
	11	.TTLDX Line half duplex
B34	TT%PGM	Pause-on-command mode
	0	Disable pause-on-command mode
	1	Enable pause-on-command mode
B35	TT%CAR	System carrier state; on if line is dataset and carrier is on

JOB CAPABILITY WORD

Bit	Symbol	Meaning
<u>B0-8 Process Capabilities</u>		
B0	SC%CTC	Process can enable for CTRL/C interrupts
B1	SC%GTB	Process can examine monitor tables with GETAB
B3	SC%LOG	Process can execute protected log functions
B6	SC%SCT	Process can change source of terminal interrupts for other processes

B9-17 Inferior Process Capabilities

B9	SC%SUP	Process can manipulate its superior process
B17	SC%FRZ	Unprocessed software interrupts can cause process to be frozen instead of terminated

B18-35 User Capabilities

B18	SC%WHL	User has WHEEL capability
B19	SC%OPR	User has OPERATOR capability
B20	SC%CNF	User has CONFIDENTIAL INFORMATION ACCESS capability
B21	SC%MNT	User has MAINTENANCE capability
B22	SC%IPC	User has IPCF capability
B23	SC%ENQ	User has ENQ/DEQ capability
B24	SC%NWZ	User has NET WIZARD (ARPAnet) capability
B25	SC%NAS	User has ARPANET ABSOLUTE SOCKET capability
B26	SC%DNA	User has access to DECNET
B27	SC%ANA	User has access to ARPANET

MAGTAPE DEVICE TYPES

Code	Symbol	Type
3	.MTT45	TU45 (default)
17	.MTT70	TU70
20	.MTT71	TU71
21	.MTT72	TU72
13	.MTT77	TU77
19	.MTT78	TU78

MAGTAPE DRIVE TYPES

Code	Symbol	Meaning
1	.TMDR9	9-track tape drive
2	.TMDR7	7-track tape drive

MAGTAPE HARDWARE DATA MODES

Code	Symbol	Meaning
0	.SJDDM	Default system data mode
1	.SJDMC	Dump mode
2	.SJD M6	SIXBIT mode
3	.SJDMA	ANSI ASCII mode
4	.SJD M8	Industry compatible mode
5	.SJD MH	High-density mode (TU70, TU72 only)

MAGTAPE LABEL STATES

Code	Symbol	Meaning
0	.LSUNL	Unlabeled tape
1	.LSPRI	Private tape
2	.LSSCR	Scratch tape
3	.LSUSC	User scratch tape

MAGTAPE LABEL TYPES

Code	Symbol	Meaning
1	.LTUNL	Unlabeled
2	.LTANS	ANSI Standard label
3	.LTEBC	EBCDIC Standard label
4	.LTT20	TOPS-20 Standard label

MAGTAPE RECORD SIZES

Data Mode	Maximum Record Size
System-default	--
Dump	8192. bytes
SIXBIT	49152. bytes
ANSI ASCII	40960. bytes
Industry compatible	32768. bytes
High density	8192. bytes

MAGTAPE RECORDING DENSITIES

Code	Symbol	Meaning
0	.SJDDN	Default system density
1	.SJDN2	200 BPI
2	.SJDN5	556 BPI
3	.SJDN8	800 BPI
4	.SJD16	1600 BPI
5	.SJD62	6250 BPI

PHYSICAL CARD PUNCH (PCDP:) STATUS BITS

Bit	Symbol	Meaning
B10	MO%FER	Fatal error condition
B12	MO%EDF	All pending output has been processed
B13	MO%IOP	Output in progress
B14	MO%SER	Software error
B15	MO%HE	Hardware error
B16	MO%OL	Card-punch off-line
B17	MO%FNX	Card punch doesn't exist
B32	MO%HEM	Stacker full or hopper empty
B33	MO%SCK	Stack check

TOPS-20 Monitor Calls Quick Reference Guide  
PCDP: Status Bits

B34 MO%PCK Pick check

PHYSICAL CARD READER (PCDR:) STATUS BITS

Bit	Symbol	Meaning
B0	MO%CDL	Device is on line
B10	MO%FER	Fatal hardware error
B12	MO%EOF	Card reader at EOF
B13	MO%IOP	I/O in progress
B14	MO%SER	Software error
B15	MO%HE	Hardware error
B16	MO%OL	Device is off line
B17	MO%FNX	Device is nonexistent
B31	MO%SFL	Output stacker full
B32	MO%HEM	Input hopper empty
B33	MO%SCK	Stack check
B34	MO%PCK	Pick check
B35	MO%RCK	Read check

PHYSICAL LINE PRINTER (PLPT:) CONTROL CHARACTERS

ASCII Code	Default Channel	Name	Default Action
11		HT (^I)	Skips to beginning of every 8th column on same line
12	8	LF (^J)	Skips to column 1 on next line; skips last 6 lines of page
13	7	VT (^K)	Skips to column 1 on line at next third of page
14	1	FF (^L)	Skips to column 1 on top of next page
15		CR (^M)	Returns to column 1 of current line; no paper advance
20	2	Half page	Skips to column 1 on next half page
21	3	Alternate lines	Skips to column 1 on next even line
22	4	Three lines	Skips to column 1 on every third line
23	5	Next line	Skips to column 1 on next line; fills last 6 lines of page
24	6	Sixth page	Skips to column 1 on next sixth of page



PHYSICAL LINE PRINTER (PLPT:) STATUS BITS

Bit	Symbol	Meaning
B0	MO%LCP	Lower case printer
B10	MO%FER	Fatal hardware error
B12	MO%EOF	All data sent to printer has been printed
B13	MO%IOP	I/O in progress
B14	MO%SER	Software error
B15	MO%HE	Hardware error
B16	MO%OL	Device is off line
B17	MO%FNX	Device is nonexistent
B30	MO%RPE	RAM parity error
B31	MO%LVU	Optical VFU
B33	MO%LVF	VFU error
B34	MO%LCI	Character interrupt
B35	MO%LPC	Page counter register overflow

PHYSICAL MAGTAPE (MTA:) STATUS BITS

Bit	Symbol	Meaning
B18	MT%ILW	Drive is write protected
B19	MT%DVE	Device error (hung or data late)
B20	MT%DAE	Data error
B21	MT%SER	Suppress automatic error recovery procedures
B22	MT%EOF	Device EOF (file) mark
B23	MT%IRL	Incorrect record length
B24	MT%BOT	Beginning of tape
B25	MT%EOT	End of tape
B26	MT%EVP	Even parity
B29-31	MT%CCT	Character counter if MT%IRL on
B32	MT%NSH	Selected data mode or density not supported by hardware

SOFTWARE DATA MODES

Mode	Symbol	Explanation
0	.GSNRM	Normal mode - allows unit-record output
1	.GSSMB	Small Buffer mode - allows small data segments to be transmitted to terminals
10	.GSIMG	Image mode - sends an "image" of each byte (12-bit)
17	.GSDMP	Dump mode - unbuffered by default

SOFTWARE INTERRUPT CHANNELS

Channel	Symbol	Meaning
0-5		Assignable by user program
6	.ICADV	Arithmetic overflow (includes NODIV)
7	.ICFV	Arithmetic floating point overflow (includes FXU)
8.		Reserved for DIGITAL
9.*	.ICPOV	Pushdown list (PDL) overflow
10.	.ICEOF	End of file condition
11.*	.ICDAE	Data error file condition
12.*	.ICQTA	Disk full or quota exceeded when creating new page
13.-14.		Reserved for DIGITAL
15.*	.ICILI	Illegal instruction
16.*	.ICIRD	Illegal memory read
17.*	.ICIWR	Illegal memory write
18.		Reserved for DIGITAL
19.	.ICIFT	Inferior process termination or forced freeze
20.*	.ICMSE	System resources exhausted
21.		Reserved for DIGITAL
22.	.ICNXP	Reference to non-existent page
23.-35.		Assignable by user program

\* Channels are panic channels and cannot be completely  
deactivated

SYSTEM PIDS

PID	Symbol	Meaning
0	.SPIPC	Reserved
1	.SPINF	PID of <SYSTEM>INFO
2	.SPQSR	PID of QUASAR
3	.SPMDA	PID of QSRMDA
4	.SPOPR	PID of ORION
5	.SPNSR	PID of NETSER

SYSTEM TABLES

Name	Index	Contents
APRID		Processor serial number
BLDTD		Date and time system was generated
DBUGSW		Debugging information
	0	State of operator coverage
		0 Unattended
		1 Attended
		2 Debugging
	1	State of BUGCHK handling
		0 Proceed
		1 Breakpoint
DEVCHR (P1)		Device characteristics word
DEVNAM (P1)		SIXBIT device name including unit number
DEVUNT (P1)		B0-17 Job # to which device is assigned; -1 if device is not assigned; or -2 if reserved for device allocator
		B18-35 Unit #; -1 if device has no units
DRMERR		Information on drum errors
	0	Number of recoverable errors
	1 to <u>n</u>	Varies depending on type of drum being used
DSKERR		Information on disk errors
	0	Number of recoverable disk errors
	1 to <u>n</u>	Varies depending on type of disk being used
DWNTIM		Downtime information
	0	Date/time of next scheduled system shutdown
	1	Date/time when system will return
HQLAV		High queue load averages
IMPLT1	<u>i</u> (P2)	ARPANET; 1 fullword for each link B0-17 -1 if control link; or internal connection index for NETAWD NETBAL NETBTC NETBUF NETFSK NETLSK NETSTS
		B18-19 00 receive 10 send 11 free 01 delete
		B20-27 Host number
		B28-35 Link number
IMPLT2	<u>i</u> (P2)	ARPANET; 1 fullword for each link B0-9 Flags B10-17 Byte size of buffer B18-35 Address of input buffer
IMPLT3	<u>i</u> (P2)	ARPANET; 1 fullword for each link B0-17 Address of output buffer B18-35 Message saved for retransmission
IMPLT4	<u>i</u> (P2)	ARPANET; 1 fullword for each link B0-17 Address of current buffer B18-35 Message allocation in bits
JBONT	Job #	Owning job for CRJOB-created jobs

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System Tables

JOBNAM	Job #	B0-17 Reserved for DIGITAL
		B18-35 Index into system program tables of system program being used by job
JOBPNM	Job #	SIXBIT name of program running in this job
JOBRT	Job #	CPU time used by job (negative if no such job)
JOBTTY	Job #	B0-17 Controlling terminal line #; or -1 if none
		B18-35 Reserved for DIGITAL
LOGDES		Logging information
	0	Designator for logging information
	1	Designator for job 0 and error information
LQLAV		Low queue load averages
NETHST	<u>i</u> (P2)	ARPANET: 1 full word for each internal connection; -1 if no foreign host
NETAWD	<u>i</u> (P2)	ARPANET: 1 full word for each internal connection
		B0-8 Link number
		B9-17 Unused
		B18-23 Timeout countdown
		B24-35 Index to link tables
NETBAL	<u>i</u> (P2)	ARPANET: number of bits allocated to each internal connection
NETBTC	<u>i</u> (P2)	ARPANET: byte count statistics
NETBUF	<u>i</u> (P2)	ARPANET: 1 fullword for each internal connection
		B0-17 Bytes per buffer
		B18-35 (Buffer location)-1
NETFSK	<u>i</u> (P2)	ARPANET: foreign socket number (32 bits) for each internal connection
NETLSK	<u>i</u> (P2)	ARPANET: local socket number for each internal connection
NETRDY		ARPANET: operational status table
	0	IMP down
	>0	IMP going down
	-1	IMP up
	1	0 Network off
		≠0 Network on
	2	Flags for NETSER
	3	Time of last NCP cycle up
	4	Last IMP GOING DOWN message
		B0-15 Reserved for DIGITAL
		B16-17 0 Panic
		1 Scheduled hardware PM
		2 Software reload
		3 Emergency restart
		B18-21 # of 5-minute intervals before IMP goes down
		B22-31 # of 5-minute intervals IMP will be down
	5	Time of last IMP ready drop
	6	Time of last IMP ready up
	7	Time of IMP GOING DOWN message
NCPGS		Number of pages of real (physical) user core available in system (1 word)
NSWPGS		Default swapping pages

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PTYPAR		Pseudo-TTY parameter information
0		B0-17 Number of PTYS in system
		B18-35 TTY number of first PTY
QTIMES	0 to <u>n</u>	Accumulated runtime of jobs on <u>n</u> scheduler queues
SNAMES	(P3)	SIXBIT name of system program; 0 if entry unused
SNBLKS	(P3)	Number of samples in working set size integral
SPFLTS	(P3)	Total number of page faults of system program
SSIZE	(P3)	Time integral of working set size
STIMES	(P3)	Total runtime of system program
SYMTAB		SIXBIT table names of all GETAB tables
SYSTAT		Monitor statistics
	0	Time with no runnable jobs
	1	Waiting time with 1 or more runnable jobs
	2	Time spent in scheduler
	3	Time spent processing pager traps
	4	Number of drum reads
	5	Number of drum writes
	6	Number of disk reads
	7	Number of disk writes
	10	Number of terminal wakeups
	11	Number of terminal interrupts
	12	Time integral of number of processes in balance set
	13	Time integral of number of runnable processes
	14	Exponential 1-minute average of number of runnable processes
	15	Exponential 5-minute average of number of runnable processes
	16	Exponential 15-minute average of number of runnable processes
	17	Time integral of number of processes waiting for disk
	20	Time integral of number of processes waiting for drum
	21	Number of terminal input characters
	22	Number of terminal output characters
	23	Number of system core management cycles
	24	Time spent doing postpurging
	25	Number of forced balance set process removals
	26	Time integral of number of processes in swap wait
	27	Scheduler overhead time in high precision units
	30	Idle time in high precision units
	31	Lost time in high precision units
	32	User time
	33	Time integral of number of processes on high queue
	34	Time integral of number of processes on low queue

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35		Sum of process disk-write waits
36		Number of forced adjustments to balance set
37		Integral of number of reserve pages of all processes in memory
40		Integral of number of pages on replaceable queue
41		High precision pager trap time
42		Number of context switches
43		Time spent on background tasks
44		Total system page traps
45		Total saves from replacement queue
46		Number of pages removed from memory during system-wide garbage collection
47		Integral of number of working sets in memory
50		Integral of number of wait time without swap waits
51		Count of working set loads
52		Count of runnable processes removed from balance set
53		Number of pages removed from memory during process-wide garbage collection
SYsver		ASCIZ string identifying system name, version, and date
TICKPS		Number of clock ticks per second
TTYJOB	line #	BO-17 Job # for which this is controlling terminal; -1 for unassigned line; -2 for line currently being assigned; or job # to which line is assigned
	B18-35	-1 if no process is waiting for input from terminal ≠ -1 if some process is waiting for input

(P<sub>n</sub>) specifies a set of parallel tables where n is a unique identifier of the set  
i specifies an index into a table derived from B24-35 of NETAWD  
i specifies an index into a table derived from BO-17 of IMPLT1

TERMINAL CHARACTERISTICS

Number	Terminal	Symbol	Characteristics
0	TTY model 33	.TT33	UPPERCASE only; padding after TAB and FF; page width 72., page length 66.
1	TTY model 35	.TT35	Mechanical FF and TAB; UPPERCASE only; padding after TAB and FF; page

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2	TTY model 37	.TT37	width 72., page length 66. Lowercase; padding after TAB and FF; page width 72., page length 66.
3	TI/EXECUPORT	.TTEXE	Lowercase; padding after CR only; page width 80., page length 66.
4-7			Reserved for customer
8.	Default	.TTDEF	Lowercase; full padding; page width 72., page length 66.
9.	Ideal	.TTIDL	Mechanical FF and TAB; lowercase; no padding; no specified width or length
10.	VT05	.TTV05	Mechanical TAB; UPPERCASE only; padding after LF and FF; page width 72., page length 20.; cursor control
11.	VT50	.TTV50	UPPERCASE only; no padding; page width 80., page length 12.; cursor control
12.	LA30	.TTL30	UPPERCASE only; full padding; page width 80., page length 66.
13.	GT40	.TTG40	Lowercase; no padding; page width 80., page length 30.
14.	LA36	.TTL36	Lowercase; no padding; page width 132., page length 66.
15.	VT52	.TTV52	Mechanical TAB; lowercase; no padding; page width 80., page length 24.
16.	VT100	.TT100	Mechanical TAB; lowercase; no padding; page width 80., page length 24.; cursor control
17.	LA38	.TTL38	Mechanical TAB; lowercase; no padding; page width 132., page length 66.
18.	LA120	.TT120	Mechanical FF and TAB; lowercase; no padding; page width 132., page length 60.
35.	VT125	.TT125	Mechanical TAB; lowercase; no padding; page width 80., page length 24.; cursor control; graphics capabilities
36.	VK100	.TTK10	Mechanical TAB; lowercase; no padding; page width 80., page length 24.; cursor control; color graphics capabilities

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Terminal Characteristics

Mechanical FF and TAB	Page width and length
Lowercase	Padding after mechanical FF
Padding after CR	Cursor control
Padding after LF	Graphics capabilities
Padding after mechanical TAB	

TERMINAL INTERRUPT CODES

Code	Symbol	Character/Condition
0	.TICBK	CTRL/@ or BREAK
1	.TICCA	CTRL/A
2	.TICCB	CTRL/B
3	.TICCC	CTRL/C
4	.TICCD	CTRL/D
5	.TICCE	CTRL/E
6	.TICCF	CTRL/F
7	.TICCG	CTRL/G
8	.TICCH	CTRL/H
9	.TICCI	CTRL/I (TAB)
10	.TICCU	CTRL/J (LF)
11	.TICCK	CTRL/K (vertical TAB)
12	.TICCL	CTRL/L (FF)
13	.TICCM	CTRL/M (CR)
14	.TICCN	CTRL/N
15	.TICCO	CTRL/O
16	.TICCP	CTRL/P
17	.TICCQ	CTRL/Q
18	.TICCR	CTRL/R
19	.TICCS	CTRL/S
20	.TICCT	CTRL/T
21	.TICCU	CTRL/U
22	.TICCV	CTRL/V
23	.TICCW	CTRL/W
24	.TICCX	CTRL/X
25	.TICCY	CTRL/Y
26	.TIC CZ	CTRL/Z
27	.TICES	ESCAPE (altmode)
28	.TICRB	DELETE (RUBOUT)
29	.TICSP	SPACE
30	.TICRF	Dataset carrier off
31	.TICTI	Typein
32	.TICTO	Typeout
33.-35.		Reserved for DIGITAL



TIME ZONES

Zone Name	Abbreviation	Left Half
GREENWICH DAYLIGHT TIME	GDT	700000
GREENWICH MEAN TIME	GMT	500000
GREENWICH STANDARD TIME	GST	500000
ATLANTIC DAYLIGHT TIME	ADT	700004
ATLANTIC STANDARD TIME	AST	500004
EASTERN DAYLIGHT TIME	EDT	700005
EASTERN STANDARD TIME	EST	500005
CENTRAL DAYLIGHT TIME	CDT	700006
CENTRAL STANDARD TIME	CST	500006
MOUNTAIN DAYLIGHT TIME	MDT	700007
MOUNTAIN STANDARD TIME	MST	500007
PACIFIC DAYLIGHT TIME	PDT	700010
PACIFIC STANDARD TIME	PST	500010
YUKON DAYLIGHT TIME	YDT	700011
YUKON STANDARD TIME	YST	500011
ALASKA-HAWAII DAYLIGHT TIME	HDT	700012
ALASKA-HAWAII STANDARD TIME	HST	500012
BERING DAYLIGHT TIME	BDT	700013
BERING STANDARD TIME	BST	500013
LOCAL DAYLIGHT TIME	DAYLIGHT	600000

TOPS-20 JSYS ERROR CODES

Note

See TOPS-20 JSYS ERROR  
 MNEMONICS for error strings.

Code	Mnemonic	Code	Mnemonic	Code	Mnemonic
600010	LGIX1	600011	LGIX2	600012	LGIX3
600013	LGIX4	600014	LGIX5	600020	CRJBX1
600021	CRJBX2	600023	CRJBX4	600024	CRJBX5
600025	CRJBX6	600035	LDUTX1	600036	LDUTX2
600045	CACTX1	600046	CACTX2	600055	GJFX1
600056	GJFX2	600057	GJFX3	600060	GJFX4
600061	GJFX5	600062	GJFX6	600063	GJFX7
600064	GJFX8	600065	GJFX9	600066	GJFX10
600067	GJFX11	600070	GJFX12	600071	GJFX13
600072	GJFX14	600073	GJFX15	600074	GJFX16
600075	GJFX17	600076	GJFX18	600077	GJFX19
600100	GJFX20	600101	GJFX21	600102	GJFX22
600103	GJFX23	600104	GJFX24	600107	GJFX27
600110	GJFX28	600112	GJFX30	600113	GJFX31
600114	GJFX32	600115	GJFX33	600116	GJFX34
600117	GJFX35	600120	OPNX1	600121	OPNX2
600122	OPNX3	600123	OPNX4	600124	OPNX5
600125	OPNX6	600126	OPNX7	600127	OPNX8
600130	OPNX9	600131	OPNX10	600133	OPNX12
600134	OPNX13	600135	OPNX14	600136	OPNX15
600137	OPNX16	600140	OPNX17	600141	OPNX18
600142	OPNX19	600143	OPNX20	600144	OPNX21
600145	OPNX22	600150	DESX1	600151	DESX2
600152	DESX3	600153	DESX4	600154	DESX5
600155	DESX6	600156	DESX7	600157	DESX8
600160	CLSX1	600161	CLSX2	600165	RJFNX1
600166	RJFNX2	600167	RJFNX3	600170	DELFX1
600175	SFPTX1	600176	SFPTX2	600177	SFPTX3
600200	CNDIX1	600204	CNDIX5	600210	SFBSX1
600211	SFBSX2	600215	IDX1	600216	IDX2
600217	IDX3	600220	IDX4	600221	IDX5
600222	IDX6	600240	PMAPX1	600241	PMAPX2
600245	SPACX1	600250	FRKHX1	600251	FRKHX2
600252	FRKHX3	600253	FRKHX4	600254	FRKHX5
600255	FRKHX6	600260	SPLFX1	600261	SPLFX2
600262	SPLFX3	600267	GTABX1	600270	GTABX2
600271	GTABX3	600273	RUNTX1	600275	STADX1
600276	STADX2	600300	ASNDX1	600301	ASNDX2
600302	ASNDX3	600320	ATACX1	600321	ATACX2
600322	ATACX3	600323	ATACX4	600324	ATACX5
600332	STDVX1	600335	DEVX1	600336	DEVX2
600337	DEVX3	600350	TERMX1	600351	TLNKX1
600352	ATIX1	600353	ATIX2	600356	TLNKX2
600357	TLNKX3	600360	TTYX1	600361	RSCNX1
600362	RSCNX2	600363	CFRKX3	600365	KFRKX1

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600366	KFRKX2	600370	HFRHX1	600371	GFRKX1
600373	GETX1	600374	GETX2	600375	TFRKX1
600376	TFRKX2	600377	SFRVX1	600407	NOUTX1
600410	NOUTX2	600411	TFRKX3	600414	IFIXX1
600415	IFIXX2	600416	IFIXX3	600424	GFDBX1
600425	GFDBX2	600426	GFDBX3	600430	CFDBX1
600431	CFDBX2	600432	CFDBX3	600433	CFDBX4
600440	DUMPX1	600441	DUMPX2	600442	DUMPX3
600443	DUMPX4	600450	RNAMX1	600451	RNAMX2
600452	RNAMX3	600453	RNAMX4	600454	BKJFX1
600460	TIMEX1	600461	ZDNEX1	600462	ODTNX1
600464	DILFX1	600465	TILFX1	600466	DATEX1
600467	DATEX2	600470	DATEX3	600471	DATEX4
600472	DATEX5	600473	DATEX6	600516	SMONX1
600530	SACTX1	600531	SACTX2	600532	SACTX3
600533	SACTX4	600540	GACTX1	600541	GACTX2
600544	FFUFX1	600545	FFUFX2	600546	FFUFX3
600555	DSMX1	600570	SIRX1	600600	SSAVX1
600601	SSAVX2	600610	SEVEX1	600614	WHELX1
600615	CAPX1	600617	PEEKX2	600620	CRDIX1
600621	CRDIX2	600622	CRDIX3	600623	CRDIX4
600624	CRDIX5	600626	CRDIX7	600640	GTDIX1
600641	GTDIX2	600650	FLINX1	600651	FLINX2
600652	FLINX3	600653	FLINX4	600660	FLOTX1
600661	FLOTX2	600662	FLOTX3	600670	HPTX1
600704	GTHSX1	600705	GTHSX2	600707	GTHSX3
600710	ATNX1	600711	ATNX2	600712	ATNX3
600713	ATNX4	600714	ATNX5	600715	ATNX6
600716	ATNX7	600717	ATNX8	600720	ATNX9
600721	ATNX10	600722	ATNX11	600723	ATNX12
600724	ATNX13	600727	CVHST1	600730	CVSKX1
600731	CVSKX2	600732	SNDIX1	600733	SNDIX2
600734	SNDIX3	600735	SNDIX4	600736	SNDIX5
600737	NTWZX1	600740	ASNSX1	600741	ASNSX2
600742	SQX1	600743	SQX2	600746	GTNCX1
600747	GTNCX2	600750	RNAMX5	600751	RNAMX6
600752	RNAMX7	600753	RNAMX8	600754	RNAMX9
600755	RNMX10	600756	RNMX11	600757	RNMX12
600760	GJFX36	600770	ILINS1	600771	ILINS2
600772	ILINS3	601000	CRLNX1	601001	INLNX1
601002	LNSTX1	601010	RDTX1	601011	GFKSX1
601013	GTJIX1	601014	GTJIX2	601015	GTJIX3
601016	IPCFX1	601017	IPCFX2	601020	IPCFX3
601021	IPCFX4	601022	IPCFX5	601023	IPCFX6
601024	IPCFX7	601025	IPCFX8	601026	IPCFX9
601027	IPCF10	601030	IPCF11	601031	IPCF12
601032	IPCF13	601033	IPCF14	601034	IPCF15
601035	IPCF16	601036	IPCF17	601037	IPCF18
601040	IPCF19	601041	IPCF20	601042	IPCF21
601043	IPCF22	601044	IPCF23	601045	IPCF24
601046	IPCF25	601047	IPCF26	601050	IPCF27
601051	IPCF28	601052	IPCF29	601053	IPCF30
601054	GNJFX1	601055	ENQX1	601056	ENQX2
601057	ENQX3	601060	ENQX4	601061	ENQX5
601062	ENQX6	601063	ENQX7	601064	ENQX8
601065	ENQX9	601066	ENQX10	601067	ENQX11

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601070	ENQX12	601071	ENQX13	601072	ENQX14
601073	ENQX15	601074	ENQX16	601075	ENQX17
601076	ENQX18	601077	ENQX19	601100	ENQX20
601101	ENQX21	601102	IPCF31	601103	IPCF32
601104	PMAPX3	601105	PMAPX4	601106	PMAPX5
601107	PMAPX6	601110	SNOPX1	601111	SNOPX2
601112	SNOPX3	601113	SNOPX4	601114	SNOPX5
601115	SNOPX6	601116	SNOPX7	601117	SNOPX8
601120	SNOPX9	601121	SNOP10	601122	SNOP11
601123	SNOP12	601124	SNOP13	601125	SNOP14
601126	SNOP15	601127	SNOP16	601130	IPCF33
601131	SNOP17	601132	DPNX23	601133	GJFX37
601134	CRLNX2	601135	INLNX2	601136	LNSTX2
601137	ALCX1	601140	ALCX2	601141	ALCX3
601142	ALCX4	601143	ALCX5	601144	SPLX1
601145	SPLX2	601146	SPLX3	601147	SPLX4
601150	SPLX5	601151	CLSX3	601152	CRLNX3
601153	ALCX6	601154	CKAX1	601155	CKAX2
601156	CKAX3	601157	TIMX1	601160	TIMX2
601161	TIMX3	601162	TIMX4	601163	SNOP18
601164	GJFX38	601165	GJFX39	601166	CRDIX8
601167	CRDIX9	601170	CRDI10	601171	DELDX1
601172	DELDX2	601173	GACTX3	601174	DIAGX1
601175	DIAGX2	601176	DIAGX3	601177	DIAGX4
601200	DIAGX5	601201	DIAGX6	601202	DIAGX7
601203	DIAGX8	601204	DIAGX9	601205	DIAG10
601206	SYEX1	601207	SYEX2	601210	MTOX1
601211	IOX7	601212	IOX8	601213	MTOX5
601214	DUMPX5	601215	DUMPX6	601216	IOX9
601217	CLSX4	601220	MTOX2	601221	MTOX3
601222	MTOX4	601223	MTOX6	601224	OPNX25
601225	GJFX40	601226	MTOX7	601227	LDUTX3
601230	LOUTX4	601231	CAPX2	601232	SSAVX3
601233	SSAVX4	601234	TDELX1	601235	TADDX1
601236	TADDX2	601237	TLUKX1	601240	IOX10
601244	SJBX1	601245	SJBX2	601246	SJBX3
601247	TMONX1	601250	SMONX2	601251	SJBX4
601252	SJBX5	601253	SJBX6	601254	GTJIX4
601255	ILINS4	601256	ILINS5	601257	COMNX1
601260	COMNX2	601261	COMNX3	601263	PRAX1
601264	PRAX2	601265	COMNX5	601270	PRAX3
601271	CKAX4	601272	GACCX1	601273	GACCX2
601274	MTOX8	601275	DBRKX1	601276	SJPRX1
601277	GJFX41	601300	GJFX42	601301	GACCX3
601302	TIMEX2	601303	DELFX2	601304	DELFX3
601305	DELFX4	601306	DELFX5	601307	DELFX6
601310	DELFX7	601311	DELFX8	601312	FRKHX7
601313	DIRX1	601314	DIRX2	601315	DIRX3
601316	UFGX1	601317	LNGFX1	601320	IPCF34
601321	COMNX8	601322	MTOX9	601323	MTOX10
601324	MTOX11	601325	MTOX12	601326	MTOX13
601327	MTOX14	601330	SAVX1	601331	MTOX15
601332	MTOX16	601333	LPINX1	601334	LPINX2
601335	LPINX3	601336	MTOX17	601337	LGINX6
601340	DESX9	601341	ACESX1	601343	DSKOX1
601344	DSKOX2	601345	MSTRX1	601346	MSTRX2

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601347	MSTRX3	601350	MSTRX4	601351	MSTRX5
601352	MSTRX6	601353	MSTRX7	601354	MSTRX8
601355	MSTRX9	601356	MSTX10	601357	MSTX11
601360	MSTX12	601361	MSTX13	601362	MSTX14
601363	MSTX15	601364	MSTX16	601365	DSKX01
601367	DSKX03	601371	GFUSX1	601372	GFUSX2
601373	SFUSX1	601374	SFUSX2	601376	RCDIX1
601377	RCDIX2	601400	RCDIX3	601401	RCDIX4
601402	RCUSX1	601403	TDELX2	601404	TIMX5
601405	LSTRX1	601406	SWJFX1	601407	MTOX18
601410	DPNX26	601411	DELFX9	601412	CRDIX6
601413	CDMNX9	601414	STYPX1	601415	PMAPX7
601416	DSKX03	601417	DESX10	601420	DSKX04
601421	MSTX17	601422	MSTX18	601423	MSTX19
601424	MSTX20	601425	MSTX21	601426	MSTX22
601427	CRDI11	601430	MSTX23	601431	ACESX3
601432	ACESX4	601433	ACESX5	601435	ACESX6
601436	STRX01	601437	STRX02	601440	IOX11
601441	IOX12	601442	STRX03	601443	STRX04
601444	PPNX1	601445	PPNX2	601450	SPLX6
601451	CRDI12	601452	GFUSX3	601453	GFUSX4
601454	RNMX13	601455	SJBX8	601456	DECRSV
601460	WILDY1	601461	MSTX41	601462	MSTX42
601475	LCBDBP	601477	LCNOND	601500	SSAVX5
601502	ATACX6	601503	ATACX7	601533	DSKX05
601534	DSKX06	601535	TIMX6	601536	TIMX7
601537	TIMX8	601540	TIMX9	601541	TIMX10
601550	SCTX1	601551	SCTX2	601552	SCTX3
601553	SCTX4	601554	PDVX01	601555	PDVX02
601556	PDVX03	601557	GETX4	601560	GETX5
601700	SFUSX4	601701	SFUSX5	601702	SFUSX6
601703	GETX3	601706	CAPX3	601713	ARGX02
601715	ARGX04	601716	ARGX05	601717	ARGX06
601720	ARGX07	601721	ARGX08	601722	ARGX09
601723	ARGX10	601725	ARGX12	601726	ARGX13
601727	MONX01	601730	MONX02	601731	MONX03
601732	MONX04	601733	ARGX14	601734	ARGX15
601741	ARGX16	601742	ARGX17	601743	ARGX18
601744	DEVX5	601747	STRX06	601750	MSTX24
601751	MSTX25	601752	MSTX26	601753	LOUTX5
601754	GJFX43	601755	MTOX19	601756	MTOX20
601757	MSTX27	601760	MSTX28	601761	MSTX29
601763	DSKX05	601764	DSKX06	601765	DSKX07
601766	DSKX08	601767	COMX10	601770	MSTX30
601771	LOCKX1	601772	LOCKX2	601774	ILLX01
601775	ILLX02	601776	ILLX03	601777	ILLX04
602000	MSTX31	602001	MSTX32	602002	MSTX33
602003	STDIX1	602004	CNDIX7	602005	PMCLX1
602006	PMCLX2	602007	PMCLX3	602010	DLFX10
602011	DLFX11	602012	GJFX44	602013	UTSTX1
602014	UTSTX2	602015	UTSTX3	602016	BOTX01
602017	BOTX02	602020	DCNX1	602021	DCNX5
602022	DCNX3	602023	DCNX4	602024	DCNX9
602025	DCNX8	602026	DCNX11	602027	DCNX12
602030	TTYX01	602031	BOTX03	602032	MONX05
602033	ARGX19	602035	COMX11	602036	COMX12

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602037	COMX13	602040	COMX14	602041	COMX15
602042	COMX16	602043	COMX17	602044	NPXAMB
602045	NPXNSW	602046	NPXNOM	602047	NPXNUL
602050	NPXINW	602051	NPXNC	602052	NPXICN
602053	NPXIDT	602054	NPXNQS	602055	NPXNMT
602056	NPXNMD	602057	NPXCMA	602060	GJFX45
602061	GJFX46	602062	GJFX47	602063	MSTX34
602064	GJFX48	602065	GJFX49	602077	SJBX7
602100	DELF10	602101	CRDI13	602102	CRDI14
602103	CRDI15	602104	CRDI16	602105	ENACX1
602106	ENACX2	602107	ENACX3	602110	ENACX4
602111	VACCX0	602112	VACCX1	602113	USGX01
602114	BOTX04	602116	USGX02	602117	CRDI17
602120	ENQX23	602121	ENQX22	602122	DCNX2
602123	ABRKX1	602124	USGX03	602125	IPCF35
602126	VACCX2	602127	CRDI18	602130	CRDI19
602132	BOTX05	602133	CRDI20	602134	COMX18
602135	COMX19	602136	CRDI21	602137	ACESX7
602140	CRDI22	602141	CRDI23	602142	STRX07
602143	STRX08	602144	CRDI24	602165	PMCLX4
602170	FRKHX8	602171	ARGX20	602172	ARGX21
602173	ARGX22	602177	ARGX23	602200	ARGX24
602201	MSTX35	602202	DCNX13	602203	DCNX14
602204	DCNX15	602205	GJFX50	602206	KDPX01
602207	NODX02	602210	NODX03	602211	GJFX51
602212	COMX20	602220	GOKER1	602221	GOKER2
602222	STRX09	602223	MSTX36	602224	MSTX37
602225	MSTX40	602227	IOX13	602230	IOX14
602231	IOX15	602233	IOX17	602234	IOX20
602235	IOX21	602236	IOX22	602237	IOX23
602240	IOX24	602241	IOX25	602242	SWJFX2
602243	IOX26	602245	IOX30	602246	ARGX25
602247	SKDX1	602275	DEVX6	602310	DATEX7
602312	ARCFX2	602313	ARCFX3	602314	ARCFX4
602315	ARCFX5	602316	ARCFX6	602317	ARCFX7
602320	ARCFX8	602321	ARCFX9	602322	ARCX10
602323	ARCX11	602324	ARCX12	602325	ARCX13
602326	OPNX30	602327	OPNX31	602330	DELX11
602331	DELX12	602332	ARCX14	602333	ARCX15
602334	ARCX16	602335	ARCX17	602336	ARCX18
602337	ARCX19	602340	ARGX26	602341	ARGX27
602342	DIRX5	602343	IOX31	602347	LTLBLX
602352	METRX1	602353	NSPX00	602354	NSPX01
602355	NSPX02	602356	NSPX03	602357	NSPX04
602360	NSPX05	602361	NSPX06	602362	NSPX07
602363	NSPX08	602364	NSPX09	602365	NSPX10
602366	NSPX11	602367	NSPX12	602370	NSPX13
602371	NSPX14	602372	NSPX15	602373	NSPX16
602374	NSPX17	602375	NSPX18	602376	NSPX19
602377	NSPX20	602400	NSPX21	602401	NSPX22
602406	DIAG11	602407	DIAG12	602410	DESX11
602411	NSPX23	602412	ARGX28	602413	NPX2CL
602414	ARGX29	602415	ARGX30	602416	ARGX31
602417	DEVX7	602420	GJFX52	602421	GOKER3
602422	IOX32	602423	IOX33	602424	XSIRX1
602425	SIRX2	602426	RIRX1	602427	XSIRX2

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602431	SMAPX1	602432	TTMSX1	602433	MONX06
602434	BOTX06	602435	BOTX07	602436	BOTX08
602437	BOTX09	602440	BOTX10	602441	BOTX11
602442	BOTX12	602443	BOTX13	602444	BOTX14
602445	BOTX15	602446	BOTX16	602447	BOTX17
602450	BOTX18	602451	NTMX1	602452	COMX21
602453	DELX13	602454	ANTX01	602455	TTYX02
602456	NSPX24	602457	NSPX25	602460	NSPX26
602461	GJFX53	602462	IOX34	602463	IDX35
602464	PMAPX8	602465	SMAPX2	602467	BOTX19
602470	BOTX20	602471	ILLX05	602472	XSEVX1
602473	XSEVX2	602474	XSEVX3	602475	ABRKX2
602477	ABRKX4				

TOPS-20 JSYS ERROR MNEMONICS

Note

See TOPS-20 JSYS ERROR CODES  
for a list of error codes  
sorted numerically.

JSYS names ([JSYS]) are listed  
for those error mnemonics that  
are called from within a  
particular JSYS module. Error  
mnemonics not followed by  
[JSYS] are not called from  
within any particular JSYS  
module, but may be returned  
while a JSYS is executing.

Mnemonic	Code	Text String [JSYS]
ABRKX1:	602123	Address break not available on this system [ADBRK]
ACESX1:	601341	Argument block too small [ACCES]
ACESX3:	601431	Password is required [ACCES; CRDIR]
ACESX4:	601432	Function not allowed for another job [ACCES]
ACESX5:	601433	No function specified for ACCES [ACCES]
ACESX6:	601435	Directory is not accessed [ACCES]
ACESX7:	602137	Directory is "files-only" and cannot be accessed [ACCES]
ALCX1:	601137	Invalid function [ALLOC]
ALCX2:	601140	WHEEL or OPERATOR capability required [ALLOC]
ALCX3:	601141	Device is not assignable [ALLOC]
ALCX4:	601142	Invalid job number [ALLOC]
ALCX5:	601143	Device already assigned to another job [ALLOC]
ALCX6:	601153	Device assigned to user job, but will be given to allocator when released [ALLOC]
ANTX01:	602454	No more network terminals available [MTOPR]
ARCFX2:	602312	File already has archive status [ARCF]
ARCFX3:	602313	Cannot perform ARCF functions on nonmultiple directory devices [ARCF]
ARCFX4:	602314	File is not on line [ARCF]
ARCFX5:	602315	Files are not on the same device or structure [ARCF]
ARCFX6:	602316	File does not have archive status [ARCF]
ARCFX7:	602317	Invalid parameter for .ARSST [ARCF]
ARCFX8:	602320	Archive not complete [ARCF]
ARCFX9:	602321	File not off line [ARCF]
ARCX10:	602322	Archive prohibited [ARCF]
ARCX11:	602323	Archive requested, modification prohibited



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		[ARCF]
ARCX12:	602324	Archive requested, delete prohibited [ARCF]
ARCX13:	602325	Archive system request not completed [ARCF]
ARCX14:	602332	Restore failed [ARCF]
ARCX15:	602333	Migration prohibited [ARCF]
ARCX16:	602334	Cannot exempt off-line, archived, or archive-pending files [ARCF]
ARCX17:	602335	FDB improper format for ARCF [ARCF]
ARCX18:	602336	Retrieval wait cannot be fulfilled for waiting process [ARCF]
ARCX19:	602337	Migration already pending [ARCF]
ARGX02:	601713	Invalid function [ADBRK; BOOT; DSKAS; GTHST%; GTNCP%; NODE; PMCTL; SKED%; USAGE; WILD%; ARCF; METER%]
ARGX04:	601715	Argument block too small [GETOK%; MTU%; SKED%; USAGE; XSIR%]
ARGX05:	601716	Argument block too long [GETOK%; MTU%; USAGE; XSIR%]
ARGX06:	601717	Invalid page number [PMAP; PMCTL; RPACS]
ARGX07:	601720	Invalid job number [ACCES]
ARGX08:	601721	No such job [ACCES; SKED%]
ARGX09:	601722	Invalid byte size [CRLNM; NTMAN%]
ARGX10:	601723	Invalid access requested [TTMSG]
ARGX12:	601725	Invalid process handle [PLOCK]
ARGX13:	601726	Invalid software interrupt channel number [NODE]
ARGX14:	601733	Invalid account identifier
ARGX15:	601734	Job is not logged in [SKED%]
ARGX16:	601741	Password is required
ARGX17:	601742	Invalid argument block length [NTMAN%; TEXTI; XRMAP%]
ARGX18:	601743	Invalid structure name [MSTR]
ARGX19:	602033	Invalid unit number [NODE]
ARGX20:	602171	Invalid arithmetic trap argument [SWTRP%]
ARGX21:	602172	Invalid LUJO trap argument [SWTRP%]
ARGX22:	602173	Invalid flags [PLOCK; WILD%]
ARGX23:	602177	Invalid section number [RSMAP%; SKPIR]
ARGX24:	602200	Invalid count [PLOCK; SKPIR]
ARGX25:	602246	Invalid class [SKED%]
ARGX26:	602340	File is off line [DELDF; GETOK%]
ARGX27:	602341	Offline expiration time cannot exceed system maximum [SFTAD]
ARGX28:	602412	Not available on this system [RSMAP%]
ARGX29:	602414	Invalid class share [SKED%]
ARGX30:	602415	Invalid KNDB value [SKED%]
ARGX31:	602416	Class scheduler already enabled [SKED%]
ASNDX1:	600300	Device is not assignable [ASND]
ASNDX2:	600301	Illegal to assign this device [ASND]
ASNDX3:	600302	No such device [ASND]
ASNSX1:	600740	Insufficient system resources (All special queues in use) [ASNSQ]
ASNSX2:	600741	Link(s) assigned to another special queue [ASNSQ]
ATACX1:	600320	Invalid job number [ATACH; TWAKE]

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ATACX2: 600321 Job already attached [ATACH]  
 ATACX3: 600322 Incorrect user number [ATACH]  
 ATACX4: 600323 Invalid password [ATACH]  
 ATACX5: 600324 This job has no controlling terminal  
 [ATACH]  
 ATACX6: 601502 Terminal is already attached to a job  
 [ATACH]  
 ATACX7: 601503 Illegal terminal number [ATACH]  
 ATIX1: 600352 Invalid software interrupt channel number  
 [ATI]  
 ATIX2: 600353 Control-C capability required [ATI]  
 ATNX10: 600721 Send JFN is not a network connection  
 [ATNVT]  
 ATNX11: 600722 Send JFN has been used [ATNVT]  
 ATNX12: 600723 Send connection has been refused [ATNVT]  
 ATNX13: 600724 Insufficient system resources (no NVTs)  
 [ATNVT]  
 ATNX1: 600710 Invalid receive JFN [ATNVT]  
 ATNX2: 600711 Receive JFN is not open for read [ATNVT]  
 ATNX3: 600712 Receive JFN is not open [ATNVT]  
 ATNX4: 600713 Receive JFN is not a network connection  
 [ATNVT]  
 ATNX5: 600714 Receive JFN has been used [ATNVT]  
 ATNX6: 600715 Receive connection has been refused  
 [ATNVT]  
 ATNX7: 600716 Invalid send JFN [ATNVT]  
 ATNX8: 600717 Send JFN is not open for write [ATNVT]  
 ATNX9: 600720 Send JFN is not open [ATNVT]  
 BKJFX1: 600454 Illegal to back up terminal pointer twice  
 [BKJFN]  
 BOTX01: 602016 Invalid DTE-20 number [BOOT]  
 BOTX02: 602017 Invalid byte size [BOOT]  
 BOTX03: 602031 Invalid protocol version number [BOOT]  
 BOTX04: 602114 Byte count is not positive [BOOT]  
 BOTX05: 602132 Protocol initialization failed [BOOT]  
 BOTX06: 602434 GTJFN failed for dump file [BOOT]  
 BOTX07: 602435 OPENF failed for dump file [BOOT]  
 BOTX08: 602436 Dump failed [BOOT]  
 BOTX09: 602437 To -10 error on dump [BOOT]  
 BOTX10: 602440 To -11 error on dump [BOOT]  
 BOTX11: 602441 Failed to assign page on dump [BOOT]  
 BOTX12: 602442 Reload failed [BOOT]  
 BOTX13: 602443 -11 didn't power down [BOOT]  
 BOTX14: 602444 -11 didn't power up [BOOT]  
 BOTX15: 602445 ROM did not ACK the -10 [BOOT]  
 BOTX16: 602446 -11 boot program did not make it to -11  
 [BOOT]  
 BOTX17: 602447 -11 took more than 1 minute to reload;  
 will cause retry [BOOT]  
 BOTX18: 602450 Unknown BOOT error [BOOT]  
 BOTX19: 602467 Overdue T0-11 transfer aborted [BOOT]  
 BOTX20: 602470 Overdue T0-10 transfer aborted [BOOT]  
 CACTX1: 600045 Invalid account identifier [CACCT]  
 CACTX2: 600046 Job is not logged in [CACCT; MSTR]  
 CAPX1: 600615 WHEEL or OPERATOR capability required  
 [ARCF; ACCES; BOOT; GIVOK%; MSFRK; MTU%];

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NTMAN%; PEEK; RCVOK%; SFTAD; SFUST; SKED%;  
SYERR; USAGE]

CAPX2: 601231 WHEEL, OPERATOR, or MAINTENANCE capability  
required [HSYS; MSTR; NODE; PMCTL; USRIO]

CAPX3: 601706 WHEEL capability required [UTEST]

CFDBX1: 600430 Invalid displacement [CHFDB]

CFDBX2: 600431 Illegal to change specified bits [CHFDB;  
SFTAD]

CFDBX3: 600432 Write or owner access required [CHFDB]

CFDBX4: 600433 Invalid value for specified bits [CHFDB]

CFRKX3: 600363 Insufficient system resources [CFORK;  
PMAP]

CKAX1: 601154 Argument block too small [CHKAC]

CKAX2: 601155 Invalid directory number [CHKAC]

CKAX3: 601156 Invalid access code [CHKAC]

CKAX4: 601271 File is not on disk [CHKAC]

CLSX1: 600160 File is not open [CLOSF]

CLSX2: 600161 File cannot be closed by this process  
[CLOSF]

CLSX3: 601151 File still mapped [CLOSF]

CLSX4: 601217 Device still active [CLOSF]

CNDIX1: 600200 Invalid password [ACCES]

CNDIX5: 600204 Job is not logged in [ACCES]

CNDIX7: 602004 The CNDIR JSYS has been replaced by ACCES

COMNX1: 601257 Invalid COMND function code [COMND]

COMNX2: 601260 Field too long for internal buffer [COMND]

COMNX3: 601261 Command too long for internal buffer  
[COMND]

COMNX5: 601265 Invalid string pointer argument [COMND]

COMNX8: 601321 Number base out of range 2-10 [COMND]

COMNX9: 601413 End of input file reached [COMND]

COMX10: 601767 Invalid default string [COMND]

COMX11: 602035 Invalid CMRTY pointer [COMND]

COMX12: 602036 Invalid CMBFP pointer [COMND]

COMX13: 602037 Invalid CMPTR pointer [COMND]

COMX14: 602040 Invalid CMABP pointer [COMND]

COMX15: 602041 Invalid default string pointer [COMND]

COMX16: 602042 Invalid help message pointer [COMND]

COMX17: 602043 Invalid byte pointer in function block  
[COMND]

COMX18: 602134 Invalid character in node name [COMND]

COMX19: 602135 Too many characters in node name [COMND]

COMX20: 602212 Invalid node name [COMND]

COMX21: 602452 Node name doesn't contain an alphabetic  
character [COMND]

CRDI10: 601170 Maximum directory number exceeded; index  
table needs expanding [CRDIR]

CRDI11: 601427 Invalid terminating bracket on directory  
[CRDIR]

CRDI12: 601451 Structure is not mounted [CRDIR]

CRDI13: 602101 Request exceeds superior directory working  
quota [CRDIR]

CRDI14: 602102 Request exceeds superior directory  
permanent quota [CRDIR]

CRDI15: 602103 Request exceeds superior directory  
subdirectory quota [CRDIR]

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CRDI16:	602104	Invalid user group [CRDIR]
CRDI17:	602117	Illegal to create nonfiles-only subdirectory under files-only directory [CRDIR]
CRDI18:	602127	Illegal to delete logged-in directory [CRDIR]
CRDI19:	602130	Illegal to delete connected directory [CRDIR]
CRDI20:	602133	WHEEL, OPERATOR, or requested capability required [CRDIR]
CRDI21:	602136	Working space insufficient for current allocation [CRDIR]
CRDI22:	602140	Subdirectory quota insufficient for existing subdirectories [CRDIR]
CRDI23:	602141	Superior directory does not exist [CRDIR]
CRDI24:	602144	Invalid subdirectory quota [CRDIR]
CRDIX1:	600620	WHEEL or OPERATOR capability required [CRDIR]
CRDIX2:	600621	Illegal to change number of old directory [CRDIR]
CRDIX3:	600622	Insufficient system resources (Job Storage Block full) [CRDIR]
CRDIX4:	600623	Superior directory full [CRDIR]
CRDIX5:	600624	Directory name not given [CRDIR]
CRDIX6:	601412	Directory file is mapped [CRDIR]
CRDIX7:	600626	File(s) open in directory [CRDIR]
CRDIX8:	601166	Invalid directory number [CRDIR]
CRDIX9:	601167	Internal format of directory is incorrect [CRDIR]
CRJBX1:	600020	Invalid parameter or function bit combination [CRJOB]
CRJBX2:	600021	Illegal for created job to enter MINI-EXEC [CRJOB]
CRJBX4:	600023	Terminal is not available [CRJOB]
CRJBX5:	600024	Unknown name for LOGIN [CRJOB]
CRJBX6:	600025	Insufficient system resources [CRJOB]
CRLNX1:	601000	Logical name is not defined [CRLNM]
CRLNX2:	601134	WHEEL or OPERATOR capability required [CRLNM]
CRLNX3:	601152	Invalid function [CRLNM]
CVHST1:	600727	No string for that host number [CVHST; CVSKT]
CVSKX1:	600730	Invalid JFN [CVSKT]
CVSKX2:	600731	Local socket invalid in this context [CVSKT]
DATEX1:	600466	Year out of range [IDCNV; IDTIM; ODTNC]
DATEX2:	600467	Month is not less than 12 [IDCNV; ODTNC]
DATEX3:	600470	Day of month too large [IDCNV; IDTIM; ODTNC]
DATEX4:	600471	Day of week is not less than 7 [ODTNC]
DATEX5:	600472	Date out of range [IDCNV; IDTIM]
DATEX6:	600473	System date and time are not set [ODCNV; ODTIM; SFTAD]
DATEX7:	602310	Julian day is out of range [IDCNV]
DBRKX1:	601275	No interrupts in progress [DEBRK]
DCNX1:	602020	Invalid network file name

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DCNX2: 602122 Interrupt message must be read first  
DCNX3: 602022 Invalid object  
DCNX4: 602023 Invalid task name  
DCNX5: 602021 No more logical links available  
DCNX8: 602025 Invalid network operation  
DCNX9: 602024 Object is already defined  
DCNX11: 602026 Link aborted  
DCNX12: 602027 String exceeds 16 bytes  
DCNX13: 602202 Node not accessible  
DCNX14: 602203 Previous interrupt message outstanding  
DCNX15: 602204 No interrupt message available  
DECRSV: 601456 DEC-reserved bits not zero [DSKOP; RFSTS]  
DELXD1: 601171 WHEEL or OPERATOR capability required  
[DELDF]  
DELXD2: 601172 Invalid directory number [DELDF]  
DELFD10: 602100 Directory still contains subdirectory  
[DELDF]  
DELFX1: 600170 Delete access required [DELDF; DELNF]  
DELFX2: 601303 File cannot be expunged because it is  
currently open [DELDF; DELDF]  
DELFX3: 601304 System scratch area depleted; file not  
deleted [DELDF]  
DELFX4: 601305 Directory symbol table could not be  
rebuilt [DELDF; DELDF]  
DELFX5: 601306 Directory symbol table needs rebuilding  
[DELDF; DELDF]  
DELFX6: 601307 Internal format of directory is incorrect  
[DELDF; DELDF; DIRST; GFUST; GTDAL; PPNST;  
VACCT]  
DELFX7: 601310 FDB formatted incorrectly; file not  
deleted [DELDF; DELDF]  
DELFX8: 601311 FDB not found; file not deleted [DELDF;  
DELDF]  
DELFX9: 601411 File is not a directory file [DELDF]  
DELX11: 602330 File has archive status, delete is not  
permitted  
DELX12: 602331 File has no pointer to offline storage  
[DELDF]  
DELX13: 602453 File is marked "Never Delete" [DELDF;  
DELNF]  
DESX1: 600150 Invalid source/destination designator  
[BIN; BKJFN; BOUT; CFIBF; CFOBF; CHFDB;  
CLOSF; DELF; DELNF; DEVST; DFIN; DFOUT;  
DIBE; DIRST; DOBE; DUMPI; DUMPO; DVCHR;  
ERSTR; FFFFP; FFUFP; FLIN; FLOUT; GACTF;  
GDSTS; GFUST; GNJFN; GTFDB; GTTYP; JFNS;  
MTOPR; MTU%; NIN; NOUT; OPENF; PBIN;  
PBOUT; PMAP; PPNST; PSOUT; RCDIR; RFBSZ;  
RFPOS; RFPTR; RFTAD; RIN; RLJFN; RNAMF;  
ROUT; RPACS; SACTF; SCTTY; SDSTS; SFBSZ;  
SFCOC; SFMOD; SFPTR; SFTAD; SFUST; SIBE;  
SIN; SINR; SIZEF; SOBE; SOUT; SOUTR;  
SPACS; STPAR; STPPN; STSTS; STTYP; SWJFN;  
TLINK]  
DESX2: 600151 Terminal is not available to this job  
[RCDIR; BIN; BKJFN; BOUT; CLOSF; DEVST;

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DFIN; DFOUT; DIRST; DUMPI; DUMPO; FLIN;  
 FLOUT; GACTF; GDSTS; GFUST; GNJFN; JFNS;  
 MTOPR; NIN; NOUT; PBIN; PBOU; PPNST;  
 PSOUT; RFBSZ; RFPTR; RIN; ROUT; SDSTS;  
 SFBSZ; SFCOC; SFPTR; SFUST; SIN; SIZEF;  
 SOUT; SPACS; STI; STO; STPPN; STSTS;  
 STTYP; SWJFN]

DESX3: 600152 JFN is not assigned [BIN; BKJFN; BOUT;  
 CFIBF; CFOBF; CHFDB; CLOSF; DELF; DELNF;  
 DEVST; DFIN; DFOUT; DIBE; DIRST; DOBE;  
 DUMPI; DUMPO; DVCHR; FFFFP; FFUFP; FLIN;  
 FLOUT; GACTF; GDSTS; GFUST; GNJFN; GTFDB;  
 JFNS; MTOPR; NIN; NOUT; OPENF; PBOU;  
 PMAP; PPNST; PSOUT; RCDIR; RFBSZ; RFPOS;  
 RFPTR; RFTAD; RIN; RLJFN; RNAME; ROUT;  
 RPACS; SACTF; SDSTS; SFBSZ; SFCOC; SFMOD;  
 SFPTR; SFTAD; SFUST; SIBE; SIN; SINR;  
 SIZEF; SOBE; SOUT; SOUTR; SPACS; SPJFN;  
 STPAR; STPPN; STSTS; SWJFN; UFPGS; WILD%]

DESX4: 600153 Invalid use of terminal designator or  
 string pointer [CHFDB; CLOSF; DELF; DELNF;  
 DUMPI; DUMPO; DVCHR; FFFFP; FFUFP; GACTF;  
 GDSTS; GFUST; GNJFN; GTFDB; JFNS; MTOPR;  
 OPENF; RCDIR; RFBSZ; RFPTR; RIN; RLJFN;  
 RNAME; ROUT; RPACS; SACTF; SDSTS; SFBSZ;  
 SFPTR; SFUST; SIZEF; SPACS; STPPN; STSTS;  
 SWJFN; UFPGS]

DESX5: 600154 File is not open [BIN; BKJFN; BOUT; CFIBF;  
 CFOBF; DEQ; DFIN; DFOUT; DIBE; DIRST;  
 DOBE; DUMPI; DUMPO; ENQ; FFFFP; FLIN;  
 FLOUT; GDSTS; GFUST; MTOPR; NIN; NOUT;  
 PBIN; PBOU; PMAP; PPNST; PSOUT; RFBSZ;  
 RFPOS; RFPTR; RIN; ROUT; RPACS; SDSTS;  
 SFBSZ; SFCOC; SFMOD; SIBE; SIN; SINR;  
 SOBE; SOUT; SOUTR; SPACS; STPAR]

DESX6: 600155 Device is not a terminal [BKJFN, SIBE]

DESX7: 600156 Illegal use of parse-only JFN or output  
 wildcard-designators [CHFDB; DELF; DELNF;  
 FFUFP; GACTF; GFUST; GTFDB; OPENF; PMAP;  
 RCDIR; RFTAD; RNAME; SFTAD; SFUST; STPPN;  
 UFPGS]

DESX8: 600157 File is not on disk [DEQ; ENQ; ENQC;  
 GFUST; RCDIR; RPACS; SFBSZ; SFPTR; SFUST;  
 SPACS; STPPN; UFPGS]

DESX9: 601340 Invalid operation for this device [DELF;  
 GTJFN; MTOPR; MTU%; SDSTS]

DESX10: 601417 Structure is dismantled [GFUST; RCDIR;  
 SFUST; STPPN]

DESX11: 602410 Invalid operation for this label type  
 [MTOPR]

DEVX1: 600335 Invalid device designator [ALLOC; ASND;  
 DEVST; DVCHR; GDSKC; RELD]

DEVX2: 600336 Device already assigned to another job  
 [ASND; CFIBF; CFOBF; DIBE; DOBE; MTOPR;  
 RELD; RFPOS; SCTTY; SFCOC; SFMOD; SIBE;  
 SOBE; STI; STO; STPAR]

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DEVX3:	600337	Device is not on-line
DEVX5:	601744	No such device [BOOT]
DEVX6:	602275	Job has open JFN on device [RELD]
DEVX7:	602417	Null device name given [COMND]
DIAG10:	601205	Subunit does not exist [DIAG]
DIAG11:	602406	Device is already on-line [DIAG]
DIAG12:	602407	Unit not on-line [DIAG]
DIAGX1:	601174	Invalid function [DIAG]
DIAGX2:	601175	Device is not assigned [DIAG]
DIAGX3:	601176	Argument block too small [DIAG]
DIAGX4:	601177	Invalid device type [DIAG]
DIAGX5:	601200	WHEEL, OPERATOR, or MAINTENANCE capability required [DIAG]
DIAGX6:	601201	Invalid channel command list [DIAG]
DIAGX7:	601202	Illegal to do I/O across page boundary [DIAG]
DIAGX8:	601203	No such device [DIAG]
DIAGX9:	601204	Unit does not exist [DIAG]
DILFX1:	600464	Invalid date format [IDTIM; IDTNC]
DIRX1:	601313	Invalid directory number [DIRST; GTDAL; PPNST; VACCT]
DIRX2:	601314	Insufficient system resources [DIRST; GFUST; PPNST]
DIRX3:	601315	Internal format of directory is incorrect [DIRST; GFUST; PPNST; VACCT]
DIRX5:	602342	Directory too large
DLFX10:	602010	Cannot delete directory; file still mapped [DELF]
DLFX11:	602011	Cannot delete directory file in this manner [DELF]
DSKX1:	601343	Channel number too large [DSKOP]
DSKX2:	601344	Unit number too large [DSKOP]
DSKX3:	601416	Invalid structure number [DSKOP]
DSKX4:	601420	Invalid address type specified [DSKOP]
DSKX5:	601533	Invalid word count
DSKX6:	601534	Invalid buffer address
DSKX01:	601365	Invalid structure number [DSKAS]
DSKX03:	601367	Bit table has not been initialized [DSKAS]
DSKX05:	601763	Disk assignments and deassignments are currently prohibited [DSKAS]
DSKX06:	601764	Invalid disk address [DSKAS]
DSKX07:	601765	Address cannot be deassigned because it has not been assigned [DSKAS]
DSKX08:	601766	Address cannot be assigned because it is already assigned [DSKAS]
DSMX1:	600555	File(s) not closed [ASND]
DUMPX1:	600440	Command list error [DUMPI; DUMPO]
DUMPX2:	600441	JFN is not open in dump mode [DUMPI; DUMPO]
DUMPX3:	600442	Address error (too big or crosses end of memory) [DUMPI; DUMPO]
DUMPX4:	600443	Access error (cannot read or write data in memory) [DUMPI; DUMPO]
DUMPX5:	601214	No-wait dump mode not supported for this device [DUMPI; DUMPO]
DUMPX6:	601215	Dump mode not supported for this device

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[DUMPI; DUMPO]

ENACX1: 602105 Account validation data base not completely closed

ENACX2: 602106 Cannot get a JFN for <SYSTEM>ACCOUNTS-TABLE.BIN

ENACX3: 602107 Account validation data base too long

ENACX4: 602110 Cannot get an OFN for <SYSTEM>ACCOUNTS-TABLE.BIN

ENQX10: 601066 Invalid argument block length [DEQ; ENQ; ENQC]

ENQX11: 601067 Invalid software interrupt channel number [DEQ; ENQ; ENQC]

ENQX12: 601070 Invalid number of resources requested [ENQ; ENQC]

ENQX13: 601071 Indirect or indexed byte pointer not allowed [DEQ; ENQ; ENQC]

ENQX14: 601072 Invalid byte size [DEQ; ENQ; ENQC]

ENQX15: 601073 ENQ/DEQ capability required [DEQ; ENQ; ENQC]

ENQX16: 601074 WHEEL or OPERATOR capability required [DEQ; ENQ; ENQC]

ENQX17: 601075 Invalid JFN [DEQ; ENQ; ENQC]

ENQX18: 601076 Quota exceeded [DEQ; ENQ; ENQC]

ENQX19: 601077 String too long [DEQ; ENQ; ENQC]

ENQX1: 601055 Invalid function [DEQ; ENQ; ENQC]

ENQX20: 601100 Locked JFN cannot be closed [CLOSF; DEQ; ENQ; ENQC]

ENQX21: 601101 Job is not logged in [DEQ; ENQC]

ENQX22: 602121 Invalid mask block length [ENQ]

ENQX23: 602120 Mismatched mask block lengths [ENQ]

ENQX2: 601056 Level number too small [DEQ; ENQ; ENQC]

ENQX3: 601057 Request and lock level numbers do not match [DEQ; ENQ; ENQC]

ENQX4: 601060 Number of pool and lock resources do not match [DEQ; ENQ; ENQC]

ENQX5: 601061 Lock already requested [ENQ; ENQC]

ENQX6: 601062 Requested locks are not all locked [DEQ; ENQ; ENQC]

ENQX7: 601063 No ENQ on this lock [DEQ; ENQC]

ENQX8: 601064 Invalid access change requested [ENQ; ENQC]

ENQX9: 601065 Invalid number of blocks specified [DEQ; ENQ; ENQC]

FFUFX1: 600544 File is not open [FFUFP]

FFUFX2: 600545 File is not on multiple-directory device [FFUFP]

FFUFX3: 600546 No used page found [FFUFP]

FLINX1: 600650 First character is not blank or numeric [DFIN; FLIN]

FLINX2: 600651 Number too small [DFIN; FLIN]

FLINX3: 600652 Number too large [DFIN; FLIN]

FLINX4: 600653 Invalid format [DFIN; FLIN]

FLOTX1: 600660 Column overflow in field 1 or 2 [DFOUT; FLOUT]

FLOTX2: 600661 Column overflow in field 3 [DFOUT; FLOUT]

FLOTX3: 600662 Invalid format specified [DFOUT; FLOUT]



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FRKHX1: 600250 Invalid process handle [ADBRK; AIC; CLZFF; DIC; DIR; EIR; EPCAP; ERSTR; FFORK; GCVEC; GET; GEVEC; GFRKH; GFRKS; GPJFN; GTRPI; GTRPW; HFORK; IIC; KFORK; MSFRK; PMAP; RCM; RFACS; RFORK; RFRKH; RFSTS; RIR; RIRCM; RMAP; RPACS; RPCAP; RTIW; RUNTM; RWM; SAVE; SCTTY; SCVEC; SETER; SEVEC; SFACS; SFORK; SFRKV; SIR; SIRCM; SKPIR; SPACS; SPJFN; SPLFK; SSAVE; STIW; UTRK; WFORK; XGVEC%; XFRK%; XSFRK%; XSIR%; XSVEC%]

FRKHX2: 600251 Illegal to manipulate a superior process [ADBRK; AIC; CLZFF; DIC; DIR; EIR; EPCAP; FFORK; GCVEC; GET; GEVEC; GFRKH; GFRKS; GPJFN; GTRPI; GTRPW; HFORK; IIC; KFORK; MSFRK; PMAP; RCM; RFACS; RFORK; RFRKH; RFSTS; RIR; RIRCM; RPACS; RTIW; RWM; SAVE; SCTTY; SCVEC; SETER; SEVEC; SFACS; SFORK; SFRKV; SIR; SIRCM; SKPIR; SPACS; SPJFN; SSAVE; STIW; UTRK; WFORK; XGVEC%; XSFRK%; XSIR%; XSVEC%]

FRKHX3: 600252 Invalid use of multiple process handle [ADBRK; AIC; CLZFF; DIC; DIR; EIR; FFORK; GCVEC; GET; GEVEC; GFRKH; GFRKS; GPJFN; GTRPI; GTRPW; IIC; KFORK; MSFRK; PMAP; RCM; RFACS; RFORK; RFRKH; RFSTS; RIR; RIRCM; RPACS; RPCAP; RTIW; RWM; SAVE; SCVEC; SEVEC; SFACS; SFORK; SFRKV; SIR; SIRCM; SKPIR; SPACS; SPJFN; SSAVE; STIW; UTRK; XGVEC%; XSFRK%; XSIR%; XSVEC%]

FRKHX4: 600253 Process is running [RFACS; SCVEC; SETER; SFACS; SFRKV]

FRKHX5: 600254 Process has not been started [SFORK; XSFRK%]

FRKHX6: 600255 All relative process handles in use [CFORK; GFRKH; GFRKS; RTRK]

FRKHX7: 601312 Process page cannot exceed 777 [PMAP]

FRKHX8: 602170 Illegal to manipulate an execute-only process [ADBRK; AIC; CFORK; DIC; DIR; EIR; GET; IIC; PMAP; RFACS; SAVE; SCVEC; SDVEC; SETER; SEVEC; SFACS; SFORK; SFRKV; SIR; SIRCM; SPACS; STIW; TFORK; UTRK; XSFRK%; XSIR%; XSVEC%]

GACCX1: 601272 Invalid job number [GACCT]

GACCX2: 601273 No such job [GACCT]

GACCX3: 601301 Confidential Information Access capability required [GACCT]

GACTX1: 600540 File is not on multiple-directory device [GACTF]

GACTX2: 600541 File expunged [GACTF]

GACTX3: 601173 Internal format of directory is incorrect [GACTF]

GETX1: 600373 Invalid save file format [GET]

GETX2: 600374 System Special Pages Table full [GET]

GETX3: 601703 Illegal to overlay existing pages [GET]

GETX4: 601557 Illegal to specify .GBASE for multisection

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		file [GET]
GETX5:	601560	EXE file directory entry specifies a section-crossing [GET]
GFDBX1:	600424	Invalid displacement [GTFDB]
GFDBX2:	600425	Invalid number of words [GTFDB]
GFDBX3:	600426	List access required [GTFDB]
GFKSX1:	601011	Area too small to hold process structure [GFRKS]
GFRKX1:	600371	Invalid process handle [GFRKH]
GFUSX1:	601371	Invalid function [GFUST]
GFUSX2:	601372	Insufficient system resources [GFUST]
GFUSX3:	601452	File expunged [GFUST]
GFUSX4:	601453	Internal format of directory is incorrect [GFUST]
GJFX1:	600055	Desired JFN invalid [GTJFN]
GJFX2:	600056	Desired JFN not available [GTJFN]
GJFX3:	600057	No JFNs available [GTJFN]
GJFX4:	600060	Invalid character in file name [CRLNM; GTJFN]
GJFX5:	600061	Field cannot be longer than 39 characters [CRLNM; GTJFN]
GJFX6:	600062	Device field not in a valid position [CRLNM; GTJFN]
GJFX7:	600063	Directory field not in a valid position [CRLNM; GTJFN]
GJFX8:	600064	Directory terminating delimiter is not preceded by a valid beginning delimiter [CRLNM; GTJFN]
GJFX9:	600065	More than one name field is not allowed [CRLNM; GTJFN]
GJFX10:	600066	Generation number is not numeric [CRLNM; GTJFN]
GJFX11:	600067	More than one generation number field is not allowed [CRLNM; GTJFN]
GJFX12:	600070	More than one account field is not allowed [CRLNM; GTJFN]
GJFX13:	600071	More than one protection field is not allowed [CRLNM; GTJFN]
GJFX14:	600072	Invalid protection [CRLNM; GTJFN]
GJFX15:	600073	Invalid confirmation character [CRLNM; GTJFN]
GJFX16:	600074	No such device [GTJFN]
GJFX17:	600075	No such directory name [GTJFN]
GJFX18:	600076	No such filename [GTJFN]
GJFX19:	600077	No such file type [GTJFN]
GJFX20:	600100	No such generation [GTJFN]
GJFX21:	600101	File was expunged [GTJFN]
GJFX22:	600102	Insufficient system resources (Job Storage Block full) [CRLNM; GTJFN; LNMST; PPNST]
GJFX23:	600103	Exceeded maximum number of files per directory [GTJFN]
GJFX24:	600104	File not found [GTJFN]
GJFX27:	600107	File already exists (new file required) [GTJFN]
GJFX28:	600110	Device is not on-line [GTJFN]
GJFX30:	600112	Account is not numeric [GTJFN]

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GJFX31:	600113	Invalid wildcard designator [CRLNM; GTJFN]
GJFX32:	600114	No files match this specification [GTJFN]
GJFX33:	600115	Filename was not specified [GTJFN]
GJFX34:	600116	Invalid character "?" in file specification [GTJFN]
GJFX35:	600117	Directory access privileges required [GTJFN]
GJFX36:	600760	Internal format of directory is incorrect [GTJFN]
GJFX37:	601133	Input deleted [GTJFN]
GJFX38:	601164	File not found because output-only device was specified [GTJFN]
GJFX39:	601165	Logical name loop detected [GTJFN]
GJFX40:	601225	Undefined attribute in file specification [GTJFN]
GJFX41:	601277	File name must not exceed 6 characters [GTJFN]
GJFX42:	601300	File type must not exceed 3 characters [GTJFN]
GJFX43:	601754	More than one ;T specification is not allowed [GTJFN]
GJFX44:	602012	Account string does not match [GTJFN]
GJFX45:	602060	Illegal to request multiple specifications for the same attribute [GTJFN]
GJFX46:	602061	Attribute value is required [GTJFN]
GJFX47:	602062	Attribute does not take a value [GTJFN]
GJFX48:	602064	GTJFN input buffer is empty [GTJFN]
GJFX49:	602065	Invalid attribute for this device [GTJFN]
GJFX50:	602205	Invalid argument for attribute [GTJFN]
GJFX51:	602211	Byte count too small [GTJFN]
GJFX52:	602420	End of tape encountered while searching for file
GJFX53:	602461	Tape label filename specification exceeds 17 characters [GTJFN]
GNJFX1:	601054	No more files in this specification [GNJFN]
GOKER1:	602220	Illegal function [GETOK%]
GOKER2:	602221	Request denied by Access Control Facility [GETOK%]
GOKER3:	602421	JSYS not executed within ACJ fork [GIVOK%; RCVOK%]
GTABX1:	600267	Invalid table number [GETAB]
GTABX2:	600270	Invalid table index [GETAB]
GTABX3:	600271	GETAB privileges required [GETAB]
GTDIX1:	600640	WHEEL or OPERATOR capability required [GTDIR; TTMSG]
GTDIX2:	600641	Invalid directory number [GTDIR]
GTHSX1:	600704	Unknown host number [GTHST%]
GTHSX2:	600705	No number for that host name [GTHST%]
GTHSX3:	600707	No string for that host number [GTHST%]
GTJIX1:	601013	Invalid index [GETJI; GTHST%; GTNCP%]
GTJIX2:	601014	Invalid terminal line number [GETJI]
GTJIX3:	601015	Invalid job number [GETJI]
GTJIX4:	601254	No such job [GETJI]
GTNCX1:	600746	Invalid network JFN [GTNCP%]
GTNCX2:	600747	Invalid or inactive NVT [GTNCP%]

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HFRKX1: 600370 Illegal to halt self with HFORK [HFORK]  
 HPTX1: 600670 Undefined clock number [HPTIM]  
 IFIXX1: 600414 Radix is not in range 2 to 10 [NIN]  
 IFIXX2: 600415 First nonspace character is not a digit  
 [NIN]  
 IFIXX3: 600416 Overflow (number is greater than 2\*\*35)  
 [NIN]  
 ILINS1: 600770 Undefined operator code  
 ILINS2: 600771 Undefined JSYS [ASNSQ; ATNVT; CVHST;  
 CVSKT; FLHST; GTHST; GTNCP; RCVIM; RELSQ;  
 SNDIM]  
 ILINS3: 600772 UUD simulation facility not available  
 ILINS4: 601255 UUD simulation is disabled  
 ILINS5: 601256 RMS facility is not available [GDVEC;  
 SDVEC]  
 ILLX01: 601774 Illegal memory read [SFTAD]  
 ILLX02: 601775 Illegal memory write  
 ILLX03: 601776 Memory data parity error  
 ILLX04: 601777 Reference to non-existent page [PLOCK]  
 ILLX05: 602471 Illegal memory reference, section greater  
 than 37  
 INLNX1: 601001 Index is beyond end of logical name table  
 [INLNM]  
 INLNX2: 601135 Invalid function [INLNM]  
 IOX1: 600215 File is not open for reading [BIN; PBIN;  
 RIN; SIN; SINR; DUMPI]  
 IOX2: 600216 File is not open for writing [BOUT; PBOUT;  
 PSOUT; SOUTR; DUMPO; ROUT; SOUT]  
 IOX3: 600217 Illegal to change pointer for this opening  
 of file [RIN; ROUT]  
 IOX4: 600220 End of file reached [BIN; DUMPI; PBIN;  
 RIN; SIN; SINR; MTOPR]  
 IOX5: 600221 Device or data error [BIN; BOUT; DUMPI;  
 DUMPO; MTOPR; PBIN; PBOUT; PSOUT; RIN;  
 ROUT; SIN; SINR; SOUT; SOUTR]  
 IOX6: 600222 Illegal to write beyond absolute end of  
 file [PBOUT; PSOUT; ROUT; SOUT; SOUTR;  
 BOUT]  
 IOX7: 601211 Insufficient system resources (Job Storage  
 Block full) [SIN; SINR; SOUT; SOUTR]  
 IOX8: 601212 Monitor internal error [MTU%; SIN; SINR;  
 SOUT; SOUTR]  
 IOX9: 601216 Function legal for sequential write only  
 [SOUTR]  
 IOX10: 601240 Record is longer than user requested  
 [SINR]  
 IOX11: 601440 Quota exceeded [BOUT; CLOSF; CLZFF; DEVST;  
 DFOUT; DIRST; DUMPO; ERSTR; FLOUT; GTJFN;  
 JFNS; NOUT; PBOUT; PMAP; PPNST; PSOUT;  
 RDTTY; ROUT; SAVE; SOUT; SOUTR; SSAVE;  
 TEXTI; UFPGS]  
 IOX12: 601441 Insufficient system resources (swapping  
 space full)  
 IOX13: 602227 Invalid segment type  
 IOX14: 602230 Invalid segment size  
 IOX15: 602231 Illegal tape format for dump mode [MTOPR]

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IOX17:	602233	Invalid tape label [MTOPR]
IOX20:	602234	Illegal tape record size [MTPOR]
IOX21:	602235	Tape HDR1 missing [MTOPR]
IOX22:	602236	Invalid tape HDR1 sequence number [MTOPR]
IOX23:	602237	Tape label read error [MTOPR]
IOX24:	602240	Logical end of tape encountered [MTOPR]
IOX25:	602241	Invalid tape format [MTOPR]
IOX26:	602243	Tape write date has not expired [MTOPR]
IOX30:	602245	Tape has invalid access character [MTOPR]
IOX31:	602343	Invalid record descriptor in labeled tape [MTOPR]
IOX32:	602422	Tape position is indeterminate [MTOPR]
IOX33:	602423	TTY input buffer full [BOUT; SOUT]
IOX34:	602462	Disk full [BOUT; CLOSF; CLZFF; DEVST; DFOUT; DIRST; DUMPO; ERSTR; FLOUT; GTJFN; JFNS; NOUT; PBOUT; PMAP; PPNST; PSOUT; RDTTY; ROUT; SAVE; SOUT; SOUTR; SSAVE; TEXTI; UFPGS]
IOX35:	602463	Unable to allocate disk - structure damaged [BOUT; CLOSF; CLZFF; DEVST; DFOUT; DIRST; DUMPO; ERSTR; FLOUT; GTJFN; JFNS; NOUT; PBOUT; PMAP; PPNST; PSOUT; RDTTY; ROUT; SAVE; SOUT; SOUTR; SSAVE; TEXTI; UFPGS]
IPCF10:	601027	WHEEL capability required [MUTIL]
IPCF11:	601030	WHEEL or IPCF capability required [MRECV; MSEND; MUTIL]
IPCF12:	601031	No free PID's available [MSEND; MUTIL]
IPCF13:	601032	PID quota exceeded [MSEND; MUTIL]
IPCF14:	601033	No PID's available to this job [MRECV; MSEND; MUTIL]
IPCF15:	601034	No PID's available to this process [MRECV; MSEND; MUTIL]
IPCF16:	601035	Receive and message data modes do not match [MRECV; MUTIL]
IPCF17:	601036	Argument block too small [MUTIL]
IPCF18:	601037	Invalid MUTIL JSYS function [MUTIL]
IPCF19:	601040	No PID for [SYSTEM]INFO [MSEND; MUTIL]
IPCF20:	601041	Invalid process handle [MUTIL]
IPCF21:	601042	Invalid job number [MUTIL]
IPCF22:	601043	Invalid software interrupt channel number [MUTIL]
IPCF23:	601044	[SYSTEM]INFO already exists [MUTIL]
IPCF24:	601045	Invalid message size [MRECV; MSEND; MUTIL]
IPCF25:	601046	PID does not belong to this job [MRECV; MSEND; MUTIL]
IPCF26:	601047	PID does not belong to this process [MRECV; MSEND; MUTIL]
IPCF27:	601050	PID is not defined [MRECV; MSEND; MUTIL]
IPCF28:	601051	PID not accessible by this process [MRECV; MSEND; MUTIL]
IPCF29:	601052	PID already being used by another process [MRECV; MSEND; MUTIL]
IPCF30:	601053	Job is not logged in [MUTIL]
IPCF31:	601102	Invalid page number [MRECV; MSEND]
IPCF32:	601103	Page is not private [MRECV; MSEND; MUTIL]

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IPCF33: 601130 Invalid index into system PID table  
 [MUTIL]  
 IPCF34: 601320 Cannot receive into an existing page  
 [MRECV]  
 IPCF35: 602125 Invalid IPCF quota [MUTIL]  
 IPCFX1: 601016 Length of packet descriptor block cannot  
 be less than 4 [MRECV; MSEND]  
 IPCFX2: 601017 No message for this PID [MRECV; MUTIL]  
 IPCFX3: 601020 Data too long for user's buffer [MRECV;  
 MUTIL]  
 IPCFX4: 601021 Receiver's PID invalid [MRECV; MSEND;  
 MUTIL]  
 IPCFX5: 601022 Receiver's PID disabled [MRECV; MSEND;  
 MUTIL]  
 IPCFX6: 601023 Send quota exceeded [MSEND; MUTIL]  
 IPCFX7: 601024 Receiver quota exceeded [MSEND; MUTIL]  
 IPCFX8: 601025 IPCF free space exhausted [MSEND; MUTIL]  
 IPCFX9: 601026 Sender's PID invalid [MSEND; MUTIL]  
 KDPX01: 602206 KMC11 not running [BOOT]  
 KFRKX1: 600365 Illegal to kill top level process [KFORK]  
 KFRKX2: 600366 Illegal to kill self [KFORK]  
 LCBDBP: 601475 Bad byte pointer passed to LCS  
 LCNOND: 601477 LCS No such node  
 LGINX1: 600010 Invalid account identifier [LOGIN]  
 LGINX2: 600011 Directory is "files-only" and cannot be  
 logged into [ACCES; LOGIN]  
 LGINX3: 600012 Internal format of directory is incorrect  
 [LOGIN]  
 LGINX4: 600013 Invalid password [LOGIN]  
 LGINX5: 600014 Job is already logged in [LOGIN]  
 LGINX6: 601337 No more job slots available for logging in  
 [LOGIN]  
 LNGFX1: 601317 Page table does not exist and file not  
 open for write [PMAP; UFGS]  
 LNSTX1: 601002 No such logical name [LNMST]  
 LNSTX2: 601136 Invalid function [LNMST]  
 LOCKX1: 601771 Illegal to lock other than a private page  
 [PLOCK]  
 LOCKX2: 601772 Requested page unavailable [PLOCK]  
 LOUTX1: 600035 Illegal to specify job number when logging  
 out own job [LGOUT]  
 LOUTX2: 600036 Invalid job number [LGOUT; MSTR]  
 LOUTX3: 601227 WHEEL or OPERATOR capability required  
 [LGOUT]  
 LOUTX4: 601230 LOG capability required [LGOUT]  
 LOUTX5: 601753 Illegal to log out job 0 [LGOUT]  
 LPINX1: 601333 Invalid unit number [LPINI]  
 LPINX2: 601334 WHEEL or OPERATOR capability required  
 [LPINI]  
 LPINX3: 601335 Illegal to load RAM or VFU while device is  
 OPEN [LPINI]  
 LSTRX1: 601405 Process has not encountered any errors  
 [GETER]  
 LTLBLX: 602347 Too many user labels  
 METRX1: 602352 METER% not implemented for this processor  
 [METER%]

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MONX01:	601727	Insufficient system resources [GETOK%; MSTR]
MONX02:	601730	Insufficient system resources (JSB full) [PVDOP%; VACCT]
MONX03:	601731	Monitor internal error [CRDIR]
MONX04:	601732	Insufficient system resources (swapping space full)
MONX05:	602032	Insufficient system resources (no resident free space) [GETOK%; MSTR]
MONX06:	602433	Insufficient system resources (no swappable free space) [NODE]
MSTRX1:	601345	Invalid function [MSTR]
MSTRX2:	601346	WHEEL or OPERATOR capability required [MSTR]
MSTRX3:	601347	Argument block too small [MSTR]
MSTRX4:	601350	Insufficient system resources [MSTR]
MSTRX5:	601351	Drive is not on-line [MSTR]
MSTRX6:	601352	Home blocks are bad [MSTR]
MSTRX7:	601353	Invalid structure name [MSTR]
MSTRX8:	601354	Could not get OFN for ROOT-DIRECTORY [MSTR]
MSTRX9:	601355	Could not MAP ROOT-DIRECTORY [MSTR]
MSTX10:	601356	ROOT-DIRECTORY bad [MSTR]
MSTX11:	601357	Could not initialize Index Table [MSTR]
MSTX12:	601360	Could not OPEN Bit Table File [MSTR]
MSTX13:	601361	Backup copy of ROOT-DIRECTORY is bad [MSTR]
MSTX14:	601362	Invalid channel number [MSTR]
MSTX15:	601363	Invalid unit number [MSTR]
MSTX16:	601364	Invalid controller number [MSTR]
MSTX17:	601421	All units in a structure must be of the same type [MSTR]
MSTX18:	601422	No more units in system [MSTR]
MSTX19:	601423	Unit is already part of a mounted structure [MSTR]
MSTX20:	601424	Data error reading HOME blocks [MSTR]
MSTX21:	601425	Structure is not mounted [MSTR]
MSTX22:	601426	Illegal to change specified bits [MSTR]
MSTX23:	601430	Could not write HOME blocks [MSTR]
MSTX24:	601750	Illegal to dismount the System Structure [MSTR]
MSTX25:	601751	Invalid number of swapping pages [MSTR]
MSTX26:	601752	Invalid number of Front-End-Filesystem pages [MSTR]
MSTX27:	601757	Specified unit is not a disk [MSTR]
MSTX28:	601760	Could not initialize bit table for structure [MSTR]
MSTX29:	601761	Could not reconstruct ROOT-DIRECTORY [MSTR]
MSTX30:	601770	Incorrect Bit Table counts on structure [MSTR]
MSTX31:	602000	Structure already mounted [MSTR]
MSTX32:	602001	Structure was not mounted [GTDIR; MSTR]
MSTX33:	602002	Structure is unavailable for mounting [MSTR]
MSTX34:	602063	Unit is write-locked [MSTR]

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MSTX35: 602201 Too many units in structure [MSTR]  
 MSTX36: 602223 Illegal while JFNs assigned [MSTR]  
 MSTX37: 602224 Illegal while connected to structure  
 [MSTR]  
 MSTX40: 602225 Invalid PSI channel number given [MSTR]  
 MSTX41: 601461 Channel does not exist [MSTR]  
 MSTX42: 601462 Controller does not exist [MSTR]  
 MTOX10: 601323 VFU or RAM file cannot be OPENed [MTOPR]  
 MTOX11: 601324 Data too large for buffers [MTOPR]  
 MTOX12: 601325 Input error or not all data read [MTOPR]  
 MTOX13: 601326 Argument block too small [MTOPR]  
 MTOX14: 601327 Invalid software interrupt channel number  
 [MTOPR]  
 MTOX15: 601331 Device does not have Direct Access  
 [programmable] VFU [MTOPR]  
 MTOX16: 601332 VFU or Translation RAM file must be on  
 disk [MTOPR]  
 MTOX17: 601336 Device is not on line [MTOPR]  
 MTOX18: 601407 Invalid software interrupt channel number  
 [MTOPR]  
 MTOX19: 601755 Invalid terminal line width [MTOPR]  
 MTOX1: 601210 Invalid function [MTOPR]  
 MTOX20: 601756 Invalid terminal line length [MTOPR]  
 MTOX2: 601220 Record size was not set before I/O was  
 done [MTOPR]  
 MTOX3: 601221 Function not legal in dump mode [MTOPR]  
 MTOX4: 601222 Invalid record size [MTOPR]  
 MTOX5: 601213 Invalid hardware data mode for magtape  
 [MTOPR]  
 MTOX6: 601223 Invalid magtape density [MTOPR]  
 MTOX7: 601226 WHEEL or OPERATOR capability required  
 [MTOPR]  
 MTOX8: 601274 Argument block too long [MTOPR]  
 MTOX9: 601322 Output still pending [MTOPR]  
 NODX02: 602207 Line not turned off [NODE]  
 NODX03: 602210 Another line already looped [NODE]  
 NOUTX1: 600407 Radix is not in range 2 to 36 [NOUT]  
 NOUTX2: 600410 Column overflow [NOUT]  
 NPX2CL: 602413 Two colons required on node name [COMND]  
 NPXAMB: 602044 Ambiguous [COMND]  
 NPXCMA: 602057 Comma not given [COMND]  
 NPXICN: 602052 Invalid character in number [COMND]  
 NPXIDT: 602053 Invalid device terminator [COMND]  
 NPXINW: 602050 Invalid guide word [COMND]  
 NPXNC: 602051 Not confirmed [COMND]  
 NPXNMD: 602056 Does not match directory or user name  
 [COMND]  
 NPXNMT: 602055 Does not match token [COMND]  
 NPXNOM: 602046 Does not match switch or keyword [COMND]  
 NPXNQS: 602054 Not a quoted string - quote missing at  
 beginning or end [COMND]  
 NPXNSW: 602045 Not a switch - does not begin with slash  
 [COMND]  
 NPXNUL: 602047 Null switch or keyword given [COMND]  
 NSPXOO: 602353 Connection not accepted  
 NSPX01: 602354 Resource allocation failure



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NSPX02:	602355	Destination node does not exist
NSPX03:	602356	Node shutting down
NSPX04:	602357	Destination process does not exist
NSPX05:	602360	Invalid process name
NSPX06:	602361	Destination process queue overflow
NSPX07:	602362	Unspecified error
NSPX08:	602363	Connection aborted by third party
NSPX09:	602364	Link aborted by process
NSPX10:	602365	NSP Failure - Flow control violation
NSPX11:	602366	Too many connections to node
NSPX12:	602367	Too many connections to destination process
NSPX13:	602370	Access denied due to unacceptable user name or password
NSPX14:	602371	NSP failure - invalid SERVICES field
NSPX15:	602372	Invalid account
NSPX16:	602373	NSP failure - invalid SEGSIZ field
NSPX17:	602374	Process aborted, timed out, or cancelled request
NSPX18:	602375	No path to destination node
NSPX19:	602376	NSP failure - flow control failure
NSPX20:	602377	NSP failure - invalid DSTADDR
NSPX21:	602400	Disconnect confirmation
NSPX22:	602401	NSP failure - image data field too long
NSPX23:	602411	Invalid NSP reason code
NSPX24:	602456	Node name not assigned to a network node
NSPX25:	602457	Illegal DECnet node number [NODE]
NSPX26:	602460	Table of topology watchers is full [NODE]
NTMX1:	602451	Network Management unable to complete request [NTMAN%]
NTWZX1:	600737	NET WIZARD capability required [ASNSQ]
ODTNX1:	600462	Time zone must be USA or Greenwich [ODTNC]
OPNX1:	600120	File is already open [GNJFN; MTU%; OPENF; RLJFN; RNAME]
OPNX2:	600121	File does not exist [GET; OPENF]
OPNX3:	600122	Read access required [OPENF]
OPNX4:	600123	Write access required [OPENF]
OPNX5:	600124	Execute access required [OPENF]
OPNX6:	600125	Append access required [OPENF]
OPNX7:	600126	Device already assigned to another job [OPENF]
OPNX8:	600127	Device is not on line [MTU%; OPENF]
OPNX9:	600130	Invalid simultaneous access [OPENF; VACCT]
OPNX10:	600131	Entire file structure full [OPENF]
OPNX12:	600133	List access required [OPENF]
OPNX13:	600134	Invalid access requested [OPENF]
OPNX14:	600135	Invalid mode requested [OPENF]
OPNX15:	600136	Read/write access required [OPENF]
OPNX16:	600137	File has bad index block [OPENF; VACCT]
OPNX17:	600140	No room in job for long file page table [OPENF]
OPNX18:	600141	Unit Record Devices are not available [OPENF]
OPNX19:	600142	IMP is not up
OPNX20:	600143	Host is not up
OPNX21:	600144	Connection refused

TOPS-20 Monitor Calls Quick Reference Guide  
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OPNX22: 600145 Connection byte size does not match  
 OPNX23: 601132 Disk quota exceeded [OPENF]  
 OPNX25: 601224 Device is write locked [OPENF; SFTAD]  
 OPNX26: 601410 Illegal to open a string pointer [OPENF]  
 OPNX30: 602326 File has archive status, modification is prohibited [ARCF]  
 OPNX31: 602327 File is off-line [ARCF; OPENF]  
 PDVX01: 601554 Address in .POADE must be as large as address in .POADR [PVDOP%]  
 PDVX02: 601555 Addresses in .PODAT block must be in strict ascending order [PVDOP%]  
 PDVX03: 601556 Address in .POADR must be a program data vector address [PVDOP%]  
 PEEKX2: 600617 Read access failure on monitor page [PEEK]  
 PMAPX1: 600240 Invalid access requested [PMAP]  
 PMAPX2: 600241 Invalid use of PMAP [PMAP]  
 PMAPX3: 601104 Illegal to move shared page into file [PMAP]  
 PMAPX4: 601105 Illegal to move file page into process [PMAP]  
 PMAPX5: 601106 Illegal to move special page into file [PMAP]  
 PMAPX6: 601107 Disk quota exceeded [PMAP]  
 PMAPX7: 601415 Illegal to map file on dismounted structure [PMAP]  
 PMAPX8: 602464 Indirect page map loop detected [PMAP]  
 PMCLX1: 602005 Invalid page state or state transition [PMCTL]  
 PMCLX2: 602006 Requested physical page is unavailable [PMCTL]  
 PMCLX3: 602007 Requested physical page contains errors [PMCTL]  
 PMCLX4: 602165 No more error information [PMCTL]  
 PPNX1: 601444 Invalid PPN [PPNST]  
 PPNX2: 601445 Structure is not mounted [PPNST]  
 PRAX1: 601263 Invalid PRARG function code [PRARG]  
 PRAX2: 601264 No room in monitor data base for argument block [PRARG]  
 PRAX3: 601270 PRARG argument block too large [PRARG]  
 RCDIX1: 601376 Insufficient system resources [RCDIR]  
 RCDIX2: 601377 Invalid directory specification [ACCES; RCDIR]  
 RCDIX3: 601400 Invalid structure name [RCDIR]  
 RCDIX4: 601401 Monitor internal error [RCDIR; RCUSR]  
 RCUSX1: 601402 Insufficient system resources [RCUSR]  
 RDTX1: 601010 Invalid string pointer [RDTTY; TEXTI; WILD%]  
 RIRX1: 602426 RIR JSYS incompatible with previous XSIR% [RIR]  
 RJFNX1: 600165 File is not closed [RLJFN]  
 RJFNX2: 600166 JFN is being used to accumulate filename [RLJFN]  
 RJFNX3: 600167 JFN is not accessible by this process [RLJFN]  
 RNAMX1: 600450 Files are not on same device [RNAMEF]  
 RNAMX2: 600451 Destination file expunged [RNAMEF]

TOPS-20 Monitor Calls Quick Reference Guide  
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RNAMX3: 600452 Write or owner access to destination file required [RNAMF]  
 RNAMX4: 600453 Quota exceeded in destination of rename [RNAMF]  
 RNAMX5: 600750 Destination file is not closed [RNAMF]  
 RNAMX6: 600751 Destination file has bad page table [RNAMF]  
 RNAMX7: 600752 Source file expunged [RNAMF]  
 RNAMX8: 600753 Write or owner access to source file required [RNAMF]  
 RNAMX9: 600754 Source file is nonexistent [RNAMF]  
 RNMX10: 600755 Source file is not closed [RNAMF]  
 RNMX11: 600756 Source file has bad page table [RNAMF]  
 RNMX12: 600757 Illegal to rename to self [RNAMF]  
 RNMX13: 601454 Insufficient system resources [RNAMF]  
 RSCNX1: 600361 Overflowed rescan buffer, input string truncated [RSCAN]  
 RSCNX2: 600362 Invalid function code [RSCAN]  
 RUNTX1: 600273 Invalid process handle -3 or -4 [RUNTM]  
 SACTX1: 600530 File is not on multiple-directory device [SACTF]  
 SACTX2: 600531 Insufficient system resources (Job Storage Block full) [SACTF]  
 SACTX3: 600532 Directory requires numeric account [SACTF]  
 SACTX4: 600533 Write or owner access required [SACTF]  
 SAVX1: 601330 Illegal to save files on this device [SAVE]  
 SCTX1: 601550 Invalid function code [SCTTY]  
 SCTX2: 601551 Terminal already in use as controlling terminal [SCTTY]  
 SCTX3: 601552 Illegal to redefine the job's controlling terminal [SCTTY]  
 SCTX4: 601553 SC%SCT capability required [SCTTY]  
 SEVEX1: 600610 Entry vector length is not less than 1000 [SEVEC; XSVEC%]  
 SFBSX1: 600210 Illegal to change byte size for this opening of file [SFBSZ]  
 SFBSX2: 600211 Invalid byte size [OPENF; SFBSZ]  
 SFPTX1: 600175 File is not open [SFPTR]  
 SFPTX2: 600176 Illegal to reset pointer for this file [BKJFN; SFPTR]  
 SFPTX3: 600177 Invalid byte number [BKJFN; SFPTR]  
 SFRVX1: 600377 Invalid position in entry vector [SFRKV]  
 SFUSX1: 601373 Invalid function [SFUST]  
 SFUSX2: 601374 Insufficient system resources [SFUST]  
 SFUSX4: 601700 File expunged [SFUST]  
 SFUSX5: 601701 Write or owner access required [SFUST]  
 SFUSX6: 601702 No such user name [SFUST]  
 SIRX1: 600570 Table address is not greater than 20 [SIR; XSIR%]  
 SIRX2: 602425 SIR JSYS invoked from non-zero section [SIR]  
 SJBX1: 601244 Invalid function [SETJB]  
 SJBX2: 601245 Invalid magtape density [SETJB]  
 SJBX3: 601246 Invalid magtape data mode [SETJB]  
 SJBX4: 601251 Invalid job number [SETJB]

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SJBX5: 601252 Job is not logged in [SETJB]  
 SJBX6: 601253 WHEEL or OPERATOR capability required [SETJB]  
 SUBX7: 602077 Remark exceeds 39 characters [SETJB]  
 SUBX8: 601455 Illegal to perform this function [SETJB]  
 SJPRI1: 601276 Job is not logged in [SJPRI]  
 SKDX1: 602247 Cannot change class [SKED%]  
 SMAPX1: 602431 Attempt to delete a section still shared [SKPIR]  
 SMAPX2: 602465 Indirect section map loop detected [SKPIR]  
 SMONX1: 600516 WHEEL or OPERATOR capability required [SMON]  
 SMONX2: 601250 Invalid SMON function [SMON]  
 SNDIX1: 600732 Invalid message size [SNDIM]  
 SNDIX2: 600733 Insufficient system resources (No buffers available) [SNDIM]  
 SNDIX3: 600734 Illegal to specify NCP links 0 - 72 [SNDIM]  
 SNDIX4: 600735 Invalid header value for this queue [SNDIM]  
 SNDIX5: 600736 IMP down [SNDIM]  
 SNOPI0: 601121 Breakpoints already inserted [SNOOP]  
 SNOPI1: 601122 Breakpoints not inserted [SNOOP]  
 SNOPI2: 601123 Invalid format for program name symbol [SNOOP]  
 SNOPI3: 601124 No such program name symbol [SNOOP]  
 SNOPI4: 601125 No such symbol [SNOOP]  
 SNOPI5: 601126 Not enough free pages for snooping [SNOOP]  
 SNOPI6: 601127 Multiply-defined symbol [SNOOP]  
 SNOPI7: 601131 Breakpoint already defined [SNOOP]  
 SNOPI8: 601163 Data page is not private or copy-or-write [SNOOP]  
 SNOPI9: 601110 WHEEL or OPERATOR capability required [SNOOP]  
 SNOPI10: 601111 Invalid function [SNOOP]  
 SNOPI11: 601112 .SNPLC function must be first [SNOOP]  
 SNOPI12: 601113 Only one .SNPLC function allowed [SNOOP]  
 SNOPI13: 601114 Invalid page number [SNOOP]  
 SNOPI14: 601115 Invalid number of pages to lock [SNOOP]  
 SNOPI15: 601116 Illegal to define breakpoints after inserting them [SNOOP]  
 SNOPI16: 601117 Breakpoint is not set on instruction [SNOOP]  
 SNOPI17: 601120 No more breakpoints allowed [SNOOP]  
 SPACX1: 600245 Invalid access requested [SPACS]  
 SPLFX1: 600260 Process is not inferior or equal to self [SPLFK]  
 SPLFX2: 600261 Process is not inferior to self [SPLFK]  
 SPLFX3: 600262 New superior process is inferior to intended inferior [SPLFK]  
 SPLX1: 601144 Invalid function [SPOOL]  
 SPLX2: 601145 Argument block too small [SPOOL]  
 SPLX3: 601146 Invalid device designator [SPOOL]  
 SPLX4: 601147 WHEEL or OPERATOR capability required [SPOOL]  
 SPLX5: 601150 Illegal to specify 0 as generation number

TOPS-20 Monitor Calls Quick Reference Guide  
TOPS-20 JSYS Error Mnemonics

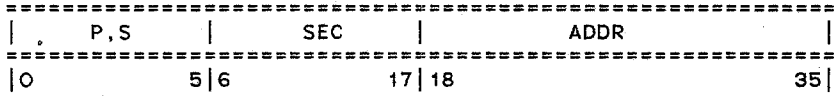
		for first file [SPOOL]
SPLX6:	601450	No directory to write spooled files into [SPOOL]
SQX1:	600742	Special network queue handle out of range [RCVIM; SNDIM]
SQX2:	600743	Special network queue not assigned [RCVIM; SNDIM]
SSAVX1:	600600	Illegal to save files on this device [GET; SSAVE]
SSAVX2:	600601	Page count (left half of table entry) must be negative [SSAVE]
SSAVX3:	601232	Insufficient system resources (Job Storage Block full) [SSAVE]
SSAVX4:	601233	Directory area of EXE file is more than one page [SSAVE]
SSAVX5:	601500	Number of PDVs grew during save [SSAVE]
STADX1:	600275	WHEEL or OPERATOR capability required [STAD]
STADX2:	600276	Invalid date or time [SFTAD; STAD]
STDIX1:	602003	The STDIR JSYS has been replaced by RCDIR and RCUSR
STDVX1:	600332	No such device [MSTR; PPNST; STDEV]
STRX01:	601436	Structure is not mounted [ACCES; DIRST; MSTR; PPNST; RCDIR; VACCT]
STRX02:	601437	Insufficient system resources [ACCES; MSTR; STPPN]
STRX03:	601442	No such directory name [ACCES; STPPN]
STRX04:	601443	Ambiguous directory specification [ACCES; STPPN]
STRX06:	601747	No such user number [PPNST]
STRX07:	602142	Invalid user number [RCUSR]
STRX08:	602143	Invalid user name [RCUSR]
STRX09:	602222	Prior structure mount required [ACCES; GNJFN; GTJFN]
STYPX1:	601414	Invalid terminal type [STTYP]
SWJFX1:	601406	Illegal to swap same JFN [SWJFN]
SWJFX2:	602242	Illegal to swap ATS JFN
SYEX1:	601206	Unreasonable SPEAR block size [SYERR]
SYEX2:	601207	No buffer space available for SPEAR [SYERR]
TADDX1:	601235	Table is full [TBADD]
TADDX2:	601236	Entry is already in table [TBADD]
TDELX1:	601234	Table is empty [TBDEL]
TDELX2:	601403	Invalid table entry location [TBDEL]
TERMX1:	600350	Invalid terminal code [ATI; DTI]
TFRKX1:	600375	Invalid function code [TFORK]
TFRKX2:	600376	Unassigned process handle or not immediate inferior [TFORK]
TFRKX3:	600411	Process not frozen [TFORK]
TILFX1:	600465	Invalid time format [IDTIM; IDTNC]
TIMEX1:	600460	Time cannot be greater than 24 hours [HSYS; IDCNV; ODCNV; ODTIM]
TIMEX2:	601302	Downtime cannot be more than 7 days in the future [HSYS]
TIMX10:	601541	No system date and time [TIMER]
TIMX1:	601157	Invalid function [TIMER]

TOPS-20 Monitor Calls Quick Reference Guide  
 TOPS-20 JSYS Error Mnemonics

TIMX2: 601160 Invalid process handle [TIMER]  
 TIMX3: 601161 Time limit already set [TIMER]  
 TIMX4: 601162 Illegal to clear time limit [TIMER]  
 TIMX5: 601404 Invalid software interrupt channel number [TIMER]  
 TIMX6: 601535 Time has already passed [TIMER]  
 TIMX7: 601536 No space available for a clock [TIMER]  
 TIMX8: 601537 User clock allocation exceeded [TIMER]  
 TIMX9: 601540 No such clock entry found [TIMER]  
 TLNKX1: 600351 Illegal to set remote to object before object to remote [TLINK]  
 TLNKX2: 600356 Link was not received within 15 seconds [TLINK]  
 TLNKX3: 600357 Links full [TLINK]  
 TLUKX1: 601237 Internal format of table is incorrect [TBLUK]  
 TMONX1: 601247 Invalid TMON function [TMON]  
 TTMSX1: 602432 Could not send message within timeout interval [TTMSX1]  
 TTYX01: 602030 Line is not active [BKJFN; CFIBF; CFOBF; DIBE; DOBE; GTTYP; MTOPR; OPENF; RFCOC; RFMOD; RFPOS; SFCOC; SFMOD; SFPOS; SIBE; SOBE; STI; STD; STPAR; STTYP; TLINK]  
 TTYX02: 602455 Illegal character specified  
 TTYX1: 600360 Device is not a terminal [STI; STO]  
 UFPGX1: 601316 File is not opened for write [UFPGS]  
 USGX01: 602113 Invalid USAGE entry type code [USAGE]  
 USGX02: 602116 Item not found in argument list [USAGE]  
 USGX03: 602124 Default item not allowed [USAGE]  
 UTSTX1: 602013 Invalid function code [UTEST]  
 UTSTX2: 602014 Area of code too large to test [UTEST]  
 UTSTX3: 602015 UTEST facility in use by another process [UTEST]  
 VACCX0: 602111 Invalid account [CACCT; SACTF; VACCT]  
 VACCX1: 602112 Account string exceeds 39 characters [CACCT; SACTF; VACCT; COMND]  
 VACCX2: 602126 Account has expired [SACTF; VACCT]  
 WHELX1: 600614 WHEEL or OPERATOR capability required [DELFI; DSKAS; DSKOP; MDDT%; SUPRI; SPIRW; STI]  
 WILDY1: 601460 Second JFN cannot be wild [WILD%]  
 XSEVX1: 602472 Illegal entry vector type [XSSEV%; XGSEV%]  
 XSEVX2: 602473 Invalid entry vector length [XSSEV%]  
 XSEVX3: 602474 Cannot get extended values with this monitor call [GCVEC; GDVEC]  
 XSIRX1: 602424 Channel table crosses section boundary [XSIR%]  
 XSIRX2: 602427 Level table crosses section boundary [XSIR%]  
 ZONEX1: 600461 Time zone out of range [IDCNV; ODCNV; ODTNC]

POINTER FORMATS

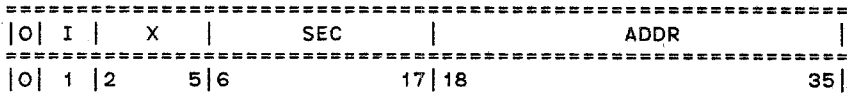
One Word Global Byte Pointer



Legal sizes and positions are as follows:

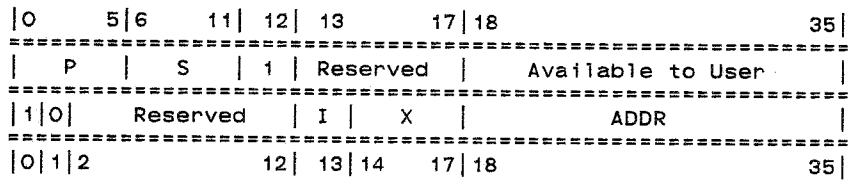
Size	Positions (Octal)	P & S Value (Octal)
6	44	45
	36	46
	30	47
	22	50
	14	51
	6	52
7	0	53
	44	61
	35	62
	26	63
	17	64
	10	65
8	1	66
	44	54
	34	55
	24	56
9	14	57
	4	60
	44	67
	33	70
	22	71
18	11	72
	0	73
	44	74
	22	75
	0	76

Global Format Indirect Word

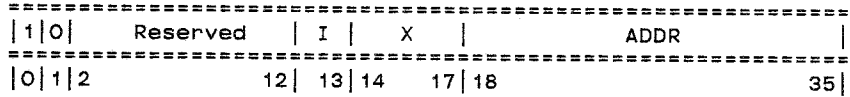


TOPS-20 Monitor Calls Quick Reference Guide  
 Pointer Formats

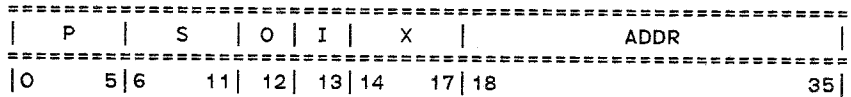
Two-word Local Byte Pointer



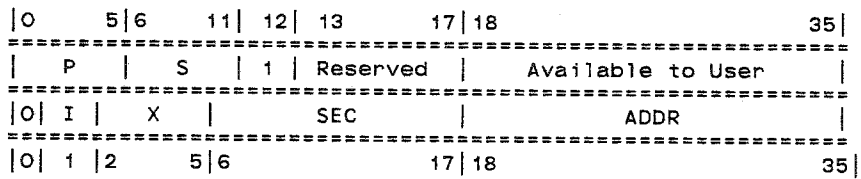
Local Format Indirect Word



One-word Local Byte Pointer



Two-word Global Byte Pointer





PDP-10 INSTRUCTION SET

Arithmetic Testing Instructions

AOBJP	252	(AC) + 1,1 --> (AC); If AC >= 0: E --> (PC)
AOBJN	253	(AC) + 1,1 --> (AC); If AC < 0: E --> (PC)
CAI	300	No-op
CAIL	301	If (AC) < E: skip
CAIE	302	If (AC) = E: skip
CAILE	303	If (AC) <= E: skip
CAIA	304	Skip
CAIGE	305	If (AC) >= E: skip
CAIN	306	If (AC) ≠ E: skip
CAIG	307	If (AC) > E: skip
CAM	310	No-op
CAML	311	If (AC) < (E): skip
CAME	312	If (AC) = (E): skip
CAMLE	313	If (AC) <= (E): skip
CAMA	314	Skip
CAMGE	315	If (AC) >= (E): skip
CAMN	316	If (AC) ≠ (E): skip
CAMG	317	If (AC) > (E): skip
JUMP	320	No-op
JUMPL	321	If (AC) < 0: E --> (PC)
JUMPE	322	If (AC) = 0: E --> (PC)
JUMPLE	323	If (AC) <= 0: E --> (PC)
JUMPA	324	E --> (PC)
JUMPGA	325	If (AC) >= 0: E --> (PC)
JUMPN	326	If (AC) ≠ 0: E --> (PC)
JUMPG	327	If (AC) > 0: E --> (PC)
SKIP	330	If AC ≠ 0: (E) --> (AC)
SKIPL	331	If (E) < 0: skip; If AC ≠ 0: (E) --> (AC)
SKIPE	332	If (E) = 0: skip; If AC ≠ 0: (E) --> (AC)
SKIPLE	333	If (E) <= 0: skip; If AC ≠ 0: (E) --> (AC)
SKIPA	334	Skip; If AC ≠ 0: (E) --> (AC)
SKIPGE	335	If (E) >= 0: skip; If AC ≠ 0: (E) --> (AC)
SKIPN	336	If (E) ≠ 0: skip; If AC ≠ 0: (E) --> (AC)
SKIPG	337	If (E) > 0: skip; If AC ≠ 0: (E) --> (AC)
ADJ	340	(AC) + 1 --> (AC)
AQJL	341	(AC) + 1 --> (AC); If (AC) < 0: E --> (PC)
AQJE	342	(AC) + 1 --> (AC); If (AC) = 0: E --> (PC)
AQJLE	343	(AC) + 1 --> (AC); If (AC) <= 0: E --> (PC)
AQJA	344	(AC) + 1 --> (AC); E --> (PC)
AQJGE	345	(AC) + 1 --> (AC); If (AC) >= 0: E --> (PC)
AQJN	346	(AC) + 1 --> (AC); If (AC) ≠ 0: E --> (PC)
AQJG	347	(AC) + 1 --> (AC); If (AC) > 0: E --> (PC)

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AOS	350	(E) + 1 --> (E); If (AC) ≠ 0: (E) --> (AC)
AOSL	351	(E) + 1 --> (E); If (AC) ≠ 0: (E) --> (AC); If (E) < 0: skip
AOSE	352	(E) + 1 --> (E); If (AC) ≠ 0: (E) --> (AC); If (E) = 0: skip
AOSLE	353	(E) + 1 --> (E); If (AC) ≠ 0: (E) --> (AC); If (E) ≤ 0: skip
AOSA	354	(E) + 1 --> (E); If (AC) ≠ 0: (E) --> (AC); skip
AOSGE	355	(E) + 1 --> (E); If (AC) ≠ 0: (E) --> (AC); If (E) ≥ 0: skip
AOSN	356	(E) + 1 --> (E); If (AC) ≠ 0: (E) --> (AC); If (E) ≠ 0: skip
AOSG	357	(E) + 1 --> (E); If (AC) ≠ 0: (E) --> (AC); If (E) > 0: skip
SOJ	360	(AC) - 1 --> (AC)
SOJL	361	(AC) - 1 --> (AC); If (AC) < 0: E --> (PC)
SOJE	362	(AC) - 1 --> (AC); If (AC) = 0: E --> (PC)
SOJLE	363	(AC) - 1 --> (AC); If (AC) ≤ 0: E --> (PC)
SOJA	364	(AC) - 1 --> (AC); E --> (PC)
SOJGE	365	(AC) - 1 --> (AC); If (AC) ≥ 0: E --> (PC)
SOJN	366	(AC) - 1 --> (AC); If (AC) ≠ 0: E --> (PC)
SOJG	367	(AC) - 1 --> (AC); If (AC) > 0: E --> (PC)
SOS	370	(E) - 1 --> (E); If AC ≠ 0: (E) --> (AC)
SOSL	371	(E) - 1 --> (E); If AC ≠ 0: (E) --> (AC); If (E) < 0: skip
SOSE	372	(E) - 1 --> (E); If AC ≠ 0: (E) --> (AC); If (E) = 0: skip
SOSLE	373	(E) - 1 --> (E); If AC ≠ 0: (E) --> (AC); If (E) ≤ 0: skip
SOSA	374	(E) - 1 --> (E); If AC ≠ 0: (E) --> (AC); skip
SOSGE	375	(E) - 1 --> (E); If AC ≠ 0: (E) --> (AC); If (E) ≥ 0: skip
SOSN	376	(E) - 1 --> (E); If AC ≠ 0: (E) --> (AC); If (E) ≠ 0: skip
SOSG	377	(E) - 1 --> (E); If AC ≠ 0: (E) --> (AC); If (E) > 0: skip

Boolean Instructions

SETZ	400	0 --> (AC)
SETZI	401	0 --> (AC)
SETZM	402	0 --> (E)
SETZB	403	0 --> (AC)(E)
SETM	414	(E) --> (AC)
SETMI	415	0, E --> (AC)
SETMM	416	(E) --> (E) [no-op]
SETMB	417	(E) --> (AC)(E)
SETA	424	(AC) --> (AC) [no-op]
SETAI	425	(AC) --> (AC) [no-op]
SETAM	426	(AC) --> (E)

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SETAB	427	(AC) --> (E)
SETD	474	777777777777 --> (AC)
SETOI	475	777777777777 --> (AC)
SETDM	476	777777777777 --> (E)
SETOB	477	777777777777 --> (AC)(E)
SETCA	450	$\neg$ (AC) --> (AC)
SETCAI	451	$\neg$ (AC) --> (AC)
SETCAM	452	$\neg$ (AC) --> (E)
SETCAB	453	$\neg$ (AC) --> (AC)(E)
SETCM	460	$\neg$ (E) --> (AC)
SETCMI	461	$\neg$ [O,E] --> (AC)
SETCMM	462	$\neg$ (E) --> (E)
SETCMB	463	$\neg$ (E) --> (AC)(E)
AND	404	(AC) & (E) --> (AC)
ANDI	405	(AC) & O,E --> (AC)
ANDM	406	(AC) & (E) --> (E)
ANDB	407	(AC) & (E) --> (AC)(E)
ANDCA	410	$\neg$ (AC) & (E) --> (AC)
ANDCAI	411	$\neg$ (AC) & O,E --> (AC)
ANDCAM	412	$\neg$ (AC) & (E) --> (E)
ANDCAB	413	$\neg$ (AC) & (E) --> (AC)(E)
ANDCM	420	(AC) & $\neg$ (E) --> (AC)
ANDCMI	421	(AC) & $\neg$ [O,E] --> (AC)
ANDCMM	422	(AC) & $\neg$ (E) --> (E)
ANDCMB	420	(AC) & $\neg$ (E) --> (AC)(E)
ANDCB	440	$\neg$ (AC) & $\neg$ (E) --> (AC)
ANDCBI	441	$\neg$ (AC) & $\neg$ [O,E] --> (AC)
ANDCBM	442	$\neg$ (AC) & $\neg$ (E) --> (E)
ANDCBB	443	$\neg$ (AC) & $\neg$ (E) --> (AC)(E)
IOR	434	(AC) ! (E) --> (AC)
IDRI	435	(AC) ! O,E --> (AC)
IDRM	436	(AC) ! (E) --> (E)
IORB	437	(AC) ! (E) --> (AC)(E)
ORCA	454	$\neg$ (AC) ! (E) --> (AC)
ORCAI	455	$\neg$ (AC) ! O,E --> (AC)
ORCAM	456	$\neg$ (AC) ! (E) --> (E)
ORCAB	457	$\neg$ (AC) ! (E) --> (AC)(E)
ORCM	464	(AC) ! $\neg$ (E) --> (AC)
ORCMI	465	(AC) ! $\neg$ [O,E] --> (AC)
ORCMM	466	(AC) ! $\neg$ (E) --> (E)
ORCMB	464	(AC) ! $\neg$ (E) --> (AC)(E)
ORCB	470	$\neg$ (AC) ! $\neg$ (E) --> (AC)
ORCBI	471	$\neg$ (AC) ! $\neg$ [O,E] --> (AC)
ORCBM	472	$\neg$ (AC) ! $\neg$ (E) --> (E)
ORCBB	473	$\neg$ (AC) ! $\neg$ (E) --> (AC)(E)
XOR	430	(AC) ^! (E) --> (AC)
XORI	431	(AC) ^! O,E --> (AC)
XORM	432	(AC) ^! (E) --> (E)
XORB	433	(AC) ^! (E) --> (AC)(E)
EQV	444	$\neg$ [(AC) ^! (E)] --> (AC)
EQVI	445	$\neg$ [(AC) ^! O,E] --> (AC)

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EQVM 446  $\neg[(AC) \wedge ! (E)] \rightarrow (E)$   
EQVB 447  $\neg[(AC) \wedge ! (E)] \rightarrow (AC)(E)$

Byte Instructions

IBP 133 Linear operations on pointer in E or E,E+1  
AC=0 if P-S >= 0: P-S --> P  
if P-S < 0: Y+1 --> Y; 36-S --> P

ADJBP 133 Array operations on pointer in E or E,E+1  
AC ≠ 0 Let A = REMAINDER ((36-P)/S)  
If S > 36-A: 1 --> NO DIVIDE  
If S = 0: (E) --> (AC) or  
(E,E+1) --> (AC,AC+1)  
If 0 < S < 36-A: make copy C of (E) or  
(E,E+1)  
Compute: (AC)+((36-P)/S) = Q \* BYTES/WORD + R  
1 ≤ R ≤ BYTES/WORD = ((36-P)/S) + (P/S)  
Y{C} + Q --> Y{C}  
36 - (R \* S) - A --> P{C}  
C --> (AC) or (AC,AC+1)

LDB 135 BYTE IN ((E)) --> (AC)  
DPB 137 BYTE IN (AC) --> BYTE IN ((E))  
ILDB 134 IBP and LDB  
IDPB 136 IBP and DPB

Fixed-point Arithmetic Instructions

ADD 270 (AC) + (E) --> (AC)  
ADDI 271 (AC) + O,E --> (AC)  
ADDM 272 (AC) + (E) --> (E)  
ADDB 273 (AC) + (E) --> (AC)(E)

SUB 274 (AC) - (E) --> (AC)  
SUBI 275 (AC) - O,E --> (AC)  
SUBM 276 (AC) - (E) --> (E)  
SUBB 277 (AC) - (E) --> (AC)(E)

IMUL 220 (AC) \* (E) --> (AC) [1]  
IMULI 221 (AC) \* O,E --> (AC) [1]  
IMULM 222 (AC) \* (E) --> (E) [1]  
IMULB 223 (AC) \* (E) --> (AC)(E) [1]

MUL 224 (AC) \* (E) --> (AC,AC+1)  
MULI 225 (AC) \* O,E --> (AC,AC+1)  
MULM 226 (AC) \* (E) --> (E) [2]  
MULB 227 (AC) \* (E) --> (AC,AC+1)(E)

IDIV 230 (AC) / (E) --> (AC); REMAINDER --> (AC+1)  
[1] High order word of product is discarded.  
[2] LOW order word of product is discarded.

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IDIVI	231	(AC) / O,E --> (AC); REMAINDER --> (AC+1)
IDIVM	232	(AC) / (E) --> (E); REMAINDER --> (AC+1)
IDIVB	233	(AC) / (E) --> (AC)(E); REMAINDER --> (AC+1)
DIV	234	(AC,AC+1) / (E) --> (AC); REMAINDER --> (AC+1)
DIVI	235	(AC,AC+1) / O,E --> (AC); REMAINDER --> (AC+1)
DIVM	236	(AC,AC+1) / (E) --> (E); REMAINDER --> (AC+1)
DIVB	237	(AC,AC+1) / (E) --> (AC)(E); REMAINDER --> (AC+1)
DADD	114	(AC,AC+1) + (E,E+1) --> (AC,AC+1)
DSUB	115	(AC,AC+1) - (E,E+1) --> (AC,AC+1)
DMUL	116	(AC,AC+1) * (E,E+1) --> (AC,AC+1,AC+2,AC+3)
DDIV	117	(AC,AC+1,AC+2,AC+3) / (E,E+1) --> (AC,AC+1)

Floating-point Arithmetic Instructions

FAD	140	(AC) + (E) --> (AC)
FADL	141	(AC) + (E) --> (AC,AC+1)
FADM	142	(AC) + (E) --> (E)
FADB	143	(AC) + (E) --> (AC)(E)
FADR	144	(AC) + (E) --> (AC)
FADRI	145	(AC) + E,O --> (AC)
FADRM	146	(AC) + (E) --> (E)
FADRBB	147	(AC) + (E) --> (AC)(E)
FSB	150	(AC) - (E) --> (AC)
FSBL	151	(AC) - (E) --> (AC,AC+1)
FSBM	152	(AC) - (E) --> (E)
FSBB	153	(AC) - (E) --> (AC)(E)
FSBR	154	(AC) - (E) --> (AC)
FSBRI	155	(AC) - E,O --> (AC)
FSBRM	156	(AC) - (E) --> (E)
FSBRBB	157	(AC) - (E) --> (AC)(E)
FMP	160	(AC) * (E) --> (AC)
FMPL	161	(AC) * (E) --> (AC,AC+1)
FMPM	162	(AC) * (E) --> (E)
FMPB	163	(AC) * (E) --> (AC)(E)
FMPR	164	(AC) * (E) --> (AC)
FMPRI	165	(AC) * E,O --> (AC)
FMPRM	166	(AC) * (E) --> (E)
FMPRBB	167	(AC) * (E) --> (AC)(E)
FDV	170	(AC) / (E) --> (AC)
FDVL	171	(AC) / (E) --> (AC)    Remainder -->(AC+1)
FDVM	172	(AC) / (E) --> (E)
FDVB	173	(AC) / (E) --> (AC)(E)
FDVR	174	(AC) / (E) --> (AC)
FDVRI	175	(AC) / E,O --> (AC)
FDVRM	176	(AC) / (E) --> (E)

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FDVRB	177	(AC) / (E) --> (AC)(E)
UFA	130	(AC) + (E) --> (AC+1) without normalization
DFN	131	-(AC,E) --> (AC,E)
FSC	132	(AC) * 2** E --> (AC)
GFSC	031	(AC,AC+1) * 2**E --> (AC,AC+1)
FLTR	127	(E) floated, rounded --> (AC)
GFLTR	030	(E) floated, rounded --> (AC,AC+1)
DGFLTR	027	(E,E+1) floated, rounded --> (AC,AC+1)
FIX	122	(E) fixed --> (AC)
FIXR	126	(E) fixed, rounded --> (AC)
GFIX	024	(E,E+1) fixed --> (AC)
GFIXR	026	(E,E+1) fixed, rounded --> (AC)
GDFIX	023	(E,E+1) fixed --> (AC,AC+1)
GDFIXR	025	(E,E+1) fixed, rounded --> (AC,AC+1)
GSNGL	021	(E,E+1) converted --> (AC)
GDBLE	022	(E) converted --> (AC,AC+1)
DFAD	110	(AC,AC+1) + (E,E+1) --> (AC,AC+1)
DFSB	111	(AC,AC+1) - (E,E+1) --> (AC,AC+1)
DFMP	112	(AC,AC+1) * (E,E+1) --> (AC,AC+1)
DFDV	113	(AC,AC+1) / (E,E+1) --> (AC,AC+1)
GFAD	102	(AC,AC+1) + (E,E+1) --> (AC,AC+1)
GFSE	103	(AC,AC+1) - (E,E+1) --> (AC,AC+1)
GFMP	106	(AC,AC+1) * (E,E+1) --> (AC,AC+1)
GFDV	107	(AC,AC+1) / (E,E+1) --> (AC,AC+1)

Fullword Instructions

EXCH	250	(AC) <--> (E)
MOVE	200	(E) --> (AC)
MOVEI	201	O,E --> (AC)
MOVEM	202	(AC) --> (E)
MOVES	203	If AC ≠ 0: (E) --> (AC)
MOVSI	204	(E)S-->(AC)
MOVSM	205	E,O --> (AC)
MOVSS	206	(AC)S --> (E)
MOVSN	207	(E)S --> (E) If AC ≠ 0: (E) --> (AC)
MOVNI	210	-(E) --> (AC)
MOVNM	211	-[O,E] --> (AC)
MOVNS	212	-(AC) --> (E)
MOVNM	213	-(E) --> (E) If AC ≠ 0: (E) --> (AC)
MOVMI	214	E  --> (AC)
MOVMM	215	O,E --> (AC)
MOVMS	216	AC  --> (E)
MOVMS	217	E  --> (E) If AC ≠ 0: (E) --> (AC)
XMOVEI	415	E --> (AC) Non-local AC reference 1,E --> (AC) Local AC reference

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DMOVE	120	(E,E+1) --> (AC,AC+1)
DMOVN	121	-(E,E+1) --> (AC,AC+1)
DMOVEM	124	(AC,AC+1) --> (E,E+1)
DMOVNM	125	-(AC,AC+1) --> (E,E+1)
BLT	251	Move E(R) - (AC)R + 1 words starting with: ((AC)L) --> ((AC)R)
XBLT	020	Move  (AC)  words If (AC) > 0: start with ((AC+1) --> ((AC+2)) and go up If (AC) < 0: start with ((AC+1)-1) --> ((AC+2)-1) and go down

Halfword Instructions (Source Left)

HLL	500	(E)L --> (AC)L
HLLI	501	O --> (AC)L
HLLM	502	(AC)L --> (E)L
HLLS	503	If AC ≠ 0: (E) --> (AC)
HLLZ	510	(E)L,O --> (AC)
HLLZI	511	O --> (AC)
HLLZM	512	(AC)L,O --> (E)
HLLZS	513	O --> (E)R
HLLO	520	(E)L,777777 --> (AC)
HLLOI	521	O,777777 --> (AC)
HLLOM	522	(AC)L,777777 --> (E)
HLLOS	523	777777 --> (E)R; If AC ≠ 0: (E) --> (AC)
HLLE	530	(E)L,[(E)O * 777777] --> (AC)
HLLEI	531	O --> (AC)
HLLEM	532	(AC)L,[(AC)O * 777777] --> (E)
HLLES	533	(E)O * 777777 --> (E)R; If AC ≠ 0: (E) --> (AC)
HLR	544	(E)L --> (AC)R
HLRI	545	O --> (AC)R
HLRM	546	(AC)L --> (E)R
HLRS	547	(E)L --> (E)R; If AC ≠ 0: (E) --> (AC)
HLRZ	554	O,(E)L --> (AC)
HLRZI	555	O --> (AC)
HLRZM	556	O,(AC)L --> (E)
HLRZS	557	O,(E)L --> (E); If AC ≠ 0: (E) --> (AC)
HLRO	564	777777,(E)L --> (AC)
HLROI	565	777777,O --> (AC)
HLROM	566	777777,(AC)L --> (E)
HLROS	567	777777,(E)L --> (E); If AC ≠ 0: (E) --> (AC)
HLRE	574	[(E)O * 777777],(E)L --> (AC)
HLREI	575	O --> (AC)
HLREM	576	[(AC)O * 777777],(AC)L --> (E)
HLRES	577	[(E)O * 777777],(E)L --> (E); If AC ≠ 0: (E) --> (AC)
XHLLI	501	If zero section: E(L) --> (AC)L If non-zero section:

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1. 0 --> (AC bits 0-5)
2. section # --> (AC bits 6-17); if E is a local AC address, section # = 1

Halfword Instructions (Source Right)

HRR	540	(E)R --> (AC)R
HRRI	541	E --> (AC)R
HRRM	542	(AC)R --> (E)R
HRRS	543	If AC ≠ 0: (E) --> (AC)
HRRZ	550	O, (E)R --> (AC)
HRRZI	551	O, E --> (AC)
HRRZM	552	O, (AC)R --> (E)
HRRZS	553	O --> (E)L
HRRO	560	777777, (E)R --> (AC)
HRROI	561	777777, E --> (AC)
HRROM	562	777777, (AC)R --> (E)
HRROS	563	777777 --> (E)L
HRRE	570	[(E)18 * 777777], (E)R --> (AC)
HRREI	571	[E18 * 777777], E --> (AC)
HRREM	572	[(AC)18 * 777777], (AC)R --> (E)
HRRES	573	(E)18 * 777777 --> (E)L; If AC ≠ 0: (E) --> (AC)
HRL	504	(E)R --> (AC)L
HRLI	505	E --> (AC)L
HRLM	506	(AC)R --> (E)L
HRLS	507	(E)R --> (E)L; If AC ≠ 0: (E) --> (AC)
HRLZ	514	(E)R, O --> (AC)
HRLI	515	E, O --> (AC)
HRLZM	516	(AC)R, O --> (E)
HRLZS	517	(E)R, O --> (E); If AC ≠ 0: (E) --> (AC)
HRLO	524	(E)R, 777777 --> (AC)
HRLOI	525	E, 777777 --> (AC)
HRLOM	526	(AC)R, 777777 --> (E)
HRLOS	527	(E)R, 777777 --> (E); If AC ≠ 0: (E) --> (AC)
HRLE	534	(E)R, [(E)18 * 777777] --> (AC)
HRLEI	535	E, [E18 * 777777] --> (AC)
HRLEM	536	(AC)R, [(AC)18 * 777777] --> (E)
HRLES	537	(E)R, [(E)18 * 777777] --> (E); If AC ≠ 0: (E) --> (AC)

I/O Instructions

DATAO	70014	(E) --> DATA
DATAI	70004	DATA --> (E)
CONO	70020	E --> COMMAND
CONI	70024	STATUS --> (E)
CONSZ	70030	If STATUS(R) & E = 0: skip
CONSO	70034	If STATUS(R) & E ≠ 0: skip
BLKI	70000	(E) + 1, 1 --> (E); DATA --> ((E)R); If (E)L ≠ 0: skip



BLKD 70010 (E) + 1,1 --> (E); ((E)R) --> DATA;  
If (E)L ≠ 0: skip

Logical Testing Instructions

TLN	601	No-op
TLNE	603	If (AC)L & E = 0: skip
TLNA	605	Skip
TLNN	607	If (AC)L & E ≠ 0: skip
TLZ	621	(AC)L & ¬E --> (AC)L
TLZE	623	If (AC)L & E = 0: skip; (AC)L & ¬E --> (AC)L
TLZA	625	(AC)L & ¬E --> (AC)L; skip
TLZN	627	If (AC)L & E ≠ 0: skip; (AC)L & ¬E --> (AC)L
TLC	641	(AC)L ^! E --> (AC)L
TLCE	643	If (AC)L & E = 0: skip; (AC)L ^! E --> (AC)L
TLCA	645	(AC)L ^! E --> (AC)L; skip
TLCN	647	If (AC)L & E ≠ 0: skip; (AC)L ^! E --> (AC)L
TLO	661	(AC)L ! E --> (AC)L
TLOE	663	If (AC)L & E = 0: skip; (AC)L ! E --> (AC)L
TLOA	665	(AC)L ! E --> (AC)L; skip
TLON	667	If (AC)L & E ≠ 0: skip; (AC)L ! E --> (AC)L
TRN	600	No-op
TRNE	602	If (AC)R & E = 0: skip.
TRNA	604	Skip
TRNN	606	If (AC)R & E ≠ 0: skip
TRZ	620	(AC)R & ¬E --> (AC)R
TRZE	622	If (AC)R & E = 0: skip; (AC)R & ¬E --> (AC)R
TRZA	624	(AC)R & ¬E --> (AC)R; skip
TRZN	626	If (AC)R & E ≠ 0: skip; (AC)R & ¬E --> (AC)R
TRC	640	(AC)R ^! E --> (AC)R
TRCE	642	If (AC)R & E = 0: skip; (AC)R ^! E --> (AC)R
TRCA	644	(AC)R ^! E --> (AC)R; skip
TRCN	646	If (AC)R & E ≠ 0: skip; (AC)R ^! E --> (AC)R
TRO	660	(AC)R ! E --> (AC)R
TROE	662	If (AC)R & E = 0: skip; (AC)R ! E --> (AC)R
TROA	664	(AC)R ! E --> (AC)R; skip
TRON	666	If (AC)R & E ≠ 0: skip; (AC)R ! E --> (AC)R
TDN	610	No-op
TDNE	612	If (AC) & (E) = 0: skip
TDNA	614	Skip
TDNN	616	If (AC) & (E) ≠ 0: skip
TDZ	630	(AC) & ¬(E) --> (AC)
TDZE	632	If (AC) & (E) = 0: skip; (AC) & ¬(E) --> (AC)
TDZA	634	(AC) & ¬(E) --> (AC); skip
TDZN	636	If (AC) & (E) ≠ 0: skip; (AC) & ¬(E) --> (AC)
TDC	650	(AC) ^! (E) --> (AC)
TDCE	652	If (AC) & (E) = 0: skip; (AC) ^! (E) --> (AC)
TDCA	654	(AC) ^! (E) --> (AC); skip
TDCN	656	If (AC) & (E) ≠ 0: skip; (AC) ^! (E) --> (AC)
TDO	670	(AC) ! (E) --> (AC)
TDOE	672	If (AC) & (E) = 0: skip; (AC) ! (E) --> (AC)

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TDOA	674	(AC) ! (E) --> (AC); skip
TDON	676	If (AC) & (E) ≠ 0: skip; (AC) ! (E) --> (AC)
TSN	611	No-op
TSNE	613	If (AC) & (E)S = 0: skip
TSNA	615	Skip
TSNN	617	If (AC) & (E)S ≠ 0: skip
TSZ	631	(AC) & ¬(E)S --> (AC)
TSZE	633	If (AC) & (E)S = 0: skip; (AC) & ¬(E)S --> (AC)
TSZA	635	(AC) & ¬(E)S --> (AC); skip
TSZN	637	If (AC) & (E)S ≠ 0: skip; (AC) & ¬(E)S --> (AC)
TSC	651	(AC) ^! (E)S --> (AC)
TSCE	653	If (AC) & (E)S = 0: skip; (AC) ^! (E)S --> (AC)
TSCA	655	(AC) ^! (E)S --> (AC); skip
TSCN	657	If (AC) & (E)S ≠ 0: skip; (AC) ^! (E)S --> (AC)
TSO	671	(AC) ! (E)S --> (AC)
TSOE	673	If (AC) & (E)S = 0: skip; (AC) ! (E)S --> (AC)
TSOA	675	(AC) ! (E)S --> (AC); skip
TSON	677	If (AC) & (E)S ≠ 0: skip; (AC) ! (E)S --> (AC)

Program-control Instructions

XCT	256	Execute (E)
JFFD	243	If (AC) = 0: 0 --> (AC+1) If (AC) ≠ 0: E --> (PC)
JFCL	255	If AC & FLAGS ≠ 0: E --> (PC); ¬AC & FLAGS --> FLAGS
JRST	25400	E --> (PC)
PORTAL	25404	0 --> PUBLIC; E --> (PC)
JRSTF	25410	(X)L or (Y)L --> FLAGS; E --> (PC)
HALT	25420	E --> (PC); stop
XJRSTF	25424	(E)L --> FLAGS; (E+1) --> (PC)
XJEN	25430	Dismiss PI; (E)L --> FLAGS; (E+1) --> (PC)
XPCW	25434	FLAGS,0 --> (E); PC+1 --> (E+1); (E+2)L --> FLAGS; (E+3) --> (PC)
JEN	25450	Dismiss PI; (X)L or (Y)L --> FLAGS; E --> (PC)
SFM	25460	FLAGS,0 --> (E)
JSR	264	If PC(L) = 0: FLAGS,PC(R)+1 --> (E); E+1 --> (PC) If PC(L) ≠ 0: PC+1 --> (E); E+1 --> (PC)
JSP	265	If PC(L) = 0: FLAGS,PC(R)+1 --> (AC); E --> (PC)

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PDP-10 Instruction Set

If PC(L) ≠ 0: PC+1 --> (AC); E --> (PC)

JSA 266 (AC) --> (E); E(R),PC(R)+1 --> (AC);  
E+1 --> (PC)  
JRA 267 ((AC)L --> (AC); E --> (PC)  
MAP 257 PHYSICAL MAP DATA --> (AC)

Shift And Rotate Instructions

ASH 240 (AC) \* 2\*\*E --> (AC)  
RDT 241 Rotate (AC) E places  
LSH 242 Shift (AC) E places  
ASHC 244 (AC,AC+1) \* 2\*\*E --> (AC,AC+1)  
ROTC 245 Rotate (AC,AC+1) E places  
LSHC 246 Shift (AC,AC+1) E places

Stack Instructions

PUSH 261 If PC(L) = 0 or (AC)O,6-17 ≤ 0:  
(AC) + 1,1 --> (AC); (E) --> ((AC)R)  
If PC(L) ≠ 0 and (AC)O,6-17 > 0:  
(AC) + 1 --> (AC); (E) --> ((AC))

POP 262 If PC(L) = 0 or (AC)O,6-17 ≤ 0:  
((AC)R) --> (E); (AC) - 1,1 --> (AC)  
If PC(L) ≠ 0 and (AC)O,6-17 > 0:  
((AC)) --> (E); (AC) - 1 --> (AC)

PUSHJ 260 If PC(L) = 0: (AC) + 1,1 --> (AC);  
FLAGS,PC+1 --> ((AC)R)  
If PC(L) ≠ 0 and (AC)O,6-17 ≤ 0:  
(AC) + 1,1 --> (AC); PC+1 --> ((AC)R)  
If PC(L) ≠ 0 and (AC)O,6-17 > 0:  
(AC) + 1 --> (AC); PC+1 --> ((AC))  
E --> PC

POPJ 263 If PC(L) = 0: ((AC)R)R --> (PC);  
(AC) - 1,1 --> (AC)  
If PC(L) ≠ 0 and (AC)O,6-17 ≤ 0:  
((AC)R) --> (PC); (AC) - 1,1 --> (AC)  
If PC(L) ≠ 0 and (AC)O,6-17 > 0:  
((AC)) --> (PC); (AC) - 1 --> (AC)

ADJSP 105 If PC(L) = 0 or (AC)O,6-17 ≤ 0:  
(AC) + [+ -]E(R),E(R) --> (AC)  
If PC(L) ≠ 0 and (AC)O,6-17 > 0:  
(AC) + [+ -]E(R) --> (AC)

MACRO-20 PSEUDO-OPS

Pseudo-op/Arguments	Function
ARRAY <u>addr</u> [ <u>expr</u> ]	Reserves a block of storage with length <u>expr</u> at address <u>addr</u>
ASCII <u>dtextd</u>	Enters ASCII text; <u>d</u> is any delimiter not in <u>text</u>
ASCIZ <u>dtextd</u>	Enters ASCII text with guaranteed trailing null; <u>d</u> is any delimiter not in <u>text</u>
.ASSIGN <u>sym1</u> , <u>sym2</u> , <u>increment</u>	Assigns value of <u>sym2</u> to <u>sym1</u> and adds <u>increment</u> to <u>sym2</u>
ASUPPRESS	Causes all local or INTERNAL symbols not referenced after ASUPPRESS to be deleted from symbol table
BLOCK <u>expr</u>	Reserves a block of length <u>expression</u>
BYTE (n) <u>expr</u>	Stores value of <u>expression</u> in n-bit bytes
COMMENT <u>dtextd</u>	Treats <u>text</u> as comment; <u>d</u> is any delimiter not in <u>text</u>
.COMMON <u>symbol</u> [ <u>expr</u> ]	Defines FORTRAN or FORTRAN-compatible COMMON block
.CREF	Resumes output of suspended cross-referencing
DEC <u>expr</u> ,..., <u>expr</u>	Defines local radix as decimal
DEFINE <u>macro</u> ( <u>dummyarg</u> )< <u>macrotxt</u> >	Defines macro <u>macro</u>
DEPHASE	Suspends effect of PHASE pseudo-op
.DIRECTIVE <u>directive</u> ,..., <u>directive</u>	Sets switches to enable/disable MACRO features
	.ITABM Include spaces and tabs in passed arguments
	.XTABM Strip leading/trailing spaces and tabs from passed arguments
	MACMPD Match paired delimiters in MACRO call
	LITLST List binary code for in-line literals

	FLBLST	List binary code for 1st line of multi-line text
	.OKOVL	Allow arithmetic overflow
	.EROVL	Disallow arithmetic overflow
	MACPRF	Prefer MACRO symbol definition over other definitions
	SFCOND	Suppress source listing for failing conditional assembly
	.NOBIN	Suppress binary generation
	KA10	Enter KA10 as CPU type in binary file header block
	KI10	Enter KI10 as CPU type in binary file header block
	KL10	Enter KL10 as CPU type in binary file header block
END <u>expr</u>		Ends a MACRO program that starts at <u>expression</u>
.ENDPS		Suspends use of relocation counter associated with current PSECT
ENTRY <u>symbol</u> ,..., <u>symbol</u>		Defines each <u>symbol</u> as INTERNAL
EXP <u>expr</u> ,..., <u>expr</u>		Enters value of each <u>expr</u> in a fullword in current radix
EXTERN <u>symbol</u> ,..., <u>symbol</u>		Identifies each <u>symbol</u> as EXTERNAL to current program
.HWFRMT		Causes binary code to be listed in halfword format
.IF <u>expr</u> , <u>qualifier</u> ,< <u>code</u> >		Specifies criteria for conditional assembly (IF <u>expr</u> )
.IFN <u>expr</u> , <u>qualifier</u> ,< <u>code</u> >		Specifies criteria for conditional assembly (if NOT <u>expr</u> )
IFx <u>expr</u> ,< <u>code</u> >		Specifies criteria and code for conditional assembly
E		Assemble if <u>expr</u> =0
N		Assemble if <u>expr</u> ≠0
G		Assemble if <u>expr</u> >0

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GE	Assemble if <u>expr</u> >=0
L	Assemble if <u>expr</u> <0
LE	Assemble if <u>expr</u> <=0
IF1 <u>&lt;code&gt;</u>	Assemble on Pass 1
IF2 <u>&lt;code&gt;</u>	Assemble on Pass 2
IFDEF <u>symbol</u> <u>&lt;code&gt;</u>	Assemble if <u>symbol</u> defined
IFNDEF <u>symbol</u> <u>&lt;code&gt;</u>	Assemble if <u>symbol</u> not defined
IFIDN <u>&lt;string1&gt;</u> <u>&lt;string2&gt;</u> , <u>&lt;code&gt;</u>	Assemble if <u>string1</u> matches <u>string2</u>
IFDIF <u>&lt;string1&gt;</u> <u>&lt;string2&gt;</u> <u>&lt;&lt;code&gt;</u>	Assemble if <u>string1</u> does not match <u>string2</u>
IFB <u>&lt;string&gt;</u> , <u>&lt;code&gt;</u>	Assemble if only blanks and tabs in <u>string</u>
IFNB <u>&lt;string&gt;</u> , <u>&lt;code&gt;</u>	Assemble if not only blanks and tabs in <u>string</u>
INTEGER <u>symbol</u> ,..., <u>symbol</u>	Reserves storage locations at end of program at one-per- <u>symbol</u>
INTERN <u>symbol</u> ,..., <u>symbol</u>	Declares each <u>symbol</u> as INTERNAL to current program
IOWD <u>expr1</u> , <u>expr2</u>	Generates I/O transfer word such that word = <2's complement ( <u>expr1</u> )>.,.< <u>expr2</u> -1>
IRP <u>dummyarg</u> , <u>&lt;code&gt;</u>	Generates expansion of <u>code</u> for each subargument of <u>dummyarg</u>
IRPC <u>dummyarg</u> , <u>&lt;code&gt;</u>	Generates expansion of <u>code</u> for each character of <u>dummyarg</u>
LALL	Lists all expansions (including text and macros) in program
.LINK <u>chainnum</u> , <u>addr</u> , <u>chainaddr</u>	Generates static chains at load time for links with same <u>chainnum</u> at <u>addr</u> and optionally places chain at <u>chainaddr</u>
LIST	Resumes listing following XLIST
LIT	Assembles literals beginning at current address
.LNKEND <u>chainnum</u> , <u>addr</u>	Ends a static chain for links with same <u>chainnum</u> at <u>addr</u>
LOC <u>expr</u>	Sets location counter to <u>expr</u>
.MFRMT	Causes multi-format listing of binary code
MLOFF	Terminates literals at EOL even if no closing bracket (])

MLON	Suspends MLOFF
.NODDT <u>symbol</u> ,..., <u>symbol</u>	Suppresses DDT recognition of <u>symbol</u>
NOSYM	Suppress listing of <u>symbol</u> table in listing file
OCT <u>expr</u> ,..., <u>expr</u>	Defines radix of <u>expr</u> as octal
OPDEF <u>symbol</u> [ <u>expr</u> ]	Defines <u>symbol</u> as equivalent to <u>expr</u>
.ORG <u>addr</u>	Sets location counter to <u>addr</u>
PAGE	Causes assembler to skip to top of next listing page
PASS2	Switches assembler to Pass 2 processing of remaining code
PHASE <u>addr</u>	Assembles part of program so that it can be moved to other location for execution
POINT <u>bytesize</u> , <u>addr</u> , <u>bitplace</u>	Generates a byte pointer for machine byte instructions
PRGEND	Replaces END for all but last program in multi-program assembly
PRINTX <u>text</u>	Causes <u>text</u> to be output during assembly to TTY and/or listing device
.PSECT <u>name/attribute</u> , <u>origin</u>	Specifies relocation counter for code following
PURGE <u>symbol</u> ,..., <u>symbol</u>	Deletes <u>symbol</u> from <u>symbol</u> table
RADIX <u>n</u>	Sets radix to value of <u>n</u>
RADIX50 <u>code</u> , <u>symbol</u>	Packs <u>symbol</u> into B4-35 of storage word, with <u>code</u> in B0-3
RELOC <u>expr</u>	Sets location counter to value of <u>expr</u> and assigns relocatable addresses to code following
REMARK <u>text</u>	Marks <u>text</u> as comment
REPEAT <u>n</u> ,< <u>code</u> >	Generates <u>code</u> <u>n</u> times
.REQUEST <u>filespec</u>	Causes file <u>filespec</u> to be loaded to satisfy a global request
.REQUIRE <u>filespec</u>	Causes file <u>filespec</u> to be loaded automatically
SALL	Causes suppression of all macro and REPEAT expansions
SEARCH <u>tabnam</u> ( <u>filespec</u> )	Defines list of <u>symbol</u> tables to be searched

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SIXBIT <u>dtexd</u>	Enters string <u>text</u> in 6-bit format; <u>d</u> is any delimiter not in <u>text</u>
SQUOZE <u>code,symbol</u> STOPI	Same as RADIX50 Ends IRP or IRPC before all subarguments or characters are used
SUBTTL <u>subtitle</u>	Defines <u>subtitle</u> (80 chars max) to be printed at top of each listing page
SUPPRESS <u>symbol</u> ,..., <u>symbol</u>	Turns on suppress bit for <u>symbol</u> in symbol table; turned off when <u>symbol</u> referenced
SYN <u>sym1,sym2</u>	Defines <u>sym2</u> as synonymous with <u>sym1</u>
TAPE	Causes assembler to begin assembling next source file in MACRO command string
.TEXT <u>dtexd</u>	Generates ASCIZ REL block for LINK and inserts <u>text</u> directly into .REL file; <u>d</u> is any delimiter not in <u>text</u>
TITLE <u>title</u>	Names program <u>title</u> and causes <u>title</u> to be printed on each page of listing
TWOSEG <u>addr</u>	Directs MACRO to assemble two-segment program with HISEG beginning at <u>addr</u>
UNIVERSAL <u>tabnam</u>	Declares symbol table of current program as available to other programs and stores <u>tabnam</u> in MACRO's internal UNIVERSAL table
VAR	Causes variable symbols defined with <u>symbol#</u> , <u>ARRAY</u> , or <u>INTEGER</u> to be assembled as <u>BLOCK</u> statements
XALL	Resumes standard listing after <u>LALL</u> or <u>SALL</u>
.XCREF <u>symbol</u> ,..., <u>symbol</u>	Suspends output of cross-referencing for <u>symbol</u>
XLIST	Suspends output to program listing file for Pass 2 until next <u>LIST</u>
XPUNGE	Deletes all local symbols during Pass 2
XWD <u>word1,word2</u>	Enters low-order 18 bits of each <u>word</u> into a



Z ac,addr

single storage word;  
high-order bits are  
ignored  
Generates instruction  
word with 0 in opcode  
field (B0-8), ac in  
accumulator field  
(B9-12), and addr in  
address field (B18-35).

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