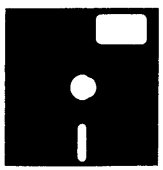
Reference Card

WMCS



Software Publications

WMCS Reference Card
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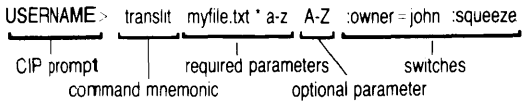
Topical Guide

Command Line Syntax



CIP prompt:	specified by user, usually a right angle bracket preceded by a username
Command mnemonic:	must be the first element on the command line
Required parameters:	must follow the command mnemonic
Optional parameters:	must follow any required parameters
Switches:	may be anywhere on the command line after the mnemonic boolean (i.e., :squeeze, :nosqueeze) valued (i.e., :owner=john) set (i.e., :list)
Character limit:	1023
Command limit:	none
Command line terminator:	[RETRN]
Command line execution:	left to right
Command element separator:	space
Command separator:	semicolon

Parameters

Typing Parameters

```
> copy letter.txt memo.txt
```

Both required parameters are typed on the command line

```
> copy letter.txt
Destination     >memo.txt
```

The first required parameter value (the source) is typed on the command line.
The second required parameter value (the destination) is typed in response to the prompt.

```
> copy :confirm
Source          >letter.txt
Destination     >memo.txt
```

The CIP prompts for both required parameters.

```
> translit
Source          >myfile.txt
Destination     >*
Character set   > a-z A-Z :owner=john :squeeze;vew myfile.txt
```

Optional parameters, switches, and additional commands are typed following the prompt.

Prompts used with CIP commands

Prompt name	Description
Archive file	Name of the archive file
Backup dir	Name of the directory to receive backups
Backup file	Name of a backup file
Block size	Block size on a tape
Checksum file	File containing checksums for file verification
Date and time	A date and time
Delay	Amount of time to delay before event
Destination	Destination file designation (see Source)
Device class	Type of device (disk, tape, tty...)
Device list	A list of one or more devicenames separated by a comma
Devicename	Name of a device
Device driver	Name of a device service routine (DSR)
Diagnostic no.	Diagnostic number
Directory	A directory path
Drive type	Type of disk drive (cmi10, fuj421, ...)
File desig	A single file designation
File list	A list of one or more file designations separated by a comma
Function	Which of several functions to execute
Pattern	Regular expression
Priority	Process priority
PID	Process ID number
Quantity	A number
Scale	Scale factor for GPRINT
Sector size	Bytes in a disk sector
Serial port	A terminal (serial) devicename
Source	Original file designation (see Destination)
Tape unit	Type of units to be skipped
Volume label	Device label (disk or tape)

Switches used with CIP commands

Switch	Description
:alloc=	Number of sectors allocated when a file is extended
:arc	Use archive date instead of file creation date
:auto	Each file is deleted, purged automatically
:autoflush=	Enable/disable autoflush flag
:baudrate=	Terminal baud rate
:before=	Identify files created before the specified date and time
:broadcast	Enable/disable reception of broadcast messages
:bytes	Display file size in bytes instead of kilobytes
:cache=	Number of sectors in disk cache
:concat	Concatenate files
:confirm	Utility asks operator to confirm each action
:controlc	Enable/disable [CTRL] c
:controlo	Enable/disable [CTRL] o
:controlu	Enable/disable [CTRL] u
:controlx	Enable/disable [CTRL] x
:controlz	Enable/disable [CTRL] z
:copies=	Number of copies to print
:create	Display creation date
:datawidth=	Number of data bits to transmit
:dest=	Replace files under specified subtree
:duplex=	Half duplex or full duplex
:exclude=	File designations to be excluded
:expandtabs	Enable/disable tab expansion
:extents	Display number of extents

:fcb	Display FCB.SEQ number
:fcbsize =	Number of FCBs initially allocated
:format	Device should be formatted by the utility
:full	All file attributes are displayed
:hostsync =	Enable software or hardware synchronization
:ialloc =	Number of sectors initially allocated to a file
:inbufsize =	Size of the input interrupt buffer
:keep =	Number of versions to keep when purging
:label =	Volume label
:list	List current contents
:mask8bit	Enable/disable masking of the 8th bit
:maxcache =	Maximum cache elements that can be consumed in a single request
:mod	Use modification date instead of file creation date
:modemctrl	Enable/disable modem control
:modify	Display the modification date
:nohead	Suppress print banner and column titles
:noverify	Command files are not displayed as they are executed
:numsyncs =	Number of sync characters to be transmitted in each block
:outbufsize =	Size of the output interrupt buffer
:owner	Display the owner and group ID
:parent	Display the FCB.SEQ number of the parent directory
:parity =	Type of parity
:path	Display the file designation
:pause	Wait for operator input after each full screen of information
:perm	Change default established even after exiting command file
:pid =	Process ID number
:protect	Display the file protection
:rawverify	Enable/disable read after write
:readahead =	Enable/disable readahead on a volume
:reboot	Boot the system after a shutdown
:reclen	Display the record length
:retries =	Number of times to try before giving up
:since =	Date and time used to identify files created after a certain date
:size	Display the physical/logical size
:sort =	How filenames in the display will be sorted
:stats	Display statistics
:stopbits =	Number of stop bits
:termtype =	Type of terminal (mg8000, visual200, ...)
:total	Filenames are not displayed, only total size is displayed
:type	Display the file type
:uic =	Specify the user identification code
:username	Display the username of the owner, instead of the UIC
:verify	Display content of command files as executed
:version	Display program version banner
:versions	Display all file versions
:writeprotect	Write protect the volume
:xonxoff	Enable/disable XONXOFF protocol

Significant Characters

Character	Purpose
?	Display a CIP help file on the screen
!	Comment flag
	Parameter separator (space character or blank)
;	Command separator
,	File-designation separator in file lists
@	Create another copy of CIP.EXE for the purpose of executing command files and parameter files
&	Background execution of commands or command files
<	Redirect standard input of process
>	Redirect standard output of process
>>	Append standard output to file
^	Redirect standard error output of process
^ ^	Append standard error output to file
|	Pipe
-	Used in relative addressing
"	Group words into a single parameter value
'	Translate a string of characters
\	The CIP uses subsequent characters literally, or inputs following binary values.
:=	Assign a logical name to the current process
:= =	Assign a logical name to the user process
:= = =	Assign a logical name to all processes on the system

Examples

Help displays
> dir?
Help display for DIR appears

Comment flag
> !jump in the lake
Nothing happens

Command separator
> cd .budget;vew june.txt
Changes default directory to /BUDGET/ and calls up JUNE.TXT for editing

File designation separator
> del june.txt,july.txt,aug.txt
Deletes three files: JUNE.TXT, JULY.TXT, and AUG.TXT

Command file execution
> @userup
Executes command file USERUP.COM

Background execution
> &sort budget.txt
Sorts file BUDGET.TXT in background

Background command file execution
> &@deviceup
Executes DEVICEUP.COM in background

Redirect input and output
> cip >_tt2 <_tt2
Temporarily assigns the input and output for this copy of CIP to _TT2

Append output

> dir >>report.txt

Writes output from DIR to the end of file REPORT.TXT

Redirect diagnostic messages

> checksum budget.txt ^checksum.err

Writes all diagnostic messages (generated when CHECKSUM is executed) to file CHECKSUM.ERR

Append error output

> checksum report.txt ^ ^checksum.err

Writes all diagnostic messages (generated when CHECKSUM is executed) to the end of file CHECKSUM.ERR

Pipe mounting

> dir | dispatch report.txt

Writes output from DIR to pipe (mounted and dismounted automatically when command is done), DISPATCH reads data from pipe and writes to file REPORT.TXT as well as to screen

Relative addressing

> cd -

Assigns parent directory as the default

Group words into one parameter

> send _tt2 "this is a test"

Sends complete message to _TT2

Translate logical names

> dir 'sys$HOME'

Translates SYS$HOME to the user-account default directory and writes the directory listing to the screen

Logical name assignment

> d := dir

Assigns the logical name D to the current process.

> d :== dir

Assigns the logical name D to the user process.

> d :=== dir

Assigns the logical name D to all processes on the system.

Accept flag

> send _tt2 "How are you\?"

The question mark appears in the message sent to _TT2 (the help display for SEND does not appear on the screen).

Precedence of characters

\
?
'
"
!
all others

Wildcard Symbols

Symbol	What the symbol matches
*	Any string of zero or more characters and spaces
%	Any single character or space
[ ]	Any one of a set of characters
( )	Any set of numeric values

Examples

a*	Matches strings that begin with A
a	Matches strings that contain the letter A
=i*	Matches strings that have "i" as the second letter
[d-m]*	Matches strings that begin with d,e,f,g,h,i,j,k,l, or m
[d-m^f^h]*	Matches strings that begin with d,e,g,i,j,k,l, or m
[d-m^f-h]*	Matches strings that begin with d,e,i,j,k,l, or m
[^f-h]*	Matches strings that begin with any letter except f,g, or h
(1-30)	Matches strings that contain any number between 1 and 30

Command Line Editing

[CTRL] a	Move cursor to front of line
[CTRL] b	Unused
[CTRL] c	Abort the command
[CTRL] d	Delete to end of line
[CTRL] e	Search and execute
[CTRL] f	Move cursor to next word
[CTRL] g	Move cursor to end of line
[CTRL] h	Move cursor left one space
[CTRL] i	Insert spaces to tab stop
[CTRL] j	Recall next command
[CTRL] k	Recall previous command
[CTRL] l	Move cursor right one space
[CTRL] m	Execute the command line
[CTRL] n	Search for previous command
[CTRL] o	Toggle output to terminal
[CTRL] p	Show path to executable for first command on line
[CTRL] q	Resume output (XON)
[CTRL] r	Move cursor to previous word
[CTRL] s	Halt output (XOFF)
[CTRL] t	Unused
[CTRL] u	Unused
[CTRL] v	Delete character in cursor
[CTRL] w	Display all the command line
[CTRL] x	Delete contents of type-ahead buffer
[CTRL] y	Delete command line
[CTRL] z	Generate end-of-file
[CTRL] _	Refresh the command line
Up arrow	Recall previous command
Down arrow	Recall next command
Left arrow	Move cursor left one space
Right arrow	Move cursor right one space
[LINE FEED]	Recall next command
[BACK SPACE]	Move cursor left one space
[ESC]	Unused
[TAB]	Insert spaces to tab stop
[NO SCRL]	Toggle XON/XOFF
[DEL]	Delete previous character
[RETRN]	Execute the command line
[BREAK]	Unused

Help Displays

Type a question mark on the CIP command line and a display appears for the first command mnemonic on the command line (regardless of how many command mnemonics are on the line). Your command-line character string reappears below the last page of the help display.

Type a question mark on a blank CIP command line for a list of help displays.

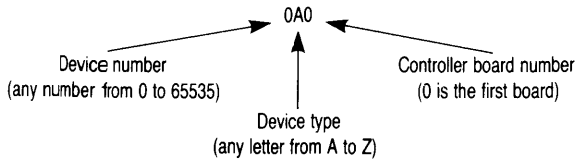
Help displays pause at the end of each page. Strike any key to continue, or type [CTRL] c to abort the help display and recall your command line to the screen.

The Devicename

Device	Recommended Devicenames*	Disk Drive Type	Disk Drive Description
Hydra audio devices	_ad0, _ad1, _ad2, ...	N/A	N/A
.25-inch cartridge tapes	_ct0, _ct1, _ct2, ...	N/A	N/A
IMI Winchester disks	_di0, _di1, _di2, ...		
15.24-inch Winchester disks	_dc0, _dc1, _dc2, ...	WIN12, WIN19, WIN30, WIN43	12, 19, 30, and 43 meg unformatted Winchester
8-inch floppy diskettes	_df0, _df1, _df2, ...	FLOP015	1.5 meg unformatted floppy
SMD Winchester disks	_ds0, _ds1, _ds2, ...	SMD84a, SMD84b SMD168a, SMD168b SMD474a, SMD474b	84, 168, and 474 meg unformatted SMD (a = 512 byte sectors, b = 1024)
5.25-inch floppy diskettes	_dx0, _dx1, _dx2, ...	FLOP09a, FLOP09b	.9 meg unformatted floppy (a=4 sector, b=5 sector)
Hydra terminal devices	_ad0, _ad1, _ad2, ...	N/A	N/A
Memory disk	_md0	N/A	N/A
.5-inch magnetic tapes	_mt0, _mt1, _mt2, ...	N/A	N/A
Parallel ports	_pp0, _pp1, _pp2, ...	N/A	N/A
Serial ports	_tt0, _tt1, _tt2, ...	N/A	N/A
Null device	_null	N/A	N/A
Pipes	unspecified	N/A	N/A
Videodisc	_ravd	N/A	N/A

* Devicenames consist of an underscore followed by up to eight alphanumeric characters.

Drive Identifier



(See release notice for examples of drive IDs)

The Filename

Filenames can contain up to nine alphanumeric characters, as well as the tilde, ~, and the dollar sign, $.

Lowercase letters are automatically converted to uppercase.

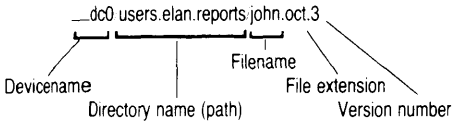
The File Extension

The file extension can contain up to three alphanumeric characters, as well as the tilde, ~, and the dollar sign, $.

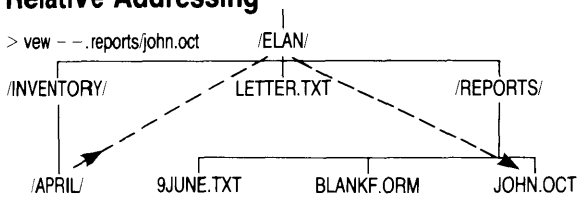
Standard WMCS file extensions

Extension	Description
.100	WMCS for the System 200,220,300
.156	WMCS for the System 150,155,160
.A	Library file
.A68	C assembler source file
.ARC	Archive file
.ASM	Assembly language source file
.AUD	Audio data file for Hydras
.BAK	Backup file
.BAS	BASIC source file
.BTF	Batch terminal emulator file
.C	C-language source file
.CBL	COBOL source file
.CKS	File containing checksums
.COM	Command file
.DAT	Data file
.DEF	Library definition file
.DIR	Directory file
.DSP	Display screen file for WISE
.DSR	Device Service Routine (device driver)
.DOC	File containing a document
.EXE	Executable image file
.F77	FORTRAN77 source program
.H	Include-files for C
.HLP	Help display
.IDX	CIS COBOL ISAM file
.INT	Intermediate code file (Pascal and COBOL)
.IT	CIS COBOL data ISAM file
.KEY	KSAM key file
.LST	Program listing file
.MCR	Linker cross reference file
.MRL	Relocatable object module
.NAM	Name association table for WISE frames
.O	Object files for C and FORTRAN
.PAS	Pascal source file
.PRM	Parameter file
.PRN	Program listing file
.STP	Setup files for WISE
.SYS	File maintained by the system (FCB.SYS, BITMAP.SYS, etc.)
.TMP	Temporary file
.TXT	File containing text
.UCP	UltraCalc pointer file
.UCS	UltraCalc string file
.UCX	UltraCalc script file
.WIS	WISE graphic and logic frames

The File Designation



Relative Addressing



When you exit this copy of VEW, /ELAN.INVENTORY.APRIL/ is still your default directory.

Directory of Commands

Accessing The System

log	Log off
logflush	Initiate logon if forked, write device buffers to cached devices
logon	Log on to the system
password	Change user password
userprof	Edit user authorization file

Logical Name Assignment

:=	Logical name assignment for current process
:= =	Logical name assignment for user process
:= = =	Logical name assignment for system
shlog	Display logical name assignments

Text Editing

vew	Edit a text file

File Commands

arch	Archive
copy	Copy a file
count	Count words, lines, characters in a file
create	Create a file
del	Delete a file
dump	Display file contents in hexadecimal
fstat	Display and change file characteristics
print	Print a file
pu	Purge a directory of files
ren	Rename a file
scan	Search a file for a pattern
sort	Sort a file
tcopy	Copy a file to or from foreign tape
translit	Character transliteration
type	Display contents of a text file
wscan	Search a file for a matching pattern
zap	Inspect and change file contents

Directory Commands

cd	Change default directory and/or device
crd	Create a directory
dir	List contents of a directory

Device Commands

alloc	Allocate a device
btup	Update the boot block on a disk
chkd	Check disk sectors
dealloc	Deallocate a device
dinit	Initialize a device
dmnt	Dismount a device
dstat	Display and change device characteristics
mnt	Mount a device
recover	Rebuild system files
rew	Rewind a tape
rotor	Create and manage rotor lists
setuped	Edit a terminal setup file
skip	Position a tape
swap	Exchange the system disk
sysprof	System profile program
xfer	Transfer disks or file

Status Commands

cmdst	Display list of previously executed commands
def	Display name of default device and directory
dev	List mounted devices
dm	Display memory status
err	Display a diagnostic message
memtest	Test memory
serial	Display hardware serial number
shutdown	Shut down the system
sp	Display report on space allocation on a device
time	Display and set system time
version	Display the version string of a file
who	List user accounts

Running Programs

cip	Create a CIP
install	Assign privileges to a file
option	Specify a CIP option
pstat	Display and change process characteristics

Program Development

fixstack	Adjust stack page for an image file
incl	Merge text files
link	Linkage editor
makedsr	Convert an image to a device driver
prelink	Prepare libraries for linking
wibug	Symbolic debugger

Backup And Restore

backup	Incremental system backup
bkup	Backup WICAT software releases
load	Load WICAT software releases
restore	Selective file restoration from backup

Communication

dwnld	Download ASCII file from a foreign system
sscopy	System-to-system file transfer
talkt	Communicate through a specified port
usscopy	Updated system-to-system file transfer

Configuration Control

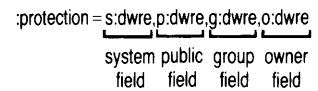
checksum	Compute file checksums
config	Configure the system
verify	Verify file checksums

Miscellanea

dispatch	Send the output of a process to several destinations
gprint	Write graphics (on screen) to a printer
prompt	Prompt user for input
send	Display a message on other terminals
typeb	Display lines in block letters
wait	Wait until specified time

Protection

Syntax of protection masks



Field names

s:	Processes with system privilege
p:	Processes not included in any of the other groups, i.e., the public
g:	Processes belonging to owners in the same group as the owner of the resource
o:	Processes with the same owner as the resource

Each field can contain any combination (in any order) of the following field values. Spaces and commas in the field are disallowed. When a symbol apears in a field, the corresponding privilege is granted to users in the group associated with that field.

Field values

r	Read access
w	Write access
e	Execute access
d	Delete access

Examples

fstat letter.txt :protection = s:re,p:,g:re,o:rwed

Processes with system privilege or which are owned by users in the same group as the owner are given read and execute privilege to the file LETTER.TXT. The public is not given any privilege, and the owner has all privileges.

fstat letter.txt :protection = p:re

The protection associated with the system, group, and owner groups of users either remains the same or takes the default value. The public is given read and execute privilege to the file.

Privileges

Syntax of process privilege

setpriv	Allows a process to assign any other privilege
system	Allows the process system access to files and devices
readphys	Allows the process physical read access to resources
writephys	Allows the process physical write access to resources
setprior	Allows the process to set a higher priority, or go realtime
chngsuper	Allows the process to change to supervisor mode
bypass	Allows the process to bypass file and device protection
operator	Allows the process to perform operator functions
altuic	Allows the process access to files as though it had the UIC of the owner of the image file
world	Allows the process to affect any other process in the system
group	Allows the process to affect processes with the same group ID as the owner of the process

Examples

:privilege = bypass

Grants the process bypass privilege in addition to whatever privileges it already has.

:privilege = all,nobypass

Grants the process all privileges except bypass.

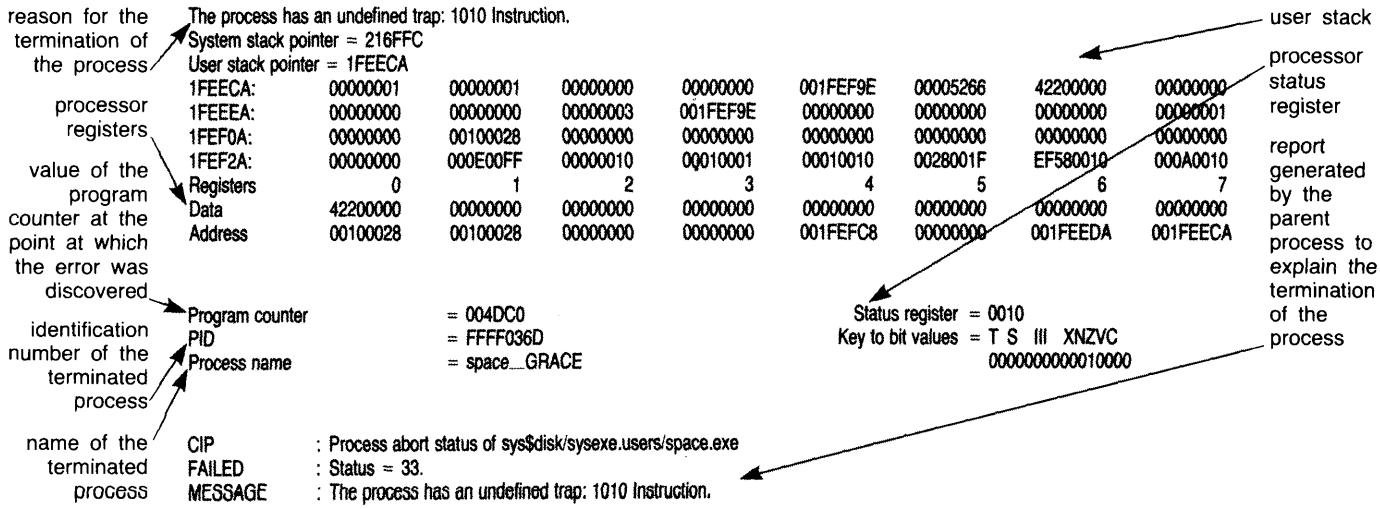
:privilege = none,bypass

Grants the process only bypass privilege, regardless of which privileges it already has.

Serial Port Characteristics

Switch	Values	Function
:autobaud	**:noautobaud**	Automatic baud rate detection (only applies to certain boards)
:broadcast	:nobroadcast	Broadcasts to the device
:controlc	:nocontrolc	[CTRL] c
:controlo	:nocontrolo	[CTRL] o
:controlu	:nocontrolu	[CTRL] u
:controlx	:nocontrolx	[CTRL] x
:controlz	:nocontrolz	[CTRL] z
:expandtabs	**:noexpandtabs**	Automatic tab expansion in output
:mask8bit	:nomask8bit	Masking of the high-order bit of each character received
:modemctrl	**:nomodemctrl**	Modem control from the device
:remote	**:noremote**	Remote processing on the device
:xonxoff	**:noxonxoff**	[CTRL] s and [CTRL] q
:baudrate =	50,75,110,134.5, 150,300,600,1200, 1800,2000,2400,3600, 4800,7200,**9600**,19200	Baud rate of the device
:datawidth =	5, 6, 7, **8**	Number of bits constituting a character
:duplex =	**full**, half	Type of duplex to be used on a port
:hostsync =	none, **bell**, software, hardware	Protocol to be used when the port's input buffer is almost full
:packetterm =	**NoCntrlChr**, CrReturn AllCntrlChr	Which control characters force packet termination
:parity =	**disabled**, odd, even	Type of parity checking on the port
:stopbits =	**1**, 1.5, 2	Number of stop bits transmitted per character
:termtype =	**ft0**--ft255,visual200 tvi912c,mg8000, t7000,vt52,vt100, videodisk,hydra, VG10000,cg9000	Type of terminal and which setup file to assign to the port
:hangup		Issue a hangup request to remote device before returning to the CIP

*bold face = Default Value


reason for the termination of the process
processor registers
value of the program counter at the point at which the error was discovered
identification number of the terminated process
name of the terminated process
user stack
processor status register
report generated by the parent process to explain the termination of the process
The process has an undefined trap: 1010 Instruction.
System stack pointer = 216FFC
User stack pointer = 1FEECA
1FEECA: 00000001 00000001 00000000 00000000 001FEF9E 00005266 42200000 00000000
1FEEEA: 00000000 00000000 00000003 001FEF9E 00000000 00000000 00000000 00080001
1FEF0A: 00000000 00100028 00000000 00000000 00000000 00000000 00000000 00000000
1FEF2A: 00000000 000E00FF 00000010 00010001 00010010 0028001F EF580010 000A0010
Registers 0 1 2 3 4 5 6 7
Data 42200000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
Address 00100028 00100028 00000000 00000000 001FEFC8 00000000 001FEEDA 001FEECA
Program counter = 004DC0
PID = FFFF036D
Process name = space__GRACE
Status register = 0010
Key to bit values = T S III XNZVC
0000000000010000
CIP : Process abort status of sys$disk/sysexe.users/space.exe
FAILED : Status = 33.
MESSAGE : The process has an undefined trap: 1010 Instruction.

Directory Of Diagnostic Messages

No.	Hex	Message
0	0	The specified operation was performed successfully.
1	1	The process lacks the privileges required to perform the operation.
2	2	The specified process is not in the system process table.
3	3	The process's buffer does not begin on a word boundary.
4	4	The logical address, for the memory requested, is invalid.
5	5	The process requested a logical page that was already allocated.
6	6	The process tried to affect a page in memory it did not own.
7	7	All available memory has been allocated.
8	8	The specified site id does not exist.
9	9	The process attempted to affect memory that does not exist.
10	A	An arithmetic operation produced a number longer than 32 bits.
11	B	No number was found during a search or scan for a number.
12	C	The file type is inappropriate for the given operation.
13	D	The specified process already exists.
14	E	A negative number is not allowed in this field.
15	F	Trap number (during _SETTRAP) exceeds range of specifiable numbers.
16	10	The specified device is not allocated.
17	11	Insufficient memory to automatically extend the user's stack.
18	12	The specified rotor list is empty.
20	14	No interprocess mail, in system message table, for the process.
21	15	The specified file is not an image file.
22	16	The queue control file is being deleted at the user's request.
23	17	The queue control file is being deleted, it may be corrupted.
26	1A	The process abort status was forced to a normal exit status.
27	1B	The process was killed by another process.
28	1C	The system clock reached the value specified for _ALARM.
29	1D	The process has an undefined trap: Divide-by-zero.
30	1E	The process has an undefined trap: CHK Instruction.
31	1F	The process has an undefined trap: TRAPV Instruction.
32	20	The process has an undefined trap: TRACE.
33	21	The process has an undefined trap: 1010 Instruction.
34	22	The process has an undefined trap: 1111 Instruction.
35	23	The process attempted to execute a privileged instruction.
36	24	The process attempted to execute an illegal instruction.
37	25	The process accessed nonexistent physical memory (bus error).
38	26	The process accessed a word on a byte boundary (address error).
39	27	The process accessed nonexistent logical memory (memory violation)
40	28	The process has a memory parity-error.
41	29	The process attempted to write to a write-protected page in memory.
42	2A	A handler was not defined before a TRAP instruction was executed.
43	2B	The WMCS does not recognize the SVC number used by the process.
44	2C	The process lost Data Set Ready on a tty line it controlled.
48	30	(WMCS error) Nondelete, or critical, count is too large (overflow).
49	31	(WMCS error) Nondelete, or critical, count is less than 0 (underflow).
50	32	The specified device is allocated.
51	33	User's stack does not contain enough parameters (underflow).
56	38	The table ends before the specified occurrence.
58	3A	The priority ratio for the scheduler is less than or equal to zero.
59	3B	The address, sent to an SVC, exceeds user's logical address space.
60	3C	The size, sent to an SVC, is out of range.
64	40	An invalid character appears in a decimal string.
65	41	(Floating point diagnostic) device does not respond.
66	42	(Floating point diagnostic) divide-by-zero error.

67	43	(Floating point diagnostic) number is too small.
68	44	(Floating point diagnostic) number is too large.
69	45	(Floating point diagnostic) illegal operation.
70	46	(Floating point diagnostic) denormalized operand.
80	50	The specified name must not be null.
81	51	The specified name already exists.
82	52	The specified name does not exist.
128	80	A request was not completed within the specified time.
129	81	A file's version number cannot be greater than 65535.
130	82	The specified devicename is syntactically incorrect.
131	83	The WMCS does not recognize the devicename. Is the device mounted?
132	84	The logical unit number does not correspond to an open file.
133	85	The specified file could not be found.
134	86	The specified version of the file already exists.
135	87	The specified file is read-locked.
136	88	The specified file is write-locked.
137	89	The specified queue does not have a default definition.
138	8A	This edit mode requires that the record length be set to one.
139	8B	The specified file type is reserved for the WMCS.
140	8C	The process tried to read past the logical end of a file.
141	8D	The process does not have read-access to the specified file.
142	8E	The process does not have write-access to the specified file.
143	8F	The process does not have Execute Privilege for the file.
144	90	The process does not have Read Privilege for the file.
145	91	The process does not have Write Privilege for the file.
146	92	The process does not have Delete Privilege for the file.
147	93	The specified filename is syntactically incorrect.
148	94	The specified directory is not a directory-type file.
149	95	The specified directory name is syntactically incorrect.
150	96	The specified entry is already active.
151	97	The WMCS cannot allocate more than 65535 sectors at a time.
152	98	The FCB (or the TFCB) does not correspond to its checksum.
153	99	The specified file is open, has been marked for deletion.
154	9A	All available disk space has been allocated.
155	9B	The specified queue is closed.
156	9C	The specified sector/block size is not supported on this device.
157	9D	The specified entry was not found.
158	9E	System files cannot be deleted.
159	9F	System files cannot be renamed.
160	A0	The device cannot be dismounted because files are still open on it.
161	A1	The usage field in the file's FCB contains an unexpected value.
162	A2	The specified device was not properly configured.
164	A4	This device was improperly dismounted.
165	A5	The read request is invalid.
166	A6	The request crosses a physical page boundary in memory.
167	A7	A file cannot be renamed to another device.
168	A8	The boot block has changed since the device was mounted.
169	A9	A sector(s) in the disk cache could not be written to the disk.
173	AD	The operation is inappropriate for the device class.
174	AE	Directories do not exist on the specified device.
175	AF	The specified device driver function code is disallowed.
176	B0	The process buffer is too small for the specified operation.
177	B1	The specified directory does not exist.
178	B2	The FCB.SEQ number for the file does not match the specified FCB.
179	B3	The specified device is already mounted.
180	B4	The WMCS does not recognize the specified device class.
181	B5	The specified volume has no valid boot block.
183	B7	The process requested more than 3964 bytes of dynamic memory.
185	B9	The device class handler was not loaded when the system was booted.

186	BA	The process tried to rename a directory as its own subdirectory.
188	BC	The specified device is already mounted, and has another name.
189	BD	The WMCS does not recognize the specified edit mode.
190	BE	The specified device has already been mounted for synchronous use.
191	BF	The specified device has already been mounted for asynchronous use.
192	C0	The specified tape speed is not 12, 25, 30, 50, 90, 100, or 125 ips.
197	C5	The process tried to access a record (on a tape) out of sequence.
200	C8	A directory file cannot have a version number greater than one.
202	CA	The operation cannot be performed because a tape file is open.
206	CE	The specified skip or erase tape-function is undefined.
210	D2	The specified directory cannot be deleted; it contains files.
215	D7	The specified device driver is unsuitable for this device class.
216	D8	The specified file does not contain a device driver.
217	D9	The value specified for a KSAM key type is undefined.
221	DD	One or more of the KSAM keys is not contained in the record.
222	DE	The KSAM key definition table is larger than 3500 bytes.
223	DF	The specified file is not a KSAM data file.
224	E0	The specified file is not a KSAM key file.
225	E1	The specified number of keys is less than or equal to zero.
226	E2	The specified number of segments is less than or equal to zero.
227	E3	The record size is less than 4 bytes or greater than 65534 bytes.
228	E4	A KSAM key for a word or longword key type is not word aligned.
229	E5	The specified key length is not a multiple of the key-type length.
230	E6	Key number is greater than or equal to the number of defined keys.
231	E7	This operation requires that the current key be defined.
232	E8	Duplicate key was attempted in a field disallowing duplicate keys.
233	E9	(WMCS error) A discrepancy in the KSAM code has been detected.
234	EA	The specified record cannot be locked without causing a deadlock.
235	EB	The specified record(s) are locked by another process.
236	EC	This operation requires that the current record be defined.
237	ED	The process attempted to unlock a record(s) it had not locked.
238	EE	(WMCS error) A discrepancy in the KPFD linkage has been detected.
239	EF	The key does not point to the beginning of an active data record.
240	F0	(WMCS error) A KSAM data-structure linkage error has been detected.
241	F1	An exact match for the specified key value was not found.
243	F3	Key- and data-file values for a record's key do not agree.
244	F4	(WMCS error) An error was detected during deletion of a leaf key.
246	F6	One of the parameters specifies an unrecognized option.
247	F7	(WMCS error) A discrepancy in the KFCB linkage has been detected.
254	FE	(WMCS error) A discrepancy in the Record Locking code has been detected.
255	FF	[CTRL] c terminated the process.
256	100	The sector header on the disk cannot be read.
257	101	The seek or rewind took too long.
258	102	The device cannot perform a seek.
259	103	A seek did not reach the proper cylinder.
260	104	The data in a sector header do not match the CRC or ECC.
261	105	The device cannot perform a recalibration.
262	106	A recalibration took too long.
263	107	The specified device is either off-line, or is not responding.
264	108	A device error occurred during a write to the volume (write fault).
265	109	The specified device is format-protected, and cannot be formatted.
266	10A	A device error occurred during a read from the volume (read fault).
267	10B	The data on the volume do not match the CRC, ECC, or checksum.
268	10C	The specified sector was not found on the current track.
269	10D	The specified device is write-protected.
270	10E	The specified sector number is too large.

271	10F	The device received a command the device did not recognize.
272	110	The device is not functioning properly (device check).
273	111	Data were lost; the driver could not read them quickly enough.
274	112	Sector headers could not be found.Is the volume formatted?
275	113	The specified device did not respond in the allotted time.
276	114	A read-after-write shows a discrepancy in the data.
277	115	The tape is positioned at the end of the data on the tape.
278	116	The tape is positioned at the physical end of the volume.
279	117	The tape is positioned at the physical beginning of the volume.
280	118	The size of the block read from the tape is larger than requested.
281	119	A parity error was detected in the data on the tape.
282	11A	The device wasn't granted access to the bus in the allotted time.
283	11B	A parity error was detected in the device controller.
284	11C	The specified device was improperly set up.
285	11D	The device being read was written at a different density.
286	11E	Connection to a remote computer has not been established.
287	11F	Connection to a remote computer has already been established.
288	120	The specified device is already being used by another device driver.
289	121	A deadlock error has been detected on the device.
290	122	The X.25 channel has been reset by the network, possible data loss.
291	123	The dial request failed.
292	124	The state of the BSC line disallows the specified function.
293	125	The modem is not ready for communication.
294	126	A bid was received in response to a BSC bid.
295	127	A NAK was received in response to a BSC bid, poll, or select.
296	128	An EOT was received on a BSC line.
297	129	An RVI was received in response to a write on a BSC line.
298	12A	A disconnect sequence was received on a BSC line.
299	12B	None of the devices, on a BSC polling list, responded.
300	12C	_BSCLOG's Transfer Log was invoked before Begin Logging.
301	12D	The driver transferred unverified data to the process.
302	12E	A conversational reply was received in response to a BSC write.
303	12F	The last (no-verify) read did not succeed.
304	130	The last (no-wait) write did not succeed.
305	131	Only part of the driver's transmission block was transferred.
306	132	The BSC transmission block is larger than the driver's buffer.
307	133	A WAK was received in response to a BSC bid, poll, or select.
308	134	The size of the device driver does not match its expected size.
309	135	A BSC line is no longer synchronized.
310	136	_BSCPOL's parameter block is incorrect.
311	137	A value in at least one field of the devicename is disallowed.
312	138	The PC board for the specified device is not installed.
313	139	The hangup cannot take place, files are still open on the device.
314	13A	The device driver does not contain the code to be downloaded.
315	13B	The Wicom board has been restarted and all calls were cleared.
316	13C	The contents of the dial buffer are missing or invalid.
317	13D	The driver can not use this version of the drive type table.
384	180	A character in the specified accept sequence is disallowed.
385	181	No more file designations match the specified wild card pattern.
386	182	No file designations match the specified wild card pattern.
387	183	One or more parameter value(s) is longer than 255 characters.
388	184	There are more than eight parameters to the parameter file.
389	185	Too many parameter values were specified.
390	186	The specified switch is not recognized.
391	187	An unacceptable value was specified for this switch.
392	188	The abbreviation of the specified switch is ambiguous.
393	189	This switch was specified twice; the first occurrence is used.
394	18A	A required parameter was not specified.
395	18B	An error occurred when the process attempted to create SYS$ERROR.

396	18C	The operation cannot be performed on a file of this type.
397	18D	The specified directory cannot be deleted; it contains files.
398	18E	Multiple command lines are not allowed for this operation.
399	18F	No such command is defined for this operation.
400	190	The specified switch is not of the expected type.
401	191	The specified date and time is syntactically incorrect.
402	192	Conflicting function switches were specified.
403	193	There is not enough space on the volume to accommodate the request.
404	194	The :edit= switch syntax did not match str1:str2,str3:str4,...
405	195	The :protection= switch syntax did not match S:DWRE,P:DWRE,...
406	196	The UIC syntax did not match [xxxx,xxxx].
407	197	The range specification syntax did not match n or n-m or n- .
408	198	The data received do not match the original data transmitted.
409	199	The remote station's response does not relate to the transmitted data.
410	19A	The remote station did not respond in a reasonable amount of time.
411	19B	The specified switch is disallowed in this context.
412	19C	The specified username does not exist.
413	19D	Fixed-length records can not be converted to a different length.
414	19E	The record size must divide evenly into the block size.
415	19F	The :privilege= switch syntax did not match SYSTEM,SETPRIV,...
416	1A0	A parameter contains a wildcard character where they are not allowed.
417	1A1	The specified pipe command is invalid.
418	1A2	The syntax of the specified pattern is incorrect.
419	1A3	There is not enough space in the file to accommodate the request.
420	1A4	The values in the setup file are invalid or out of range.
421	1A5	The specified drive type was not found in the drive type file.
422	1A6	The specified device had no drive type listed for it.

ASCII CHART

		CHR	OCT	DEC	HEX	CHR	OCT	DEC	HEX
^	@	NUL	000	000	00	@	100	064	40
^	A	SOH	001	001	01	A	101	065	41
^	B	STX	002	002	02	B	102	066	42
^	C	ETX	003	003	03	C	103	067	43
^	D	EOT	004	004	04	D	104	068	44
^	E	ENQ	005	005	05	E	105	069	45
^	F	ACK	006	006	06	F	106	070	46
^	G	BEL	007	007	07	G	107	071	47
^	H	BS	010	008	08	H	110	072	48
^	I	HT	011	009	09	I	111	073	49
^	J	LF	012	010	0A	J	112	074	4A
^	K	VT	013	011	0B	K	113	075	4B
^	L	FF	014	012	0C	L	114	076	4C
^	M	CR	015	013	0D	M	115	077	4D
^	N	SO	016	014	0E	N	116	078	4E
^	O	SI	017	015	0F	O	117	079	4F
^	P	DLE	020	016	10	P	120	080	50
^	Q	DC1	021	017	11	Q	121	081	51
^	R	DC2	022	018	12	R	122	082	52
^	S	DC3	023	019	13	S	123	083	53
^	T	DC4	024	020	14	T	124	084	54
^	U	NAK	025	021	15	U	125	085	55
^	V	SYN	026	022	16	V	126	086	56
^	W	ETB	027	023	17	W	127	087	57
^	X	CAN	030	024	18	X	130	088	58
^	Y	EM	031	025	19	Y	131	089	59
^	Z	SUB	032	026	1A	Z	132	090	5A
^	[	ESC	033	027	1B	[	133	091	5B
^	\	FS	034	028	1C	\	134	092	5C
^	]	GS	035	029	1D	]	135	093	5D
^	^	RS	036	030	1E	^	136	094	5E
^	_	US	037	031	1F	_	137	095	5F
		SP	040	032	20		140	096	60
		!	041	033	21	a	141	097	61
		"	042	034	22	b	142	098	62
		#	043	035	23	c	143	099	63
		$	044	036	24	d	144	100	64
		%	045	037	25	e	145	101	65
		&	046	038	26	f	146	102	66
		'	047	039	27	g	147	103	67
		(	050	040	28	h	150	104	68
		)	051	041	29	i	151	105	69
		*	052	042	2A	j	152	106	6A
		+	053	043	2B	k	153	107	6B
		,	054	044	2C	l	154	108	6C
		-	055	045	2D	m	155	109	6D
		.	056	046	2E	n	156	110	6E
		/	057	047	2F	o	157	111	6F
		0	060	048	30	p	160	112	70
		1	061	049	31	q	161	113	71
		2	062	050	32	r	162	114	72
		3	063	051	33	s	163	115	73
		4	064	052	34	t	164	116	74
		5	065	053	35	u	165	117	75
		6	066	054	36	v	166	118	76
		7	067	055	37	w	167	119	77
		8	070	056	38	x	170	120	78
		9	071	057	39	y	171	121	79
		:	072	058	3A	z	172	122	7A
		;	073	059	3B		173	123	7B
		<	074	060	3C		174	124	7C
		=	075	061	3D		175	125	7D
		>	076	062	3E	~	176	126	7E
		?	077	063	3F	DEL	177	127	7F

System Logical Name Assignments

Name	Equivalence
SYS$CIP	The file containing the Command Interpreter Program
SYS$CLKRATE	The speed of the clock that is driving the system
SYS$DISK	The device containing the operating system
SYS$ERROR	The file to which diagnostic messages are written
SYS$HOME	The user-account default directory
SYS$INPUT	The file from which input to the process is received
SYS$MATH	HARDWARE if your system has a floating point PC board; otherwise, SOFTWARE
SYS$MODEL	The system's model number
SYS$OUTPUT	The file to which process output is written
SYS$RESULT	The error code returned by the last process that was executed
SYS$PIPE	The device driver to be used for mounting pipes
SYS$PRINT	The printer
SYS$PROMPT	The port at which the user logged on to the system
SYS$SYSNAME	The system name assigned by the system manager
SYS$TMP	The device where temporary files will be placed
SYS$USERNAME	The username assigned to the user

System Time

Absolute dates and times:

To specify a date and a time, type the date followed by an underscore and then the time. Spaces are disallowed.

Use any of the following as separators: hyphen, comma, slash, colon.

Date

Use syntax shown above or a keyword (YESTERDAY, TODAY, TOMORROW)

dd Day of the month (1..31)
mm Month of the year (1..12) or (JANUARY,..,DECEMBER)
yy Year (if less than 100, 19yy is assumed)

Time
Use syntax shown above or the keyword CURRENT

hh Hour of the day (0..23)
mm Minute of the hour (0..59)
ss Second of the minute (0..59)
tt Tick (0..99)

Relative dates and time:

(+/-)dd_hh-mm-ss-tt

Corresponding Setup File

Numbers 0 through 15 are available for user-defined terminal types, i.e., use these numbers for files pertaining to terminal types for which setup files do not already exist.

WICAT uses 246 through 255 to define the following terminal types:

What you type	Corresponding setup file
ft0	SETUP0.SYS
ft1	SETUP1.SYS
ft2	SETUP2.SYS
.	.
.	.
.	.
ft15	SETUP15.SYS
cg9000	SETUP246.SYS
VG10000	SETUP247.SYS
hydra	SETUP248.SYS
videodisk	SETUP249.SYS
vt100	SETUP250.SYS
vt52	SETUP251.SYS
t7000	SETUP252.SYS
mg8000	SETUP253.SYS
tvi912c	SETUP254.SYS
visual 200	SETUP255.SYS

Set Up Files

Feature	Key Function	CG9000 MG8000 T7000 VG10000	TVI912C	VT52 VT100 VISUAL200
Number of lines on the screen		24*	24	24
Number of characters on a line		80	80	79
Direct cursor addressing		255	27 61	27 89
X or Y first, the disp to add to each		YS 255	Y 32 32	Y 32 32
Erase to end of line		27 91 75	27 84	27 75
Erase to end of screen		27 91 74	27 89	27 74
Scroll down from home position		27 77	27 69	27 73
VEW command line terminator		27	27	27
Move cursor to top of file	[CTRL] t	20	20	20
Move cursor to bottom of file	[CTRL] e	5	5	5
Move cursor to next page	[CTRL] p	16	16	16
Move cursor to previous page	[CTRL] h	8	17	17
Move cursor to next line	[CTRL] o	15	15	15
Move cursor to previous line	[CTRL] w	23	23	23
Move cursor up in same column	↑	27 91 65	11	27 65
Move cursor down in same column	↓	27 91 66	10	27 66
Move cursor to front of line	[CTRL] a	1	1	1
Move cursor to end of line	[CTRL] g	7	7	7
Move cursor to next word	[CTRL] f	6	6	6
Move cursor to previous word	[CTRL] r	18	18	18
Move cursor to next character position	→	27 91 67	12	27 67
Move cursor to previous character position	←	27 91 68	8	27 68
Create blank line	[CTRL] n	14	14	14
Delete line	[CTRL] y	25	25	25
Delete to end of line	[CTRL] d	4	4	4
Delete to front of line	[CTRL] u	21	21	21
Delete word	[CTRL] k	11	19	19
Delete previous word	[CTRL] b	2	2	2
Delete character	[CTRL] v	22	22	22
Delete previous character	[DEL]	127	127	127
Refresh the screen	[CTRL] -	31	31	31
Restore command line function	[CTRL] \	28	28	28
Abort function		3	3	3
Beginning sequence for VEW		0	0	0
Ending sequence for VEW		10	10	10

* VG10000 terminals have 30 lines on the screen.

VEW Control-key and Escape-key Functions

Function	Control Key	Escape Key
Move cursor to top of file	[CTRL] t	[ESC] mt
Move cursor to end of file	[CTRL] e	[ESC] me
Move cursor to next page	[CTRL] p	[ESC] (n)mp
Move cursor to previous page	[CTRL] q	[ESC] (-n)mp
Move cursor to front of line	[CTRL] a	[ESC] fl
Move cursor to end of line	[CTRL] g	[ESC] el
Move cursor to next line	[CTRL] o	[ESC] (n)ml
Move cursor to previous line	[CTRL] w	[ESC] (-n)ml
Move cursor to next word	[CTRL] f	[ESC] (n)mw
Move cursor to previous word	[CTRL] r	[ESC] (-n)mw
Move cursor to next character	→	[ESC] (n)mc
Move cursor to previous char.	←	[ESC] (-n)mc
Delete line	[CTRL] y	[ESC] (n, or -n)dl
Delete to front of line	[CTRL] u	[ESC] df
Delete to end of line	[CTRL] d	[ESC] de
Delete word	[CTRL] s	[ESC] (n)dw
Delete previous word	[CTRL] b	[ESC] (-n)dw
Delete character	[CTRL] v	[ESC] (n)dc
Delete previous character	[DEL]	[ESC] (-n)dc
Create blank line	[CTRL] n	[ESC] (n)ol
Insert a tab character	[CTRL] i	
Insert line feed, <LF>	[CTRL] j	
Insert form feed, <FF>	[CTRL] l	
Insert carriage return, <CR>	[CTRL] m	(use with the IC Function)
Insert vertical tab, <VT>	[CTRL] k	(use only with the IC Function)
Terminate command in progress	[CTRL] c	
Restore command-line function	[CTRL] \	
Refresh screen	[CTRL] -	[ESC] rs
Undo previous deletion		[ESC] ud
Cut line(s) for pasting		[ESC] (n)cu
Paste line(s)		[ESC] (n)pa
Move cursor up in same column	↑	[ESC] (-n)pl
Move cursor down in same col.	↓	[ESC] (n)pl
Decide and switch		[ESC] (n, or -n)ds
Find and switch		[ESC] (n, or -n)fs
Search		[ESC] (n, or -n)sr
Help display		[ESC] he
Assign horizontal view		[ESC] hv n
Assign page size		[ESC] ps n
Abort the editing session		[ESC] ab y
Save this copy of the file		[ESC] sa
Exit the buffer and save this copy of file		[ESC] ex
Rename this copy of the file		[ESC] fn (then enter new file name)
Insert control-key character		[ESC] ic
Insert file at cursor		[ESC] if (then enter file name)
VEW status report (toggle)		[ESC] ss
Insert/replace (toggle)		[ESC] ir
Uppercase/lowercase flag (toggle)		[ESC] ul
Create a CIP while you are in VEW		[ESC] cp

VEW Program Diagnostic Messages

No.	Message
1	Error in reading terminal setup file
2	Error in opening source file
3	Unable to open .TMP files
4	Error in writing to MAINBEF.TMP
5	Error in writing to MAINAFT.TMP
6	Error in reading MAINBEF.TMP
7	Error in writing to MAINBEF.TMP after read
8	Error in reading MAINAFT.TMP
9	Error in writing to MAINAFT.TMP after read
10	Line character limit exceeded
11	Unable to insert character
12	Unable to create output file
13	Unable to read help file
14	Unable to create cut buffer, i.e., VEWCUTTXT.TMP, for the CU Function
15	Error in writing to VEWCUTTXT.TMP
16	Error in reading VEWCUTTXT.TMP
17	Error in reading source file

Use the CP Function and the ERR Command to identify the WMCS diagnostic message, i.e., the portion of the message that reads: STATUS=

WMCS System Calls

_alarm Set alarm clock

mstime long integer = most significant 32 bits of clock value

Byte	Description (msb = 0)
0, 1	= the current year (1984)
2, 3	= the day of the year (1..365 or 1..366)

lstime long integer = least significant 32 bits of clock value

Byte	Description (msb = 0)
0	= the hour of the day (0..23)
1	= the minute of the hour (0..59)
2	= the second of the minute (0..59)
3	= the fraction of a second (in 100ths) (0..99)

_allmem Allocate dynamic memory

pid long integer = process ID
adr long integer = logical address of new page
prot long integer = protection mask
timout long integer = time out
status long integer = returned result of operation

_alloc Allocate a device

pid long integer = process ID
timout long integer = time out
access long integer = type of access required for device

Bit	Description
0	= read access (1 = access desired, 0 = no access)
1	= write access (1 = access desired, 0 = no access)
2-31	= reserved (should be 0)

dname string (93) = devicename or rotor list to allocate
alcnam string (9) = returned name of allocated device
status long integer = returned result of operation

_andevnt Wait for and of event flags

pid long integer = process ID
efmask long integer = mask specifying flags to wait for
timout long integer = time out
status long integer = returned status of operation

_assign Assign a logical name

lname string (93) = logical name to be assigned a value
equiv string (93) = equivalence to be assigned
pid long integer = process ID
status long integer = returned result of operation

_chdir Set default device and directory

devdir string (93) = default device and directory
status long integer = returned result of operation

_chsuper Change to supervisor mode

status long integer = returned result of operation

_chuser Change processor mode to user

(no parameters)

_close Close a file

lun	long integer	= logical unit number of device
mode	long integer	= action to be taken upon closing

Bit name	Bit	Description
cldelete	0	= delete
clnotrunc	1	= no truncate
clnodelete	2	= no delete
clforcedwrite	3	= forced write
	4-3	= reserved

status	long integer	= returned result of operation

_clrevnt Clear event flags

pid	long integer	= process ID
efmask	long integer	= mask specifying flags to clear
status	long integer	= returned result of operation

_create Create a file

fname	string (93)	= name of file to create
mode	long integer	= type of access required to file

Bit name	Bit	Description
opreadacc	0	= read access
opwriteacc	1	= write access
opreadlock	2	= read access with lock
opwritelock	3	= write access with lock
opdelete	4	= delete upon closing
opappend	5	= append
opfastread	6	= fast read
opnextfile	7	= open next file
opnordahead	8	= no read ahead
opnotruncfile	9	= no truncation upon closing
cropenifthere	10	= open if there
cropenshared	11	= open shared
	12-31	= reserved

reclen	long integer	= default file record length in bytes
ftype	long integer	= file type

File type	Value	Description
fcbftdata	0	= data
fcbftdir	1	= directory
fcbftimage	2	= image file
fcbftksamdata	3	= ksam data
fcbftksamkey	4	= ksam key
fcbftllimage	5	= LL image type file
fcbftarchcont	6	= archive file continuation
	7	= reserved
fcbftsystem	8	= system file
fcbftarchive	9	= archive file
	10-255	= reserved
	256-65535	= user defined

prot	long integer	= file protection mask
uic	long integer	= user identification code
fid	long integer	= file ID
mstime	long integer	= most significant 32 bits of creation time
lstime	long integer	= least significant 32 bits of creation time
lun	long integer	= returned logical unit number of created file
status	long integer	= returned result of operation

_creats Simplified file creation

fname	string (93)	= name of file to create
mode	long integer	= type of access required (same as _create)
reclen	long integer	= default record length in bytes
lun	long integer	= returned logical unit number of created file
status	long integer	= returned result of operation

_crprcs Simplified create process

fname	string (93)	= name of file containing process image
pname	string (16)	= name to be assigned to process
cmd	pointer	= command line to be passed to process
cmdlen	long integer	= length of command line
pid	long integer	= returned process ID of created process
ccode	long integer	= condition code returned by created process
status	long integer	= returned result of operation

_crproc Create a new process

mode long integer = whether the process is spawned or forked

Value	Description
0	= spawn the process
1	= fork the process

siteid	long integer	= system ID of system to create process on
fname	string (93)	= name of file containing process image
pname	string (16)	= name to be assigned to process
priv	long integer	= privilege mask to be assigned to process

Bit name	Bit	Description
pcbpvsetpriv	0	= setpriv
pcbpvsystem	1	= system
pcbpvreadphys	2	= readphys
pcbpvwritephys	3	= writephys
pcbpvsetprior	4	= setprior
pcbpvchngsuper	5	= chngsuper
pcbpvbypass	6	= bypass
pcbpvoperator	7	= operator
pcbpvaltuic	8	= altuic
pcbpvworld	9	= world
pcbpvgroup	10	= group
	11-31	= reserved

priort	long integer	= priority to be assigned to process
tslice	long integer	= time slice to be assigned to process
uic	long integer	= user identification code to be assigned to process
sysin	string (93)	= standard input file
sysout	string (93)	= standard output file
syserr	string (93)	= standard error file
cmd	pointer	= command line to be passed to process
cmdlen	long integer	= length of command line
pid	long integer	= returned process ID of create process
ccode	long integer	= condition code returned from process
status	long integer	= returned result of operation

_crshdp Enable/disable crash display

mode long integer = enable crash display (0 = disable, 1 = enable)

_ctrlc Set/clear [CTRL] c protection

mode long integer = set [ctrl] c protection (0 = reset, 1 = set)

_dealloc Deallocate an allocated device

dname	string (93)	= name of device to be deallocated
status	long integer	= returned result of operation

_defdprt Set default device protection

dname	string (93)	= devicename
prot	long integer	= protection mask to be assigned to device
status	long integer	= returned result of operation

_defduic Set default device UIC

dname	string (93)	= devicename
uic	long integer	= default owner to be assigned to device
status	long integer	= returned result of operation

_defmem Define named shared memory area

mname	string (93)	= name of shared memory area
adr	long integer	= logical address of memory area
size	long integer	= length of memory area in bytes
uic	long integer	= owner of memory area
prot	long integer	= protection to be assigned to memory area
mode	long integer	= linger bit (0 = no linger, 1 = linger)
status	long integer	= returned result of operation

_defprot Set default protection mask

prot	long integer	= default protection mask

_deinst Deinstall privileged file

siteid	long integer	= system ID of system
index	long integer	= index in system table of file to be deinstalled
status	long integer	= returned result of operation

_delete Delete a file

fname	string (93)	= name of file to be deleted
status	long integer	= returned result of operation

_dismnt Dismount a logical device

dname	string (93)	= name of device to be dismounted
status	long integer	= returned result of operation

_errno Receive process abort reason

pid	long integer	= process ID
reason	long integer	= returned abort reason
status	long integer	= returned result of operation

_exitrtn Define a returnable exit handler

adr	long integer	= address of exit handler routine

_exproc Terminate the specified process

pid	long integer	= process ID of process to be terminated
result	long integer	= result to be passed to processes parent
status	long integer	= returned result of operation

_flush Flush i/o buffers to the device

dname	string (93)	= name of device to be flushed
status	long integer	= returned result of operation

_frdwait Wait for fast read to complete

lun	long integer	= logical unit number of device on which fast read was initiated
status	long integer	= returned result of operation

_frememe Deallocate a page of memory

adr	long integer	= logical address of page to be deallocated
status	long integer	= returned result of operation

_gassign Assign a global logical name

lname	string (93)	= global logical name to be assigned a value
equiv	string (93)	= equivalence to be assigned
siteid	long integer	= system ID of system
status	long integer	= returned result of operation

_gengy Get PID of ancestor process

refpid	long integer	= process ID to serve as reference point
rel	long integer	= relative relationship with refpid (-1 = parent, etc.)
pid	long integer	= returned process ID of relative
status	long integer	= returned result of operation

_getalc Get names of allocated devices

pid	long integer	= process ID to be examined
devlst	string (1024)	= returned list of devices
maxlen	long integer	= maximum length of returned list
status	long integer	= returned result of operation

_getdir Get default device and directory

devdir	string (93)	= returned default device and directory

_getdnam Get devicename

siteid	long integer	= system ID of system being examined
index	long integer	= index into the system table of devicenames
dname	string (93)	= returned devicename
class	long integer	= returned device class
status	long integer	= returned result of operation

_getdprt Get device protection

dname	string (93)	= devicename
prot	long integer	= returned protection of device
status	long integer	= returned result of operation

_getdst Get device status

dname	string (93)	= devicename
dtable	pointer	= returned device table
ldtab	long integer	= length of device table to be returned
dstat	pointer	= returned device status buffer
status	long integer	= returned result of operation

_getduic Get device UIC

dname	string (93)	= devicename
uic	long integer	= returned owner of device
status	long integer	= returned result of operation

_getevnt Read event flags

pid	long integer	= process ID
efmask	long integer	= mask of event flags to read
eflags	long integer	= returned mask of event flags that were read
status	long integer	= returned result of operation

_getfcb Get file control block

lun	long integer	= logical unit number of open file
cont	long integer	= which part of fcb desired (0 = primary, etc.)
fcbuf	pointer	= returned file control block
status	long integer	= returned result of operation

_getfid Get file ID

lun	long integer	= logical unit number of open file
fid	long integer	= returned file ID
status	long integer	= returned result of operation

_getfnam Given a lun, return the filename

lun	long integer	= logical unit number of open file
fname	string (93)	= returned filename
status	long integer	= returned result of operation

_getfprt Get file protection

lun	long integer	= logical unit number of open file
prot	long integer	= returned protection mask
status	long integer	= returned result of operation

_getfre Get amount of available memory

siteid	long integer	= system ID of system to be examined
fremem	long integer	= returned amount of free memory
status	long integer	= returned result of operation

_getfuic Get file UIC

lun	long integer	= logical unit number of open file
uic	long integer	= returned owner of file
status	long integer	= returned result of operation

_getglb Retrieve a global logical name

index	long integer	= index into global logical name table
siteid	long integer	= system ID of system
lname	string (93)	= logical name to be translated
equiv	string (93)	= returned equivalence of logical name
status	long integer	= returned result of operation

_getinst Get installed files

siteid	long integer	= system ID of system to be examined
index	long integer	= index into table of installed files
fcbnam	string (93)	= returned name of file in fcb.seq format
priv	long integer	= returned installed privilege

Bit name	Bit	Description
pcbpvsetpriv	0	= setpriv
pcbpvsystem	1	= system
pcbpvreadphys	2	= readphys
pcbpvwritephys	3	= writephys
pcbpvsetprior	4	= setprior
pcbpvchngsuper	5	= chngsuper
pcbpvbypass	6	= bypass
pcbpvoperator	7	= operator
pcbpvaltuic	8	= altuic
pcbpvworld	9	= world
pcbpvgroup	10	= group
	11-31	= reserved

status	long integer	= returned result of operation

_getlog Retrieve a logical name

index	long integer	= index into processes logical name table
pid	long integer	= process ID of process to search
lname	string (93)	= returned logical name from table
equiv	string (93)	= returned equivalence to logical name
status	long integer	= returned result of operation

_getmlst Get an entry from list of named shared memory areas

siteid	long integer	= system ID
index	long integer	= index into system table
lmtab	long integer	= maximum size of buffer receive nsm information
mtable	pointer	= buffer to receive nsm information
reretlen	long integer	= length of buffer actually returned
status	long integer	= returned result of operation

_getpcb Get process control block

pid	long integer	= process ID
pcbuff	pointer	= buffer to receive process control block
len	long integer	= length of buffer to receive process control block
retlen	long integer	= length of buffer actually returned
status	long integer	= returned result of operation

_getpid Get process ID from name

siteid	long integer	= system ID
pname	string (16)	= process name to get process ID for
pid	long integer	= returned process ID
status	long integer	= returned result of operation

_getpnam Get process name from PID

pid	long integer	= process ID to get process name for
pname	string (16)	= returned process name
status	long integer	= returned result of operation

_getpos Get the current file position

lun	long integer	= logical unit number of open file
recnum	long integer	= returned current record number in file
status	long integer	= returned result of operation

_getpri Get process's priority

pid	long integer	= process ID
priort	long integer	= returned process priority
status	long integer	= returned result of operation

_getprot Get default protection mask

prot	long integer	= returned default protection mask

_getprv Get process privilege

pid	long integer	= process ID
priv	long integer	= returned privilege mask

Bit name	Bit	Description
pcbpvsetpriv	0	= setpriv
pcbpvsystem	1	= system
pcbpvreadphys	2	= readphys
pcbpvwritephys	3	= writephys
pcbpvsetprior	4	= setprior
pcbpvchngsuper	5	= chngsuper
pcbpvbypass	6	= bypass
pcbpvoperator	7	= operator
pcbpvaltuic	8	= altuic
pcbpvworld	9	= world
pcbpvgroup	10	= group
	11-31	= reserved

status	long integer	= returned result of operation

_getrel Get names of rotor list elements

rtrnam	string (93)	= name of a rotor list
devnms	string (1024)	= buffer to receive rotor list
maxlen	long integer	= maximum length of returned rotor list
status	long integer	= returned result of operation

_getrtr Get rotor list names

index	long integer	= index into system list of rotors
rtrnam	string (9)	= returned rotor name
status	long integer	= returned result of operation

_gettic Get internal tick count

siteid	long integer	= system ID
mstime	long integer	= most significant 32 bits of tick clock
lstime	long integer	= least significant 32 bits of tick clock
status	long integer	= returned result of operation

_gettim Get the current date and time

siteid	long integer	= system ID
mstime	long integer	= most significant 32 bits of clock value

Byte	Description (msb = 0)
0, 1	= the current year (1984)
2, 3	= the day of the year (1..365 or 1..366)

lstime	long integer	= least significant 32 bits of clock value

Byte	Description (msb = 0)
0	= the hour of the day (0..23)
1	= the minute of the hour (0..59)
2	= the second of the minute (0..59)
3	= the fraction of a second (in 100ths) (0..99)

status	long integer	= returned result of operation

_gettmsl Get scheduling time slice

pid	long integer	= process ID
tslice	long integer	= returned timeslice of process
status	long integer	= returned result of operation

_getuic Get process UIC

pid	long integer	= process ID
uic	long integer	= returned owner of process
status	long integer	= returned result of operation

_giodst Get device status with lun

lun	long integer	= logical unit number of open file
dtable	pointer	= returned device table
ldtab	long integer	= length of device table to be returned
dstat	pointer	= returned device status table
status	long integer	= returned result of operation

_gmail Receive interprocess mail

rpid	long integer	= process ID whose mail you wish to receive
mail	pointer	= buffer to receive message that was sent
len	long integer	= maximum length of buffer to receive message
timout	long integer	= time out
pid	long integer	= returned process ID of sender of message
retlen	long integer	= actual length of returned message
status	long integer	= returned result of operation

_hibern Hibernate a process

pid long integer = process ID of process to hibernate
status long integer = returned result of operation

_install Install privileged file

siteid long integer = system ID
lun long integer = logical unit number of file whose privileges are to be set
priv long integer = privilege mask to install process with

Bit name	Bit	Description
pcbpvsetpriv	0	= setpriv
pcbpvsystem	1	= system
pcbpvreadphys	2	= readphys
pcbpvwritephys	3	= writephys
pcbpvsetprior	4	= setprior
pcbpvchngsuper	5	= chngsuper
pcbpvbypass	6	= bypass
pcbpvoperator	7	= operator
pcbpvaltuic	8	= altuic
pcbpvworld	9	= world
pcbpvgroup	10	= group
	11-31	= reserved

status long integer = returned result of operation

_kclall Close all KSAM files

siteid long integer = system ID
status long integer = returned result of operation

_kclose Close a KSAM file

lun long integer = logical unit number of open ksam file
mode long integer = action to be taken on closing

Bit name	Bit	Description
cldelete	0	= delete data and key file
	1-31	= reserved

status long integer = returned result of operation

_kcreat Create a KSAM file

fname string (93) = name of ksam data file to create
kfname string (93) = name of ksam key file to create
mode long integer = type of access required

Bit name	Bit	Description
opreadacc	0	= read access
opwriteacc	1	= write access
opreadlock	2	= read access with lock
opwritelock	3	= write access with lock
opdelete	4	= delete upon closing
	5-31	= reserved

reclen long integer = record length
prot long integer = protection mask
numbuf long integer = number of key buffers to maintain
ktable pointer = buffer which contains key descriptions
lun long integer = returned logical unit number of created file
status long integer = returned result of operation

_kdelet Delete a KSAM record

lun	long integer	= logical unit number of open ksam file
timout	long integer	= time out
status	long integer	= returned result of operation

_kfind Locate a KSAM record

lun	long integer	= logical unit number of open ksam file
keynum	long integer	= key number to search by
keybuf	pointer	= buffer to contain search key
buflen	long integer	= length of search key buffer
status	long integer	= returned result of operation

_kflush Write modified KSAM buffers

siteid	long integer	= system ID of system on which buffers are to be flushed
status	long integer	= returned result of operation

_kinfo Retrieve KSAM information file

lun	long integer	= logical unit number of open ksam file
option	long integer	= type of information requested (negative number = general info, positive or zero = key number info)
ktable	pointer	= buffer to receive returned information
status	long integer	= returned result of operation

_kmovfb Position to front or back of file

lun	long integer	= logical unit number of open ksam file
keynum	long integer	= key number to position by
mode	long integer	= direction (0 = beginning, non zero = end)
status	long integer	= returned result of operation

_kopen Open a KSAM file

fname	string (93)	= name of ksam data file
kfname	string (93)	= name of ksam key file
mode	long integer	= type of access required

Bit name	Bit	Description
opreadacc	0	= read access
opwriteacc	1	= write access
opreadlock	2	= read access with lock
opwritelock	3	= write access with lock
opdelete	4	= delete upon closing
	5-31	= reserved

numbuf	long integer	= number of key buffers to maintain
lun	long integer	= returned logical unit number of created file
status	long integer	= returned result of operation

_kread Read a KSAM record

lun long integer = logical unit number of open ksam file
option long integer = options to be used

Bit	Description
0-3	= indicate which record to read
	0000 = read current record
	0001 = read next record
	0010 = read previous record
	0011-
	1111 = reserved
4	= write lock record before reading
5	= key compare inhibit
6	= data transfer inhibit
7-31	= reserved

timout long integer = time out
buf pointer = buffer to receive record read
status long integer = returned result of operation

_kunlck Unlock specified KSAM records

lun long integer = logical unit number of open ksam file
option long integer = options to be used

Bit	Description
0	= which record (0 = unlock current, 1 = unlock all)
1-31	= reserved

status long integer = returned result of operation

_kupdat Update an existing KSAM record

lun long integer = logical unit number of open ksam file
timout long integer = time out
buf pointer = buffer to be written to record
status long integer = returned result of operation

_kwrite Write a new KSAM record

lun long integer = logical unit number of open ksam file
timout long integer = time out
buf pointer = buffer to be written to ksam file
status long integer = returned result of operation

_lock Lock records within an open file

lun long integer = logical unit number of open file
recnum long integer = record number of first record to lock
nrecs long integer = number of records to lock
timout long integer = time out
status long integer = returned result of operation

_mapfp Map floating point hardware

fptype long integer = type of hardware to map

Name	Value	Description
fpunmap	0	= unmap the given logical address
fpsky1	1	= sky1
fpndp2	2	= ndp2
fpffp1	3	= ffp1

adr long integer = logical address to map hardware into
size long integer = number of bytes to map
status long integer = returned result of operation

__mapphys Map physical address into process's logical space

physad	long integer	= physical address to map
adr	long integer	= logical address to map physical address into
size	long integer	= number of bytes to be mapped
prot	long integer	= protection (0 = no protect, 1 = write protect)
status	long integer	= returned result of operation

__memmnt Mount a logical device from memory

dname	string (93)	= devicename to mount
driver	pointer	buffer which contains device driver
class	long integer	= device class

Value	Description
0, 1	= character class device (ttyspecial, tty)
2, 3	= tape class device (tapespecial, tape)
4, 5	= disk class device (diskspecial, disk)
6, 7	= network class device (networkspecial, network)
8, 9	= pipe class device (pipespecial, pipe)
10, 11	= sync class device (syncspecial, sync)
12, 13	= queue class device (queuespecial, queue)
14, 15	= nondev class device (nondevspecial, nondev)

dstat	long integer	= buffer containing initial device status
label	string (16)	= returned volume label from device
status	long integer	= returned result of operation

__mount Mount a logical device

dname	string (93)	= devicename to mount
driver	string (93)	= name of file containing device driver
class	long integer	= device class

Value	Description
0, 1	= character class device (ttyspecial, tty)
2, 3	= tape class device (tapespecial, tape)
4, 5	= disk class device (diskspecial, disk)
6, 7	= network class device (networkspecial, network)
8, 9	= pipe class device (pipespecial, pipe)
10, 11	= sync class device (syncspecial, sync)
12, 13	= queue class device (queuespecial, queue)
14, 15	= nondev class device (nondevspecial, nondev)

dstat	long integer	= buffer containing initial device status
label	string (16)	= returned volume label from device
status	long integer	= returned result of operation

_mulcrps Multiple create process

siteid	long integer	= system ID on which to create processes
fname	string (93)	= name of file containing image of process
repit	long integer	= number of instances of process to create
pname	pointer	= list of process names to assign to each process
priv	long integer	= privilege to assign to each child process

Bit name	Bit	Description
pcbpvsetpriv	0	= setpriv
pcbpvsystem	1	= system
pcbpvreadphys	2	= readphys
pcbpvwritephys	3	= writephys
pcbpvsetprior	4	= setprior
pcbpvchngsuper	5	= chngsuper
pcbpvbypass	6	= bypass
pcbpvoperator	7	= operator
pcbpvaltuic	8	= altuic
pcbpvworld	9	= world
pcbpvgroup	10	= group
	11-31	= reserved

priort	long integer	= priority level to assign to each child process
tslice	long integer	= time slice to assign to each child process
uic	long integer	= owner of each child processes
sysin	pointer	= pointer to list of standard input files
sysout	pointer	= pointer to list of standard output files
syserr	pointer	= pointer to list of standard error files
cmd	pointer	= pointer to list of command lines
cmdlen	long integer	= pointer to list of command line lengths
pid	long integer	= pointer to returned list of process IDs
prccnt	long integer	= returned number of processes actually created
status	long integer	= returned result of operation

_open Open a file

fname	string (93)	= filename to open
mode	long integer	= type of access required

Bit name	Bit	Description
opreadacc	0	= read access
opwriteacc	1	= write access
opreadlock	2	= read access
opreadlock	2	= read access with lock
opwritelock	3	= write access with lock
opdelete	4	= delete upon closing
opappend	5	= append
opfastread	6	= fast read
opnextfile	7	= open next file
opnordahea	8	= no readahead
opnotruncfile	9	= no truncation upon closing
	10	= reserved
cropenshared	11	= open shared
	12-31	= reserved

reclen	long integer	= record length to use
lun	long integer	= returned logical unit number
status	long integer	= returned result of operation

_orevnt Wait for or of even flags

pid	long integer	= process ID
efmask	long integer	= mask specifying flags to wait for
timout	long integer	= time out
status	long integer	= returned result of operation

_origprv Get original process privileges

pid	long integer	= process ID
priv	long integer	= returned process privileges

Bit name	Bit	Description
pcbpvsetpriv	0	= setpriv
pcbpvsystem	1	= system
pcbpvreadphys	2	= readphys
pcbpvwritephys	3	= writephys
pcbpvsetprior	4	= setprior
pcbpvchngsuper	5	= chngsuper
pcbpvbypass	6	= bypass
pcbpvoperator	7	= operator
pcbpvaltuic	8	= altuic
pcbpvworld	9	= world
pcbpvgroup	10	= group
	11-31	= reserved

status	long integer	= returned result of operation

_physio Perform physical I(O operation

lun	long integer	= logical unit number
func	long integer	= function to perform
timout	long integer	= time out
parm1	long integer	= parameter number 1
parm2	long integer	= parameter number 2
parm3	long integer	= parameter number 3
parm4	long integer	= parameter number 4
status	long integer	= returned result of operation

_physop Perform physical device operation

dnam	string (93)	= devicename
func	long integer	= function to perform
timout	long integer	= time out
parm1	long integer	= parameter number 1
parm2	long integer	= parameter number 2
parm3	long integer	= parameter number 3
parm4	long integer	= parameter number 4
status	long integer	= returned result of operation

_prclst Get PIDs on a priority level

siteid	long integer	= system ID
priort	long integer	= priority level to search
pidlst	pointer	= buffer to receive list of process IDs
len	long integer	= maximum length of returned list
retlen	long integer	= actual length of returned list
status	long integer	= returned result of operation

_prirat Set priority scheduling ratio

siteid	long integer	= system ID
ratio	long integer(16)	= array containing priority ratio
status	long integer	= returned result of operation

_protmem Change memory page protection

adr	long integer	= logical address of memory page
prot	long integer	= protection (0 = no protect, 1 = write protect)
status	long integer	= returned result of operation

_rdpmem Read physical memory

siteid	long integer	= system ID
adr	long integer	= physical address to read
mode	long integer	= type of transfer (0 = byte, 1 = word, 2 = long word)
buf	pointer	= buffer to receive memory read
nrec	long integer	= number of units (byte, word, or long word) to read
trnsfr	long integer	= number of units actually read
status	long integer	= returned result of operation

_read Read from an open file

lun	long integer	= logical unit number of open file
recnum	long integer	= record number to read
edmode	long integer	= edit mode to use

(Least significant 16 bits indicates which edit mode processor)

Name	Value	Description
emvreadraw	0	= raw data
	1	= reserved
emvreadln	2	= read line for tty class devices
emvreadlnwchr	3	= read character for tty class devices
emvreadlnall	4	= read line for all devices
emvreadnwchall	5	= read character for all devices

(Most significant 16 bits contain bit flags)

Bit name	Bit	Description
emnoecho	16	= no echo for tty class devices
emspccompact	17	= space compact for sync class devices
emnofastread	18	= disable fast read on disk class devices
emnoverifyrd	19	= no verify read ok for sync class devices
	20	= reserved
emlockunlock	21	= read and lock record on disk class devices
	22-31	= reserved

timout	long integer	= time out
buf	pointer	= buffer to receive data
nrecs	long integer	= number of records to read
trnsfr	long integer	= returned number of records actually read
status	long integer	= returned result of operation

_rename Rename a file

fname	string (93)	= current name of file
newnam	string (93)	= new name of file
status	long integer	= returned result of operation

__setdst Set device status

dname	string (93)	=devicename
dstat	pointer	=device status table to set
status	long integer	=returned result of operation

__setduic Set device UIC

dname	string (93)	=devicename
uic	long integer	=owner to be set on device
status	long integer	=returned result of operation

__setevnt Set event flags

pid	long integer	=process ID
efmask	long integer	=mask of flags to set
status	long integer	=returned result of operation

__setexit Define exit handler

adr	long integer	=address of exit handler

__setfcb Write file control block

lun	long integer	=logical unit number of open file
cont	long integer	=which part of fcb to update (0=root,1=first cont,...)
fcbuff	pointer	=buffer containing file control block
status	long integer	=returned result of operation

__setfid Set file ID

lun	long integer	=logical unit number of open file
fid	long integer	=file ID to set on file
status	long integer	=returned result of operation

__setfprt Set file protection

lun	long integer	=logical unit number of open file
prot	long integer	=protection mask to set on file
status	long integer	=returned result of operation

__setfuic Set file UIC

lun	long integer	=logical unit number of open file
uic	long integer	=owner to be set on file
status	long integer	returned result of operation

__setmprt Change access protection of a named shared memory area

mname	string (93)	=name of named shared memory area
prot	long integer	=protection mask to set on nsm
status	long integer	=returned result of operation

__setmuic Set named memory area UIC

mname	string (93)	=name of named shared memory area
uic	long integer	=owner to set on nsm
status	long integer	=returned result of operation

__setpnam Change process name

pid	long integer	=process ID
pname	string (16)	=new process name for pid
status	long integer	=returned result of operation

__setpos Set the current file position

lun	long integer	=logical unit number of open file
recnum	long integer	=record number to make current
status	long integer	=returned result of operation

_setpri Change process's priority

pid	long integer	= process ID
priort	long integer	= new priority for process
status	long integer	= returned result of operation

_setprv Set process privilege

pid	long integer	= process ID
priv	long integer	= new privilege mask to set for process

Bit name	Bit	Description
pcbpvsetpriv	0	= setpriv
pcbpvsystem	1	= system
pcbpvreadphys	2	= readphys
pcbpvwritephys	3	= writephys
pcbpvsetprior	4	= setprior
pcbpvchngsuper	5	= chngsuper
pcbpvbypass	6	= bypass
pcbpvoperator	7	= operator
pcbpvaltuic	8	= altuic
pcbpvworld	9	= world
pcbpvgroup	10	= group
	11-31	= reserved

status	long integer	= returned result of operation

_setrtm Set/clear real time mode flag

mode	long integer	= mode to set (0 = non-realtime, 1 = realtime)
status	long integer	= returned result of operation

_setrtr Assign devicenames to a rotor list

rtrlst	string[1024]	= list containing name of rotor and devices in rotor
status	long integer	= returned result of operation

_settim Set system date and time

siteid	long integer	= system ID
mstime	long integer	= most significant 32 bits of clock value

Byte	Description (msb = 0)
0, 1	= the current year (1984)
2, 3	= the day of the year (1..365 or 1..366)

lstime	long integer	= least significant 32 bits of clock value

Byte	Description (msb = 0)
0	= the hour of the day (0..23)
1	= the minute of the hour (0..59)
2	= the second of the minute (0..59)
3	= the fraction of a second (in 100ths) (0..99)

status	long integer	= returned result of operation

_settmsl Change scheduling time slice

pid	long integer	= process ID
tslice	long integer	= time slice
status	long integer	= returned result of operation

_settrp Initialize a user-defined trap

trap	long integer	= trap number
adr	long integer	= address of routine to service trap
status	long integer	= returned result of operation

_setuic Set process UIC

pid	long integer	= process ID
uic	long integer	= new owner of process
status	long integer	= returned result of operation

_shrmem Share a named shared memory area

mname	string (93)	= name of named shared memory area
adr	long integer	= logical address to locate nsm
size	long integer	= number of bytes of memory to share
retlen	long integer	= returned number of bytes actually shared
mode	long integer	= desired usage of memory area

Bit name	Bit	Description
opreadacc	0	= read access
opwriteacc	1	= write access

timout	long integer	= time out
status	long integer	= returned result of operation

_siodst Set device status with lun

lun	long integer	= logical unit number of open file
dstat	pointer	= buffer containing device status to set
status	long integer	= returned result of operation

_skip Position a tape

dname	string (93)	= devicename
stype	long integer	= type of skip to perform

Name	Value	Description
skipfile	0	= skip file marks
skipbot	1	= skip to beginning of volume
skipeot	2	= skip to end of volume

units	long integer	= number of files to skip
nskip	long integer	= returned number of files actually skipped
status	long integer	= returned result of operation

_smail Send interprocess mail

pid	long integer	= process ID to send mail to
buf	pointer	= buffer containing message to send
buflen	long integer	= length of buffer containing message
status	long integer	= returned result of operation

_tranpid Translate another process's logical name

pid	long integer	= process ID
lname	string (93)	= logical name to translate
equiv	string (93)	= returned equivalence of logical name
status	long integer	= returned result of operation

_trans Translate a logical name

lname	string (93)	= logical name to translate
equiv	string (93)	= returned equivalence of logical name

_udefmem Undefine a named shared memory area

mname	string (93)	= name of named shared memory area
status	long integer	= returned result of operation

_unlock Unlock records in an open file

lun	long integer	= logical unit number of open file
recnum	long integer	= beginning record number to unlock
nrecs	long integer	= number of records to unlock
status	long integer	= returned result of operation

_ushrmem Unshare a named shared memory area

mname	string (93)	= name of named shared memory area
adr	long integer	= location in logical memory of nsm
status	long integer	= returned result of operation

_version Get the OS version banner

siteid	long integer	= system ID
buf	string (80)	= buffer to contain returned os banner
status	long integer	= returned result of operation

_wait Pause for a period of time

mstime long integer = most significant 32 bits of clock value

Byte	Description (msb = 0)
0, 1	= the current year (1984)
2, 3	= the day of the year (1..365 or 1..366)

lstime long integer = least significant 32 bits of clock value

Byte	Description (msb = 0)
0	= the hour of the day (0..23)
1	= the minute of the hour (0..59)
2	= the second of the minute (0..59)
3	= the fraction of a second (in 100ths) (0..99)

_wake Wake a hibernated process

pid	long integer	= process ID
status	long integer	= returned result of operation

_wakec Wake a hibernated process with count

pid	long integer	= process ID
status	long integer	= returned result of operation

_write Write to an open file

lun	long integer	= logical unit number of open file
recnum	long integer	= record number to write
edmode	long integer	= edit mode to use

(Least significant 16 bits indicates which edit mode processor)

Name	Value	Description
emvwriteraw	0	= raw data
	1	= reserved (must be 0)
	2	= reserved (must be 0)
emvwriteln	3	= write line for tty class devices

Most significant 16 bits contain bit flags)

Bit name	Bit	Description
	16	= reserved (must be 0)
emspccompact	17	= space compact for sync class devices
emforcedwrite	18	= forced write
emtransparent	19	= transparent mode for sync class devices
emnowaitwrite	20	= no wait on write
emlockunlock	21	= write and unlock record on disk class devices
emitbwrite	22	= itb write on sync class devices
	23-31	= reserved

timout	long integer	= time out
buf	pointer	= buffer containing data to write
nrec	long integer	= number of records to write
nrec	long integer	= number of records to write
trnsfr	long integer	= returned number of records actually written
status	long integer	= returned result of operation

_wtpmem Write physical memory

siteid	long integer	= system ID
adr	long integer	= address of physical memory to write
mode	long integer	= type of transfer (0 = byte, 1 = word, 2 = long word)
buf	pointer	= buffer containing data to write
nrec	long integer	= number of units (bytes, words, long words) to write
trnsfr	long integer	= returned number of units actually written
status	long integer	= returned result of operation

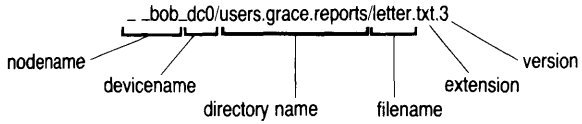
Addendum for WMCS 6.0

The information on the following pages applies only to systems running on version 6.0 of the WICAT Multi-user Control System.

Networking

The Nodename

Nodenames are required for every computer running WMCS 6.0 to uniquely identify each system in a network. Nodenames can contain up to sixteen alphanumeric characters, as well as the tilde, ~, and the dollar sign, $. The nodename is placed in front of the devicename in a file designation and is preceded by two underscores, as follows:



Remote System Calls

The following system calls are known as remote system calls because they can be executed over the network. To execute any of these system calls across a network, the NETWORK privilege must be set. To execute _clone, _crproc, or _setattr across a network, the SETATTR privilege must be set.

_alloc	_andevnt	_assign	_chdir
_clone	_close	_clrevnt	_connect
_create	_creats	_crprcs	_crproc
_dealloc	_defdprt	_defduic	_deinst
_delete	_dismnt	_duplun	_errno
_exproc	_flush	_gassign	_gengy
_getalc	_getattr	_getdnam	_getdprt
_getdst	_getduic	_getevnt	_getfcb
_getfid	_getfnam	_getfprt	_getfre
_getfrsz	_getfuic	_getglb	_getinst
_getlog	_getmlst	_getpcb	_getpid
_getpnam	_getpos	_getpri	_getprv
_getrel	_getrtr	_gettic	_gettim
_gettmsl	_getuic	_giodst	_gmail
_hibern	_install	_kclose	_kdelet
_kfind	_kflush	_kinfo	_kmovfb
_kopen	_kread	_kunlck	_kupdat
_kwrite	_lock	_mount	_mulcrps
_open	_orevnt	_origprv	_physio
_physop	_prclst	_prirat	_rdpmem
_read	_rename	_setattr	_setdprt
_setdst	_setduic	_setevnt	_setfcb
_setfid	_setfprt	_setfrsz	_setfuic
_setpnam	_setpos	_setpri	_setprv
_setrtr	_settim	_settmsl	_setuic
_siodst	_skip	_smail	_tranpid
_unlock	_version	_wake	_wakec
_write	_wtpmem		

Remote system calls can receive the following diagnostic messages:

errinsufpriv	(1)	The process lacks the privileges required to perform the operation.
errnomemavail	(7)	All available memory has been allocated.
errinvsiteid	(8)	The specified site ID does not exist.
errundefsvc	(43)	The WMCS does not recognize the SVC number used by the process.
errremotelogon	(47)	The process was not allowed to log on to the remote system.
errnodevavail	(52)	No network virtual circuits are available for this operation.
errnonodefnd	(53)	The specified node could not be found.
errnoremcrproc	(55)	Remote process creation is not allowed by the remote system.
errsiteinvalid	(57)	The site ID verification failed for the specified network node.
errdupconnect	(72)	A connect packet was received after the connection was made.
errnoconnect	(73)	An SVC packet was received before the connect packet was received.
errnotremotesvc	(75)	A packet was received for a local-execution-only SVC.
errbadpktsize	(76)	The actual packet size is not the same as the size in the header.
errnoremotemem	(78)	All available memory has been allocated on the remote system.
errwrongos	(79)	The process is incompatible with the current operating system version.
errunknowncmd	(175)	The specified device driver function code is disallowed.
errbuftosmall	(176)	The process buffer is too small for the specified operation.
errnonetbufs	(184)	Not enough network buffers are available for a remote connection.
errnositeid	(194)	The network site ID on this machine is uninitialized.
errnocallestb	(286)	Connection to a remote computer has not been established.
errcallestb	(287)	Connection to a remote computer has already been established.
errdialfailed	(291)	The dial request failed.

Additional CIP Commands

Networking Commands

nsp	Performs supervisor calls for a remote process
nstat	Displays network status
nsysprof	Manages the system network profile
nuserprof	Manages the remote user profiles

Miscellaneous Commands

crypt	Encrypts/decrypts a file based on a user key
defrag	Reorganizes disk files to make them contiguous
dumpdiff	Dumps the differences between two files
fpmgr	Manages the system's floating-point packages
keygen	Generates public/private key pair for data encryption
peek	Examines physical or logical memory
poke	Deposits data into physical or logical memory
submit	Submits processes for batch execution in background mode
swapper	Performs process swapping
typemrl	Displays linker records in a .mrl file
watchdog	Kills inactive processes
wsort	WICAT version of the sort utility

New CIP Command Syntax

Process Creation

The following process creation parameters can be specified on the command line enclosed in braces, { }.

nodename/siteid	Valid nodename or site ID
:processname =	Process name (up to 16 characters)
:privilege =	Privilege list (setpriv, system, readphys, writephys, setprior, chngsuper, bypass, operator, altuic, world, group, network, setattr, all, none)
:priority =	Priority (number from 0 to 15)
:timeslice =	Timeslice in milliseconds
:owner =	UIC or username
:attribute =	Attribute list (swappable, prezeromem, postzeromem, fastencrypt, desencrypt, watchdog, user1, user2, user3, user4)

Examples

> {_ _nodeb :prio = 2 :priv = group :owner = [22,2] :time = 100 :proc = "joe"} dir

Creates DIR.EXE on node _ _NODEB with priority 2, privilege GROUP, owner [22,2], timeslice 100, and processname JOE.

> dstat _tt3 | {:attr = fastencrypt} dispatch _ _nodeb_ds0/logs/dstat.log

Pipes output of DSTAT.EXE to DISPATCH.EXE which sends it to the file DSTAT.LOG on node _ _NODEB using fast encryption on the transfer.

Significant Characters

The significant characters <, >, >>, ^, ^ ^, can be combined on the command line to redirect input, output, and error, to a single destination.

Standard error output can be piped with standard output by combining the significant characters, |^.

Examples

> dir >^ junk.dat

Redirects both sys$output and sys$error to the file JUNK.DAT.

> &cip <^> _tt3

Starts up a CIP on terminal _TT3.

> dir >>^ ^ junk.dat

Appends sys$output and sys$error to the file JUNK.DAT.

> verify myfiles.cks |^ dispatch myfiles.dat

Pipes sys$error with sys$output to the file MYFILES.DAT.

VEW 6.0 Control-key and Escape-key Functions

Function	Control Key	Escape Key	Alt. Key
Move to top of file	[CTRL] t	[ESC][ESC] mt	
Move to end of file	[CTRL] e	[ESC][ESC] me	
Move to next page	[CTRL] p	[ESC][ESC] (n)mp	
Move to previous page	[CTRL] q	[ESC][ESC] (-n)mp	
Move to front of line	[CTRL] a	[ESC][ESC] fl	
Move to end of line	[CTRL] g	[ESC][ESC] el	
Move to next line	[CTRL] o	[ESC][ESC] (n)ml	
Move to previous line	[CTRL] w	[ESC][ESC] (-n)ml	
Move to next word	[CTRL] f	[ESC][ESC] (n)mw	
Move to previous word	[CTRL] r	[ESC][ESC] (-n)mw	
Move to next character	→	[ESC][ESC] (n)mc	
Move to previous char.	←	[ESC][ESC] (-n)mc	
Move to line/block mrk	[CTRL] x	[ESC][ESC] go	
Move up in same column	↑	[ESC][ESC] (-n)pl	
Move down in same col.	↓	[ESC][ESC] (n)pl	
Delete line/range	[CTRL] y	[ESC][ESC] (n)dl	
Delete previous line	[ESC] y	[ESC][ESC] (-n)dl	
Delete to front of line	[CTRL] u	[ESC][ESC] df	
Delete to end of line	[CTRL] d	[ESC][ESC] de	
Delete word	[CTRL] s	[ESC][ESC] (n)dw	
Delete previous word	[CTRL] b	[ESC][ESC] (-n)dw	
Delete character	[CTRL] v	[ESC][ESC] (n)dc	
Delete previous char.	[DEL]	[ESC][ESC] (-n)dc	
Delete to end of file		[ESC][ESC] dd	
Delete to top of file		[ESC][ESC] -dd	
Change to uppercase		[ESC][ESC] (n)uc	{0}
Change to lowercase		[ESC][ESC] (n)lc	{.}
Create blank line	[CTRL] n	[ESC][ESC] (n)ol	
Repeat last command	[CTRL] z	[ESC][ESC] rp	
Insert a tab character	[CTRL] i		
Insert line feed	[CTRL] j		
Insert form feed	[CTRL] l		
Insert carriage return	[CTRL] m	(use with IC)	
Insert vertical tab	[CTRL] k	(use with IC)	

Terminate command	[CTRL] c		
Restore command line	[CTRL] \		
Refresh screen	[CTRL] —	[ESC][ESC] rs	
Undo deletion/position		[ESC][ESC] ud	{PF1}
Copy lines/range		[ESC][ESC] (n)cu	{1}
Move lines/range		[ESC][ESC] (n)cd	{2}
Paste cut buffer		[ESC][ESC] (n)pa	{3}
Erase cut buffer		[ESC][ESC] ec	
Decide & switch forward		[ESC][ESC] (n)ds	{9}
Decide & switch backwd		[ESC][ESC] (-n)ds	{6}
Find & switch forward		[ESC][ESC] (n)fs	{8}
Find & switch backward		[ESC][ESC] (-n)fs	{5}
Search forward		[ESC][ESC] (n)sr	{7}
Search backward		[ESC][ESC] (-n)sr	{4}
Help display		[ESC][ESC] he	
Assign horizontal view		[ESC][ESC] hv(n)	
Assign page size		[ESC][ESC] ps(n)	
Abort the file		[ESC][ESC] ab(y)	
Abort all files		[ESC][ESC] aa	
Save the file		[ESC][ESC] sa	{,}
Exit & save the file		[ESC][ESC] ex	{–}
Exit all files		[ESC][ESC] ea	
Rename the file		[ESC][ESC] fn	
Put file		[ESC][ESC] pf	
Define macro		[ESC][ESC] dm	{PF3}
Execute macro		[ESC][ESC] (n)xm	{PF4}
Save macro to file		[ESC][ESC] sm	
Load macro from file		[ESC][ESC] lm	
Set block mark		[ESC][ESC] sb	
Delete block mark		[ESC][ESC] db	
Display block marks		[ESC][ESC] bd	
Create a CIP	[ESC] c	[ESC][ESC] cp	
Edit a new file	[CTRL] ^	[ESC][ESC] ef	
Switch to file	[CTRL]]	[ESC][ESC] sf	
Push position		[ESC][ESC] pu	
Pop position		[ESC][ESC] po	
Insert literal char.		[ESC][ESC] ic	{ENTER}
Insert file at cursor		[ESC][ESC] if	
Show status line		[ESC][ESC] ss	
Show status page		[ESC][ESC] sp	
Insert/replace mode		[ESC][ESC] ir	
Upper/lowercase flag		[ESC][ESC] ul	
Specify right margin		[ESC][ESC] rm	
Set tab width		[ESC][ESC] tw	
Side scroll width		[ESC][ESC] sw	
Define range		[ESC][ESC] dr	{PF2}
Define word delimiters		[ESC][ESC] wo	
Auto indention		[ESC][ESC] ai	
Autosave time		[ESC][ESC] at	
Autosave count		[ESC][ESC] ac	
Toggle Silent Mode		[ESC][ESC] ts	

Set Up Files for VEW 6.0

Feature	Key Function	MG8000 T7000 WIT	TVI912C	VT52 VT100 VISUAL200
No. of lines on the screen		24*	24	24
No. of characters on a line		80	80	80
Direct cursor addressing		255	27 61	27 89
X or Y first, disp to add		Y 255	Y 32 32	Y 32 32
Device status control bits	xxxx001x10011100		xxxx0xxx10011110	xxxx0xxx10011100
Erase to end of line		27 91 75	27 84	27 120
Erase to end of screen		27 91 74	27 89	27 121
Scroll down from home		27 77	27 69	27 73
VEW command line terminator		13	13	13
Newline command	[CTRL] m	13	13	13
Move to top of file	[CTRL] t	20	20	20
Move to end of file	[CTRL] e	5	5	5
Move to next page	[CTRL] p	16	16	16
Move to previous page	[CTRL] h	8	17	8
Move to front of next line	[CTRL] o	15	15	15
Move to previous line	[CTRL] w	23	23	23
Move up in same column	<up>	27 91 65	11	27 65
Move down in same column	<down>	27 91 66	10	27 66
Move to front of line	[CTRL] a	1	1	1
Move to end of line	[CTRL] g	7	7	7
Move to front of next word	[CTRL] f	6	6	6
Move to end of previous word	[CTRL] r	18	18	18
Move to next character	<right>	27 91 67	12	27 67
Move to previous character	<left>	27 91 68	8	27 68
Create blank line	[CTRL] n	14	14	14
Delete current line	[CTRL] y	25	25	25
Delete to end of line	[CTRL] d	4	4	4
Delete to front of line	[CTRL] u	21	21	21
Delete current word	[CTRL] k	11	19	11
Delete previous word	[CTRL] b	2	2	2
Delete current character	[CTRL] v	22	22	22
Delete previous character	[DEL]	127	127	127
Refresh screen	[CTRL] _	31	31	31
Recall the last command line	[CTRL] \	28	28	28
Abort current function	[CTRL] c	3	3	3
Start sequence	[ESC] =	27 61 27 91 63 104	0	27 61
End sequence	[ESC] >	27 62 27 91 63 108 13 10	13 10	27 62 13 10
sys$disk/syslib.setup/vew<terminalname>.hlp				
Delete current line		27 91 77	27 82	27 77
Insert a line		27 91 76	27 69	27 76
Delete a character		27 91 80	0	27 79
Begin insert character mode		27 91 52 104	0	27 105
End insert character mode		27 91 52 108	0	27 106
Begin highlight		27 91 55 59 50 109	27 106	27 52

End highlight		27 91 48 109	27 107	27 51
Continue execution of Interpretive Pascal		29	29	29
Execute next statement for Int. Pascal		10	30	10
SYS$DISK/PASCAL.INTERP/GENERIC.HLP				
Startup filename				
Go to command line	[ESC][ESC]	27 27	27 27	27 27
Insert character	{ENTER}	27 79 77	0	27 63 77
Delete previous line	[ESC] y	27 121	27 121	27 121
Copy data to cut buffer	{1}	27 79 113		27 63 113
Paste data	{3}	27 79 115		27 63 115
Decide and switch forward	{9}	27 79 121		27 63 121
Decide and switch backward	{6}	27 79 118		27 63 118
Find and switch forward	{8}	27 79 120		27 63 120
Find and switch backward	{5}	27 79 119		27 63 119
Search forward	{7}	27 79 119		27 63 119
Search backward	{4}	27 79 116		27 63 116
Help display				
Set horizontal view				
Set page size				
Abort current file				
Save a copy of this file	{,}	27 79 108		27 63 108
Exit and save the file	{-}	27 79 109		27 63 109
Rename the file				
Insert file				
Toggle status line display				
Toggle insert/replace modes				
Toggle case distinction				
Create a CIP	[ESC] c	27 99	27 99	27 99
Define macro	{PF3}	27 79 82		27 82
Execute macro	{PF4}	27 79 83		27 32
Save macro				
Load macro				
Define range	{PF2}	27 79 81		27 81
Move to cut buffer	{2}	27 79 114		27 63 114
Show status page				
Go to line/block mark	[CTRL] x	24	24	24
Put file				
Delete to end of file				
Delete to beginning of file				
Edit file	[CTRL] ^	30	30	30
Switch to another file	[CTRL]]	29	29	29
Sidescroll width				
Map forward to uppercase	{0}	27 79 112		27 63 112
Map forward to lowercase	{.}	27 79 110		27 63 110
Define word delimiters				
Erase cut buffer				
Repeat last command	[CTRL] z	26	26	26
Exit all files				
Tab width				
Push position				
Pop position				
Toggle silent mode				
Undo the last command	{PF1}	27 79 80		27 80
Define right margin				
Abort all files				
Set block mark				
Delete block mark				
Display block mark				
Auto indention				

Set autosave time interval
Set autosave count interval

*WIT terminals have 30 lines on the screen.

Additional Diagnostic Messages

No.	Hex	Message
45	2D	This item is not implemented yet.
46	2E	The spawned child has terminated.
47	2F	The process was not allowed to logon to the remote system.
52	34	No network virtual circuits are available for this operation.
53	35	The specified node could not be found.
54	36	The originator process has been aborted.
55	37	Remote process creation is not allowed by the remote system.
57	39	The site ID verification failed for the specified network node.
61	3D	An invalid value was specified.
62	3E	The process was killed because of a SWAPPER I/O error.
63	3F	(Floating point diagnostic) illegal FFP instruction.
71	47	This operation is not allowed on a SURROGATE process.
72	48	A connect packet was received after the connection was made.
73	49	A SVC packet was received before the connect packet was received.
74	4A	The disconnect packet was not from the originator process.
75	4B	A packet was received for a local-execution-only SVC.
76	4C	The actual packet size is not the same as the size in the header.
77	4D	The reply packet SVC is not the same as the size in the header.
78	4E	All available memory has been allocated on the remote system.
79	4F	The process is incompatible with the current operating system version.
83	53	Process killed because of a queue restart request.
163	A3	The request cannot cross machine boundaries.
170	AA	Operator privilege is required in order to change a network window size.
171	AB	The operation is inappropriate for physical devices in the network class.
172	AC	An error occurred in doing Huffman decompression on the network data.
182	B6	The user's write request is too large to fit in the system buffers.
184	B8	Not enough network buffers are available for a remote connection.
187	BB	The WMCS cannot extend the FCB file.
193	C1	The specified tape density is not 800, 1600, 3200, 6250, or 6400 BPI.
194	C2	The network site ID on this machine is uninitialized.
195	C3	The network nodename on this machine is uninitialized.
318	13E	The SCSI port is already busy on select.
319	13F	No SCSI request after select.
320	140	The SCSI controller is in the wrong phase.

321	141	Error detected while requesting SCSI error status.
322	142	SCSI port hardware error.
323	143	SCSI error detected with no error status.
324	144	No index signal.
325	145	No track zero.
326	146	Multiple Winchester drives selected.
423	1A7	The process was terminated with an error.
424	1A8	The lower bound of the range is greater than the upper bound.
425	1A9	The specified range falls outside the allowable range.
426	1AA	The keys are not consecutive; a :keyN= switch has been skipped.
427	1AB	The FIELD= modifier cannot be used with binary type fields.
428	1AC	The IGNORELEADING = modifier cannot be used with binary type fields.
429	1AD	The STARTAT= modifier must be on a byte boundary.
430	1AE	The ENDAT= modifier must be on a byte boundary.
431	1AF	The OFFSET= modifier must be on a byte boundary.
432	1B0	The sort key requires the field to start on a byte boundary.
433	1B1	The sort key requires the length to be a multiple of bytes.
434	1B2	The sum of STARTAT= + OFFSET= modifiers must be positive.
435	1B3	The STARTAT= modifier must be a positive integer.
436	1B4	The OFFSET= modifier must be a positive integer.
437	1B5	The ENDAT= modifier must be a positive integer.
438	1B6	The LENGTH= modifier must be a positive integer.
439	1B7	The FIELD= modifier must be a positive integer.
440	1B8	The :RECORDLEN= switch must be a positive integer.
441	1B9	The :MEMORY= switch must be a positive integer.
442	1BA	The :MAXRECORDLEN= switch must be a positive integer.
443	1BB	A field must be at least one bit wide (STARTAT= + LENGTH= > ENDAT=).
444	1BC	The field is not big enough for the given length (LENGTH= > ENDAT=).
445	1BD	A length must be specified.
446	1BE	The key length must be <= 32 bits for BINARY or BIT.
447	1CF	The key length must be <= 64 bits for FLOATINGPOINT or REAL.
448	1C0	FLOATINGPOINT or REAL must have a length of 32 or 64 bits.
449	1C1	A text file cannot have a record length greater than one (1) byte.
450	1C2	The delimiter= modifier is required when field= is specified.
451	1C3	The pattern is too complex.
452	1C4	The extension is not recognized.
453	1C5	The :attribute= switch did not match SWAPPABLE,DESENCRYPT,...
454	1C6	The username/password cannot be validated.
455	1C7	The data checksum is not valid.
456	1C8	Error(s) occurred during assembly.
457	1C9	The terminal type is unsupported by this utility.
458	1CA	The data read is inconsistent, invalid, or has missing bytes.

Additional WMCS System Calls

_clone Create a new process by cloning an existing process

pid	long integer	= process ID of the process to be cloned
pname	string (16)	= name to be assigned to new process
priv	long integer	= privilege mask to be assigned to process

Bit name	Bit	Description
pcbpvsetpriv	0	= setpriv
pcbpvsystem	1	= system
pcbpvreadphys	2	= readphys
pcbpvwritephys	3	= writephys
pcbpvsetprior	4	= setprior
pcbpvchngsuper	5	= chngsuper
pcbpvbypass	6	= bypass
pcbpvoperator	7	= operator
pcbpvaltuic	8	= altuic
pcbpvworld	9	= world
pcbpvgroup	10	= group
pcbpvnetwork	11	= network
pcbpvsetattr	12	= setattr
	13-31	= reserved

priort	long integer	= priority to be assigned to process
tslice	long integer	= time slice to be assigned to process
uic	long integer	= user identification code to be assigned to process
sysin	string (93)	= standard input file
sysout	string (93)	= standard output file
syserr	string (93)	= standard error file
cmd	pointer	= command line to be passed to process
cmdlen	long integer	= length of command line
chpid	long integer	= returned process ID of child process
ccode	long integer	= condition code returned from process
status	long integer	= returned result of operation

_connect Make a connection to a remote machine

siteid	long integer	= site ID of system to be connected to
status	long integer	= returned result of operation

_dconall Disconnect all remote connections this process has

status	long integer	= returned result of operation

_dconidle Disconnect idle remote connections

status	long integer	= returned result of operation

_disconn Break a connection to a remote machine

siteid	long integer	= site ID of system to break connection with
status	long integer	= returned result of operation

_duplun Duplicate a logical unit number of a file

lun	long integer	= logical unit number to duplicate
newlun	long integer	= new duplicate logical unit number
status	long integer	= returned result of operation

_getattr Get PCB attribute bits

pid	long integer	= process ID
attr	long integer	= process attributes

Bit name	Bit	Description
pcbattrdesencrypt	16	= network encryption with DES algorithm
pcbattrfastencrypt	17	= network encryption with fast algorithm
pcbattrswappable	28	= OS will not swap this process
pcbattrprezeromem	29	= pages of memory are zeroed as allocated
pcbattrpostzeromem	30	= pages of memory are zeroed as released
pcbattrforceset	31	= modify the bits

status	long integer	= returned result of operation

_getexit Get the address of the current exit handler

adr	long integer	= address to store exit handler address

_getfrsz Get file record size

lun	long integer	= logical unit number of the open file
result	long integer	= file record size
status	long integer	= returned result of operation

_getnnam Get nodename from site ID

siteid	long integer	= site ID for the nodename
nname	string (93)	= returned nodename
status	long integer	= returned result of operation

_getnsid Get site ID from nodename

nname	string (93)	= nodename
siteid	long integer	= returned site ID
status	long integer	= returned result of operation

_pidlst Return a list of all known process ID numbers

siteid	long integer	= system ID
pidlst	pointer	= process ID buffer
len	long integer	= length of pidlst buffer
retlen	long integer	= number of process IDs returned
total	long integer	= total number of process IDs
status	long integer	= returned result of operation

_rnidlst Return a list of all known remote ID numbers

rnidlst	pointer	= remote network ID buffer
len	long integer	= length of rnidlst buffer
retlen	long integer	= number of remote network IDs returned
total	long integer	= total number of remote network IDs

_rsidlst Return a list of all known site IDs for a remote network

rnid	long integer	= remote network ID
sidlst	pointer	= site ID buffer
len	long integer	= length of sidlst buffer

retlen long integer = number of site IDs returned
total long integer = total number of site IDs

_setattr Set PCB attribute bits

pid long integer = process ID
attr long integer = new attributes

Bit name	Bit	Description
pcbattrdesencrypt	16	= network encryption with DES algorithm
pcbattrfastencrypt	17	= network encryption with fast algorithm
pcbattrswappable	28	= OS will not swap this process
pcbattrprezeromem	29	= pages of memory are zeroed as allocated
pcbattrpostzeromem	30	= pages of memory are zeroed as released
pcbattrforceset	31	= modify the bits

status long integer = returned result of operation

_setfrsz Set file record size

lun long integer = logical unit number of the file
newrsz long integer = new record size
status long integer = returned result of operation

_sidlst Return a list of all known site ID numbers

sidlst pointer = site ID buffer
len long integer = length of sidlst buffer
retlen long integer = number of site IDs returned
total long integer = total number of site IDs

ASCII CHART

		CHR	OCT	DEC	HEX	CHR	OCT	DEC	HEX
^	@	NUL	000	000	00	@	100	064	40
^	A	SOH	001	001	01	A	101	065	41
^	B	STX	002	002	02	B	102	066	42
^	C	ETX	003	003	03	C	103	067	43
^	D	EOT	004	004	04	D	104	068	44
^	E	ENQ	005	005	05	E	105	069	45
^	F	ACK	006	006	06	F	106	070	46
^	G	BEL	007	007	07	G	107	071	47
^	H	BS	010	008	08	H	110	072	48
^	I	HT	011	009	09	I	111	073	49
^	J	LF	012	010	0A	J	112	074	4A
^	K	VT	013	011	0B	K	113	075	4B
^	L	FF	014	012	0C	L	114	076	4C
^	M	CR	015	013	0D	M	115	077	4D
^	N	SO	016	014	0E	N	116	078	4E
^	O	SI	017	015	0F	O	117	079	4F
^	P	DLE	020	016	10	P	120	080	50
^	Q	DC1	021	017	11	Q	121	081	51
^	R	DC2	022	018	12	R	122	082	52
^	S	DC3	023	019	13	S	123	083	53
^	T	DC4	024	020	14	T	124	084	54
^	U	NAK	025	021	15	U	125	085	55
^	V	SYN	026	022	16	V	126	086	56
^	W	ETB	027	023	17	W	127	087	57
^	X	CAN	030	024	18	X	130	088	58
^	Y	EM	031	025	19	Y	131	089	59
^	Z	SUB	032	026	1A	Z	132	090	5A
^	[	ESC	033	027	1B	[	133	091	5B
^	\	FS	034	028	1C	\	134	092	5C
^	]	GS	035	029	1D	]	135	093	5D
^	^	RS	036	030	1E	^	136	094	5E
^	_	US	037	031	1F	_	137	095	5F
		SP	040	032	20	`	140	096	60
		!	041	033	21	a	141	097	61
		"	042	034	22	b	142	098	62
		#	043	035	23	c	143	099	63
		$	044	036	24	d	144	100	64
		%	045	037	25	e	145	101	65
		&	046	038	26	f	146	102	66
		'	047	039	27	g	147	103	67
		(	050	040	28	h	150	104	68
		)	051	041	29	i	151	105	69
		*	052	042	2A	j	152	106	6A
		+	053	043	2B	k	153	107	6B
		,	054	044	2C	l	154	108	6C
		-	055	045	2D	m	155	109	6D
		.	056	046	2E	n	156	110	6E
		/	057	047	2F	o	157	111	6F
		0	060	048	30	p	160	112	70
		1	061	049	31	q	161	113	71
		2	062	050	32	r	162	114	72
		3	063	051	33	s	163	115	73
		4	064	052	34	t	164	116	74
		5	065	053	35	u	165	117	75
		6	066	054	36	v	166	118	76
		7	067	055	37	w	167	119	77
		8	070	056	38	x	170	120	78
		9	071	057	39	y	171	121	79
		:	072	058	3A	z	172	122	7A
		;	073	059	3B	{	173	123	7B
		<	074	060	3C	|	174	124	7C
		=	075	061	3D	}	175	125	7D
		>	076	062	3E	~	176	126	7E
		?	077	063	3F	DEL	177	127	7F