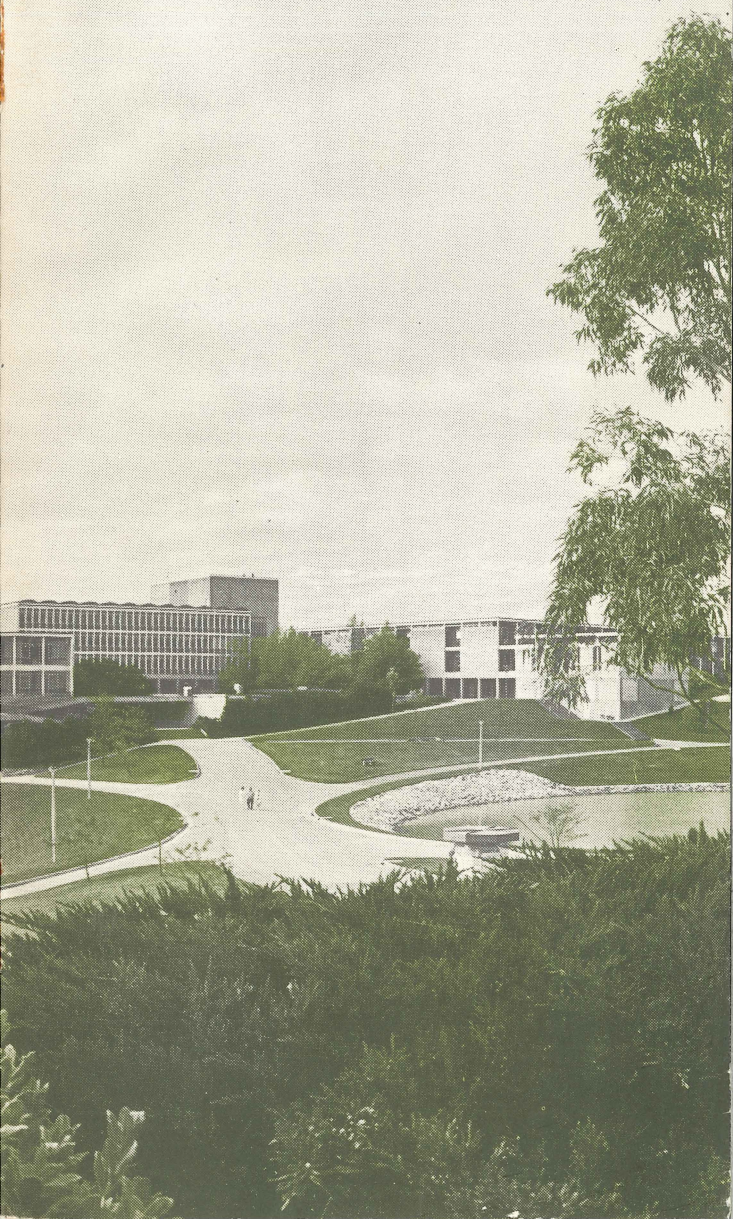


GRAHAM REES
DEC-SYSTEM-10
Reference
Booklet





C O N T E N T S

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OPERATING SYSTEM COMMANDS

This section is to be used in conjunction with the "Operating System Commands" section of the **DECsystem-10 Users Handbook**, Second Edition.

Format

The first part of this section defines certain conventions.

The second part contains an alphabetical list of operating system commands including format, and a brief explanation of what function the command serves.

A plus sign (+) following a command denotes that a /H switch exists to provide on-line information concerning that command. The format for the use of the /H switch is:

COMMAND /H

The portion of the command in boldface type is the legal abbreviation for the command and may be used in place of entire command.

Example:

EX dev:file.ext[p,pn] /S
may be used in place of
EXECUTE dev:file.ext[p,pn] /S

In most of the commands where "dev:" is used, a logical device name can be substituted.

Conventions

dev:	Any physical device name. DSK: is usually the default if no device is specified.
[p,pn]	a designation identifying a particular project, programmer number.
file.ext	any legal filename from one to six characters followed by a dot and an extension of zero to three characters.
jobn	number assigned to a job by the system.
jobname	a name of up to six characters of a job entered into one of the system queues.

logdev:	any logical device name from one to six alphanumeric characters.
<nnn>	three digit octal code indicating the protection of a file.
prog	a program name of six or fewer characters.
/S	one or more switches used to modify the command string.

COMMANDS

ASSIGN	ASSIGN dev: logdev: Allocates an I/O device to the user's job without operator intervention.
BACKSPACE	BACKSPACE dev: x FILES BACKSPACE dev: x RECORDS Spaces a magnetic tape backward the specified number of files or records.
CLOSE	CLOSE dev: Terminates I/O currently in progress on the specified device, but does not release the device.
COMPILE	COMPILE dev: file.ext[p,pn] /S Produces relocatable binary files. (.REL files) for the specified source files.
CONTINUE	CONTINUE Continues the program from the point at which it was interrupted.
COPY	COPY dev:file.ext[p,pn] <nnn> = dev:file.ext[p,pn] Transfers files from one I/O device to another.
CORE	COREn Types or modifies the amount of core assigned to the user's job.
CREATE	CREATE file.ext Opens a new file on disk for creation with QEDIT.
CREF	CREF Lists on LPT: any cross-referenced listing files generated by a previous COMPILE, LOAD, EXECUTE, or DEBUG command.
DAYTIME	DAYTIME Types the current date followed by the time of day.

DDT	Copies the saved program counter and starts the program at the beginning address of DDT.
DEASSIGN	DEASSIGN dev: Returns devices assigned to user's job to the monitor's pool of available devices and clears logical names.
DEBUG	DEBUG dev: file.ext[p,pn]/S Produces relocatable binary files (.REL files) for the specified source files, loads the .REL files, and prepares for debugging with DDT.
DELETE	DELETE dev: file.ext[p,pn] Deletes files from disk.
DIRECT +	DIRECT dev:file.ext[p,pn] = dev:file.ext[p,pn]/S Lists the directory entries for the specified arguments,
DISMOUNT +	DISMOUNT dev:/S Returns, via the operator, devices assigned to the user's job to the monitors pool of available devices.
DSK	DSK jobn Types disk usage for all structures of the specified job.
DUMP	DUMP/S Writes a core image file and analyzes the file written in order to provide printable output.
EDIT	EDIT file.ext Opens the specified file already existing on disk for editing with QEDIT.
EOF	EOF dev: Writes an end-of-file mark on the specified magnetic tape.
EXECUTE	EXECUTE dev:file.ext[p,pn]/S Produces relocatable binary files (.REL files) for the specified source files, loads the .REL files, and begins execution.
FILCOM +	R FILCOM Compares two versions of a file and outputs any differences.
GET	GET dev:file.ext[p,pn] core Loads a core image from the specified device, but does not begin execution.
GRIPE	R GRIPE Accepts text from a user and records it in a disk file for the operations staff

HALT

↑C

Stops the job and stores the program counter in the job data area.

HELP

HELP prog

Outputs useful documentation on various system features. The "prog" is optional. The command HELP without a specific program specified will print a listing on how to use the HELP command as well as a list of all system commands that have HELP files.

KJOB

KJOB logfile=file structure /S

The KJOB monitor command is used to terminate the terminal session. Code letters, called switches, associated with this command control file disposition. The most common form of this command is:

KJOB/S

where "S" is a valid KJOB switch. There are twelve valid switches the most commonly used ones being:

- /F** fast logout-leaves all files on disk.
- /H** types information on valid KJOB switches.
- /I** to individually determine disposition of files — see reference text.
- /U** same as /I but automatically preserves files already preserved.

If the user attempts to KJOB when his files occupy more space than his logged-out quota allows, the following message will be printed:

? name LOGGED OUT QUOTA m
exceeded by n BLOCKS

This message indicates that on the structure "name" the user has a logged-out quota of "m" blocks and has files that occupy "m" + "n" blocks of disk space. Following this message, the user will be prompted to confirm the KJOB command.

The user can then elect what he wishes to do. The /I switch is commonly used to allow disposition of individual files. Alternatively a ↑C will put the job back in monitor mode and permit DIRECT and DELETE commands to be performed.

LOAD

LOAD. dev:file.ext[p,pn] /S

Produces relocatable binary files (.REL files) for the specified files and loads the .REL files generated.

LOCATE	LOCATE nn Establishes the user's job at the specified station																
LOGIN	LOGIN project, programmer number Gains access to the system.																
MAKE	MAKE dev: file. ext [p,pn] Opens a new file on disk for creation with TECO.																
MAKLIB	R MAKLIB Updates libraries of relocatable binary files (.REL files).																
MOUNT +	MOUNT dev: logdev/S Allocates an I/O device to the user's job via the operator.																
PJOB	PJOB Outputs the job number to which the terminal is currently attached.																
PLOT	PLOT jobname=dev:file.ext[p,pn]/S Places entries into the plotter output spooling queue.																
PRESERVE	PRESERVE file.ext, file.ext Renames the specified files with the standard protection inclusively ORed with 100.																
PRINT	PRINT jobname=dev:file.ext[p,pn]/S Places entries into the printer output spooling queue.																
PROTECT	<p>PROTECT file <xyz> Where x is the protection code associated with this p, pn; y is the protection code associated with all other programmers under this project, and z is all other accounts. The access protection codes are:</p> <table> <tr><td>7</td><td>No access permitted</td></tr> <tr><td>6</td><td>Execute only</td></tr> <tr><td>5</td><td>Execute and read</td></tr> <tr><td>4</td><td>5 priv. and append</td></tr> <tr><td>3</td><td>4 priv. and update</td></tr> <tr><td>2</td><td>3 priv. and write</td></tr> <tr><td>1</td><td>2 priv. and rename</td></tr> <tr><td>0</td><td>1 priv. and change protection.</td></tr> </table> <p>The default protection is 057 which means the owner has free access to the file (0), and all others with the same project number may read and execute the file (5), and the public has no access privileges at all (7).</p>	7	No access permitted	6	Execute only	5	Execute and read	4	5 priv. and append	3	4 priv. and update	2	3 priv. and write	1	2 priv. and rename	0	1 priv. and change protection.
7	No access permitted																
6	Execute only																
5	Execute and read																
4	5 priv. and append																
3	4 priv. and update																
2	3 priv. and write																
1	2 priv. and rename																
0	1 priv. and change protection.																
QUOLST	R QUOLST Types the used, logged-in quota, and logged-out quota for each file structure for which the user has access, followed by the number of free blocks left on that structure.																

R	R file.ext core Loads a core image from the system device (SYS:) and starts it at the location specified within the file.
RENAME	RENAME new=old, new-old, ... Changes one or more items of the file specification of files on disk.
RESOURCES	RESOURCES Outputs the name of all available devices (except for TTY's and PTY's), all file structures, and all physical units not in file structures.
REWIND	REWIND dev: Rewinds a magnetic tape.
RUN	RUN dev: file.ext[p,pn] core Loads a core image from the specified device and starts it at the location specified within the file.
SAVE	SAVE dev: file.ext[p,pn] core Writes a core image of the user's core area on the specified device.
SEND	SEND dev: text SEND JOB n text Provides a one-way interconsole line of communication.
SET BLOCK-SIZE	SET BLOCKSIZE dev: nnnn Sets the default blocksize for the specified magnetic tape.
SET DENSITY	SET DENSITY dev:nnn Sets the default density for the specified magnetic tape.
SETSRC	R SETSRC Manipulates the job's search list.
SET TTY	SET TTY NO arg SET TTY arg Sets properties to be associated with the terminal.
SKIP	SKIP dev:x FILES SKIP dev:x RECORDS SKIP dev: EOT Moves the specified magnetic tape forward the designated number of files or records or to the logical end of the tape.
SSAVE	SSAVE dev: file.ext [p,pn] core Writes a core image of the user's core area on the specified device with the high segment being sharable when it is loaded with a GET command.

START	START adr Begins execution of a program either previously loaded with the GET command or interrupted.
SUBMIT	SUBMIT jobname=control file, log file/S Modifies entries in Batch input queue.
SYSTAT +	SYSTAT/S Prints system information about the current system.
TECO	TECO dev:file.ext[p,pn] Opens the specified file that already exists for editing with TECO.
TIME	TIME jobn Outputs the running time for the specified job.
TTY	TTY NO arg TTY arg Sets properties to be associated with the terminal.
TYPE	TYPE def:file [p,pn] /S Types the specified files on the user's terminal.
WHERE	WHERE dev: Outputs the station number at which the specified device is located.
ZERO	ZERO dev:[p,pn] Clears the directory of the specified device.

QEDIT

This section contains a summary of the most frequently used **QEDIT** commands.

Where '/' is shown as a string delimiter in the following commands, any character not occurring in the string (other than '+' and '-') may be used.

The range of execution of a command is defined in three ways:

- (1) $\pm n$ meaning for the next n lines towards the top (-) or bottom (+) of the file.
- (2) \pm /string/ meaning towards the top (-) or bottom (+) of the file until "string" is found.
- (3) * (in place of $\pm n$) implies all lines to end of file i.e. ***END.

ALLCHANGE $\pm n$ /string1/string2/

change all occurrences of string1 to string2 on each line over the indicated range.

APPEND $\pm n$ /string/

append the string to the end of each line over the indicated range.

BOTTOM

move the line pointer to ***END.

CHANGE $\pm n$ /string1/string2/

change the first occurrence of string1 to string2 on each line over the indicated range.

DELETE $\pm n$ or +/string/

delete each line over indicated range.

DINSERT $\pm n$ or \pm /string/

perform delete as above, move up one line, type it and enter input mode.

DISPLAY $\pm n$ or \pm /string/

type out each line over the indicated range. Output will pause when screen is full or when form feed is output. See PAGELINES command. Display continued by <CR.>

EXIT

return to monitor mode leaving all files as they were before the edit.

FILE filename (optional)

write the entire edited text onto file being edited or the filename given, rename old copy to .BAK. Return to monitor mode.

GET filename

insert the contents of filename after the current line leaving the line pointer at the last line of inserted text.

INSERT text (optional)

either enter input mode or insert given line after current line.

LABEL \pm label +n

find first line with 'label' starting in column 1 move pointer n lines in given direction. (Most useful in MACRO or COBOL edits).

LOCATE \pm m /string/

find the line containing the mth occurrence of the given string.

NEXT \pm n

move the pointer n lines through the text.

PAGELINES m

set size of screen page on a display terminal to m lines. See DISPLAY command.

PRINT \pm n or \pm /string/

type out each line over the indicated range.

PUT \pm n filename or \pm /string/ filename

starting with the current line, write all lines over indicated range into the named file, close it, and leave pointer at last line output.

REPLACE text

replace the current line with the given text.

SAVE filename (optional)

write the entire edited text onto file being edited or the filename given, rename old copy to 'BAK'.

STATEMENT \pm label \pm n

find the first line with 'label' in columns 1 to 5 with leading or trailing spaces, then move pointer n lines in the given direction. (Most useful in FORTRAN file edits.)

TOP

move line pointer to ***TOP.

UP N

move line pointer up n lines towards ***TOP.

DEC-10 FORTRAN

This section is to be used in conjunction with the "FORTRAN IV Programmers Reference Manual".

The information in this section pertains to the F10 compiler and the FOROTS runtime system.

FILE SPECIFICATIONS

All information in the DEC-10 is stored as files. A file specification has the format

dev:file.ext[p,pn]

'dev' is a device; default: disk (DSK). 'file' is a one to six character file name.

'ext' is an optional one to three character extension. These extensions have special meaning for FORTRAN users:

EXTENSION	MEANING
.CDR	Card reader file
.CRF	input for CREF program (for cross-referenced listing)
.DAT	data file
.FOR	FORTRAN source program
.LPT	line printer file
.LST	compiler listing of program
.MAP	loader map
.PLT	plotter data
.REL	relocatable compiler output
.SAV	core image file
.EXE	core image file

'[p,pn]' is a project programmer number identifying the disk area in which the file is stored; default: the current user. In the remainder of this card, whenever the term 'file.ext' is used, a complete file specification may be supplied.

FORTRAN JOB CONTROL

Monitor Commands

.COMPILE file.ext.	compile the source program stored on file.ext if no REL file exists or if the REL file is older than the source.
.LOAD file.ext	compile and load the REL file into core.
.EXECUTE file.ext.	compile, load, and execute the program.
.SAVE file.ext	save a copy of the current core image
.RUN file.ext	run a SAVED program.

Compiler switches

A compiler switch is specified in a COMPILE, LOAD, or EXECUTE command immediately following the filename to which it refers.

- | | |
|-----|--|
| (I) | treat all statements with a D in column 1 as normal FORTRAN statements. When (I) is not specified, those statements are treated as comments. |
| (M) | include machine language code in the source listing. |

Basic COMPIL Switches

A COMPIL switch is used in a COMPILE, LOAD, or EXECUTE command.

- | | |
|----------|--|
| /COMPILE | force compilation. |
| /CREF | use with the CREF program to produce a cross-referenced listing. |
| /LIST | generate a compiler listing. |
| /MAP | generate a file containing a loader map. |

Basic Batch Control Cards

- | | |
|------------------|---|
| \$FORTRAN | precedes a FORTRAN source deck. Compiles the program and generates a source listing. Compiler switches may be included. Example: \$FORTRAN(M) |
| \$DATA | follows a FORTRAN source deck; executes the program. Place any data cards read by the program after the \$DATA card. |
| \$DECK file.ext. | store following cards (up to next \$card) on a permanent disk file. /SUPPRESS:OFF switch can be used to retain trailing blanks. |

Switches for use on \$FORTRAN card:

- | | |
|---------|---|
| /CREF | generate a cross-referenced source listing instead of the normal source listing. Automatically runs the CREF program. |
| /NOLIST | suppress the source listing that is normally generated. |
| /MAP | generate a loader map on a line printer file. (May also be used with \$DATA). |

See Chapter 3 (Batch System Commands) of the "Operating System Commands" section of the DECsystem-10 Users Handbook for more information on batch control cards and for sample deck setups.

Available Devices

name	device	unit number defaults
CDR	card reader	5 (batch)
DSK	disk	1-4, 8-30
LPT	line printer	6 (batch)
MTA	magnetic tape	
PLT	plotter	
TTY	terminal	5,6 (timesharing)

Overriding Default Device Assignments.

The following monitor commands change the default device assignments; 'dev' is a device name, 'unit' is a FORTRAN unit number (1-30), 'n' is a number.

.ASSIGN dev: unit

assigns unit number to a device. Cannot be used to allocate or mount a tape or card reader or line printer.
Example: **.ASSIGN DSK 3**

.MOUNT dev:unit/WE/REEL:reel-no

.MOUNT dev:unit/RO/REEL:reel-no

mounts specified tape and assigns a unit number to it.
/WE specifies write enable; /RO specifies read only.

DSK Data File Names

Names are of the form FORnn.DAT where 'nn' is the two digit unit number specified in a READ or WRITE statement.
EXAMPLES:

READ(1,15)A,B,C reads file FOR01.DAT

WRITE(12,15)A,B,C writes file FOR12.DAT

It is recommended that users call OPEN and CLOSE routines to provide name linkage with device.

CDR Data Files

CDR file names are of the form xxx.CDR ('xxx' is a maximum of three characters). To access a CDR file, ASSIGN a unit number to CDR and issue the monitor command,

SET CDR xxx

to specify the desired file. Example:

.ASSIGN CDR 3

.SET CDR ABC

enables file ABC.CDR to be read from unit 3. For batch jobs, data following a \$DATA card is automatically stored on a CDR file and a SET CDR command issued. In this case no intervention from the batch user is required.

LPT, and PLT Output Files

Output to the line printer and plotter is written onto a disk file with an extension corresponding to the device name. These files may be entered into an output queue explicitly via the monitor commands.

QUEUE dev:=file.ext.
 PRINT file.ext.
 PLOT file.ext.

or implicitly with the monitor command.

KJOB/S

They are automatically queued by the KJOB command generated for batch jobs. No files are queued by the K/F command.

Data File Conventions

Formatted Data Files (ASCII)

Variable length records allowed for all I/O except
RANDOM ACCESS.

Unformatted Data Files (Binary)

Maximum record size: limited only by available core. Variable length records allowed for all I/O except RANDOM ACCESS. Each record occupies at least one block of storage.

FORTRAN STATEMENTS

The following notations are used in the FORTRAN statements listed below:

arg	constant, variable, array, or expression
array	array name
block	COMMON block name
format	format statement number
i	integer variable
k	integer expression
list	list of variable names and/or array names
ltr	a letter
lx	logical expression
n	integer constant
name	subroutine or function name
namelist	NAMELIST name
sn	statement number
specification	a FORMAT specification
statement	any executable FORTRAN statement
type	one of the following INTEGER, REAL, DOUBLE PRECISION, COMPLEX, LOGICAL,
v	variable or array element.
values	list of constants
var	variable name
x	numeric expression

Control and Assignment Statements

ASSIGN sn TO var
 CALL name (arg, arg, ...)
 CONTINUE
 DO sn i=k, k, k
 GO TO sn
 (1) GO TO var
 (1) GO TO var, (sn, sn, ...)
 GO TO (sn, sn, ...), i
 IF (x) sn, sn, sn
 IF (lx) statement
 PAUSE
 RETURN
 RETURN i
 STOP
 v=x
 v= lx

(1) For this statement, var must be defined in an ASSIGN statement.

Data Transmission Statements.

- (2) ACCEPT format, list
- (2) BACKSPACE unit
- DECODE (k, format, array) list
- (2) END FILE unit
- ENCODE (k, format, array) list
- PRINT format
- PRINT format, list
- READ format, list
- READ (unit, format) list
- READ (unit) list
- (3) READ (unit # n) list
- READ (unit, namelist)
- (3) READ (unit # n, format) list
- READ (unit, format, END=sn, ERR=sn) list
- READ (unit, format, END=sn) list
- READ (unit, format, ERR=sn) list
- REREAD format, list
- REWIND unit
- (2) SKIP RECORD UNIT
- TYPE format
- TYPE format, list
- WRITE (unit, format)
- WRITE (unit, format) list
- WRITE (unit) list
- (3) WRITE (unit # n) list
- WRITE (unit, namelist)
- (3) WRITE (unit # n, format) list
- (2) UNLOAD unit

- (2) This command valid only for magnetic tape.
- (3) This command used only with Random Access files.

NOTE: ACCEPT reads from TTY (or .CTL file for batch jobs), PRINT writes to FORLPT.DAT. "READ format, list" reads from unit 5, and TYPE writes to TTY (or .LOG file for batch jobs.)

Non-Executable Statements

- BLOCK DATA
- (4) COMMON list
- (4) COMMON /block/list/block/list ...
- DATA list/values/
- DIMENSION array (n, n, ...),
array (n, n, ...), ...
- END
- EQUIVALENCE (v, v,...), (v, v,...), ...
- EXTERNAL name, name, ..
- FORMAT (specification)
- FUNCTION name (list)
- IMPLICIT type (ltr-ltr), type (ltr-ltr), ...
- name (var, var, ..) = x
- NAMelist /namelist/list/namelist/list ...
- SUBROUTINE name (list)
- (4) type list
- (4) type FUNCTION (list)

- (4) Dimension information can be included in the list.

File Control Statements

File control statements are used to set up files and establish parameters for I/O operations and to terminate I/O operations. They should be used for initiation of all DISK I/O. Refer to chapter 12 of the FORTRAN-10 reference manual for detailed information.

- OPEN** (Arg 1, Arg 2 . . . Arg N)
Opens a data file allowing the user to specify explicitly all attributes of the file.
- CLOSE** (Arg 1, Arg 2, . . . Arg N)
Terminates I/O, restores core occupied by I/O buffer dissociates active I/O device from the file.

Examples:

```
UNIT = 10  
DEVICE = 'DSK'  
ACCESS = 'RANDOM'  
MODE = 'ASCII'  
DISPOSE = 'SAVE'  
FILE = 'XYZ.DAT'  
PROTECTION = 177  
DIRECTORY = '1010,123'  
BUFFER COUNT = 2  
FILESIZE = 10  
VERSION = 7  
BLOCKSIZE = 40  
ASSOCIATE VARIABLE = KJR  
PARITY = 'ODD'  
DENSITY = '300'  
DIALOG
```

In most cases the right hand side of the "=" may be either a constant or a variable containing an appropriate value.

FORTRAN Statement Coding Rules

- | | |
|---------------|---|
| Columns 1–5 | statement number |
| Column 6 | continuation character (non-blank, non-zero). Maximum of 19 continuation lines per statement. |
| Columns 7–72 | FORTRAN statement |
| Columns 73–80 | comments |

A letter C in column one indicates a comment line.

Use of a tab in the statement number field has the following meaning: if the character following the tab is a digit from 1 to 9, that character is placed in column 6; otherwise that character is placed in column 7.

Data Values

ASCII Characters

Character size: 7 bits. Maximum 5 characters per word, left justified, padded on right with blanks, right most bit of word not used. Full ASCII character set available via A format; 60 character subset available for literal strings in program.

Floating Point Numbers

Absolute magnitude from 1.4693679E-39 to 1.7014118E38. REAL accurate to 8 decimal digits; DOUBLE PRECISION accurate to 18 decimal digits.

INTEGER Values

Values from -3459738368 (-2^{35}) to 34359738367 ($2^{35}-1$)

LOGICAL Values

Internal values of logical constants: .FALSE. = "0"; .TRUE. = "777777777777". Logical operators combine full words, but only sign bit is used to determine truth value of a word: 0 (positive) implies FALSE: 1 (negative) implies TRUE.

Operator Precedence

Operators are listed in order of decreasing precedence. In the case of an expression containing operators of equal precedence, the calculation is performed from left to right.

**
* /
+ -
.GT..GE..LT..LE..EQ..NE.
NOT.
.AND.
.OR.
.EQV..XOR.

FORDDT – DEBUGGING FORTRAN PROGRAMS

This section contains a summary of the most frequently used FORDDT commands.

FORDDT allows the user to interactively control execution of a FORTRAN program. To load and start FORDDT type.

.DEBUG filename. FOR(DEBUG),SYS:FORDDT.REL

After successful compilation and loading FORDDT will respond with

ENTERING FORDDT
>>

The two angle brackets indicate that FORDDT is waiting for one of the following commands.

OPEN name makes available the symbol names in a particular subprogram unit of the FORTRAN program.

START starts user program at main program entry point.

STOP terminates program, closes files and returns to monitor mode.

MODE list defines display format for TYPE command.

Mode	Meaning
F	floating point
D	double precision
C	complex
I	integer
O	octal
A	ASCII (left justified)
R	RASCII (right justified)

NEXT execute the next FORTRAN source statement and then pause again.

TYPE list displays contents of one or more data locations in modes specified by previous MODE command.

ACCEPT name/mode value allows user to change contents of FORTRAN variable, array, array element or array element range.

PAUSE P sets up a breakpoint at label, line number or subroutine entry.

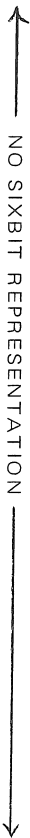
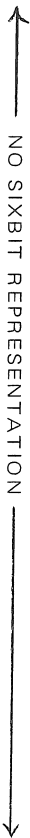
CONTINUE continues execution after a PAUSE statement has caused program suspension.

REMOVE P removes pauses previously set up by PAUSE command.

WHAT displays name of currently open program unit and active pause settings.

Detailed explanations of FORDDT commands are available in Appendix F of the DECsystem-10 FORTRAN-10 Language Manual.

DECSYSTEM-10 CHARACTER CODES

SIXBIT	Character	ASCII 7-Bit*	SIXBIT	Character	ASCII 7-Bit*
00	Space	040	60	P	120
01	!	041	61	Q	121
02	"	042	62	R	122
03	#	043	63	S	123
04	\$	044	64	T	124
05	%	045	65	U	125
06	&	046	66	V	126
07	'	047	67	W	127
10	(	050	70	X	130
11	)	051	71	Y	131
12	*	052	72	Z	132
13	+	053	73	[	133
14	,	054	74	\	134
15	—	055	75	]	135
16	.	056	76	↑	136
17	/	057	77	←	137
20	0	060		`	140
21	1	061		a	141
22	2	062		b	142
23	3	063		c	143
24	4	064		d	144
25	5	065		e	145
26	6	066		f	146
27	7	067		g	147
30	8	070		h	150
31	9	071		i	151
32	:	072		j	152
33	;	073		k	153
34	<	074		l	154
35	=	075		m	155
36	>	076		n	156
37	?	077		o	157
40	@	100		p	160
41	A	101		q	161
42	B	102		r	162
43	C	103		s	163
44	D	104		t	164
45	E	105		u	165
46	F	106		v	166
47	G	107		w	167
50	H	110		x	170
51	I	111		y	171
52	J	112		z	172
53	K	113		{	173
54	L	114		}	174
55	M	115		~	175
56	N	116		Delete	176
57	O	117			177



