

60344300



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**SCOPE 2.1  
INSTANT**

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**CONTROL DATA<sup>®</sup>  
CYBER 70/MODEL 76  
7600  
COMPUTER SYSTEMS**



60344300

 CONTROL DATA  
CORPORATION

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## PREFACE

SCOPE 2, an operating system for the CONTROL DATA® CYBER 70/Model 76 or the CDC® 7600 Computer System, provides the user with a set of control statements and macros to facilitate management of a job. SCOPE coordinates a comprehensive product set of assemblers and compilers.

This manual provides a quick reminder for the experienced user of the system. For the inexperienced, the following related publication is more useful.

<u>Control Data Publication</u>	<u>Publication No.</u>
SCOPE 2.1 Operating System User's Guide	60372600

This product is intended for use only as described in the reference manuals listed below. Control Data Corporation cannot be responsible for the proper functioning of undescribed features or undefined parameters.

<u>Control Data Publications</u>	<u>Publication No.</u>
SCOPE 2.1 Operating System Reference Manual	60342600
Record Manager Reference Manual	60307300
Loader Reference Manual	60429800
Loader Instant Manual	60449800

All references in this manual to the Control Data SCOPE 3.4 Operating System also apply to the Control Data NOS/BE 1.0 Operating System.

## FEATURES

The primary features of SCOPE 2 include:

- |   |  |
|---|--|
| Compatibility with CDC CYBER 170 Series, CYBER 70 Series, and 6000 Series Computers | Offers upward compatibility at the source language level. Programs prepared for the software products of the CDC CYBER 170 Series, CYBER 70 Series, and 6000 Series Computers can run on the CDC CYBER 70/Model 76 and vice versa. |
| Record Manager  | Manipulates logical records, performs physical blocking/deblocking, and performs file control for the user. Supports both on-line and staged tape processing.  |
| Permanent Files   | Provides permanent file support including dump and reload by device or file name. Provides audit of files to report information on size and activity. Provides clean-up and compaction of files on specific devices.               |
| Stations  | The CDC CYBER 70/Model 76 uses I/O stations to process unit record equipment and files. Stations permit the multiplexing of lower speed data sources to achieve optimum use of CPU channels.                                       |

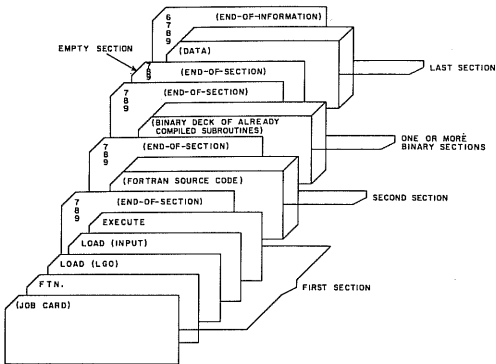
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**JOB FILE STRUCTURE**



Job File Structure

## FILE DELIMITER CARDS

End-of-section (EOS) card (rows 7/8/9 punched in card column 1)

End-of-partition (EOP) card (rows 7/8/9 punched in column 1 and Hollerith 17 in columns 2 and 3)

End-of-information (EOI) card (rows 6/7/8/9 punched in column 1), last section only

In free form binary cards, all columns contain binary data. A deck is delimited by free form binary flag cards, one in front of the section and one at the end of the section. A flag card is signified by having all three of the following: all rows of column 1 punched, all rows of any other single column punched, and the rest of the card blank.

## CONTROL STATEMENTS

Control statements provide information to SCOPE 2. A control statement is terminated by either a period or a right parenthesis.

## CONTROL STATEMENT SYNTAX

A job control statement can span more than one logical record (coded punched card). Each logical record (coded card) of a control statement must end with a separator (refer to following table). The syntax of the SCOPE control statements is:

$$\left. \begin{array}{l} \text{verb} \\ q \end{array} \right\} \left\{ \begin{array}{l} \text{keyword}_1 = \text{value}_1 \\ \text{parameter}_1 \end{array} \right\} q \left\{ \begin{array}{l} \text{keyword}_2 = \text{value}_2 \\ \text{parameter}_2 \end{array} \right\} \dots z \quad [\text{comment}]$$

The above format is interpreted as follows:

- { } Indicates options within a field; select one
- [ ] Indicates optional field. Required fields are merely listed
- verb The first name on the control statement. Limited to 1 to 7 alphanumeric characters. Blanks preceding the first alphanumeric character of the verb are ignored
- q A separator as shown in the following table. One or more blanks following the verb are treated as a separator; elsewhere, blanks are ignored

keyword	A 1 to 7 alphanumeric character symbol known to the system by which a value is assigned to a parameter. Keywords are position independent
value	A quantity or field of information being assigned to a parameter
parameter	A field of information or a literal. Blanks within a parameter are deleted, except when the parameter is a literal. Parameters are position independent unless specified otherwise. A literal is any character string delimited by dollar signs. Two consecutive dollar signs within a literal result in a single dollar sign
z	A terminator as specified in the following table
comment	Any character string (except consecutive colons) can be added to the control statement following the terminator providing the (partial) control statement and comment do not exceed one card image

SEPARATOR AND TERMINATOR CODES

Symbol	Display Code	Interpretation
-	-	Continuation
56	56	
,	54	Separators
=	50	
/	51	
(	45	
+	46	
-	55	Ignored, not a separator or a terminator
Blank		
;	77	Separator
Other	Above 46†	Separators
) .	52, 57	Terminators

† Except symbols \*, \$, and blank and terminators

SCOPE 2 recognizes the following control statements located in the first logical section of the user's job deck.

Control Statement

jobname [, Tt] [, CMfIs] [, ECfIl] [, Pp] [, MTd]  
[. NTd] [, YDd] [, YLp] [, Rn] [, Dym]  
[. STggg] . [ code]

Function

Defines to the operating system a new job (code parameter must be in columns 79 and 80)

jobname

1 to 7 alphanumeric character jobname; first character a letter

Tt

1 to 5 digit octal CPU time limit in seconds; default is 10<sub>8</sub>

CMfIs

1 to 6 digit octal SCM field length in words; default is installation parameter (IP.SCM)

ECfIl

1 to 4 digit octal LCM field length in 1000<sub>8</sub> word units; default is 0

Pp

1 to 4 digit octal priority code; default is installation parameter

MTd

1 or 2 digit octal number of 7-track tapes (MT) or 9-track tapes (NT); default is 0

NTd

Control Statement

Function

\$ YDd	1 or 2 digit octal number ( $d < 378$ ) specifying number of 844 drives that can be used simultaneously; default is 0 or YL value
\$ YLp	1 or 2 digit octal number ( $p < 378$ ) specifying maximum number of disk packs that will be used; default is 0 or YD value
Rn	Maximum number of times ( $n < 778$ ) a job can be rerun
Dy	2-character alphabetic dependency string identifier
m	1 or 2 digit octal number of dependencies
STggg	3-character physical or logical identifier for central processor; if omitted, job is processed at station of origin



code

Inform system of input code character set (must be in columns 79 and 80) (code parameter may be on the job identification statement or a separator card)

26 Input is Hollerith code  
29 Input is ASCII code

Loads and executes programs from the named file

$$\left. \begin{array}{l} \text{program name} \\ \text{file name} \end{array} \right\} (p_1[, p_2], \dots [, p_n])$$

$P_i$

entry point name  $(p_1[, p_2], \dots [, p_n])$

$P_i$

\$ACCOUNT( $p_1[, p_2], \dots [, p_n]$ )

$P_i$

Optional parameters

Initiates execution of a program in a library set or in the nucleus library

Optional parameters

Specifies accounting information for a job

Parameters defined by installation

<u>Control Statement</u>	<u>Function</u>
ADDSET (VSN=vs <sub>n1</sub> , MP=vs <sub>n2</sub> [, SN=setname] [,*PF] [ ,NF=maxpfn] [ ,NM=maxmem] [ ,RP=p] [ ,DT=dt <sub>1</sub> , ] [ ,MDT=dt <sub>2</sub> ])	Creates a set or adds a member to an existing set
VSN=vs <sub>n1</sub>	Volume serial number for device being added to set; 1 to 6 alphanumeric characters
MP=vs <sub>n2</sub>	1 to 6 alphanumeric vsn for master device of existing set. When creating a new set, vs <sub>n2</sub> must specify same device as vs <sub>n1</sub>
SN=setname	Set identification, 1 to 7 alphanumeric characters
*PF	Parameter presence allows permanent files to reside on the device being added to the set
NF=maxpfn	Maximum number (in decimal) of unique permanent files that can reside in specified set
NM=maxmem	Maximum number (in decimal) of members allowed in specified set. If parameter is omitted, is greater than 50, or is 0, the default of 50 is used
RP=p	Retention period for set in decimal number of days
DT=dt <sub>1</sub>	Device type:
	AY 844-2 (default)
	AF 7638
	AR 819
MDT=dt <sub>2</sub>	Device type of master device; as dt <sub>1</sub> above

Increases or decreases disk space for a permanent file (lfn)

Logical file name

Performs data reduction and analysis of system information

Directive input from file INPUT (default)

Directive input from user's file lfn<sub>1</sub>

List output on OUTPUT (default)

List output on user's file lfn<sub>2</sub>

Print directives, error messages, and control messages (default)

Same as M=0

Print directives and all messages

Print limit set at 50,000 records (default value)

Print limit is on number of records which can be written on the output file (maximum 9999999)

ALTER(lfn)

ANALYZE( ( I { I=lfn<sub>1</sub> } | I { L { L=lfn<sub>2</sub> } } |  
 ( M { M=n } | I { PL { PL=n } } | ) )

I  
 I=lfn<sub>1</sub>  
 L  
 L=lfn<sub>2</sub>  
 M=1  
 M  
 M=0  
 PL  
 PL=n

Control Statement

\$ ATTACH(lfn[, pfn], ST=ggg[, ID=uid]  
 [, PP=parameter] [, CY=n1]  
 [, PW=list])

lfn

pfn

ST=ggg

ATTACH(lfn[, pfn] [, ID=uid] [, MR=n4]  
 [, PP=parameter] [, {CY=n2}  
 [, PW=list] [, SN=setname])

lfn

pfn

ID=uid

PP=parameter

CY=n

PW=list

Function

Attaches a file from a CDC CYBER Station or from another CDC CYBER 70/Model 76, if linked in a multiframe environment. Parameters vary in accordance with the operating system being used.

Logical file name

Permanent file name

Station identification

Attaches a SCOPE 2 file

Logical file name

Permanent file name

User identification; 1 to 9 characters

Privacy procedure parameter, 1 to 9 characters

Cycle number, 1 to 999, assigned by creator. n1 (or default) or n2=0 and n3=0 (or not specified) attaches highest cycle number

List of passwords; each is 1 to 9 alphanumeric characters and requests a permission

Set identification, 1 to 7 alphanumeric characters

Multiread access; n=1 (default)† attaches file in multiread access mode; n=0 all defaulted permissions are retained

Lowest cycle number. Takes precedence over CY parameter if both used. n<sub>3</sub>≠0 attaches lowest-numbered cycle

To provide an audit of current permanent files

Logical file name

Permanent file name, 1 to 40 characters

Gives accounting listing of all expired files

User identification; gives accounting listing of files under the specified user identification

Gives a full output (two lines) on OUTPUT file for each file

Gives a partial output (one line) on OUTPUT file for each file

Set identification, 1 to 7 alphanumeric characters

SN=setname

MR=n<sub>4</sub>

LC=n<sub>3</sub>

AUDIT( LF=Ifn ] [ , MO=X ] [ , ID=uid ]  
 [ , PF=pfm ] [ , AI=F ] [ , SN=setname ] )

LF=Ifn

PF=pfm

MO=X

ID=uid

AI=F

AI-P

SN=setname

† Unless changed by installation  
 § Not compatible SCOPE 2/SCOPE 3.4.

Control Statement

Function

BKSP(lfn[, n])

lfn

n

Backspaces n sections on a file (lfn)

Logical file name; default is FILE

Number (decimal) of sections to backspace; default gives n=1

CATALOG([lfn,] pfn, ST=ggg[, ID=uid]  
[, PP=parameter][, CY=n1]  
[, PW=password])

lfn

pfn

ST=ggg

CATALOG([lfn,] pfn[, ID=uid][, PP=parameter]  
[, RP=n3][, CY=n2][, TK=password,]  
[, CN=password2][, MD=password3]  
[, EX=password4][, RD=password5]  
[, PW=list][, MR=n][, XR=password6])

lfn

pfn

ID=uid

PP=parameter

Logical file name; default is first 7 characters of pfn

Permanent file name, 1 to 40 characters

Mainframe at which file is to be cataloged

Causes a file to be made permanent and to be cataloged under SCOPE 2.1

Logical file name; default is first 7 characters of pfn

Permanent file name, 1 to 40 characters

User identification, 1 to 9 characters

Privacy procedure parameter, 1 to 9 characters

CY=n	Cycle number n <sub>1</sub> or n <sub>2</sub> is 1 to 999
TK=password <sub>1</sub>	Defines turnkey; 1 to 9 characters, initial cycle only
CN=password <sub>2</sub>	Defines control password; 1 to 9 characters, initial cycle only
MD=password <sub>3</sub>	Defines modify password; 1 to 9 characters, initial cycle only
EX=password <sub>4</sub>	Defines extend password; 1 to 9 characters, initial cycle only
RD=password <sub>5</sub>	Defines read password; 1 to 9 characters, initial cycle only
PW=password	Password; 1 to 9 alphabetical characters
RP=n <sub>3</sub>	Specifies retention period; 0 to 999 days
PW=list	Password list
MR=n	Multiread access: n=1 read permission only, n=0 all permissions are retained
XR=password <sub>6</sub>	Defines except read password; 1 to 9 characters, initial cycle only

CKP.  
CKP([lfn<sub>1</sub>] [, lfn<sub>2</sub>] ... [, lfn<sub>n</sub>])

Requests an explicit checkpoint on current system checkpoint file(s). First format implies inclusion in the checkpoint of all files local to the job. Second format designates the set of files to be included in the checkpoint

COMMENT, comments

Enters a message in a job's dayfile

comments

Any character string following the terminator through column 80 (or end of line on a terminal entry) on any control statement.

COMPARE([lfn<sub>1</sub>] [, lfn<sub>2</sub>] [, n] [, l] [, e] [, r] [, a] [, lfn<sub>3</sub>])

Compares sections of a file (lfn<sub>1</sub>) with sections of another file (lfn<sub>2</sub>)

lfn<sub>1</sub>, lfn<sub>2</sub>

Names of files to be compared; default is OLDLIB and NEWLIB

n

Decimal number of sections to be compared; default is 1

l

Octal level number; default is 0

e

Decimal number of word pairs of each record not the same to be written on the OUTPUT file; default is 0

r

Decimal number of counted records to be processed during the comparison; default is 30000



a  
 lfn<sub>3</sub>  
 CONTENT(lfn<sub>1</sub> [, lfn<sub>2</sub>] )  
 lfn<sub>1</sub>  
 lfn<sub>2</sub>  
 COPY({ lfn<sub>1</sub> } [, lfn<sub>2</sub>] [, A])  
 lfn<sub>1</sub>  
 lfn<sub>2</sub>  
 A  
 COPYBCD({ lfn<sub>1</sub> } [, lfn<sub>2</sub>] [, n])  
 lfn<sub>1</sub>  
 lfn<sub>2</sub>  
 n  
 SCOPYBF({ lfn<sub>1</sub> } [, lfn<sub>2</sub>] [, n] [, A])  
 SCOPYBR({ lfn<sub>1</sub> } [, lfn<sub>2</sub>] [, n] [, A])  
 SCOPYCF({ lfn<sub>1</sub> } [, lfn<sub>2</sub>] [, n] [, A])  
 SCOPYCR({ lfn<sub>1</sub> } [, lfn<sub>2</sub>] [, n] [, A])

If nonblank, abort job on bad compare  
 File to receive error output; default is OUTPUT  
 To obtain a listing of information about a file  
 Name of file to furnish the contents summary  
 Name of file receiving summary; default is OUTPUT  
 Copies a file (lfn<sub>1</sub>), from current position to end-of-information, to receiving file (lfn<sub>2</sub>)  
 Logical file to be copied; default is INPUT, comma required. Positional parameter  
 Logical file to receive copy; default is OUTPUT. Positional parameter  
 Tape read parity errors accepted and processed according to error option for lfn<sub>1</sub>  
 Copies n partitions from file (lfn<sub>1</sub>) to file (lfn<sub>2</sub>)  
 Logical file to be copied; default is INPUT, comma required if lfn<sub>1</sub> omitted  
 Logical file to receive copy; no legal default  
 Decimal number of partitions to be copied; default is 1  
 Same as COPYP  
 Same as COPYS  
 Same as COPYP  
 Same as COPYS

\$ Not compatible SCOPE 2/SCOPE 3, 4

Control Statement

Function

Copies a library file where lfn1 is the source, lfn2 contains the replacement sections, and lfn3 receives the new library. For copy without replacement, omit lfn2 (commas required)

COPYLB([lfn1] [, lfn2] [, lfn3])

Copies lfn1 to lfn3, replacing sections of lfn1 with sections from lfn2

§ COPYL ([lfn1] [, lfn2] [, lfn3] [, name])

Logical file name of file to copy; default is OLDLIB, comma required unless all defaulted

lfn1

Logical file name of file containing replacement sections; default is BINARY

lfn2

Logical file name to receive new file; default is NEWLIB, comma required

lfn3

Name of the last section to be read from lfn1 and copied to lfn3

name

Same as COPYL, except if lfn1 has more than one section with the same name; COPYLM replaces all sections of same name with one section from lfn2

§ COPYLM([lfn1] [, lfn2] [, lfn3] [, name])

Copies a file (lfn1) from current position to next partition or partitions (n) and lfn2 receives the file; defaults are INPUT and OUTPUT; commas required

§ COPYP([lfn1] [, lfn2] [, n] [, A])

Decimal number of partitions to be copied; default is 1

n

Tape read parity errors accepted and processed according to error option for lfn1

A

COPYR([ lfn<sub>1</sub>] [, lfn<sub>2</sub>] [, n] [, A])

n  
A

Copies n records from file (lfn<sub>1</sub>) to file (lfn<sub>2</sub>); defaults are INPUT and OUTPUT  
Decimal number of records to be copied; default is 1  
Tape read parity errors accepted and processed according to error option for lfn<sub>1</sub>

COPYS([ lfn<sub>1</sub>] [, lfn<sub>2</sub>] [, n] [, A])

n  
A

Copies n sections of a file (lfn<sub>1</sub>) from current position onto lfn<sub>2</sub>; defaults are INPUT and OUTPUT  
Decimal number of sections to be copied; default is 1  
Tape read parity errors accepted and processed according to error option for lfn<sub>1</sub>

COPYSBF([ lfn<sub>1</sub>] [, lfn<sub>2</sub>])

COPYSP([ lfn<sub>1</sub>] [, lfn<sub>2</sub>])

COPYXS([ lfn<sub>1</sub>] [, lfn<sub>2</sub>] [, n])

Same as COPYSP  
Copies and shifts a partition from lfn<sub>1</sub> to lfn<sub>2</sub>; defaults are INPUT and OUTPUT  
Copies X-mode tape (lfn<sub>1</sub>) and converts format to SCOPE logical (lfn<sub>2</sub>) where n gives the number (decimal) of partitions to be copied and converted; default is 1

DELSET(MP=vsn, VSN=vsn [, SN=setname] [, DT=dt])

MP=vsn

Deletes a set or a member of a set  
Volume serial number of master device of the set; 1 to 6 alphanumeric characters

Control Statement

Function

VSN=vsnn  
Volume serial number of set to be deleted. Entire set is destroyed if MP and VSN identifiers are the same; 1 to 6 alphanumeric characters

SN=setname  
Name of set being deleted or set from which a member device is being deleted; 1 to 7 alphanumeric characters

DT=dt  
Device type:  
AY 844-2 (default)  
AF 7638  
AR 819

DISPOSE(1fn, { ST=ggg } ] L, [\*] { dt  
ST=ggg } ] ] dt=Cyy } ] )

Rewinds and spools a file to a unit record device and/  
or to a terminal at a station

1fn

Logical file name

\$ST=ggg  
\$ST=ggg

Station (and optionally terminal) to which file is to be  
spooled

dt  
dt=Cyy  
\*dt  
\*dt=Cyy

ggg 3-character identifier of station  
ttt Optional 3-character identifier of terminal

dt specifies device type (refer to table). Asterisk (\*)  
prefix indicates file is to be disposed at close/unload  
or job termination, whichever occurs first. Spooling  
occurs immediately if asterisk is omitted. yy is 2-  
character alphanumeric specifying a form or a hard-  
ware characteristic; defined by installation

\$ Not compatible SCOPE 2/SCOPE 3. 4.

Disposition Code (xx)	Device Type	Implicitly Disposed File
SSC  PU PB P8 PR P1 P2 LR LS LT FR FL HR HL PT	Discards the file. If the file is OUTPUT, only the dayfile is printed Punch Hollerith coded cards Punch SCOPE binary cards Punch free-form binary cards Print on available printer Print on 501 or 505 printer Print on 512 or 517 printer Print on 580-12 printer Print on 580-16 printer Print on 580-20 printer Microfilm print Microfilm plot Print on hardcopy device Plot on hardcopy device Plot	PUNCH PUNCHB  OUTPUT  FILMPR FILMPL HARDPR HARDPL PLOT  Reserved for future use

DMP  $\left\{ \begin{array}{l} (lwa) \\ (fwa, lwa) \\ (fwa, fwa) \end{array} \right\}$

fwa

lwa

\$DMPFILE([ lfn<sub>1</sub>] [, L=lfn<sub>2</sub>] [, XW=n<sub>1</sub>] [, XR=n<sub>2</sub>] [, XS=n<sub>3</sub>] [, XP=n<sub>4</sub>] )

lfn<sub>1</sub>

L=lfn<sub>2</sub>

XW=n<sub>1</sub>

XR=n<sub>2</sub>

XS=n<sub>3</sub>

XP=n<sub>4</sub>

Prints an octal listing of an SCM area within the limits of the first word (fwa) and last word (lwa) relative addresses.

Beginning octal SCM address; default is RAS

Ending octal SCM address; default is FLS

Places the contents of records on an output file with summary information about the records of a file

Logical file name of input file to be dumped; default is INFILE. Positional parameter, comma required for default.

Logical file name of receiving file; default is OUTPUT

Maximum decimal number of words from each record of the file to dump; default is until EOR

Maximum decimal number of records of each section to dump; default is until EOS

Maximum decimal number of sections of each partition to dump; default is until EOP

Maximum decimal number of partitions of the file to dump; default is until EOI

Control Statement

\$DMPFTB(lfn)

\$DMPJSL.

\$DMPJT.

$$\left\{ \begin{array}{l} \text{DMPL} \\ \text{DMPECS} \end{array} \right\} \left( \left\{ \begin{array}{l} \text{fwa, lwa[ , f[ , lfn]]} \\ \text{lwa} \end{array} \right\} \right)$$

fwa

lwa

f

Function

Dumps the current LCM buffers (FDT, current PRE, and buffers attached to current PRE) of the file, lfn, to OUTPUT

Dumps the job supervisor LCM area associated with the current job to OUTPUT

Dumps JCB and SFT for current job to OUTPUT

Dumps contents of an LCM area within the limits of the first word (fwa) and last word (lwa) relative addresses

Beginning octal LCM address; default is RAL

Ending octal LCM address; default is FLL

Selects print format as follows:

- 1 Gives 4 words in octal and alphanumeric interpretation per line (default or 0 also gives this option)
- 2 Gives 2 words in octal parcels (15 bits) and alphanumeric interpretation per line
- 3 Gives 2 words in octal bytes (12 bits) and alphanumeric interpretation per line
- 4 Gives 2 words in octal and alphanumeric interpretation per line



lfn

Logical file name of receiving file; default is OUTPUT file

DSMOUNT(VSN=vs[n] , SN=setname )

Logically dismounts:

1. A set member from the requesting job
2. A set member from the system if no other job currently has the member mounted
3. A master device (and related set members) from the system if no other job currently has a member of the set mounted

VSN=vsn

Volume serial number of set member to be dismounted; 1 to 6 alphanumeric characters

SN=setname

Setname of member to be dismounted. If setname is omitted, job default setname is used. If job default setname is the system set, system issues diagnostic message and ignores request; 1 to 7 alphanumeric characters

DUMPF(PW=password[ , MO= $\left. \begin{matrix} 1 \\ 2 \\ 3 \end{matrix} \right\}$ ] [ , PF=pfn]

To selectively dump permanent files

§ Not compatible SCOPE 2 / SCOPE 3.4.

Control Statement

Function

[ , DP =  $\left\{ \begin{array}{l} \text{A} \\ \text{X} \\ \text{C} \end{array} \right\}$  ] [ , ID = name ] [ ,  $\left\{ \begin{array}{l} \text{I} \\ \text{I=1fn} \end{array} \right\}$  . ]

[ , IN = n ]

[ , JN = yyddd ] [ , SN = setname ] [ , VSN = vsn ]  
[ , LF = 1fn ] [ , CL ] [ , DA = yyddd ]  
[ , TI = hhmmss ] [ , CY = n ] )

PW = password

Installation password used must correspond with mode specification for DUMPF to run:

- Use read (RD) if MO=1 or omitted
- Use modify (MD) if MO=2
- Use control (CN) if MO=3

MO=1

Mode of dumping permanent files as backup leaving the PFD, PFC, and all disk space remains intact (default)

MO=2

Mode of dumping permanent files and releasing associated disk space; the PFD and PFC remain intact

MO=3

Mode of dumping permanent files and releasing all associated disk space

PF=pfm

Permanent file name of file to be dumped, used only in conjunction with ID parameter; 1 to 40 characters

DP=A	Gives a full dump of all files; this is the default
DP=X	All expired files are dumped
DP=C	All files that were modified, created, or extended since the last dump are dumped
ID=name	All files that have this ID are dumped if PF parameter is not specified; 1 to 9 characters
I=ifn	Input directives file starting at current position of file (ifn) will control DUMPF
I	Next section on INPUT contains DUMPF directives. If I is omitted, DUMPF has no directive file
CY=n	Cycle number of permanent file to be dumped. If PF is not present, CY is ignored. Up to five cycle numbers may be specified in the form CY=CN1, CN2, CN3, CN4, CN5. If the requested cycle of the permanent file cannot be found, a message is issued and DUMPF continues
IN=n	All files inactive n number of days are dumped
JN=yyddd	All files inactive since this date (5-decimal-digit Julian) are dumped; refer to TI parameter description
SN=setname	Name of set to be dumped; 1 to 7 alphanumeric characters

Control Statement

VSN=vsn

LF=lfm

CL

DA=yyddd

TI=hmmss

EXIT (  $\left. \begin{matrix} S \\ U \\ C \end{matrix} \right\}$  )

EXIT.

Function

Volume serial number to be dumped; 1 to 6 alpha-numeric characters

File on which DUMPF list output is written; default is OUTPUT

Specifies that list output pertains to all files in the permanent file directory whether dumped or not by this dump. If CL is omitted, only dumped files are noted in the listing

A 5-decimal-digit Julian date. All files that were created, modified, or extended after this date are dumped; refer to TI parameter description

A 6-decimal-digit time in the form hhhmss. This parameter modifies the time associated with the DA and JN parameters. If DA or JN is not defined, TI is ignored. Default is 00.00.00

Specifies the conditional execution of control statements

Provides a change in the sequence of control statement execution. If no errors, job terminates; if errors, processes subsequent control statements until end-of-section

- §§ Similar to EXIT. except special abort conditions are included in the conditions causing the change
- §U Provides unconditional continuation of processing of control statements after EXIT (U)
- §C Provides continuation of processing of control statements unless fatal error occurs, in which case the job terminates

EXTEND(lfn)

Increases space for a permanent file (lfn)

§ Not compatible SCOPE 2/SCOPE 3.4.

Control StatementFunction

$FILE(1fn|, BT = \left\{ \begin{matrix} I \\ C \\ K \\ E \end{matrix} \right\} | |, CF = \left\{ \begin{matrix} R \\ N \\ U \end{matrix} \right\} | |, CL = length_1 |$  Defines the characteristics of a specified file  
 $|, CP = count | |, CM = \left\{ \begin{matrix} YES \\ NO \end{matrix} \right\} | |, DL = length_2 | |, ERL = cnt]$   
 $|, EO = \left\{ \begin{matrix} T \\ D \\ A \end{matrix} \right\} | |, FL = length_3 | |, FO = \left\{ \begin{matrix} SQ \\ WA \\ LB \end{matrix} \right\} | |, CNF = \left\{ \begin{matrix} YES \\ NO \end{matrix} \right\} |$   
 $TD \left\{ \begin{matrix} DD \\ AD \end{matrix} \right\} | |, HL = length_4 | |, LL = length_5 | |, LBL = n |$   
 $|, MRL = length_7 | |, OF = \left\{ \begin{matrix} R \\ N \\ E \end{matrix} \right\} | |, LP = position | |, MBL = length_6]$   
 $|, PD = \left\{ \begin{matrix} INPUT \\ OUTPUT \\ I-O \end{matrix} \right\} | |, RB = n |$   
 $|, RMK = code | |, RT = \left\{ \begin{matrix} F \\ D \\ X \\ R \\ T \\ W \\ Z \\ U \\ S \end{matrix} \right\} | |, SPR = \left\{ \begin{matrix} YES \\ NO \end{matrix} \right\} | |, TL = length_8]$   
 $|, ULP = \left\{ \begin{matrix} V \\ F \\ U \\ VU \\ VF \\ FU \\ VFU \end{matrix} \right\} | |, VF = \left\{ \begin{matrix} U \\ R \\ N \end{matrix} \right\} |$

Ifn	Logical file name
\$BT	Unblocked
BT=I	Block type is internal blocking
BT=C	Block type is character count
BT=K	Block type is record count
BT=E	Block type is exact records
\$CF=R	CLOSEM file flag; overrides default. Rewind file; default parameter
\$CF=N	No rewind of file
\$CF=U	Unload file
CL=length <sub>1</sub>	Supplies decimal length in characters of trailer count field
CP=count	Supplies the starting character position of the trailer count field in decimal
CM=YES	File contains characters and conversion required
CM=NO	File contains characters but conversion not required
\$DL=length <sub>2</sub>	Supplies decimal length in words of the directory required for library files; must be greater than 2

\$ Not compatible SCOPE 2/SCOPE 3. 4.

Control Statement

Function

EO=T	Upon error terminate job; default parameter
\$EO=D	Upon parity input errors, passes control to user error routine and drops defective input
\$EO=A	Upon parity input errors, passes control to user error routine and processes defective input records where possible
\$EO=TD	Prints defective data on special output file and terminates job
\$EO=DD	Prints defective data on special output file, passes control to user error routine, and drops defective input
\$EO=AD	Prints defective data on special output file, and passes control to user error routine to process defective input records where possible
ERL=cnt	Trivial error limit: omitted or 0, no limits; 1 to 511, limit as specified
FL=length3	Supplies decimal length in characters of fixed length records or length to which zero-byte records are to be extended on input or supplied on output
FO=SQ	File organized as sequential; default parameter
FO=WA	File organized as word addressable



\$FO=LB  
 File organized as library  
 CNF=YES  
 Activates the connected file option  
 CNF=NO  
 Deactivates the connected file option  
 HL=length<sub>4</sub>  
 Supplies decimal length of T record format header  
 LL=length<sub>5</sub>  
 Supplies decimal length of field for D record format  
 in characters  
 LBL=n  
 Length of label requested in characters; n>80 for  
 standard labels  
 LP=position  
 Supplies decimal number of starting character  
 position of length field  
 MBL=length<sub>6</sub>  
 Supplies maximum block length as decimal number of  
 characters for I, C, and E formats (defaults: if MBL  
 is not specified, MBL is (MRL) (RB) and BT=K;  
 otherwise, 5120  
 MRL=length<sub>7</sub>  
 Supplies maximum record length in decimal of T, D,  
 R, X, U, S, or W format records in characters  
 OF=R  
 Open file flag (override default) file position at open  
 time is rewind; default parameter  
 OF=N  
 File position at open time is no rewind  
 OF=E  
 File position at open time is for extend  
 \$PD=INPUT  
 File processing direction at open time is input  
 \$PD=OUTPUT  
 File processing direction at open time is output  
 \$PD=I-O  
 File processing direction at open time is input/output;  
 default parameter

\$ Not compatible SCOPE 2./SCOPE 3, 4.

Control Statement

Function

RB=n	Supplies decimal number of records per block for K format blocks; default is 1
RMK=code	Supplies record mark character in display code if RT=R
RT=F	Indicates record type is fixed length (F)
RT=D	Indicates record type is decimal character count (D)
RT=R	Indicates record type is record mark (R)
RT=T	Indicates record type is trailer count (T)
RT=W	Indicates record type is control word (W); default parameter
RT=Z	Indicates record type is zero byte (Z)
RT=U	Indicates record type is undefined (U)
RT=S	Indicates record type is SCOPE logical (S)
\$RT=X	Indicates record type is X mode (input only)
\$SPR=NO	User does not select suppress read ahead, write behind for on-line tape; default parameter
\$SPR=YES	User selects suppress read ahead, write behind for on-line tape
TL=length	Supplies the length (decimal) of T format record trailer in characters

VF=U CLOSEM volume flag (overrides default). Volume positioning at close time is unload volume (default parameter)

VF=R Volume positioning at close time is rewind volume

VF=N Volume positioning at close time is no rewind

ULP=NO No user label processing; default

ULP=V User volume label processing (VOL and EOV)

ULP=F User file label processing (HDR and EOF)

ULP=U User processing of UHL, UTL, and UVL labels

ULP=VU Combination of V and U

ULP=VF Combination of V and F

ULP=FU Combination of F and U

ULP=VFU Combination of V, F, and U

Attaches a copy of a permanent file; refer to ATTACH control statement

VF=R

VF=N

ULP=NO

ULP=V

ULP=F

ULP=U

ULP=VU

ULP=VF

ULP=FU

ULP=VFU

GETPP(/fn[, pfn] [, ID=uid] [, PW=list]  
 [, MR=n<sub>1</sub>] [, {LC=n<sub>2</sub>} | [, PP=parameter]  
 [, SN=setname] [, ST=ggg]

§ Not compatible SCOPE 2/SCOPE 3.4.

Control Statement

Function

LABEL(ifn[, C=yyddd] [, { R } | [, E=n<sub>1</sub>] [, G=n<sub>2</sub>] | W )  
 [, L=value] [, M=name] [, P=n<sub>3</sub>]  
 [, { T=ddd } | [, V=n<sub>4</sub>] | U=yyddd ]

Supplies information used by the record manager to check standard labels of input files or to create standard labels for output files

ifn

Logical file name

C=yyddd

Label creation date in Julian format

R

Requests checking of existing label

W

Requests creation of nonexistent label

E=n<sub>1</sub>

Indicates version number; 2 decimal digits

\$G=n<sub>2</sub>

Indicates generation number; 4 octal digits

L=value

Indicates file identifier; 1 to 17 characters. Identifiers containing special characters must be supplied as literals (enclosed in dollar signs)

M=name

Indicates multifile name; 1 to 6 characters

} I/O sequential files only

P=n<sub>3</sub> Supplies file sequence number of file in multfile set  
 T=dddd Decimal expiration time in days from creation  
 \$ U=yyddd Expiration date in Julian format  
 V=n<sub>4</sub> File section number. A 1 to 4 digit octal number that gives the volume number of the file at which processing is to commence  
 ' Creates and manipulates library files  
 Receives directive input from INPUT file; default  
 Receives directive input from logical file lfn<sub>1</sub>  
 Sends output to OUTPUT file; default  
 Sends output to logical file lfn<sub>2</sub>  
 Print directives and all messages  
 Print directives, error messages, and control messages; default parameter  
 Define a global library set

$$\text{LIBEDT}(\left\{ \begin{array}{l} I \\ I=I_{fn_1} \end{array} \right\} | \left\{ \begin{array}{l} L \\ L=I_{fn_2} \end{array} \right\} | \left\{ \begin{array}{l} M \\ M=n \end{array} \right\} | )$$
I=I<sub>fn<sub>1</sub></sub>

L

L=I<sub>fn<sub>2</sub></sub>

M or M=0

M=1

$$\text{LIBRARY}(\left\{ \begin{array}{l} * \\ \text{libname}_1 \end{array} \right\} | \left\{ \begin{array}{l} * \\ \text{libname}_2 \end{array} \right\} | \dots \\ | \left\{ \begin{array}{l} * \\ \text{libname}_n \end{array} \right\} | )$$

libname

Library name to be defined

Control Statement

LIMIT(n)

Function  
Sets a limit on the amount of mass storage allocatable to a job. Value of 0 implies unlimited  
Decimal number of 4096 (60-bit) word blocks

$n$   
LOADPF([ LP= $\left. \begin{matrix} X \\ R \\ X, R \\ R, X \end{matrix} \right\}$  | [ , PF=pfm] [ , ID=name]

[ , JN=yyddd[ , TI=hmmss] ] [ , CY=n]  
[ , CL] [ , LF=lfn] [ , SN=setname] [ ,  
VSN=vsn ] )

LP=X

LP=R

LP=X, R or R, X

PF=pfm

ID=name

JN=yyddd

Requests no expired files to be loaded

Requests replacement of existing file if the file on tape is more current or if parity errors exist in the file on disk

Selects both X and R options

Permanent file name of the file to be loaded; 1 to 40 characters

Requests that all user files identified by this name be loaded

Requests that all files attached after this Julian date be loaded

TI=hmmss	Modifies with a 6-decimal digit time the JN parameter yyddd; default is 00.00.00
CY=n	Requests that this cycle number of the files specified is to be read. If PF parameter is not present, CY is ignored
CL	Specifies that list output pertains to all files in the permanent file directory, whether or not loaded by this load. If CL is not specified, only files loaded by this LOADPF are listed
LF=lfm	File on which LOADPF list output is written; default is OUTPUT
SN=setname	Name of set on which files are to be loaded; 1 to 7 alphanumeric characters
VSN=vsfn	Volume serial number of set member on which files are to be loaded; 1 to 6 alphanumeric characters
MAP { ON OFF PART }	To select options for the load map
ON	Requests that full maps be generated for all load sequences requested by the job
OFF	Requests no maps for load sequences
PART	Requests partial maps for load sequences

Control Statement

Function

MODE(n)

To select PSD exit or stop conditions for a central processor program

- n
- Octal number (0-17<sub>8</sub>) specifying exit selection
- 0 Disable exit mode
  - 1 Terminate execution; SCM direct range error
  - 2 Terminate execution; overflow
  - 3 Combination of 1 and 2
  - 4 Terminate execution, indefinite operand
  - 5 Combination of 1 and 4
  - 6 Combination of 2 and 4
  - 7 Combination of 1, 2, and 4; default
  - 108 Terminate execution; underflow
  - 118 Combination of 10 and 1
  - 128 Combination of 10 and 2
  - 138 Combination of 10, 1, and 2
  - 148 Combination of 10 and 4
  - 158 Combination of 10, 1, and 4
  - 168 Combination of 10, 2, and 4
  - 178 Terminate execution; any error

MOUNT (VSN=vsn[, SN=setname] [, DT=dt]

VSN=vsn

SN=setname

Requests assignment of a set member to a job

Volume serial number name of set to be mounted;  
1 to 6 alphanumeric characters

Setname of set to be mounted; 1 to 7 alphanumeric  
characters



DT=dt

PAUSE { (ggg[ ttt])message }  
 .message

ggg

ttt

message

PURGE (lfn)

PURGE(lfn[, pfn] [, { LC=n1 } | [, ID=uid]  
 [, PP=parameter] [, PW=list]  
 [, SN=setname] [, ST=ggg)

\$REDUCE[ ( { S } ) |  
 { L } ]

REDUCE.

S

L

Device type:

AY 844-2 (default)  
 AF 7638  
 AR 819

Notifies an operator at a station of a condition or requirement of a job

Specifies station identification; 3 characters; default is station of job origin

Specifies terminal at station ggg; 3 characters

Text to end of logical record. The first 40 characters of the statement are displayed at the station

Deletes a permanent file (lfn) from the permanent file directory; prior ATTACH of file required.

Deletes permanent file (lfn) from the permanent file directory; prior ATTACH of file not required. Refer to ATTACH for description of parameters.

Returns a job to automatic memory management by the system

Requests system management of LCM and SCM

Reduces SCM

Reduces LCM

Control Statement

Function

REQUEST(.lfn) { MT } [ , { US } ]  
 { mfn } { NT } [ , { EB } ]

[ , { M1 } ] [ , NR ] [ , { N } ]  
 { M2 } [ , { E } ]

[ , VSN=vsn<sub>1</sub> [ /vsn<sub>2</sub> ] .. [ /vsn<sub>n</sub> ] ] [ , MF ]

MT

NT

† LO

HI

HY

HD

PE

\$ M1

\$ M2

NR

Assigns unstaged, on-line magnetic tape unit to a specific file (lfn) or multifile (mfn)

7-track tape

9-track tape

200 bpi 7-track tape recording density

556 bpi 7-track tape recording density

800 bpi 7-track tape recording density

800 bpi 9-track tape recording density

1600 bpi 9-track tape recording density

Only one volume can be mounted at one time; default

Two volumes can be mounted at one time

No recovery attempts from tape parity errors; default gives standard operating system parity error recovery procedures

N System to create a new label if file is opened the first time for I/O

E System to check the existing label if the file is opened for INPUT or I/O; default

US Labels and coded data on tape are converted from ASCII on input or to ASCII on output (9-track tape only)

EB Labels and coded data on tape are converted from EBCDIC on input or to EBCDIC on output (9-track tape only)

US and EB omitted Label and coded data conversion is defined by an installation parameter (9-track tape only)

\$ VSN=vs<sub>n</sub><sub>1</sub> Volume serial number (or visual reel number of unlabeled tapes) of the volume or volumes of the file (1 to 6 characters)

MF A multifile volume (mfn) is being requested

† Cannot be used for 66X magnetic tape unit

§ Not compatible SCOPE 2/SCOPE 3.4

<u>Control Statement</u>	<u>Function</u>
<pre> REQUEST(lfn[ , An<sub>1</sub>] [ , {   AF   AY   AR } ] [ , {   CK   CKB   CK1   CK2 } ] [ , SN=setname] [ , VSN=vs<sub>n</sub><sub>1</sub>] [ /vs<sub>n</sub><sub>2</sub>] .. [ /vs<sub>n</sub><sub>n</sub>] [ [ , Tn<sub>2</sub>] [ [ , WCK] [ [ , *PF] \$ An<sub>1</sub> </pre>	<p>Assigns mass storage set members to a specific file (lfn)</p> <p>Number of minimum allocation units (MAU) for the file. 0 gives 1 MAU, 1 gives 2 MAU, 2 gives 4 MAU, 3 gives 8 MAU, and 4 gives 16 MAU (default gives 1 MAU)</p> <p>Designates file assignment to 7638 Disk Storage Subsystem; system set only</p> <p>Designates file assignment to 844-2 Disk Storage Subsystem</p> <p>Designates file assignment to 819 Disk Storage Subsystem</p> <p>Designates file assignment to any set member meeting qualifications of *PF and VSN parameters</p> <p>File is checkpoint file and overwrite is not allowed; extended</p> <p>File is checkpoint file and overwrite of previous record of checkpoint data is allowed</p>
AF	
AY	
AR	
\$ AF, AY and AR	
\$ CK	
\$ CKB	

- \$ CK1 File is the first of two checkpoint files that receive data alternately
- \$ CK2 File is the second of two checkpoint files that receive data alternately
- SN=setname 1 to 7 character name of set on which file is to reside
- \$ VSN=vsn<sub>1</sub> Volume serial number(s) of set(s) where file can reside; 1 to 6 characters
- \$ Tn<sub>2</sub> Number of minimum allocation units of data to be transferred between mass storage and system I/O buffers at one time. 0 gives 1 MAU, 1 gives 2 MAU, 2 gives 4 MAU, 3 gives 8 MAU, and 4 gives 16 MAU. Tn<sub>2</sub> is forced  $\leq$  An<sub>1</sub>. Specifying T causes minimum LCM buffer size (5120 characters)
- \$ WCK Request write-check procedure for write operations to the file; default furnishes no write-check procedure
- \*PF Assigns file to permanent file device

\$ Not compatible SCOPE 2/SCOPE 3.4.

<u>Control Statement</u>	<u>Function</u>
RESTART (lfn, n[ , RI] )	Restarts a job from the contents of a checkpoint file (lfn)
n (integer or *)	Decimal number of the checkpoint from which to re-start. Asterisk restarts from last available checkpoint of the file
RI	Copy of the INPUT file for the restarted job (including control statements) is not to be restored
RETURN(lfn <sub>1</sub> [ , lfn <sub>2</sub> ] ... [ , lfn <sub>n</sub> ] )	Closes and unloads a file (lfn <sub>1</sub> ) or files (lfn <sub>i</sub> ) decrements MT, NT, or YL scheduling value
REWIND (lfn <sub>1</sub> [ , lfn <sub>2</sub> ] ... [ , lfn <sub>n</sub> ] )	Positions a file (lfn <sub>1</sub> ) or files (lfn <sub>i</sub> ) to beginning of information
\$ RFL( $\left. \begin{array}{l} \text{nfls, L=nfl} \\ \text{L=nfl, nfls} \\ \text{nfls} \\ \text{L=nfl} \end{array} \right\} )$	Requests a different SCM and/or LCM field length during job execution
nfls	New SCM field length in octal
L=nfl	New LCM field length in 1000 <sub>8</sub> word units

Saves copy of a permanent file. Refer to CATALOG

```
SAVEPF([ lfn], pfn[, ID=uid] [, ST=ggg]  
[, PP=parameter] [, RP=n] [, CY=n]  
[, TK=password1] [, CN=password2]  
[, MD=password3] [, EX=password4]  
[, RD=password5] [, PW=lst] [, MR=n]  
[, XR=password6]
```

SETNAME(setname)

Specifies the default setname for the job

setname

Identifies the default setname; 1 to 7 alphanumeric characters; omitting setname returns a job to the system default setname

SKIPB([ lfn] [, n] [, lev] [, m])

lfn

Repositions a file n sections or partitions backward

n

Logical file name to be skipped; default is FILE

lev

Decimal number of units of specified level to skip; default is 1

lev

Octal level number (0 through 17<sub>o</sub>); default is 0

SKIPB treats a tapemark as end-of-partition

For W records, levels 0 through 16<sub>g</sub> indicate n sections are to be skipped. Level 17<sub>g</sub> indicates that n partitions are to be skipped; sections are not included in the partition count

For S records, levels 0 through 17<sub>g</sub> indicate n S records or partitions of the indicated level number or greater are to be skipped. That is, if 15<sub>g</sub> is specified, levels 0 through 14<sub>g</sub> are not counted toward n but levels 15<sub>g</sub> and 16<sub>g</sub> are counted

Control Statement

m

Function

B indicates binary or C indicates coded; ignored by SCOPE 2

SKIPF([ lfn] [, n] [, lev] [, m])

Repositions a file n sections forward. Parameters are the same as for SKIPB

\$ STAGE(lfn[, { MT } | [, { PRE } ] | [, { HI } ]  
 [, { NT } | [, { POST } ] | [, { HY } ] ]  
 [, { US } ] | [, { LO } ] ]  
 [, { EB } ] | [, { HD } ] ]  
 | [, { PE } ] ]

Requests transfer of a file between magnetic tape unit and system mass storage

[, VSN= { vsn<sub>1</sub> [ / vsn<sub>2</sub> ] ... [ vsn<sub>n</sub> ]  
 { \$vsn<sub>1</sub> / { B } | { F } } / n<sub>1</sub> / m<sub>1</sub> \$

[, An] [, Tn] [, ST=ggg] [, NR] [, SF]

[, { E } ] | [, WCK] )  
 [, { N } ]

Logical file name

7-track tape; default parameter

9-track tape

Prestage; default parameter

lfn

MT

NT

PRE



POST	Poststage
HI	556 bpi 7-track tape density
HY	800 bpi 7-track tape density
LO†	200 bpi 7-track tape density
HD	800 bpi 9-track tape density
PE	1600 bpi 9-track tape density
US	ASCII conversion; 9-track tape only
EB	EBCDIC conversion; 9-track tape only
US and EB omitted	Conversion defined by installation parameter; 9-track tape only
VSN=vs <sub>n</sub> <sub>1</sub>	Staged volume serial numbers; 1 to 6 characters each
\$	Delimits volume of unlabeled file for partial staging
B	Blocked file; refers to blocks (n) to be skipped
F	Tape file; refers to tapemarks (n) to be skipped
n <sub>1</sub>	Number (decimal) of blocks (B) or tapemarks (F) to be skipped; default is staging from first block
m <sub>1</sub>	Decimal number of blocks (B) or tapemarks (F) to be processed in the partial staging operation; default is staging termination at next tapemark

† For on-line tape staging, tapes cannot be staged at 200 bpi on 66X tape drives.

§ Not compatible SCOPE 2 / SCOPE 3.4

Control Statement

Function

An	Number of minimum allocation units (MAU) for the file. 0 gives 1 MAU, 1 gives 2 MAU, 2 gives 4 MAU, 3 gives 8 MAU, and 4 gives 16 MAU; default gives 1 MAU
Th	Number of minimum allocation units of data to be transferred between mass storage and system I/O buffers at one time. 0 gives 1 MAU, 1 gives 2 MAU, 2 gives 4 MAU, 3 gives 8 MAU, and 4 gives 16 MAU. Th is forced $\leq$ An. Specifying T causes use of minimum LCM buffer (5120 characters)
ST=ggg	Station identification; 3 characters; default is station of job origin
NR	Requests no return of control to operator upon parity error on tape; default gives control to operator after recovery
SF	Requests all volumes of the file be prestaged at open time; default gives only first volume prestaged at open time. Subsequent volumes (if labeled) are prestaged as program completes reading the previous volume
E	Checks existing label; default

N

Creates a new label for file

WCK

Checks writes on file

SUMMARY.

Adds the accounting summary up to the point of issue to the job dayfile

SWITCH(n [, { ON }  
                  { OFF } ] )  
                  n

Controls sense switches

Logical sense switch number; 1 to 6

ON or OFF

Turns ON or OFF a pseudo sense switch. Default reverses switch to opposite setting

TRANSF(jbname1 [, jbname2] ... [, jbname<sub>n</sub>] )

Establishes a sequence of processing of two or more jobs

jbname

Job name; 1 to 5 characters. The dependency count for the named job is decremented by one

UNLOAD(lfn<sub>1</sub> [, lfn<sub>2</sub>] ... [ lfn<sub>n</sub>] )

Closes, rewinds, and unloads file (lfn<sub>1</sub>) and releases device

<u>Control Statement</u>	<u>Function</u>
$  \$ \text{VSN} \left\{ \begin{array}{l} \cdot \\ ( \text{gggttt} ) \\ (\text{ggg}) \end{array} \right. \left. \begin{array}{l} \text{vsn}_1, \text{vsn}_2, \dots, \text{vsn}_n \\ \text{ggg} \\ \text{ttt} \\ \text{vsn}_n \end{array} \right.  $	<p>Notifies the operator at station of some requirement or condition of the job</p> <p>Station identification; 3 characters; default is station of job origin</p> <p>Terminal identification; 3 characters</p> <p>Lists volume serial numbers for volumes required by the job; 1 to 6 alphanumeric characters</p>

\$ Not compatible SCOPE 2 / SCOPE 3.4

**MACROS**

## CODING MACRO INSTRUCTIONS

System action requests are written in the COMPASS assembler language and as such, are subject to the rules defined in the COMPASS Reference Manual. Macro instructions are written in the following general format.

LOCATION	OPÉRATION	VARIABLE SUBFIELDS
symbol	mname	parameters

**symbol** A location field symbol, if supplied, is assigned the first word address of the macro expansion.

**mname** The name of the macro.

**parameters** A list of arguments separated by commas. Parameters supply information required for the action to be performed or define optional actions. They are presented here using the following conventions.

- If a parameter is shown in all capital letters (for example, TERM, it is to be coded exactly as shown. The only other option is to omit the parameter (it is then null).
- Keyword parameters may be coded in any sequence unless specified otherwise. Other parameters must be coded in the sequence indicated unless prefixed by one, two, or three literal characters. If a null parameter is interspersed with legal parameters, the correct positions must be maintained by commas.

- If a parameter is presented in lowercase letters, substitute a symbol, value, address, name, or register as indicated in the text following the format.
- When a parameter list terminates before the last possible parameter, all remaining parameters are considered null.
- When a parameter represents an expression, the argument reduces to:
  1. An absolute value (absolute address or an integer value)
  2. An external symbol  $\pm$  a 21-bit integer
  3.  $\pm$  a relocatable value  $\pm$  a 21-bit integer
  4. Register designators and one of the above, or
  5. Register designators

A macro call can be coded through column 72 of a line. It is continued on the next line by placing a comma in column 1 and resuming the parameter list in column 2.

## RECORD MANAGER MACROS

The following lists the record manager macros and the functions performed by each.

<u>Macro</u>	<u>Function</u>						
<table border="1"><thead><tr><th>LOCATION</th><th>OPERATION</th><th>VARIABLE SUBFIELDS</th></tr></thead><tbody><tr><td>\$ [tag]</td><td>CHECK[M]</td><td>fit<sub>1</sub>, fit<sub>2</sub>, ..., fit<sub>n</sub></td></tr></tbody></table>	LOCATION	OPERATION	VARIABLE SUBFIELDS	\$ [tag]	CHECK[M]	fit <sub>1</sub> , fit <sub>2</sub> , ..., fit <sub>n</sub>	<p>Gives status of GETR, PUTR, READM, or WRITEM with optional wait for completion</p> <p>Places the job in wait state until all the operations on the files in the list are complete. On return to the user, the high order bits of the associated parameter list/X register are set to indicate completion status</p> <p>Places the job in wait state until one or more of the operations on files in the list is complete. On return to the user, the high order bits of the associated parameter list/X register are set to indicate completion status</p> <p>Address expression or X register containing FIT address</p>
LOCATION	OPERATION	VARIABLE SUBFIELDS					
\$ [tag]	CHECK[M]	fit <sub>1</sub> , fit <sub>2</sub> , ..., fit <sub>n</sub>					
M	blank						
fit	fit						



LOCATION	OPERATION	VARIABLE SUBFIELDS
[tag]	CHECKR	tag <sub>1</sub> [, fit <sub>1</sub> ][, fit <sub>2</sub> ][, fit <sub>n</sub> ]

Similar to CHECK. User designates location to receive control upon file operation completion. If incomplete, control is passed to location following macro

tag<sub>1</sub>

Designates location receiving control when one or more of the operations on the files in the list is complete. It may optionally be specified as an X register containing the address

fit

Address expression or X register containing FIT address

LOCATION	OPERATION	VARIABLE SUBFIELDS
[ tag ]	CLOSEL	fit [ , close type ]

fit

Terminates label processing and returns control to record manager

Address expression or X register containing FIT address

close type

Alternatives: FILE Terminate file label processing; default  
 VOLUME Terminate volume label processing

§ Not compatible SCOPE 2/SCOPE 3.4.

MacroFunction

LOCATION	OPERATION	VARIABLE SUBFIELDS
\$ [tag]	CLOSEM	fit [, positioning] [, close type]

Terminates a file

fit

Address expression or X register containing FIT address

positioning

Alternatives: N No rewind

R Rewind; default if FILE closing

U Unload; default if VOLUME closing

close type

Alternatives: FILE

Terminate processing of file;  
default

VOLUME

Terminate processing of  
magnetic tape output volume

LOCATION	OPERATION	VARIABLE SUBFIELDS
	CONNECT	lfn

Prepares a file for connected I/O processing; allocates system tables.

Logical file name of file to be connected to the terminal

lfn

LOCATION	OPERATION	VARIABLE SUBFIELDS
[ tag]	DELETE	fit

Removes a logical record from a file or an entry from a library directive on a W record file

Address expression or X register containing FIT address

fit

LOCATION	OPERATION	VARIABLE SUBFIELDS
	DISCONT	lfn

Terminates connected I/O file processing; releases system tables.

Logical file name of file to be disconnected from terminal

lfn

Macro

Function

LOCATION	OPERATION	VARIABLE SUBFIELDS
	DSMOUNT	VSN=vsn [ , SN=setname]

Logically dismounts a set member from the requesting job; keyword values may be X registers containing addresses of parameter values

VSN=vsn

Volume serial number of set member to be dismounted

SN=setname

Setname of the set to be dismounted

LOCATION	OPERATION	VARIABLE SUBFIELDS
	DISPOSE	Ifn, disposition, station

Assigns file disposition

Ifn

Logical file name

disposition

The device type and the recording characteristics to be used; refer to DISPOSE control statement

station

The station, and optionally the terminal, to which the file is to be staged

Written as:

§ ST=ggg or ST=gggttt

ggg Station identification

ttt Terminal identification

LOCATION	OPERATION	VARIABLE SUBFIELDS
[tag]	ENDFILE	fit

Writes a logical end-of-partition delimiter for RT=W, RT=S, and RT=Z with BT=C. Writes a physical end-of-partition delimiter (tapemark) for blocked files not one of above. Does not record anything for RT=W unblocked files

fit

Address expression or X register containing FIT address

§ Not compatible SCOPE 2/SCOPE 3.4.

Macro

LOCATION	OPERATION	VARIABLE SUBFIELDS
[tag]	FETCH	fit, keyword, Xi

fit

keyword

Function

Retrieves value of any field in FIT

Address expression or X register containing FIT address

Identifies the field to be retrieved. Possible values are the same as for the FILE macro plus any of the following:

BN	block number
ECT	error count
ES	error status
FNF	fatal error flag
FP	file position field
IRS	error code (equivalent to ES)
LOP	last operation
OC	open/close status
PEF	parity error flag
PTL	partial transfer length
RC	record count
RL	record length
SES	system error severity
VNO	volume number
WA	current word address
WPN	write bit

## XI

Specified X register into which retrieved value is to be placed

LOCATION	OPERATION	VARIABLE SUBFIELDS
lfn	FILE	[p <sub>1</sub> , p <sub>2</sub> , . . . , p <sub>n</sub> ]

Creates file information table (FIT)

Parameters other than lfn are optional.

lfn                    Logical file name  
 \$ BT                    Unblocked  
 BT=I                   Internal blocking; default  
 BT=C                   Character count blocking

Macro

Function

BT=K	Record count blocking
BT=E	Exact records blocking
\$ CF=R	Rewind file at close; default
\$ CF=N	No rewind
\$ CF=U	Unload
CL=length	Supplies the length in characters of the trailer count field of T format records
CNF=YES	YES activates the connected file option
CNF=NO	NO deactivates the connected file option
CP=count	Supplies the starting character position of the trailer count field for T format records (first position CP=0)
CM=YES	Indicates records on the file contain character data and requests character code conversion
CM=NO	Conversion not required
\$ DL=length	Supplies the length in words of the directory required for library files; must be greater than 2



DX=address	Supplies the address of the user end-of-data routine
EX=address	Supplies the address of a user error exit routine to which control is to be passed when an error is detected
EO=T	Terminates job; default
\$ EO=D	Passes control to user error routine (if present), and drops defective input records; parity errors only
\$ EO=A	Passes control to user error routine (if present), and allows processing of defective input records where possible; parity errors only
\$ EO=TD	Prints defective input data on special error file and terminates job
\$ EO=DD	Prints defective input data on special error file and processes as in D above
\$ EO=AD	Prints defective input data on special error file and processes as in A above

Macro

ERL=cnt

FL=length

Function

Trivial error limit: omitted or 0, no limits;  
1 to 511, limit as specified

Supplies the length in characters of:

Fixed length (F) format records

Length to which zero byte (Z) format records  
are to be extended on input

Length of Z format record supplied on output

FO=SQ

Sequential file organization; default

FO=WA

Word addressable organization

§ FO=LB

Library organization

HL=length

Supplies the length in characters of T format record  
header

LA=addr

Address of a label area

LBL=n

Length of requested label; standard labels=80  
characters

LFN=new

1 to 7 alphanumeric characters (first character  
alphabetic) specifying file name; default=lfn

LL=length	Supplies the length of length field for D format records in characters
LP=count	Supplies the starting character position of the length field of D format records; first position LP=0
LX=addr	Label exit address to which control is passed at certain file positions
MBL=length	Gives maximum block length in characters for I, C, and E format blocks; default value is 5120
MRL=length	Supplies maximum record length of T, D, R, S, X, U, or W format records in characters
OF=R	Rewind file at open; default
OF=N	No rewind of file at open
OF=E	Position for extend at open
\$ PD=INPUT	Input at file open
\$ PD=OUTPUT	Output
\$ PD=I-O	Input/output; default

\$ Not compatible SCOPE 2/SCOPE 3.4

Macro

Function

\$ PNA[L]=address	Supplies address of an area in user SCM (PNA) or LCM (PNAL) for the directory entry.
RB=number	Supplies the number of records per block for K format blocks
RMK=character	Display code of record mark for R format records in octal or decimal (for example, RMK=53B for \$)
RT=F	Fixed length record
RT=D	Decimal character count record
RT=R	Record mark record
RT=T	Trailer count record
RT=W	Control word record; default
RT=Z	Zero-byte record
RT=U	Undefined record
RT=S	SCOPE logical record

§ RT=X Short block record; X-mode (read only)  
 § SPR=NO Record manager anticipates user requirements for on-line tapes; default  
 § SPR=YES Reads and writes no more than one on-line tape block at a time. Transfers completed blocks to a tape file before allowing the user to construct further blocks  
 TL=length Supplies the length of T format record trailer in characters  
 ULP=NO No user label processing; default  
 ULP=V User volume label processing (VOL and EOV)  
 ULP=F User file label processing (HDR and EOF)  
 ULP=U User processing of UHL, UTTL, and UVL labels  
 ULP=VU Combination of V and U  
 ULP=VF Combination of V and F  
 ULP=FU Combination of F and U  
 ULP=VFU Combination of V, F, and U

---

§ Not compatible SCOPE 2/SCOPE 3.4

Macro

VF=U

VF=R

VF=N

\$ WSA[L]=address

Function

Unloads volume at close; default

Rewinds volume at close

Specifies no rewind at close

Supplies user address in SCM(WSA) or LCM(WSAL) of user record/data tape

LOCATION	OPERATION	VARIABLE SUBFIELDS
\$ [ tag ]	FIND	fit, pna

Retrieves the library file directory entry of a specified partition and positions the file for GET operations

fit

pn

Address expression or X register containing FIT address

Location containing directory entry name and a receiving area for the entry

LOCATION	OPERATION	VARIABLE SUBFIELDS
[ tag ]	GET[form]	fit, wsa, $\left\{ \begin{array}{l} \text{ptl} \\ \text{rl} \end{array} \right\}$ , $\left\{ \begin{array}{l} \text{dx} \\ \text{ex} \end{array} \right\}$ , wa, SKIP

Transfers data from a file to a user area.

form

Options: blank Lengths supplied by macro are in units of characters

- \$ W Lengths supplied by macro are in units of words not characters
- \$ P Partial get of only part of the current record
- \$ R Return immediately
- \$ WP Combines W and P options
- \$ PR Combines P and R options
- \$ WR Combines W and R options
- \$ WPR Combines W, P, and R options

fit

Address expression or X register containing FIT address

Macro

Function

Address of working storage area to which user record is destined

Length supplied for variable length records only

Specifies address of either an end-of-data exit (dx) for FO=SQ or an error-exit (ex) for FO=WA or FO=LB

Word address or record number for word addressable file

Only used after a GETP. Partial transfer length; number of characters to be transferred

Only used after a GETP. If specified and necessary, the record manager advances to the start of the next logical record before performing the requested partial transfer (GET or PUT, and option)

Retrieves the next label of a label group and delivers it to the label area

Address expression or X register containing FIT address  
Address of label area; destination of retrieved label  
Length (in characters) of the label area

wsa

r1

ex or dx

wa

ptl

SKIP

LOCATION	OPERATION	VARIABLE SUBFIELDS
[ tag ]	GETL	fit, la, lbl

fit

la

lbl



LOCATION	OPERATION	VARIABLE SUBFIELDS
\$ [tag]	GETPOS	fit, Xj [ , E]

Provides word address of current file position

fit

Address expression or X register containing FIT address

Xj

X register in which the record manager returns the current position. The returned value is undefined for:

Tape files

Random mass storage files

Any position other than a logical record boundary at the time the request is issued

The current position is either after the last record read (input files) or after the last record written (output files)

Macro

Function

The position is returned in register Xj



Bits 59-33 Reserved  
 32- 0 Word address in file

If specified, word address of end-of-information is returned in Xj

E

LOCATION	OPERATION	VARIABLE SUBFIELDS
[tag]	LABEL	fit[, p1, p2, ..., pn]
		fit

C=yyddd

R

W

Supplies label information to record manager.

Address of the FIT

Creation date in Julian format yyddd

Check existing label

Create nonexisting label

} I/O sequential  
 files only

E=number	A 2-digit version number of the generation
§ G=number	A 4-digit generation number
L=value	A 1 to 17 character value enclosed by § signs used to supply/check the associated HDR1 label field
M=name	A 6-character multifile† name that associates all files of a file set

†Refers to ANSI standard but does not imply support of multifile volumes  
§ Not compatible SCOPE 2/SCOPE 3.4

Macro

P=number

V=number

T=dddd

\$ U=yyddd

Function

Gives the sequence number of a file in a multiframe set †

A 1 to 4 digit number that gives the file section (volume number) of the file at which processing is to commence

Expiration time in days from creation date in format dddd

An expiration date in Julian format yyddd

Requests assignment of a set member to a job; key-word values may be X registers containing addresses of parameter values

Volume serial number of set member to be mounted (required)

Setname of set to be mounted

Address of the word to which to return conditionally fatal error code

LOCATION	OPERATION	VARIABLE SUBFIELDS
	MOUNT	VSN=vsnl, SN=setname, RC=addr, DT=dt, EST= est]

VSN=vsnl

SN=setname

RC=addr

DT=dt

Device type of master device

AY 844-2 (default)  
AF 7638  
AR 819

EST=est

EST ordinal of device on which set member is mounted

LOCATION	OPERATION	VARIABLE SUBFIELDS
[tag]	OPENM	fit[, processing direction, file position]

fit

processing direction

Address expression or X register containing FIT address

Alternatives: INPUT; default  
OUTPUT  
I-O (input/output)

† Refers to ANSI standard but does not imply support of multiframe volumes.  
§ Not compatible SCOPE 2/SCOPE 3.4.

Macro

file positioning

Function

- Alternatives: N No rewind  
R Rewind to start of file; default  
E Position immediately before end-of-information to allow extension of sequential files (mass storage file only)

LOCATION	OPERATION	VARIABLE SUBFIELDS
\$ [tag]	POSITION	fit, Xj [, E]

Repositions file to point specified by GETPOS

Address expression or X register containing FIT address

X register containing the new position exactly as returned by the GETPOS request

Applies to unblocked files only

If specified, file is positioned at end-of-information

LOCATION	OPERATION	VARIABLE SUBFIELDS				
[ tag ]	PUT <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>W</td></tr> <tr><td>R</td></tr> <tr><td>WR</td></tr> </table>	W	R	WR	fit, wsa, rl, ex, wa	
W						
R						
WR						
[ tag ]	PUT <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>P</td></tr> <tr><td>WP</td></tr> <tr><td>PR</td></tr> <tr><td>WPR</td></tr> </table>	P	WP	PR	WPR	fit, wsa, pt1, ex, wa, rl, TERM
P						
WP						
PR						
WPR						

Transfers data from a user area to a file

Options: blank Lengths supplied by macro are in units of characters

§ W Lengths supplied by macro are in units of words, not characters

§ P Partial put of only part of the current record

§ R Return immediately

§ WP Combines W and P options

§ PR Combines P and R options

§ WR Combines W and R options

§ WPR Combines W, P, and R options

Address of the FIT

.Address of working storage area specified by user

Length of record to be written (in characters)

fit

wsa

rl

§ Not compatible SCOPE 2/SCOPE 3.4

Macro

ex  
wa  
pt1

TERM

LOCATION	OPERATION	VARIABLE SUBFIELDS
[ tag ]	PUTL	fit, la, lb1

la  
lb1

LOCATION	OPERATION	VARIABLE SUBFIELDS
\$ [tag]	READM	fit, lcm area, size, relative sector

fit

lcm area

Function

Specifies address of an error exit

Word address for word addressable files

Amount of data to be transferred (in characters); required for all P options

Signals record is to terminate with this PUTP

Transfers a label from the user label area to the file

Address expression or X register containing FIT address

Address of label area containing label to be written

Length (in characters) of label area

Transfers data from a device to LCM

Address of the FIT

The address to which the data is to be transferred



Options: Sector count for mass storage  
Maximum block length for tape files

Relative sector number of first sector to be transferred; required for mass storage only

relative sector

size

LOCATION	OPERATION	VARIABLE SUBFIELDS
	REQUEST	{ lfn } [ , device, density, { mfn } vsn, labeling, mount, conversion, recovery, MF]

lfn

mfn

device

density

Assigns a magnetic tape to a file

Address expression or X register containing FIT address

Multifile name; specified when MF is present

Device type:

MT 7-track tape

NT 9-track tape

Recording density

Macro

Function

LO†	200 bpi	} 7-track
HI	556 bpi	
HY	800 bpi	
HD	800 bpi	} 9-track
PE	1600 bpi	

Not included: Installation defined

labeling

N Write new label  
E Label exists, check only; default

conversion

Code conversion:

US ASCII 8-bit code  
EB EBCDIC 8-bit code

\$ mount

Specifies the number of tape volumes of the file to be mounted at one time

M1 One volume; default  
M2 Two volumes

\$ vsn

Gives the volume serial numbers (or visual reel number for unlabeled tapes) of the volumes of the file. The operand is written: VSN=vsn<sub>1</sub>/vsn<sub>2</sub>/.../vsn<sub>n</sub>

recovery  
 Specifies whether or not recovery from read parity errors is to be attempted

NR No recovery is to be attempted  
 omitted Recovery attempt is requested

MF Presence specifies that REQUEST is for a multiframe volume

LOCATION	OPERATION	VARIABLE SUBFIELDS
	REQUEST	lfn [, device, allocation size, checkpoint, transfer-size, WCK, SN=setname, VSN=vsn <sub>1</sub> /vsn <sub>2</sub> /.../.... / vsn <sub>n</sub> , *PF]

Logical file name

Designates file assignment

AF 7638 Disk Storage Subsystem; system set only  
 AY 844-2 Disk Storage Subsystem  
 AR 819 High Capacity Disk Subsystem

\$ omitted Any set member meeting qualification of \*PF and VSN parameters

lfn

device

† Cannot be used for 66X Magnetic Tape Unit  
 ‡ Not compatible SCOPE 2/SCOPE 3.4

Macro

**\$ allocation size**

The number of allocation units; that is, contiguous area of mass storage, allocated for the file

	<u>Function</u>
A0, A	1 MAU
A1	2 MAUs
A2	4 MAUs
A3	8 MAUs
A4	16 MAUs
omitted	Defined by installation parameter

**\$checkpoint**

**Options:**

CK	File is checkpoint file and overwrite not allowed
CKB	File is checkpoint file and overwrite of previous record of checkpoint data is allowed
CK1	File is first of two checkpoint files that receive data alternately
CK2	File is second of two checkpoint files that receive data alternately

**\$ transfer-size**

The size of units of data to be transferred between mass storage and system I/O buffers at one time

T Minimum LCM buffer size (5120 characters)  
 T0 1 MAU  
 T1 2 MAUs  
 T2 4 MAUs  
 T3 8 MAUs  
 T4 16 MAUs  
 default Equal to A parameter

Specifies that write-check techniques are to be used when recording data on the file  
 1 to 7 character name of set on which file is to reside  
 Volume serial number(s) of set(s) where file can reside;  
 1 to 6 characters  
 Assigns file to permanent file device

Causes file to be closed and unloaded and the assigned device to be released from the job  
 Address expression or X register containing FIT address

\$ WCK

SN=setname

\$ VSN=vsn<sub>1</sub>/vsn<sub>2</sub>/.../vsn<sub>n</sub>

\*PF

LOCATION	OPERATION	VARIABLE SUBFIELDS
	RETURN	fit
		fit

MacroFunction

LOCATION	OPERATION	VARIABLE SUBFIELDS
[tag]	REWINDM	fit <sub>1</sub> [, fit <sub>2</sub> ]

fit

Rewinds current volume of a tape file to beginning of information

Address expression or X register containing FIT address

LOCATION	OPERATION	VARIABLE SUBFIELDS
[tag]	SETFIT	fit

fit

Sets FIT fields in accordance with values saved by record manager the last time the file was opened

Address expression or X register containing FIT address

LOCATION	OPERATION	VARIABLE SUBFIELDS
	SETNAME	setname

setname

Specifies the default setname for the job

1 to 7 alphanumeric character name of set to be used as default; if omitted, default returns to system-defined default

LOCATION	OPERATION	VARIABLE SUBFIELDS
[tag]	SKIP [direction] [unit]	fit, no. of units

Repositions the file forward or backward

direction

units

fit

no. of units

- F Forward
  - B Backward
  - L Logical records
  - P Blocks (physical records)
  - F Files (tapemarks)
- Address expression or X register containing FIT address  
 Number of L, P, or F units to be skipped or an X register containing number of units; default=0

MacroFunction

LOCATION	OPERATION	VARIABLE SUBFIELDS
	STAGE	fit[, volume serial numbers, device, direction, density, station, allocation size, transfer-size, conversion, labeling, write-check, stage full, recovery]

Provides staging of magnetic tape files/volumes

fit

device

Address expression or X register containing FIT address

Device type:

MT	7-track magnetic tape (default)
NT	9-track magnetic tape
null	7-track magnetic tape



direction

Specifies staging in or out

PRE Stage in at OPEN time  
POST Stage out at CLOSE UNLOAD  
null Stage in

allocation size

The number of allocation units, that is, contiguous area of storage, allocated for the file.

Values: A0,A 1 MAU  
A1 2 MAUS  
A2 4 MAUS  
A3 8 MAUS  
A4 16 MAUS  
omitted Defined by installation parameter

volume serial numbers

The volume serial numbers of the volume to be staged. Required for prestaging and is written:

$VSN = vsn_1/vsn_2/.../vs_n$

For unlabeled files to be staged in, the operand may be extended to specify partial staging:

$VSN = \$vsn_1/type/n/m\$$

Type is either B or F, and respectively, indicates that n is either the number of blocks to be skipped and m is the number of blocks on the volume to be staged, or n is the number of tapemarks to be skipped and m is the number of tapemarks to be processed

Macro

Function

Partial staging is only permitted for unlabeled tapes

transfer-size

The size of units of data to be transferred

Values: T Minimum LCM buffer size (5120 characters)

T0	1 MAU
T1	2 MAUs
T2	4 MAUs
T3	8 MAUs
T4	16 MAUs

omitted Equal to A parameter

station

Designates the station at which the file is to reside.  
 The operand is written ST=ggg where ggg is the station identification. If ggg is the mainframe identifier of the 7600 CPU on which the job runs, staging occurs from an on-line tape unit; default is station of job origin.

write-check

Specifies that write-check techniques are to be used when recording data on the file

WCK	Write-check
omitted	No write-check

recovery Specifies return of control upon parity error on tape

null Control passes to operator after recovery  
 NR No control passes to operator; bad data flagged to operator and transmitted

labeling

N Write new label  
 E Label exists, check only; default

conversion

Code conversion

US ASCII to display on input, display to ASCII on output  
 EB EBCDIC to display on input, display to EBCDIC on output

density

Recording density

LO †	200 bpi	} 7-track
HI	556 bpi	
HY	800 bpi	
HD	800 bpi	} 9-track
PE	1600 bpi	
null	Installation defined	

stage full

null The first volume of the file is to be staged at OPEN time. Subsequent volumes are to be staged when the job completes reading the prior volume

Macro

Function

SF All volumes of the file are to be prestaged at OPEN time

Note: If stage by volume is requested, system mass storage space allocated for a prior volume is released. Storage is allocated for each volume. REWIND causes positioning to the start of the last volume mounted. Multiple passes of the file are not possible.

LOCATION	OPERATION	VARIABLE SUBFIELDS
[tag]	STORE	fit(, keyword= { option Xi , f, s, m

fit

keyword

option

Xi

Modifies any field in the FIT. Code expansion uses X5, X6, X7, A5, B5, and B6 registers

Address expression or X register containing FIT address

Identifies field to be modified. Options are the same as for the FILE macro. If values are furnished in words, provide a W suffix to keyword

Options associated with the keyword. Refer to the FILE macro for rules.

X register containing the proper code for the keyword.

f Number of X register used to fetch FIT word; 1-5  
(5 is default)

s Number of X register used to store FIT word; must be  
6 or 7 (6 is default)

m Number of X register used as mask (7 is default)

LOCATION	OPERATION	VARIABLE SUBFIELDS
\$ [tag]	STOW	fit, pna

Makes an entry in the library file directory and positions the file for PUT operations

Address expression or X register containing FIT address  
Location (in user field length) of the new directory entry

LOCATION	OPERATION	VARIABLE SUBFIELDS
	UNLOAD	fit

Address expression or X register containing FIT address  
Rewinds, closes, and unloads file. If file is on magnetic tape, tape unit is physically and logically released

Address expression or X register containing FIT address

MacroFunction

LOCATION	OPERATION	VARIABLE SUBFIELDS
[tag]	WEOR	fit[, level no.]

Writes end-of-section or terminates a record

fit

Address expression or X register containing FIT address

level no.

Specifies level number, an integer less than 178; default gives 00

LOCATION	OPERATION	VARIABLE SUBFIELDS
\$[tag]	WRITEM	fit, area, size, sector

Transfers data from LCM to a device

fit

Address expression or X register containing FIT address

area

Supplies the LCM address from which the data is to be transferred

size

Options: Sector count for mass storage

Block length for tape files

sector

LOCATION	OPERATION	VARIABLE SUBFIELDS
[tag]	WTMK	fit

fit

Relative sector number of first sector to be transferred;  
required for mass storage only

Records a tapemark on a blocked file

Address expression or X register containing FIT address

## SYSTEM ACTION MACROS

SCOPE 2 furnishes several system functions called by the user by means of macros. The macro generates an instruction word in the user's program. The upper portion of the word is a monitor jump to the job supervisor with an overlay load request.

### Macro

### Function

LOCATION	OPERATION	VARIABLE SUBFIELDS
	ABORT	[lfn] [, ndump] [, S]
	CLOCK	address
	CONTRLC	address

Causes the current job step to abort

lfn File for which error processing is specified

ndump Specifying NODUMP or ND suppresses the user abort dump. If omitted, standard user dump is performed.

S Specifying this parameter causes processing to continue at next EXIT(S); if not specified, processing continues at next EXIT.

When lfn is specified, ndump and S parameters are ignored.

Places current value of the clock into an address specified by the user

Provides a means of reading the next control statement record or backspacing to the previous control statement record



LOCATION	OPERATION	VARIABLE SUBFIELDS
	DATE	address
	ENDRUN	
	JDATE	address
	MEMORY	type, address, length, nabort

Enters the date supplied by the operator into an address specified by the user

Provides a normal exit from program execution

Stores the Julian date in an address specified by the user

Obtains the current memory size assigned to a job or to change a job's memory size requirement

type	LCM or SCM
length	if not null, overrides contents of location address as value of memory request
nabort	if null, job aborted if MEMORY request exceeds current maximum; if not null, job is not aborted

MacroFunction

LOCATION	OPERATION	VARIABLE SUBFIELDS
	MESSAGE	address, x
	NXTCARD	
	PAUSE	address
	RECALL	[ lfn ]
	REPRIEVE	address

RTIME address, option

Enters a dayfile message into a job dayfile and the system information file where x, if null, specifies message entry in both dayfile and SIF and to be displayed. If x is not null, message is displayed but is not entered in dayfile

Requests reading of the next card of a continued control statement.

Notifies operator at a station of some condition or requirement of a job

If lfn is a local file name, record manager performs a status check and an owncode routine is executed if necessary. If lfn is not local or is null, program is placed in wait status and relinquishes the CPU for one or more monitor cycles.

Declares error conditions to be processed by user routine and gives the address of the routine

Places a number of clock periods since midnight in an address specified by the user; option can be as follows:

7CLK Integer clock periods  
 other Seconds (modulo 4096), milliseconds (modulo 1000), and milliseconds

Updates sense switch field in RAS+0

Places values equal to the current CPU time and the time limit in an SCM address specified by the user; option can be as follows:

7CLK Integer clock periods  
 other Time limit in seconds (bits 59-35) and CPU time used in seconds (bits 34-11) and milliseconds (bits 10-0)

LOCATION	OPERATION	VARIABLE SUBFIELDS
	SSW	
	TIME	address, option, type

Macro

Function

type

The type parameter selects type of time requested as follows:

USER	User time only
other	Job time used by user and job supervisor

LOCATION	OPERATION	VARIABLE SUBFIELDS
	TRANSF	address

Accomplishes synchronized processing of a sequence of two or more jobs

## PERMANENT FILE MACROS

The permanent file macros require an FDB macro.

The FDB macro need be called only once for a file.

### Macro

LOCATION	OPERATION	VARIABLE SUBFIELDS
fdbaddr	FDB	lfn, pfn, [p1, p2, ..., Pn]

### Function

Creates a file definition block for file

A 1 to 7 alphanumeric symbolic address associated with word 0 of the file definition block for a file

Logical file name

Name under which permanent file is to be cataloged. Parameter must be second parameter in variable subfield. Name may be 1 to 40 alphanumeric characters

If only one file name is specified, it is assumed to be both lfn and pfn; the first 7 characters are used for lfn.

fdbaddr

lfn

pfn

Format

Macro

Octal  
Code†

p<sub>i</sub> (Keyword)

none	00	End of FDB list
PP=parameter	01	Privacy procedure parameter, 1 to 9 characters used by the installation to pass information to an installation defined procedure
RP=number	02	Retention period; 0 to 999 days (999=indefinite)
CY=number	03	Cycle number; 1 to 999
TK=password	04	Turnkey password
CN=password	05	Control password
MD=password	06	Modify password
EX=password	07	Extend password
RD=password	10	Read password
MR=number	11	Multiread access if MR=1; all permissions granted if MR=0

- 12 Not used
- XR=password 13 Except read password
- ID=name 14 User identification
- 15-17 Not used
- PW=list 20-24 Password list
- LC=number 31 Lowest cycle number
- SN=name 40 Setname

LOCATION	OPERATION	VARIABLE SUBFIELDS
\$	CATALOG	fdbaddr, [RC]

Establishes a permanent file directory and catalogs entries for user's file

fdbaddr

A 1 to 7 alphanumeric symbolic address of the FDB for the file to be cataloged. Parameter requires the FDB macro to inform system

†Refers to parameter code in FDB

\$ Not compatible SCOPE 2/SCOPE 3.4

Macro

RC

Function

RC returns control to the requester on nonfatal errors. A return code in word fdbaddr, bits 17-9, can have the following octal values.

<u>Return Code</u>	<u>Meaning</u>
0	Function successful
1	Not used
2	Logical file name already assigned
3	Logical file name not found
4	No room for cycle
5	Catalog full
6	lfn and pfn both null
7	Unused
10	Blocked file not closed
11	Device illegal for file residence or *PF not specified for file
12	File not in system



13	Unused
14	Invalid cycle number
15	Duplicate 4 cycles
16	Directory full
17	Function attempted on non-permanent files
20	Function attempted on nonlocal files
21	Parameter error
22	Attempt to catalog null file
23	Cycle incomplete on an attach
24	Duplicate attach
26	I/O error on permanent file device
35	File already in system
40	Illegal setname specified

Macro

Function

LOCATION	OPERATION	VARIABLE SUBFIELDS
S	ATTACH	fdbaddr, RC

Provides access to an existing permanent file

Parameters are the same as for CATALOG

LOCATION	OPERATION	VARIABLE SUBFIELDS
	SAVEPF	fdbaddr, RC

Catalogs a copy of a local file; may be used to catalog a copy of a file at another mainframe with the use of the ST=ggg parameter on the FDB macro

Parameters are the same as for CATALOG

LOCATION	OPERATION	VARIABLE SUBFIELDS
	GETPF	fdbaddr, RC

Obtains a working copy of a permanent file; may be used to obtain a copy of a file residing at another mainframe with the use of the ST=ggg parameter on the FDB macro

Parameters are the same as for CATALOG

LOCATION	OPERATION	VARIABLE SUBFIELDS
	PURGE	fdbaddr, RC

Removes a file from the permanent file directory and catalog; may be used to purge a file at another mainframe with the addition of the ST=ggg parameter on the FDB macro

Parameters are the same as for CATALOG

LOCATION	OPERATION	VARIABLE SUBFIELDS
	EXTEND	fdbaddr, RC
	ALTER	fdbaddr, RC

Redefines the space allocated for permanent file

Where parameters are as defined for CATALOG above



**TABLES**



## FUNCTION CODE: (OCTAL VALUES)

10 ATTACH  
 20 CATALOG  
 30 EXTEND  
 40 PURGE  
 50 ALTER  
 110 ATTACH  
 120 CATALOG  
 130 EXTEND  
 140 PURGE  
 150 ALTER  
 160 SAVEPF  
 170 GETPF

}  
 CALL WITH RC  
 PARAMETER

}  
 CALL WITHOUT RC  
 PARAMETER

}  
 RC NOT SUPPORTED

WHEN THE FUNCTION IS COMPLETED, THE LOW ORDER BIT OF THE FUNCTION CODE IS SET TO ONE.

RETURN CODE: (OCTAL VALUES)

Refer to CATALOG macro RC parameter

## PARAMETER CODE: (OCTAL VALUES):

Refer to FDB macro parameter list





**LABELS**

## LABEL GROUP TYPES

Type	Use	Requirement	Identifier and Number
Volume/Header Group†	System Volume Label	Required	VOL1
	User Volume Labels	Optional	UVL1-9 †††
	File Labels	Required Optional	HDR1 HDR2-9 ††
	User File Labels	Optional	UHL(a) †††
End of Volume Group	End of Volume Labels	Required Optional	EOV1 EOV2 to †† EOV9
	User Volume Trailer Labels	Optional	UTL(a) †††

†No more than 63 volumes per file

††Creation of these labels not supported by SCOPE 2

†††Creation and use of optional user labels is supported for on-line tapes for SCOPE 2. However, these labels are read and skipped if they are on staged tape files.

Label Group Types (Cont'd)

Type	User	Requirement	Identifier and Number
End of File Group	End of File Labels	Required Optional	EOF1 EOF2 to † EOF9
	User File/Volume Trailer Labels	Optional	UTL(a) ††

NOTE

The symbol (a) means any of the ASCII characters with-  
in the range from 20<sub>16</sub> through 5E<sub>16</sub>, except 5B<sub>16</sub> and  
5D<sub>16</sub>.

† Creation of these labels not supported by SCOPE 2

†† Creation and use of optional user labels is supported for on-line tapes for SCOPE 2. However, these labels are read and skipped if they are on staged tape files.

## LABELED FILE FORMATS

Type File/ Volume	Structure
S / S	VOL1 HDR1*... File A... *EOF1**
S / M	VOL1 HDR1*... First part of File A... *EOV1** VOL1 HDR1*... Last part of File A... *EOF1**
M / S	VOL1 HDR1 ... FileA... *EOF1*... *HDR1*... File n... *EOF1**
M / M	VOL1 HDR1*... FileA... *EOF1* *DHR1*... File B... *EOV1** VOL1 HDR1*... File B cont'd... *EOF1**

\* Hardware tapemark  
S Single  
M Multiple

## VOLUME HEADER LABEL CONTENTS

Field Name	Starting Character Position (decimal)	Length In Characters (decimal)	(If Used) Defined Values Character
Volume Header ID	1	4	VOL1
Volume Serial Numbers	5	6	Visual Reel Numbers
Accessibility	11	1	
Blank	12	26	
Owner Identi- fication	38	14	
Blank	52	28	
Label Standard Level	80	1	1

## FILE HEADER LABEL CONTENTS

Field Name	Starting Character Position (decimal)	Length In Characters (decimal)	(If Used) Defined Values Characters
Header ID	1	4	HDR1
File Identifier	5	17	
Multifile Name	22	6	
Volume Number †	28	4	
File Sequence Number	32	4	
Generation Number	36	4	
Version Number	40	2	
Blank	42	1	
Creation date	43	5	Julian yyddd
Blank	48	1	
Expiration date	49	5	Julian yyddd
Accessibility	54	1	Blank
Block Count	55	6	Zeros
Blanks	61	20	Blanks

† Within multivolume file

## END-OF-FILE (VOLUME) LABEL CONTENTS

Field Name	Starting Character Position (decimal)	Length In Characters (decimal)	(If Used) Defined Values Characters
Header ID	1	4	EOF1(EOV1)
Same as	5	17	
	22	6	
	28	4	
	32	4	
	36	4	
Header	40	2	
	42	1	
Label	43	5	
	48	1	
	49	5	
Block Count	54	1	
	55	6	Block count since last label group
Blank	61	20	Blanks

## UNLABELED FILE FORMAT

DATA Type	Structure
Single	Start of Tape ... DATA ... **
Multiple	Start of Tape ... DATA ... **
	Start of Tape...DATA cont'd... **

\*Hardware tapemark

**STANDARD CHARACTER SETS**

CDC Graphic	ASCII Graphic Subset	Display Code	Hollerith Punch (026)	External BCD Code	ASCII Punch (029)	ASCII Code
:†	:	00†	8-2	00	8-2	3A
A	A	01	12-1	61	12-1	41
B	B	02	12-2	62	12-2	42
C	C	03	12-3	63	12-3	43
D	D	04	12-4	64	12-4	44
E	E	05	12-5	65	12-5	45
F	F	06	12-6	66	12-6	46
G	G	07	12-7	67	12-7	47
H	H	10	12-8	70	12-8	48
I	I	11	12-9	71	12-9	49
J	J	12	11-1	41	11-1	4A
K	K	13	11-2	42	11-2	4B
L	L	14	11-3	43	11-3	4C
M	M	15	11-4	44	11-4	4D
N	N	16	11-5	45	11-5	4E
O	O	17	11-6	46	11-6	4F
P	P	20	11-7	47	11-7	50
Q	Q	21	11-8	50	11-8	51
R	R	22	11-9	51	11-9	52
S	S	23	0-2	22	0-2	53
T	T	24	0-3	23	0-3	54
U	U	25	0-4	24	0-4	55
V	V	26	0-5	25	0-5	56
W	W	27	0-6	26	0-6	57
X	X	30	0-7	27	0-7	58
Y	Y	31	0-8	30	0-8	59
Z	Z	32	0-9	31	0-9	5A
0	0	33	0	12	0	30
1	1	34	1	01	1	31
2	2	35	2	02	2	32
3	3	36	3	03	3	33
4	4	37	4	04	4	34
5	5	40	5	05	5	35

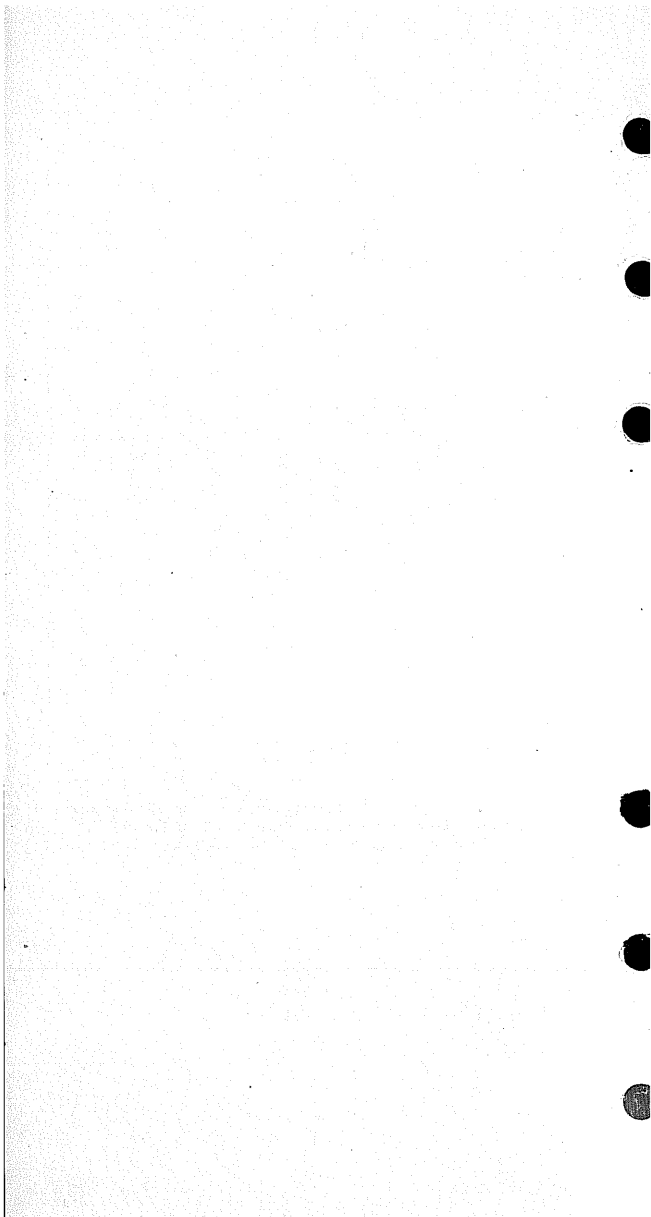
† Twelve or more zero bits at the end of a 60-bit word are interpreted as end-of-line mark rather than two colons. End-of-line mark is converted to external BCD 1632.



CDC Graphic	ASCII Graphic Subset	Display Code	Hollerith Punch (026)	External BCD Code	ASCII Punch (029)	ASCII Code
6	6	41	6	06	6	36
7	7	42	7	07	7	37
8	8	43	8	10	8	38
9	9	44	9	11	9	39
+	+	45	12	60	12-8-6	2B
-	-	46	11	40	11	2D
.	.	47	11-8-4	54	11-8-4	2A
/	/	50	0-1	21	0-1	2F
(	(	51	0-8-4	34	12-8-5	28
)	)	52	12-8-4	74	11-8-5	29
S	S	53	11-8-3	53	11-8-3	24
=	=	54	8-3	13	8-6	3D
blank	blank	55	no punch	20	no punch	20
, (comma)	, (comma)	56	0-8-3	33	0-8-3	2C
. (period)	. (period)	57	12-8-3	73	12-8-3	2E
≡	≡	60	0-8-6	36	8-3	23
		61	8-7	17	12-8-2	5B
		62	0-8-2	32	11-8-2	5D
%††	%	63	8-6	16	0-8-4	25
⌘	" (quote)	64	8-4	14	8-7	22
→	(underline)	65	0-8-5	35	0-8-5	5F
v	†	66	11-0 or 11-8-2†††	52	12-8-7 or 11-0†††	21
^	&	67	0-8-7	37	12	26
↑	' (apostrophe)	70	11-8-5	55	8-5	27
↓	?	71	11-8-6	56	0-8-7	3F
∨	<	72	12-0 or 12-8-2†††	72	12-8-4 or 12-0†††	3C
∨	>	73	11-8-7	57	0-8-6	3E
∨	@	74	8-5	15	8-4	40
∨	\	75	12-8-5	75	0-8-2	5C
∨	˘ (circumflex)	76	12-8-6	76	11-8-7	5E
;(semicolon)	;(semicolon)	77	12-8-7	77	11-8-6	3B

†† In installations using the CDC 63-graphic set, display code 00 has no associated graphic or Hollerith code; display code 63 is the colon (8-2 punch).

††† The alternate Hollerith (026) and ASCII (029) punches are accepted for input only.





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