

DITTO/ESA



Reference Summary

Release 3

DITTO/ESA



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Release 3

| **Third Edition (June 1999)**

| This edition applies to Version 1 Release 3
| Modification Level 0 of IBM Data Interfile Transfer,
| Testing, and Operations Utility for ESA, program
| numbers 5655-103 (OS/390 or MVS), 5654-029 (VM),
| 5648-099 (VSE), and to all subsequent releases and
| modifications until otherwise indicated in new editions.

This reference summary may be updated from time to
time. The information contained herein is taken from
DITTO/ESA User's Guide and Reference, which is the
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Function Keywords

DITTO Control Functions

XXX	List DITTO functions on the printer
NEWS	Display release news
SET	Set processing parameters
FMT	Describe double-byte character set (DBCS) format
FSN	Full-screen no — use line mode
FSY	Full-screen yes — use full-screen mode
VSE	Invoke CMS/VSE mode
MB	Memory browse
APB	Advanced print browse (AFP data such as LIST3820)
PB	Print browse (DITTO current session output)
VMC	CMS VSAM master catalog default
DLA	VSE display label area
VER, LVL	Version (level) of DITTO
CCL	Card close (cancel card input)—VSE only
EOJ	End of job
SPB	Spool file browse—VSE or CMS
SPL	Spool list display—VSE only
SPS	Spool services—VSE only

Catalog and VTOC Functions

DVT	Display VTOC
PVT	Process VTOC (rename or scratch)—VSE or CMS
SCS	Catalog services—MVS or VSE
VDL	VSAM data set list
DSE	Data set extents

Function Keywords (continued)

Tape Functions

TLB	Tape label display (when labels unknown)
TB	Tape browse
TCN	Tape to console
TMP	Tape map (short list of a tape's contents)
TC	Tape to card
TP	Tape print
TFA	Print SYSLST A (CCW code)
TFD	or D (ASA code) tape—VSE only
TRS	Tape record scan
TTC	Tape to tape compare
TT	Tape to tape copy
TTR	Tape to tape, reblocked
TU	Tape update
TRL	Tape record load
TX	Tape to REXX variable
XT	REXX variable to tape
ERT	Erase tape (data security erase 34xx only)
INT	Initialize tape (EBCDIC or ASCII format)

Note: Under MVS, if you use functions that are not enabled for output label processing, the tape remains open until you rewind and unload it (RUN function) or end the job (EOJ function). Additional functions process the tape at the current position. However, if you use a function that is enabled for output label processing (BT, CT, QT, ST, or VT), the tape is rewound and unloaded after the file is closed and the function has completed.

Labeled Tape Functions

TLT	Tape to labeled tape, with label processing
TFT	Tape file to tape file—VSE or CMS

Tape Control Functions

BSF	Backspace file
BSR	Backspace record
FSF	Forward space file
FSR	Forward space record
REW	Rewind tape
RUN	Rewind and unload tape
WTM	Write tape marks

Function Keywords (continued)

Basic Disk Functions

DB	Disk browse
DCN	Disk to console
DID	Alter disk volume ID–VSE or CMS
DU	Disk update
DTE	Disk track edit
DRL	Disk record load
EOF	Write disk EOF record
DP	Disk print
DRS	Disk record scan

Sequential Data Functions

SC	Sequential data to card
SP	Sequential data print
SFA	Print SYSLST A (CCW code)
SFD	or D (ASA code) disk file–VSE only
TS	Tape to sequential data–MVS or VSE
ST	Sequential data to tape
SS	Sequential data to sequential data–MVS or VSE
SL	Sequential data to library member
SV	Sequential data to VSAM file

VSAM Disk File Functions

VB	VSAM browse
VC	VSAM to card
VP	VSAM print
TV	Tape to VSAM
VT	VSAM to tape
VL	VSAM to library member
VS	VSAM to sequential data–MVS or VSE
VV	VSAM to VSAM
VE	VSAM edit
VU	VSAM update
VRU	VSAM record update
DVB	Data-in-virtual browse–MVS only
VX	VSAM to REXX variable
XV	REXX variable to VSAM

Function Keywords (continued)

OAM Object Functions (MVS Only)

ODL	Object data list
OB	Object browse
OP	Object print
OO	Object to object
OS	Object to sequential data
SO	Sequential data to object
OV	Object to VSAM
VO	VSAM to object
OU	Object update
OE	Object erase

CMS File Functions (CMS Only)

FB	CMS file browse
FP	CMS file print
FS	CMS file to sequential data
SF	Sequential data to CMS file
FL	CMS file to library member
LF	Library member to CMS file
FT	CMS file to tape
TF	Tape to CMS file
FV	CMS file to VSAM
VF	VSAM to CMS file

DUMP	Dump CMS files to tape
LOAD	Load CMS files from DITTO dump tape or DDR backup tape

Data Create Functions

BS	Create sequential data—MVS or VSE
BT	Create a tape file
BV	Create a VSAM file

Function Keywords (continued)

Library Functions (VSE Only)

LDL	Library directory list
LSL	Library status list
LB	Library member browse
LP	Library member print
LL	Library member to library member
LT	Library member to tape
TL	Tape to library member
LV	Library member to VSAM
LS	Library member to sequential data
LC	Library member to card
CL	Card to library member
LE	Library member edit
LU	Library member update
LDEL	Library member delete
LR	Library member rename
LX	Library member to REXX variable
XL	REXX variable to library member

Card Functions: The end of a card file is detected as follows:

- In interactive operation, by means of a blank card.
- In batch operation, the end of a card file is /* for both control cards and data. If data cards contain /*, specify a delimiter in the EOD parameter of the SET function.
Under MVS, you can also specify
//SYSIN DD DATA,DLM=delimiter

CC	Card to card
II	Interpret pre-punched cards
CP	Card print
CS	Card to sequential data—MVS or VSE
CT	Card to tape blocked or unblocked
CV	Card to VSAM

Notes On Using DITTO

Batch Mode: DITTO batch control cards are indicated by **\$\$DITTO** in columns 1-7 followed by one or more blanks, followed by a function code, followed by one or more blanks, followed by any keyword parameters if necessary.

To continue a command onto the next line, end the first control card with a comma and begin the next control card with **\$\$DITTO** in columns 1-7, followed by one or more blanks, followed by any parameters.

The last control card should be **\$\$DITTO EOJ**.

Under VSE, use a // UPSI 1 card to indicate batch mode.

Under CMS, code DITTO batch control cards in a CMS file named fn DITTO fm.

Under MVS, use a // EXEC PGM=DITTO card to indicate batch mode.

Line Mode: Functions can be ended by replying **U** or **EOJ** to prompt messages.

Command Mode: You can enter a DITTO function as a single command using the keyword syntax:

```
DITTO $command keyword=parameter ...
```

or the parameter syntax:

```
DITTO command parameter parameter ...
```

SET Options

These SET options affect print output:

DATAHDR= YES|NO - whether output has a data header
DBCSPRT= OFF|3200|SOSI - how DBCS fields are formatted
DUMP= UPDOWN|ACROSS - format for dump output
HEADERPG= YES|NO - whether output has a header page
PAGESIZE= 60|nnn - number of lines per page
 STDOPT|nnn - for VSE
PAGESKIP= NO|YES - whether output from each function starts on a new page
PRINTLEN= 132|80 - number of columns per line
PRINTOUT= PRINTER|TERMINAL|REXX - destination of output
 SYSPRINT|SYSOUT=
 c|TERMINAL|REXX - for MVS
PRTRTRANS= ON|OFF|KN - whether characters are translated
RECLIMIT= (n,m) - limits output to specified positions

The SET function also lets you set these options:

RESET resets all SET options
ASCII= NO|IN|OUT|BOTH - ASCII translation for tapes
| CMDSYNTAX= CMS|DITTO|ISPF - specifies
| syntax of the browse and edit
| LOCATE command and the edit
| CHANGE command
CYLHD= ABSOLUTE|RELATIVE - how to interpret disk locations (MVS)
EOD= delimiter - delimiter for card and tape
LANGUAGE= language for panels and messages if translated
PAD= ON|OFF|c - pad character for copy
TAPEASGN= TEMP|PERM - whether tapes are assigned temporarily or permanently (VSE)
| TAPBLBL= SL|AL|AL4 - whether EBCDIC,
| ANSI Version 3, or ANSI
| Version 4 labels are created

Parameter Descriptions

This section describes parameters used in batch mode and interactive processing.

APPEND=YES

Appends output to an existing CMS file

ASCII=YES

Formats a tape for use with ASCII labels

AVGSIZE=avgsiz

Average record size

BEGIN=begin

Lower disk extent: cylhd, Rnnnnnn,
nnnnnn (FBA only), or * (MVS only)

BLKSIZE=nnnnnnnn

Block size

BYTES=nnnnnnnn

Number of bytes to print

CATALOG=catalog

Name of a catalog

CIACCESS=YES

Process VSAM file based on control
intervals

CISIZE=nnnnn

Control interval size for an FBA disk

COLLECTN=coll

Name of an OAM collection

ddinfo

ddname plus additional information if it is
not allocated

DENS=mm

Tape density, mode, or format value

DISP=disp

Disposition of an output dataset

dsinfo

Data set name plus additional information
if it is not allocated

dsnvol

Data set name, volser, or both for MVS

DSNAME=filemask

A generic file ID, which can include the
, *, and ** characters.

DSNIN|OUT=dsname

Data set name; for MVS optionally
followed by (member)

Parameter Descriptions (continued)

END=end
Upper disk extent: cylhd, Rnnnnnn,
nnnnnnn (FBA only), Nnnnnnnn, or *
(MVS only)

ENTRIES=type
Entry type for SCS or VDL list

FILEIN|OUT=d|bl|tbl
Name of a DLBL or TLBL statement

FILLCHAR=fill
Fill character (decimal or hex), AN for
alphanumeric, BIN for binary, RAND for
random, default is blank

FLD=(start,end,type)
DBCS field definition

FORMAT=CHAR|HEX
Format of print output

FROMDATE=yyyymmdd
Lower date limit

FUNCTION=function
Function to perform on a data set

HEADER=NO
Do not include an object header

INCR=nnnnnnnnn
Sequence field increment value, default is
10

INFILE=tapefile
File ID for tape input

INFILE=cmsfile
CMS file ID for input

INPUT=input
Input device (physical device address,
SYSnnn, the letter V followed by a volser,
or an MVS ddname)

INTERPRET=YES
To interpret card output

KEEP=YES
Keeps the staging file from a LOAD
operation

KEY=key
VSAM key or slot number

KEYLEN=n
Length of a sequence field, 1 to 9, default
is 8

KEYLOC=nnnnnnn
Starting location of a sequence field

Parameter Descriptions (continued)

LABEL=BLP

Forces bypass label processing

LIBIN=lib|libmask

Library name or generic library name

LIBOUT=lib

Library for output

LIMIT=limit

Object processing limit

LISTONLY=CKD|CNT|KEY

Limits the printout from a CKD disk

location

For a CKD disk, cyl-hh-rrr or Rnnnnnn-rrr;
for an FBA disk, the physical block
number

mdiskbeg

First disk address for LOAD operation

MEMBERIN|OUT=

Member name or

memname|memmask

generic member name

MGMTCLAS=mgmt

Name of an SMS management class

MODE=U

To process physical records (MVS)

MOVE=YES

Moves members (instead of copying)

NBLKS=ALL|nnnnnnnn

Number of tape blocks, 1 to 99 999 999 or
ALL

NBYTES=nnnnnnnn

Number of bytes to print, 1 to 99 999 999

NEWNAME=...

New name of a renamed VTOC entry or
library member

NEWVOL=volser

New volser

NFILES=nnnnn|EOV|EOD|EOT

Number of tape files, 1 to 99 999, EOV
(until an EOV label or double tape mark),
EOD (until the delimiter specified in SET
EOD), EOT (until the physical end of the
tape).

NLRECS=ALL|nnnnnnnn

Number of logical records, 1 to
99 999 999 or ALL

Parameter Descriptions (continued)

NTMKS=nnnn
Number of tape marks to be written, 1 to 9999

OBJNAME=object|objmask
Object name or generic object name

OUTFILE=cmsfile
CMS file ID for output

OUTFILE=tapefile
File ID for tape output

OUTPUT=output
Output device (physical device address, SYSnnn, the letter V followed by a volser, or an MVS ddname)

POSITION=skip
Number of logical records or control intervals to skip

PWDIN|OUT=pwd
Password of a VSAM data set

RECFMIN=recfmin
Record format for input

RECFMOUT=recfmout
Record format for output

RECSIZE=nnnnnnn
Logical record size

release
Specify YES to release an ATL device

RENAME=fileid
Old file ID of a VTOC entry to be renamed

| REPLACE=YES
| Replaces existing members or objects

REUSE=YES
To replace existing records. Default is to add records without replacing.

SCAN=cmsfile
Starts loading with the specified file

| SCALE=0|25|50|75
| Limits a tape to % of its capacity

SCANARG=string
String to scan for

SCANHITS=nnnnnnnn
Scan hits limit value, 1 to 99999999 or ALL

Parameter Descriptions (continued)

SCANPOS=nnnnn

Start column for scanning, 1 to 99999

SCANTYPE=D|DP|E|K|KP

Scan data at scanpos (D), data from scanpos (DP), EOF records, key at scanpos (K), or key from scanpos (KP)

SCRATCH=fileid

File ID of a VTOC entry to be deleted

SKIP=cmsfile

Starts loading after the specified file

SORTBY=...

Field used to sort a list

SPACE=n|(n,m)

Primary and secondary space

STORCLAS=stor

Name of an SMS storage class

SUBAREA=SYSTEM|ALL|p|c

Subarea for DLA function

TEMPLBL=YES

Include temporary (user) labels in DLA display

TODATE=yyyymmdd

Upper date limit

TYPE=DDR|FULLDDR

Uses a DDR or fullpack DDR tape as input

TYPE=MIXED

Copy both labeled and unlabeled files

TYPE=SHORT

List only first tape label

UCATIN|OUT=ucat

User catalog name

UNITIN|OUT=ucat

Tape unit

VARNAME=stem

REXX stem variable

VOLSER=volser

Volume serial number

VOLSERIN|OUT=volser

Volume serial number

VSAMIN|OUT=YES

For VSAM-managed SAM

Keyword Syntax - Batch or Command Mode

[] denotes optional parameters.

DITTO Control Functions

XXX

SET [RESET][,ASCII={NO|IN|OUT|BOTH}]
[,CMDSYNTAX={CMS|DITTO|ISPF}]
[,CYLHD={ABSOLUTE|RELATIVE}]
[,DATAHDR={YES|NO}]
[,DBCSPRT={OFF|3200|SOS}]
[,DUMP={UPDOWN|ACROSS}]
[,EOD=delimiter]
[,HEADERPG={YES|NO}]
[,LANGUAGE=language]
[,PAGESIZE=size] [,PAD={ON|OFF|c}]
[,PAGESKIP={NO|YES}]
[,PRINTLEN={132|80}]
[,PRTRAN={ON|OFF|KN}]
[,RECLIMIT={{1,*}}(n,m)]
[,TAPELBL={SL|AL|AL4}]
DLA [SUBAREA={SYSTEM|ALL|part|class}]
[,TEMPLBL={NO|YES}]
[,SORTBY={LABEL|NAME|VOLSER}]
VMC CATALOG=catalog,UNIT=unit
VER (or LVL)
FMT {SET
,FLD=(start,end,type),...|LIST|RESET}
EOJ

Disk Functions

DP [INPUT=input][,VOLSER=volser]
[,DSNAME=dsname][,BEGIN=begin]
[,END=end][,CISIZE=nnnnn]
[,RECSIZE=nnnnn]
[,LISTONLY={CNT|KEY|CKD}]
[,FORMAT=HEX]
DRS [INPUT=input][,VOLSER=volser]
[,DSNAME=dsname][,BEGIN=begin]
[,END=end][,CISIZE=nnnnn]
,SCANTYPE={D|DP|E|K|KP}
[,RECSIZE=nnnnn][,SCANPOS=nnnnn]
[,SCANARG=string]
DID INPUT=input[,NEWVOL=volser]

Keyword Syntax (continued)

Tape Functions

TLB [LABEL=BLP,]INPUT|OUTPUT=input
[,TYPE=SHORT]

TMP [LABEL=BLP,]INPUT|OUTPUT=input
[,NFILES={nnnnn|EOV|EOD}]
[,NBLKS=nnnnnnnn][,FORMAT=CHAR]

TC [LABEL=BLP,]INPUT=input
[,RECFMIN=recfmin][,INTERPRET=YES]

TP [LABEL=BLP,]INPUT|OUTPUT=input
[,RECFMIN=recfmin]
[,RECSIZE=nnnnnnnn]
[,NLRECS={ALL|nnnnnnnn}]
[,NFILES={nnnnn|EOV|EOD}]
[,FORMAT=HEX]

TFA INPUT=input[,NLRECS={ALL|nnnnnnnn}]

TFD INPUT=input[,NLRECS={ALL|nnnnnnnn}]

TRS [LABEL=BLP,]INPUT|OUTPUT=input
[,RECFMIN=recfmin]
[,RECSIZE=nnnnnnnn]
[,SCANTYPE={D|DP}]
[,SCANPOS=nnnnn] ,SCANARG=string
[,SCANHITS=nnnnnnnn]
[,NLRECS={ALL|nnnnnnnn}]

TTC [LABEL=BLP,]INPUT=input
,OUTPUT=output
[,NFILES={nnnnn|EOV|EOD}]

TT [LABEL=BLP,]INPUT=input
,OUTPUT=output
[,NFILES={nnnnn|EOV|EOT|EOD}]
[,DENS=mm]

TTR [LABEL=BLP,]INPUT=input
,OUTPUT=output
[,RECFMIN=recfmin][,RECSIZE=nnnnnnnn]
[,RECFMOUT=recfmout]
[,BLKSIZE=nnnnnnnn][,DENS=mm]

TX [LABEL=BLP,]INPUT=input
[,FILEIN=tlb|INFILE=tapefile]
,VARNAME=stem[,RECFMIN=recfmin]
[,RECSIZE=nnnnnnnn][,POSITION=skip]
[,NLRECS={ALL|nnnnnnnn}]

Keyword Syntax (continued)

Tape Functions (continued)

XT VARNAME=stem[,LABEL=BLP]
,OUTPUT=output[,DENS=mm]
[,FILEOUT=tlb|OUTFILE=tapefile]
[,RECFMOUT=recfmout]
[,BLKSIZE=nnnnnnn]

ERT [LABEL=BLP,]OUTPUT=output
[,DENS=mm]

INT [LABEL=BLP,]OUTPUT=output
[,VOLSER=volser]
[,OUTFILE=tapefile][,ASCII=YES|NO]
[,DENS=mm] [,SCALE=0|25|50|75]

Labeled Tape Functions

TLT [LABEL=BLP,]INPUT=input
[,FILEIN=tlb|INFILE=tapefile]
,OUTPUT=output[,DENS=mm]
[,NFILES=nnnnn][,NEWVOL=*|volser]
[,TYPE=mixed]

TFT INPUT=input
[,FILEIN=tlb|INFILE=tapefile]
[,RECFMIN=recfmin]
[,RECSIZE=nnnnnnn]
[,POSITION=skip]
[,NLRECS={ALL|nnnnnnnn}]
,OUTPUT=output[,DENS=mm]
[,FILEOUT=tlb|OUTFILE=tapefile]
[,RECFMOUT=recfmout]
[,BLKSIZE=nnnnnnn]

Tape Control Functions

BSF [LABEL=BLP,]INPUT|OUTPUT=input
[,NFILES=nnnnn]

BSR [LABEL=BLP,]INPUT|OUTPUT=input
[,NBLKS=nnnnnnnn]

FSF see BSF

FSR see BSR

REW [LABEL=BLP,]INPUT|OUTPUT=input

RUN INPUT|OUTPUT=input

WTM [LABEL=BLP,]OUTPUT=output
[,DENS=mm][,NTMKS=nnnn]

Keyword Syntax (continued)

Sequential Input

MVS: [INPUT=ddname]
[,DSNIN=dsname[(member)]]
[,VOLSERIN=volser][,UNITIN=unit]
[,POSITION=skip]
[,NLRECS={ALL|nlrecs}]

VSE: [INPUT={unit|SYSnnn|Vvolser}]
[,FILEIN=dlib][,DSNIN=dsname]
[,VSAMIN=YES][,UCATIN=ucat]
[,RECFMIN=recfmin][,RECSIZE=recsize]
[,POSITION=skip]
[,NLRECS={ALL|nlrecs}]

CMS: DSNIN=dsname,INPUT={unit|Vvolser}
[,RECFMIN=recfmin]
[,RECSIZE=recsize][,POSITION=skip]
[,NLRECS={ALL|nlrecs}]

Sequential Output

MVS: [OUTPUT=ddname]
[,DSNOUT=dsname[(member)]]
[,VOLSEROUT=volser][,UNITOUT=unit]
[,DISP={NEW|OLD|MOD|CAT}]
[,SPACE=space]
[,RECFMOUT=recfmout]
[,BLKSIZE=nnnnnnnn]

VSE: [OUTPUT={unit|SYSnnn|Vvolser}]
[,FILEOUT=dlib][,DSNOUT=dsname]
[,VSAMOUT=YES]
[,BEGIN=begin][END=end]
[,UCATOUT=ucat][,DISP={NEW|OLD}]
[,SPACE=space][,AVGSIZE=avgsize]
[,RECFMOUT=recfmout]
[,BLKSIZE={MAX|nnnnnnnn}]

Keyword Syntax (continued)

Sequential Data Functions

SC	sequential input keywords (except RECFMIN, RECSIZE), plus: [,INTERPRET=YES]
SP	sequential input keywords, plus: [,FORMAT=HEX][,MODE=U]
SFA	sequential input keywords
SFD	sequential input keywords
TS	sequential output keywords, plus: [,LABEL=BLP,]INPUT=input [,FILEIN=tlb INFILE=tapefile] [,RECFMIN=recfmin] [,RECSIZE=nnnnnnn] [,POSITION=skip] [,NLRECS={ALL nnnnnnn}] [,NFILES={nnnnn EOV EOD}]
ST	sequential input keywords, plus: [,LABEL=BLP],OUTPUT=output [,FILEOUT=tlb OUTFILE=tapefile] [,RECFMOUT=recfmout] [,BLKSIZE=nnnnnnn][,DENS=mm]
SL	sequential input keywords, plus: [,LIBOUT=lib,]MEMBEROUT=member [,RECFMOUT={F S}]
SS	sequential input and output keywords
SV	sequential input and VSAM output keywords

VSAM Input

MVS:	[INPUT=ddname][,DSNIN=dsname] [,,{POSITION=skip KEY=key}] [,NLRECS={ALL nnnnnnn}]
VSE:	[FILEIN=d bl][,DSNIN=dsname] [,UCATIN=ucat][,PWDIN=pwd] [,,{POSITION=skip KEY=key}] [,NLRECS={ALL nnnnnnn}]
CMS:	DSNIN=dsname[,UCATIN=ucat] [,PWDIN=pwd] [,,{POSITION=skip KEY=key}] [,NLRECS={ALL nnnnnnn}]

VSAM Output

MVS:	[OUTPUT=ddname][,DSNOUT=dsname] [,REUSE=YES]
VSE:	[FILEOUT=d bl][,DSNOUT=dsname] [,UCATOUT=ucat][,REUSE=YES] [,PWDOUT=pwd]
CMS:	DSNOUT=dsname[,UCATOUT=ucat] [,REUSE=YES][,PWDOUT=pwd]

Keyword Syntax (continued)

VSAM Functions

- VC** VSAM input keywords, plus:
[,INTERPRET=YES]
- VP** VSAM input keywords, plus:
[,CIACCESS=YES][,FORMAT=HEX]
- TV** VSAM output keywords, plus:
[LABEL=BLP,]INPUT=input
[,FILEIN=tlb|INFILE=tapefile]
[,RECFMIN=recfmin]
[,RECSIZE=nnnnnnn]
[,POSITION=skip]
[,NLRECS={ALL|nnnnnnnn}]
[,NFILES={nnnnn|EOV|EOD}]
- VT** VSAM input keywords, plus:
[,LABEL=BLP],OUTPUT=output
[,FILEOUT=tlb|OUTFILE=tapefile]
[,RECFMOUT=recfmout]
[,BLKSIZE=nnnnnnn][,DENS=mm]
- VL** VSAM input keywords, plus:
,LIBOUT=lib,MEMBEROUT=member
[,RECFMOUT={F|S}]
- VS** VSAM input and sequential output keywords
- VV** VSAM input and output keywords
- VX** VSAM input keywords, plus:
,VARNAME=stem
- XV** VSAM output keywords, plus:
,VARNAME=stem

Card Functions

- CC** [INTERPRET=YES]
- II**
- CP** [FORMAT=HEX]
- CS** sequential output keywords
- CT** [LABEL=BLP,]OUTPUT=output
[,DENS=mm][,RECFMOUT=recfmout]
[,BLKSIZE=nnnnnnn]
- CV** VSAM output keywords

Keyword Syntax (continued)

OAM Object Functions

- ODL** [COLLECTN=coll][,OBJNAME=objmask]
[,LIMIT=limit][,VOLSER=volser]
[,FROMDATE=yyyymmdd]
[,TODATE=yyyymmdd]
[,SORTBY={DATE|EDATE|NAME|SIZE}]
[,FUNCTION={LIST|PRINT}]
- OP** COLLECTN=coll,OBJNAME=object
[,BLKSIZE=nnnnn][,POSITION=skip]
[,BYTES={ALL|nnnnnnnn}]
[,FORMAT=HEX]
- OO** COLLECTN=coll1,OBJNAME=object1
[,COLLECTN=coll2][,OBJNAME=object2]
[,STORCLAS=stor][,MGMTCLAS=mgmt]
- OS** sequential output keywords, plus:
[COLLECTN=coll][,OBJNAME=objmask]
[,LIMIT=limit][,VOLSER=volser]
[,FROMDATE=yyyymmdd]
[,TODATE=yyyymmdd]
[,HEADER=NO][,BLKSIZE=nnnnn]
- SO** sequential input keywords (except
POSITION, NLRECS), plus:
[,COLLECTN=coll]
[,OBJNAME=objmask]
[,STORCLAS=stor]
[,MGMTCLAS=mgmt][,LIMIT=limit]
[,VOLSER=volser]
[,FROMDATE=yyyymmdd]
[,TODATE=yyyymmdd][,REPLACE=YES]
- OV** VSAM output keywords, plus:
[COLLECTN=coll][,OBJNAME=objmask]
[,LIMIT=limit][,VOLSER=volser]
[,FROMDATE=yyyymmdd]
[,TODATE=yyyymmdd]
[,HEADER=NO][,BLKSIZE=nnnnn]
- VO** VSAM input keywords (except
POSITION, NLRECS), plus:
[,COLLECTN=coll][,OBJNAME=objmask]
[,STORCLAS=stor][,MGMTCLAS=mgmt]
[,LIMIT=limit][,VOLSER=volser]
[,FROMDATE=yyyymmdd]
[,TODATE=yyyymmdd]
[,REPLACE=YES]
- OE** COLLECTN=coll,OBJNAME=object

Keyword Syntax (continued)

Library Functions

LDL LIBIN=libmask[,LIBIN=libmask...]
,MEMBERIN=memmask
[,FROMDATE=yyyymmdd]
[,TODATE=yyyymmdd] [,SORTBY=
{NAME|LIB|TYPE|SIZE|DATE}]

LSL LIBIN=libmask

LP LIBIN=lib,MEMBERIN=member
[,POSITION=skip]
[,NLRECS|NBYTES=nnnnnnnn]
[,FORMAT=HEX]

LL LIBIN=lib,MEMBERIN=memmask
[,MOVE={YES|NO}] ,LIBOUT=lib
[,MEMBEROUT=memmask]
[,REPLACE={YES|NO}]

LT LIBIN=lib,MEMBERIN=member
,OUTPUT=output
[,FILEOUT=tlb|OUTFILE=tapefile]
[,RECFMOUT=recfmout]
[,BLKSIZE=nnnnnnnn][,DENS=mm]

TL INPUT=input
[,FILEIN=tlb|INFILE=tapefile]
[,RECFMIN=recfmin]
,LIBOUT=lib,MEMBEROUT=member
[,RECFMOUT={F|S}]

LV VSAM output keywords, plus:
LIBIN=lib,MEMBERIN=member
[,BLKSIZE=nnnnnnnn]

LS sequential output keywords, plus:
LIBIN=lib,MEMBERIN=member

LC LIBIN=lib,MEMBERIN=member
[,INTERPRET=YES]

CL LIBOUT=lib,MEMBEROUT=member
[,RECFMOUT={F|S}]

LDEL LIBIN=lib,MEMBERIN=memmask

LR LIBIN=lib,MEMBERIN=memmask
,NEWNAME=memmask

LX LIBIN=lib,MEMBERIN=member
,VARNAME=stem[,POSITION=skip]
[,NLRECS|NBYTES=nnnnnnnn]

XL LIBOUT=lib,MEMBEROUT=member
,VARNAME=stem[,RECFMOUT={F|S}]

Keyword Syntax (continued)

Catalog and VTOC Functions

DVT {INPUT=input|VOLSER=volser}
[,DSNAME=filemask] [,SORTBY=
{NAME|DATE|EDATE|EXTENT}]
[,FUNCTION={LIST|PRINT}]

PVT INPUT=input,[SCRATCH=fileid]
[RENAME=fileid,NEWNAME=fileid]

SCS [CATALOG=catalog|FILEIN=d|bl]
[,DSNAME=filemask][,VOLSER=volser]
[,PWDIN=pwd][,ENTRIES=type]
[,SORTBY=
{NAME|DATE|EDATE|FREESP}]
[,FUNCTION=function]

VDL [CATALOG=catalog|FILEIN=d|bl]
[,DSNAME=filemask][,ENTRIES=type]
[,VOLSER=volser][,PWDIN=pwd]
[,SORTBY=
{NAME|DATE|EDATE|FREESP}]
[,FUNCTION=function]

DSE [INPUT=input][,VOLSER=volser]
[,DSNAME|DSNIN=dsname]

Data Create Functions

BS sequential output keywords, plus:
,NLRECS=nnnnnnnn
,RECSIZE=nnnnnnn[,FILLCHAR=fill]
[,KEYLOC=nnnnnnn[,KEYLEN=n]
[,INCR=nnnnnnnn]]

BT [LABEL=BLP,]OUTPUT=output
[,DENS=mm]
[,FILEOUT=t|bl|OUTFILE=tapefile]
,NLRECS=nnnnnnnn
,RECSIZE=nnnnnnn[,FILLCHAR=fill]
[,KEYLOC=nnnnnnn[,KEYLEN=n]
[,INCR=nnnnnnnn]]
[,RECFMOUT=recfmout]
[,BLKSIZE=nnnnnnn]

BV VSAM output keywords, plus:
,NLRECS=nnnnnnnn
,RECSIZE=nnnnnnn
[,FILLCHAR=fill][,KEYLOC=nnnnnnn
[,KEYLEN=n][,INCR=nnnnnnnn]]

Keyword Syntax (continued)

CMS File Functions

FP INFILE=' cmsfile ' [,POSITION=skip]
[,NLRECS={ALL|nnnnnnnn}]
[,RECSIZE=nnnnnnn] [,FORMAT=HEX]

FT INFILE=' cmsfile ' [,DENS=mm]
,OUTPUT=address[,OUTFILE=tapefile]
[,POSITION=skip]
[,NLRECS={ALL|nnnnnnnn}]
[,RECFMOUT=recfmout]
[,BLKSIZE=nnnnnnn]

TF INPUT=address[,INFILE=tapefile]
,OUTFILE=' cmsfile ' [,APPEND=YES]
[,RECFMIN=recfmin]
[,RECSIZE=nnnnnnn]
[,POSITION=skip]
[,NLRECS={ALL|nnnnnnnn}]
[,NFILES={nnnnn|EOV|EOD}]
[,RECFMOUT={F|V|U}]

SF sequential input keywords, plus:
,OUTFILE=' cmsfile ' [,APPEND=YES]
[,RECFMOUT={F|V|U}]

VF VSAM input keywords, plus:
,OUTFILE=' cmsfile ' [,APPEND=YES]
[,RECFMOUT={F|V|U}]

FV VSAM output keywords, plus:
INFILE=' cmsfile ' [,POSITION=skip]
[,NLRECS={ALL|nnnnnnnn}]

DUMP INFILE=' cmsfile ' ,OUTPUT=address
[,DENS=mm]

LOAD OUTFILE=' cmsfile ' ,INPUT=address
[,NFILES=nnnnn][,SCAN|SKIP=cmsfile]

LOAD OUTFILE=' cmsfile ' ,TYPE=DDR
,VOLSER=volser [,INPUT=
{address|CMS,INFILE=' cmsfile ' }]
[,KEEP=YES][,SCAN|SKIP=cmsfile]

LOAD OUTFILE=' cmsfile ' ,TYPE=FULLDDR
[,VOLSER=volser],BEGIN=mdiskbeg
,INPUT=
{address|CMS,INFILE=' cmsfile ' }
[,KEEP=YES][,SCAN|SKIP=cmsfile]

Parameter Syntax - Line or Command Mode

DITTO Control Functions

XXX
SET [RESET][,ASCII={NO|IN|OUT|BOTH}]
| [,CMDSYNTAX={CMS|DITTO|ISPF}]
| [,CYLHD={ABSOLUTE|RELATIVE}]
| [,DATAHDR={YES|NO}]
| [,DBCSPRT={OFF|3200|SOS}]
| [,DUMP={UPDOWN|ACROSS}]
| [,EOD=delimiter]
| [,HEADERPG={YES|NO}]
| [,LANGUAGE=language]
| [,PAGESIZE=size] [,PAD={ON|OFF|c}]
| [,PAGESKIP={NO|YES}]
| [,PRINTLEN={132|80}]
| [,PRINTOUT=destination]
| [,PRTRANS={ON|OFF|KN}]
| [,RECLIMIT={{1,*}}(n,m)]
| [,TAPEASGN={TEMP|PERM}]
| [,TAPELBL={SL|AL|AL4}]
FMT {SET
,FLD=(start,end,type),...|LIST|RESET}
DLA [,subarea][,templbl][,sortby]
VMC address,catalog
VER (or LVL)
CCL
EOJ

Tape Control Functions

BSF or FSF,{address|ddinfo}[,nfiles]
BSR or FSR,{address|ddinfo}[,nblks]
REW,{address|ddinfo}
RUN,{address|ddname}[,release]
WTM,{address|ddinfo}[,ntmks]

Parameter Syntax (continued)

Tape Functions

TCN,{address|ddinfo}
TLB,{address|ddinfo}[,type]
TMP,{address|ddinfo}[,nfiles][,nblks][,format]

TC,{address|ddinfo}[,recfmin][,interpret]
TP,{address|ddinfo}[,format][,recfmin][,reclsize]
[,nlrecs][,nfiles]
TFA or TFD,address[,nlrecs]
TRS,{address|ddinfo}[,recfmin][,reclsize]
[,scantype][,scanpos],scanarg[,scanhits]
[,nlrecs]
TTC,{address|ddinfo},{address|ddinfo}[,nfiles]
TT,{address|ddinfo},{address|ddinfo}[,nfiles]
TTR,{address|ddinfo},{address|ddinfo}[,recfmin]
[,reclsize][,recfmout][,blksize]
TRL,{address|ddinfo},{address|ddinfo}
TX,{address|ddinfo}[,tapefile],stem[,recfmin]
[,reclsize][,skip][,nlrecs]
XT,stem{address|ddinfo}[,tapefile][,recfmout]
[,blksize]

ERT,{address|ddinfo}
INT,{address|ddinfo}[,volser][,tapefile][,ascii]
[,scale]

Labeled Tape Functions (VSE or CMS)

TLT,address1[,tapefile],address2[,nfiles]
[,newvolser][,type]
TFT,address1[,tapefile],address2[,tapefile]
[,recfmin][,reclsize][,skip][,nlrecs]
[,recfmout][,blksize]

Labeled Tape Functions (MVS)

TLT,ddinfo1,ddinfo2[,nfiles][,newvolser][,type]

Parameter Syntax (continued)

Disk Functions

DCN,{address|Vvolser|dsnvol},location[,csize]
DID,{address|Vvolser}[,newvol]
DRL,{address|Vvolser|dsnvol},location[,csize]
EOF,{address|Vvolser|dsnvol},location[,csize]
DP,{address|Vvolser|dsnvol}[,begin][,end]
[,csize][,format][,listonly][,recsize]
DRS,{address|Vvolser|dsnvol}[,begin][,end]
[,csize],scantype[,recsize][,scanpos][,scanarg]

Sequential Data Functions

SC,fileid...[,skip][,nlrecs][,interpret]
SP,fileid...[,format][,recfmin|mode][,recsize]
[,skip][,nlrecs]
SFA,fileid...[,recfmin][,recsize][,skip][,nlrecs]
SFD,fileid...[,recfmin][,recsize][,skip][,nlrecs]
TS,{address|ddinfo}[,tapefile],fileid...[,recfmin]
[,recsize][,skip][,nlrecs][,nfiles][,recfmout]
[,blksize]
ST,fileid...,{address|ddinfo}[,tapefile][,recfmin]
[,recsize][,skip][,nlrecs][,recfmout][,blksize]
SL,fileid...[,recfmin][,recsize][,skip]
[,nlrecs],libout,memberout[,recfmout]
SS,fileid...,fileid...[,recfmin][,recsize]
[,skip][,nlrecs][,recfmout][,blksize]
SV,fileid...,fileid...[,reuse][,recfmin][,recsize]
[,skip][,nlrecs]

Parameter Syntax (continued)

VSAM Functions

VC,fileid...[,C,skip|K,key][,nlrecs][,interpret]
VP,fileid...[,ciaccess][,format][,C,skip|K,key]
[,nlrecs]

TV,{address|ddinfo}[,tapefile],fileid...[,reuse]
[,recfmin][,reclsize][,skip][,nlrecs][,nfiles]
VT,fileid...,{address|ddinfo}[,tapefile]
[,C,skip|K,key][,nlrecs][,recfmout][,blksize]
VL,fileid...[,C,skip|K,key][,nlrecs],libout
,memberout[,recfmout]
VS,fileid...,fileid...[,recfmout][,blksize]
[,C,skip|K,key][,nlrecs]
VV,fileid...,fileid...[,reuse][,C,skip|K,key]
[,nlrecs]
VRU,fileid...[,ciaccess][,C,skip|K,key]
VX,fileid,stem...[,C,skip|K,key][,nlrecs]
XV,stem,fileid...[,reuse]

Data Create Functions

BS,fileid...,nlrecs,reclsize[,fillchar]
| [,keyloc[,keylen][,incr]][,recfmout][,blksize]
BT,{address|ddinfo}[,tapefile],nlrecs,reclsize[,fillchar]
| [,keyloc[,keylen][,incr]][,recfmout][,blksize]
BV,fileid...[,reuse],nlrecs,reclsize[,fillchar]
| [,keyloc[,keylen][,incr]]

Library Functions

LDL,liblist[,memmask][,fromdate][,todate][,sortBy]
LSL,libmask
LP,libin,memberin[,format][,skip][,nlrecs|nbytes]
| LL,libin,memmask[,move],libout[,memmask]
| [,replace]
LT,libin,memberin,address[,tapefile][,recfmout]
[,blksize]
TL,address[,tapefile][,recfmin],libout
,memberout[,recfmout]
LV,libin,memberin,fileid...[,reuse][,blksize]
LS,libin,memberin,fileid...[,recfmout][,blksize]
LC,libin,memberin[,interpret]
CL,libout,memberout[,recfmout]
LDEL,libin,memmask
LR,libin,memmask,memmask
LX,libin,memberin,stem[,skip][,nlrecs|nbytes]
XL,stem,libin,memberin[,recfmout]

Parameter Syntax (continued)

OAM Object Functions

ODL[,collectn][,objmask][,limit][,volser]
[,fromdate][,todate][,sortby][,function]
OP,collectn,object[,format][,blksize][,skip][,bytes]
OO,coll1,object1[,coll2][,object2][,storclas]
[,mgmtclas]
OS[,collectn][,objmask][,limit][,volser][,fromdate]
[,todate],fileid...[,header][,blksize]
SO,fileid...[,collectn][,objmask][,storclas]
[,mgmtclas][,limit][,volser][,fromdate][,todate]
[,replace]
OV[,collectn][,objmask][,limit][,volser][,fromdate]
[,todate],fileid...[,reuse][,header][,blksize]
VO,fileid...[,collectn][,object][,storclas]
[,mgmtclas][,limit][,volser][,fromdate][,todate]
[,replace]
OE,collectn,object

Catalog and VTOC Functions

DVT,{address|Vvolser|volser}[,filemask]
[,sortby][,function]
PVT,{address|Vvolser},[SCRATCH,fileid]
[RENAME,fileid,NEWNAME,fileid]
SCS or VDL[,catalog][,spaceid][,filemask]
[,entries][,sortby] (VSE)
SCS or VDL[,filemask][,catalog][,entries]
[,function][,sortby] (MVS)
VDL[,catalog][,spaceid][,filemask][,entries]
[,function][,sortby] (CMS)
DSE,{dsname,address|dsname,Vvolser|dsnvol}

Parameter Syntax (continued)

Card Functions

CC[,interpret]
II
CP[,format]
CS,fileid...[,recfmout][,blksize]
CT,{address|ddinfo}{[,recfmout][,blksize]}
CV,fileid...[,reuse]

CMS File Functions

FP,cmsfile[,format][,skip][,nlrecs][,recsize]
SF,fileid...,cmsfile[,append][,recfmin][,recsize]
[,skip][,nlrecs][,recfmout]
FT,cmsfile,address[,tapefile][,skip][,nlrecs]
[,recfmout][,blksize]
TF,address[,tapefile]cmsfile[,append][,recfmin]
[,recsize][,skip][,nlrecs][,nfiles][,recfmout]
FV,cmsfile,fileid...[,reuse][,skip][,nlrecs]
VF,fileid...,cmsfile[,append][,C,skip|K,key]
[,nlrecs][,recfmout]

DUMP,cmsfile,address
LOAD,cmsfile,address[,nfiles]
[,SCAN|SKIP,cmsfile]
LOAD,cmsfile,DDR,volser,{address|CMS,infile}
[,keep][,SCAN|SKIP,cmsfile]
LOAD,cmsfile,FULLDDR,volser,mdiskbeg
,{address|CMS,infile}[,keep]
[,SCAN|SKIP,cmsfile]
LOAD,cmsfile,DDR,volser[,SCAN|SKIP,cmsfile]

Tape Density and Mode Values

mm	3480/3490 Cartridge Tapes
08/28	Compact, buffered/immediate write mode
00/20	Non-compact, buffered/immediate write mode
BU/IM	The same as 00/20
mm	3400 Tapes
C8*	800 bpi, dual density
C0*	1600 bpi, dual density
D0*	6250 bpi, dual density
mm	3424/9348 Tapes
42/62*	1600 bpi, buffered/immediate write mode
C2/E2*	6250 bpi, buffered/immediate write mode
00, BU	The same as C2
20, IM	The same as E2
mm	9346/9347 Streamer Tapes
50, LL	IBM 9347, low speed, long gap
60, LS	IBM 9347, low speed, short gap
90, HL	IBM 9347, high speed, long gap
30, HS	IBM 9347, high speed, short gap
00 - FE	IBM 9346, forced streaming mode

7-Track Tapes

mm	BPI	Parity	Translate	Conversion
10*	200	Odd	Off	On
20*		Even	Off	Off
28*		Even	On	Off
30*		Odd	Off	Off
38*		Odd	On	Off
50*	556	Odd	Off	On
60*		Even	Off	Off
68*		Even	On	Off
70*		Odd	Off	Off
78*		Odd	On	Off
90*	800	Odd	Off	On
A0*		Even	Off	Off
A8*		Even	On	Off
B0*		Odd	Off	Off
B8*		Odd	On	Off

Notes:

1. For mm values marked with an asterisk (*), the tape must be positioned at the load point.
2. If the mm value is omitted, the value specified in JCL or the system default is used.
3. VSE: for labeled tape processing functions other than TLT, you cannot set the density within DITTO. (DITTO gets control after OPEN processing, so the tape is no longer positioned at the load point and the density cannot be changed.)
4. VSE: for IBM 9347 tape units, an attention routine SETMOD command is recommended for better performance.

A user input tape error correction routine is available in interactive mode. Control will be passed to the routine for all input tape functions if the system error recovery is unsuccessful.

The operator may either ignore the error (accepting the record as read), bypass (drop) the error record, or perform interactive alteration to the record length, the data, or both, before returning control to the original DITTO function.



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