CA Copycat Utility

User Guide

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CA Product References

This document references the following CA products:

- CA 1® Tape Management (CA 1)
- CA TLMS® Tape Management (CA TLMS)
- CA Earl™ (CA Earl)

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- Online and telephone contact information for technical assistance and customer services
- Information about user communities and forums
- Product and documentation downloads
- CA Support policies and guidelines
- Other helpful resources appropriate for your product

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Chapter 1: Introduction

CA Copycat Utility provides software to assist you with tape media-type conversions, media consolidation, media stacking/unstacking, and media replacement operations. CA Copycat Utility also aids in disaster recovery by facilitating tape backup and electronic vaulting.

CA Copycat Utility Features

CA Copycat Utility is designed to copy data from tape to tape while retaining the information in the CA 1 Tape Management Catalog (TMC) or in the CA TLMS Volume Master File (VMF) regarding data set attributes and the creation information of the original data set.

Tape Conversions

CA Copycat Utility enables you to convert from one tape medium or format to another. Automated data set copy methods expedite the conversion process and significantly reduce the resource requirements demanded by manual conversions using JCL.

Media Consolidation/Stacking

CA Copycat Utility permits you to consolidate active data sets from multiple tape volumes onto fewer volumes, resulting in a larger scratch pool. By using CA-Earl, the standard report writer, you can identify the control information that CA Copycat Utility needs to effectively improve the utilization of the entire tape library.

Migration to Virtual Tape

CA Copycat Utility facilitates the migration to virtual tape systems by copying physical media to virtual media. If you want the virtual tape system to handle the file stacking, you can unstack the previously stacked tapes into the virtual system. The virtual system would then assign a unique volume to each file copied.

Media Replacement

CA Copycat Utility provides facilities to retrieve data from old or faulty media with the functionality to copy a tape volume, in its entirety, to a new replacement volume. Volume labels can be included in the copy function, if desired.

Volume/Data Set Backup

CA Copycat Utility allows you to copy volumes or data sets onto other tapes without requiring the cataloging of the backup volume. The backup volume, as any other CA 1 or CA TLMS controlled volume, is recorded in the TMC or VMF for tracking and management purposes. If required, a new high-level data set name qualifier can be specified for all files on the backup volume.

Electronic Vaulting

CA Copycat Utility reduces the overhead of vaulting tapes to off-site locations. By copying volumes or data sets to devices or tape volume pools at specific off-site locations, the data center minimizes the tasks of pulling the vaulting list, packaging the tapes and transporting them.

Tape Analysis

CA Copycat Utility allows you to map a tape volume to help verify its contents. Detailed information is provided for each file residing on the tape volume.

CA Copycat Utility Functions

CA Copycat Utility furnishes tape copy and file copy functions that are compatible with CA 1 and CA TLMS operations. Major functions allow you to:

- Copy an entire volume
- Copy selected data set(s)
- Copy all data sets on specified volume(s)
- Map an entire volume

CA Copycat Utility is driven by control statements which you supply as SYSIN with the execution JCL. The functions provided with CA Copycat Utility are initiated by the specification of a function code and one or more function control statements. The functions, described in the following chapters, are:

- FILECOPY

  Copies one or more files from one tape volume set to a different tape volume set

- TAPECOPY

  Copies an entire tape volume onto a different tape volume

- TAPEMAP

  Maps an entire tape volume

Related Publications

The following product-specific publications relate to CA Copycat Utility and are produced by CA:

Name	Minimum Version
CA 1 Administrator and Operator Guide	11.5
CA 1 Utilities and Reports Reference Guide	11.5
CA 1 Systems Programmer Guide	11.5
CA TLMS User Guide	11.5
CA TLMS Systems Programmer Guide	11.5

The following publications are not produced by CA, but are referenced in this guide or are recommended reading.

IBM Publications

- *MVS Catalog Administration Guide*
- *SMP/E General Information Guide*
- *SPL Application Development Guide*
- *MVS Tape Labels*

Command Notation

This guide uses the following command notation.

Enter the following exactly as they appear in command descriptions:

UPPERCASE

Identifies commands, keywords and keyword values which must be coded exactly as shown.

MIXed Cases

Identify command abbreviations. The uppercase letters are the minimum abbreviation and the lowercase letters are optional.

Symbols

All symbols, such as commas, equal signs and slashes, must be coded exactly as shown.

Reading Syntax Diagrams

Syntax diagrams are used to illustrate the format of statements and some basic language elements. Read syntax diagrams from left to right and top to bottom.

The following terminology, symbols, and concepts are used in syntax diagrams:

- Keywords appear in uppercase letters, for example, COMMAND or PARM. These words must be entered exactly as shown.
- Variables appear in italicized lowercase letters, for example, variable.
- Required keywords and variables appear on a main line.
- Optional keywords and variables appear below a main line.
- Default keywords and variables appear above a main line.
- Double arrowheads pointing to the right indicate the beginning of a statement.
- Double arrowheads pointing to each other indicate the end of a statement.
- Single arrowheads pointing to the right indicate a portion of a statement, or that the statement continues in another diagram.

- Punctuation marks or arithmetic symbols that are shown with a keyword or variable must be entered as part of the statement or command. Punctuation marks and arithmetic symbols can include the following:

  ,

  comma

  .

  period

  (

  open parenthesis

)

  close parenthesis

  +

  addition

  *****

  multiplication

  >

  greater than symbol

  <

  less than symbol

  =

  equal sign

  ¬

  not sign

  -

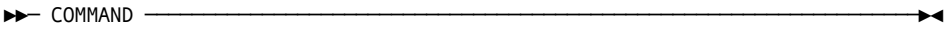
  subtraction

  /

  division

The following is a diagram of a statement without parameters:

Statement Without Parameters

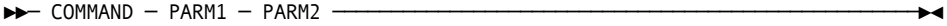


For this statement, you must write the following:

```
COMMAND
```

Required parameters appear on the same horizontal line, the main path of the diagram, as the command or statement. The parameters must be separated by one or more blanks.

Statement with Required Parameters

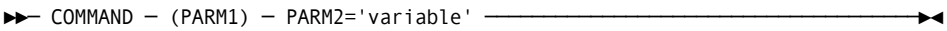


You must write the following:

```
COMMAND PARM1 PARM2
```

Delimiters, such as parentheses, around parameters or clauses must be included.

Delimiters Around Parameters

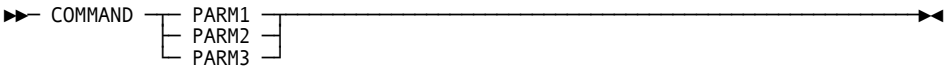


If the word variable is a valid entry, you must write the following:

```
COMMAND (PARM1) PARM2='variable'
```

When you see a vertical list of parameters as shown in the following example, you must choose one of the parameters. This indicates that one entry is required, and only one of the displayed parameters is allowed in the statement.

Choice of Required Parameters

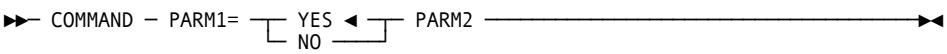


You can choose one of the parameters from the vertical list, such as in the following examples:

```
COMMAND PARM1

COMMAND PARM2

COMMAND PARM3
```

When a required parameter in a syntax diagram has a default value, the default value appears above the main line, and it indicates the value for the parameter if the command is not specified. If you specify the command, you must code the parameter and specify one of the displayed values.

Default Value for a Required Parameter

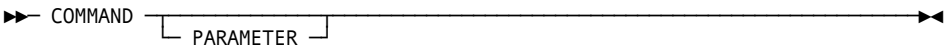


If you specify the command, you must write one of the following:

```
COMMAND PARM1=NO PARM2

COMMAND PARM1=YES PARM2
```

A single optional parameter appears below the horizontal line that marks the main path.

Optional Parameter

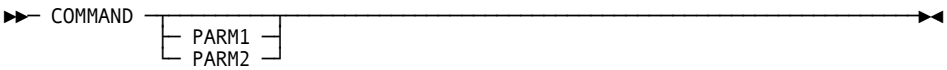


You can choose (or not) to use the optional parameter, as shown in the following examples:

```
COMMAND

COMMAND PARAMETER
```

If you have a choice of more than one optional parameter, the parameters appear in a vertical list below the main path.

Choice of Optional Parameters

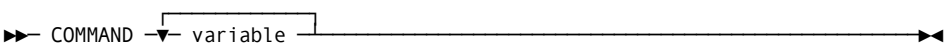


You can choose any of the parameters from the vertical list, or you can write the statement without an optional parameter, such as in the following examples:

```
COMMAND

COMMAND PARM1

COMMAND PARM2
```

In some statements, you can specify a single parameter more than once. A repeat symbol indicates that you can specify multiple parameters.

Repeatable Variable Parameter

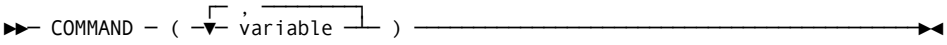


In the preceding diagram, the word variable is in lowercase italics, indicating that it is a value you supply, but it is also on the main path, which means that you are required to specify at least one entry. The repeat symbol indicates that you can specify a parameter more than once. Assume that you have three values named VALUEX, VALUEY, and VALUEZ for the variable. The following are some of the statements you might write:

```
COMMAND VALUEX

COMMAND VALUEX VALUEY

COMMAND VALUEX VALUEX VALUEZ
```

If the repeat symbol contains punctuation such as a comma, you must separate multiple parameters with the punctuation. The following diagram includes the repeat symbol, a comma, and parentheses:

Separator with Repeatable Variable and Delimiter

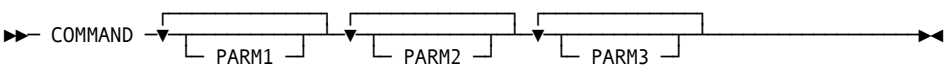


In the preceding diagram, the word variable is in lowercase italics, indicating that it is a value you supply. It is also on the main path, which means that you must specify at least one entry. The repeat symbol indicates that you can specify more than one variable and that you must separate the entries with commas. The parentheses indicate that the group of entries must be enclosed within parentheses. Assume that you have three values named VALUEA, VALUEB, and VALUEC for the variable. The following are some of the statements you can write:

```
COMMAND (VALUEC)

COMMAND (VALUEB,VALUEC)

COMMAND (VALUEB,VALUEA)

COMMAND (VALUEA,VALUEB,VALUEC)
```

The following diagram shows a list of parameters with the repeat symbol:

Optional Repeatable Parameters

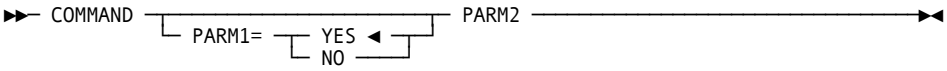


The following are some of the statements you can write:

```
COMMAND PARM1

COMMAND PARM1 PARM2 PARM3

COMMAND PARM1 PARM1 PARM3
```

The placement of YES in the following diagram indicates that it is the default value for the parameter. If you do not include the parameter when you write the statement, the result is the same as if you had actually specified the parameter with the default value.

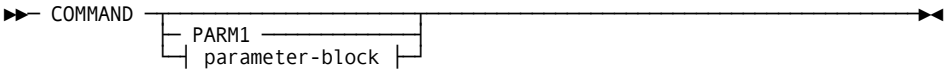
Default Value for a Parameter



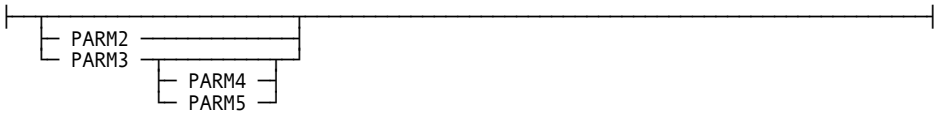
For this command, COMMAND PARM2 is the equivalent of COMMAND PARM1=YES PARM2.

In some syntax diagrams, a set of several parameters is represented by a single reference.

Variables Representing Several Parameters



Expansion of parameter-block



The parameter-block can be displayed in a separate syntax diagram.

Choices you can make from this syntax diagram therefore include, but are not limited to, the following:

```
COMMAND PARM1

COMMAND PARM3

COMMAND PARM3 PARM4
```

Note: Before you can specify PARM4 or PARM5 in this command, you must specify PARM3.

Chapter 2: Copying Files

Use the FILECOPY function control statements to copy one or more files from one tape volume set to another. The following restrictions apply to the FILECOPY function:

- All files copied must be under the control of CA 1 or CA TLMS.
- The maximum number of files that can be copied per program execution is 65,535.

Important! The FILECOPY function requires standard label (SL) tapes.

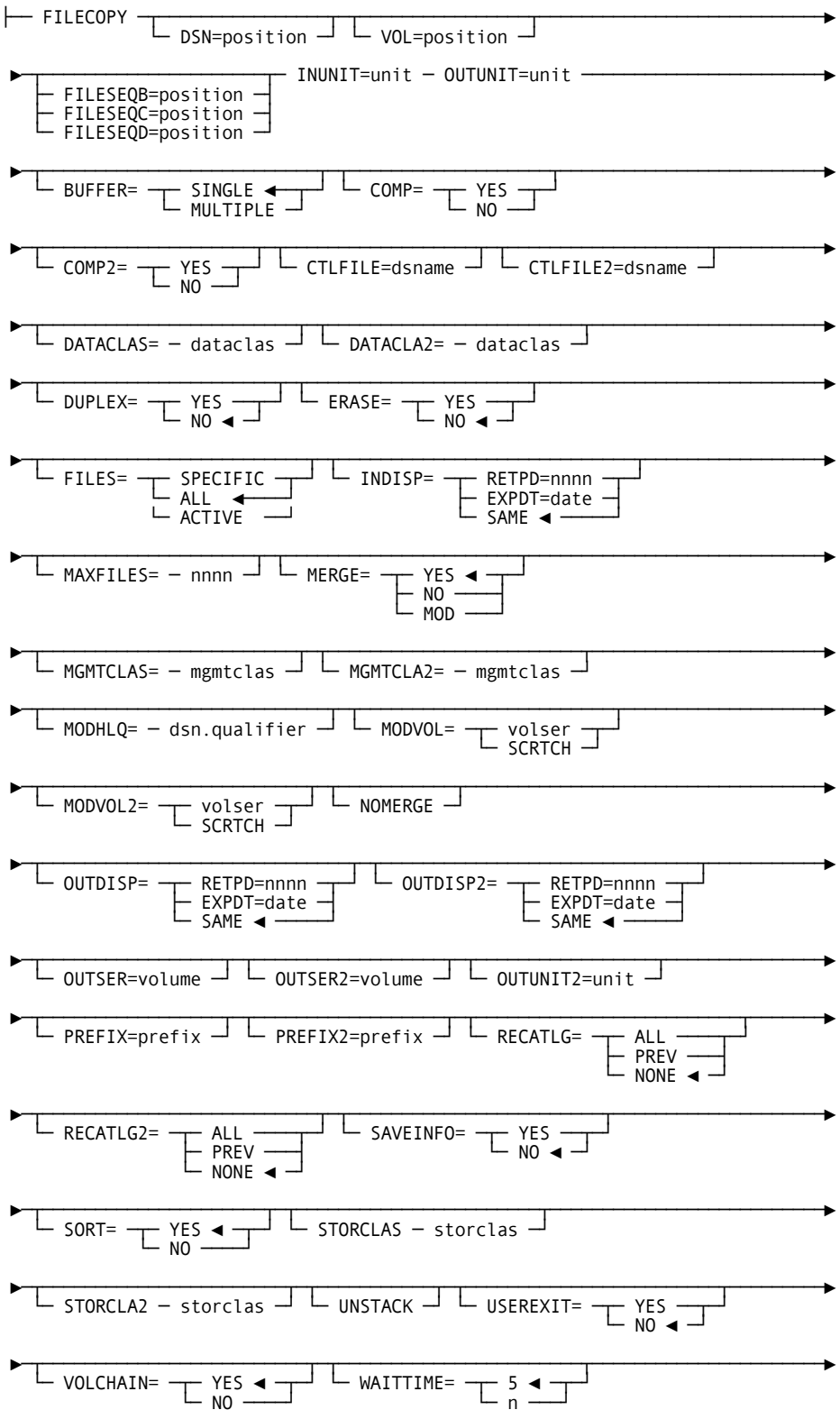
Coding FILECOPY Control Statements

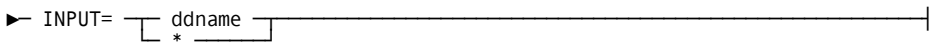
When coding FILECOPY control statements, the first statement identifies the function as FILECOPY. It is followed by control statements which allow you to indicate the position number in the input file where the data set name and/or volume serial number fields are located. Additionally, a file sequence number (binary or character) can be provided. Other optional control statements allow you to propagate creation information from the original data set to the copy, recatalog the data set to the new volume(s)/device type, and specify the retention of the output and input files. Comment statements may be included, and are identified as comments by coding an asterisk (*) in position 1.

CA Copycat Utility control statements are constructed using keyword parameters. Statements may be coded as one keyword per statement, or as multiple keywords which are separated by a comma. Keywords specified in a multiple keyword statement are not positional, and continuation characters are not required.

Note: CA Copycat Utility opens input and output files based on the following dispositions: DISP=(SHR,KEEP,KEEP) for input and DISP=(NEW,KEEP,KEEP) for output.

The formats for the FILECOPY control statements are shown in the following diagrams.


FILECOPY
DSN=position
VOL=position
INUNIT=unit
OUTUNIT=unit
FILESEQB=position
FILESEQC=position
FILESEQD=position
BUFFER=
SINGLE
MULTIPLE
COMP=
YES
NO
COMP2=
YES
NO
CTLFILE=dsname
CTLFILE2=dsname
DATACLAS=
dataclas
DATACLA2=
dataclas
DUPLEX=
YES
NO
ERASE=
YES
NO
FILES=
SPECIFIC
ALL
ACTIVE
INDISP=
RETPD=nnnn
EXPDT=date
SAME
MAXFILES=
nnnn
MERGE=
YES
NO
MOD
MGMTCLAS=
mgmtclas
MGMTCLA2=
mgmtclas
MODHLQ=
dsn.qualifier
MODVOL=
volser
SCRTCH
MODVOL2=
volser
SCRTCH
NOMERGE
OUTDISP=
RETPD=nnnn
EXPDT=date
SAME
OUTDISP2=
RETPD=nnnn
EXPDT=date
SAME
OUTSER=volume
OUTSER2=volume
OUTUNIT2=unit
PREFIX=prefix
PREFIX2=prefix
RECATLG=
ALL
PREV
NONE
RECATLG2=
ALL
PREV
NONE
SAVEINFO=
YES
NO
SORT=
YES
NO
STORCLAS
storclas
STORCLA2
storclas
UNSTACK
USEREXIT=
YES
NO
VOLCHAIN=
YES
NO
WAITTIME=
5
n



Required Control Statement Definitions

FILECOPY

Identifies this as a file copy operation. This must be the first noncomment control statement, contain no other parameters, and must begin in position 1.

INPUT

(Required.) Specified as one of the following:

INPUT=ddname

Specifies the ddname of the input data set containing the data set or volume selection list.

INPUT=*

Indicates that the data set or volume selection list immediately follows this INPUT control statement. If any other control statements are coded, they must be placed before the INPUT=* control statement.

VOL

Specifies the starting position within the input data set where the 6-character volume serial number is found. (See rules following FILESEQD parameter definition.) The default is Vol=1.

INUNIT

(Required.) Specifies the unit name for the input tape device. The JCL equivalent is UNIT= on the DD statement.

OUTUNIT

(Required.) Specifies the unit name for the output tape device. The JCL equivalent is UNIT= on the DD statement. As an alternative, the STORCLAS keyword may be specified. Either OUTUNIT or STORCLAS is required.

Optional Control Statement Definitions

BUFFER

Specifies whether the channel programs should process single blocks or multiple blocks of tape data in one I/O execution.

SINGLE

One data block at a time is copied from input to output tape. This is the default.

MULTIPLE

Multiple-block buffering will be used for all data sets with a block up to 32760. The number of blocks being buffered depends on the block size and ranges between 1 and 2048. Specifying BUFFER=MULTIPLE can significantly reduce the EXCP count of FILECOPY jobs. The actual saving rate depends on data structure and DCB attributes. At least half of the number of tape EXCPs will be reduced according to the buffering factor.

BUFFER=MULTIPLE cannot be used for tapes created in proprietary format. All data sets must have standard labels with valid DCB information. In particular, the actual block length must not exceed the maximum block size documented in the tape label. Otherwise, data may be truncated when copied with BUFFER=MULTIPLE specified.

Note: The setting of the BUFFER option has an impact on the processing logic of duplex tapes. See option DUPLEX for further information.

COMP

Specifies whether compaction is to be specifically turned on for the output tape device. The JCL equivalent is DCB=(TRTCH=COMP) on the DD statement. If COMP is not specified, the compaction is set to be the same as detected for the input tape.

YES

Compaction is specifically turned on.

NO

Compaction is specifically turned off.

COMP2

Specifies whether compaction is to be specifically turned on for the secondary output tape device. The JCL equivalent is DCB=(TRTCH=COMP) on the DD statement. COMP2 is only valid if DUPLEX=YES is also specified. If COMP2 is not specified, the compaction is set to be the same as detected for the input tape.

YES

Compaction is specifically turned on.

NO

Compaction is specifically turned off.

CTLFILE

Specifies the 1- to 44-character data set name which identifies a dummy file that is created as the first file on the tape. Files that match this data set name will not be copied if ALL is specified by the FILES parameter.

If DUPLEX=YES is specified, the duplex copy will also have a control file with this same name, unless CTLFILE2 is specified.

Note: This data set name is not affected by PREFIX or PREFIX2.

CTLFILE2

Specifies the 1- to 44-character data set name which identifies a dummy file that is created as the first file on the duplex tape. Files that match this data set name will not be copied if ALL is specified by the FILES parameter. To use CTLFILE2, DUPLEX=YES and CTLFILE must also be specified.

Note: This data set name is not affected by PREFIX or PREFIX2.

DATACLAS

Specifies a 1 to 8 character name of a valid SMS Data Class to be used for the dynamic allocation of all primary output tape data sets.

DATACLA2

Specifies a 1 to 8 character name of a valid SMS Data Class to be used for the dynamic allocation of all duplex output tape data sets. DATACLA2 is only valid if DUPLEX=YES is also specified.

DSN

Specifies the starting position within the input data set where the 44-character data set name is found. (See rules following FILESEQD parameter definition.)

DUPLEX

Specifies whether a second output tape is to be created.

YES

Create a secondary output tape. Allows specification of optional parameters CTLFILE2, COMP2, OUTDISP2, OUTUNIT2, PREFIX2 and RECATLG2.

Note: The logic of multivolume output processing depends on the BUFFER option. With BUFFER=SINGLE, end-of-volume is always forced simultaneously on both output tapes. For each volume sequence, the data on the primary and the secondary volume is identical, even if the tapes are of different length or on different device types. With BUFFER=MULTIPLE, end-of-volume is processed asynchronously on the output tapes, according to their capacity. While the entire output data sets are the same, single tapes of the output chains are usually not identical and cannot be exchanged.

NO

Do not create a secondary output tape. This is the default.

ERASE

Specifies whether the remainder of a tape is to be erased after the copy has finished.

YES

Erases any remaining data that may exist on an output tape upon completion of a copy operation.

NO

No erase of remaining data is done. This is the default.

FILES

Determines which files are copied.

SPECIFIC

The data set name parameter (DSN) must be supplied. Only those data sets specified are copied.

ACTIVE

All active (nonexpired) data sets on the specified volume(s), and on any volume chained to it, are copied.

Note: FILES=ACTIVE is valid with CA 1 only.

ALL

All data sets on the specified volume(s), and on any volumes chained to it, are copied. This is the default.

FILESEQB

Specifies the starting position within the input data set where the *two-byte binary* file sequence number is found. FILESEQB, FILESEQC and FILESEQD are mutually exclusive. Supply only one of these. (See rules following FILESEQD parameter definition.)

FILESEQC

Specifies the starting position within the input data set where the *four-character numeric* file sequence number is found. FILESEQB, FILESEQC, and FILESEQD are mutually exclusive. Supply only one of these. (See rules following FILESEQD parameter definition.)

FILESEQD

Specifies the starting position within the input data set where the one to five character, delimited, numeric file sequence number is found. Up to six positions are scanned. Leading blanks are accepted. The last digit of the file sequence number must be followed by a blank or a comma. FILESEQB, FILESEQC, and FILESEQD are mutually exclusive. Supply only one of these.

The following rules apply when using the DSN, VOL, FILESEQB, FILESEQC, and FILESEQD parameters:

- *position* is a numeric value. If **INPUT=ddname** is used, it is in the range of 1-255. If **INPUT=*** is used, it is in the range of 1-80.
- The position number specified is relative to 1 for example, if the volume serial number starts in position 2, VOL=2 would be specified.
- If DSN is specified without the VOL parameter, all data sets listed must be cataloged data sets.
- Coding the FILESEQB, FILESEQC, or FILESEQD parameter requires that the DSN and VOL parameters also be supplied.
- If neither DSN, VOL, FILESEQB, FILESEQC, nor FILESEQD is specified, VOL=1 is assumed.

INDISP

Determines the retention for the input file.

RETPD

Assign the retention specified.

EXPDT

Assign the specified expiration date to the input file. CA tape keyword expiration dates may be used. For example, if permanent retention is required, INDISP=EXPDT=PERM can be coded. (See the topic "Specifying CA 1 Keywords" in the *CA 1 Utilities and Reports Reference Guide,* or Appendix B "Expiration Date Cross Reference" in the *CA TLMS User Guide,* for a list of valid JCL expiration date keywords.) Specification of non-keyword dates should be in the same format as that specified in the DATEFMT parameter if it is present in the JCL.

Note: Do not use the Julian numeric equivalents for keyword dates here. For example, use the keyword CATLG, not 99000 and not 1999/000.

SAME

The disposition on the input file will not be modified upon completion of the copy operation. This is the default.

MAXFILES

Specifies the maximum number of files that can be processed in a file set. This analysis is performed before any tapes are mounted. The input volumes are analyzed and all secondary files are taken into consideration. The default is 9999. Values from 1 to 65535 are accepted.

MERGE

Specifies whether each input volume set is processed individually. "Set" refers to all volumes chained to the same first volume when applied to a multi-file, multivolume data set.

In the examples shown below, assume that volumes 123456 and 123555 are chained together with four files between them. Volumes 122323 and 112332 are chained together with a single large file.

YES

Used for combining (merging) all of the input files into a single set. This is the default.

For example, performing a FILECOPY on volumes 123456 and 122323 would result in all five files being merged together onto a single large multivolume set.

NO

Produces the same result as executing multiple CA Copycat Utility jobs (with a single volume set processed in each job) as a single task. All files from each volume set will be processed in the normal fashion. However, once EOF has been reached for the last file on the first volume set, a scratch request is issued to start a new output volume set for the next input volume set.

For example, performing a FILECOPY on volumes 123456 and 122323 would cause the four files starting on volume 123456 to be copied to one output volume set and the single large file starting on volume 122323 to be copied to a different output volume set. This produces a basic copy of volume sets, without the merging of files, in a single job.

MOD

Causes all input files to be merged into a single output set, like MERGE=YES. However, instead of starting a new output chain on a scratch tape, CA Copycat Utility will try to resume stacking on an existing output volume which was created in a previous execution. If no appropriate active volume is found, a scratch tape is requested. Option MODVOL can be used to specify an active output volume explicitly. Option MODHLQ can be used to maintain a catalog entry pointing to the last file created by a specific job. Any subsequent Filecopy job using the same jobname and the same MODHLQ specification will then automatically be directed to the output volume that was used last by the preceding job. If neither MODVOL nor MODHLQ is specified, MERGE=MOD operates exactly like MERGE=YES.

When MERGE=MOD is used to continue stacking on an existing CA Copycat Utility volume, the use of CTLFILE and OUTDISP must match the previous specification. If CTLFILE is used, the specified value must match the DSN of the first data set on the output volume set. If the default of OUTDISP=SAME is not used, the specified EXPDT or RETPD value must match the EXPDTs of the existing files on the volume set. The new date must be equal to or higher than all existing dates, and the date type must be the same. If the OUTDISP date is higher than the previous volume retention, the EXPDT of the first file is increased accordingly.

If MERGE=MOD is used with DUPLEX=YES, the primary and duplex output chains must be kept in sync. When active volumes are to be used for output, a pair of matching output volumes from a previous Filecopy execution must be selected.

MGMTCLAS

Specifies a 1 to 8 character name of a valid SMS Management Class to be used for the dynamic allocation of all primary output tape data sets.

MGMTCLA2

Specifies a 1 to 8 character name of a valid SMS ManagementClass to be used for the dynamic allocation of all duplex output tape data sets. MGMTCLA2 is only valid if DUPLEX=YES is also specified.

MODHLQ

Specifies a 1- to 24-character DSN high level qualifier, used to establish a dummy catalog entry for MERGE=MOD processing. MODHLQ is valid with MERGE=MOD only.

If MODHLQ is specified, CA Copycat Utility builds the following data set names: "modhlq.COPYCAT.jobname" for primary output and "modhlq.COPYCAT2.jobname for duplex output, where "modhlq" is the specified option value, and "jobname" is the name of the executing CA Copycat Utility job.

If MODVOL is not specified (or if MODVOL2 is not specified for duplex processing), the above data set name is located in the system catalog. If an entry is found, the cataloged volser and file sequence are validated on the tape system. If the tape represents a valid CA Copycat Utility volume, it is used for output, and the Filecopy job starts stacking files behind the existing files on the tape.

CA Copycat Utility maintains the pointer to the last volume and the last file sequence of the output chain by deleting the catalog entry whenever a new output data set is opened and by recataloging it upon successful close. The catalog entry is always maintained when the MODHLQ option is specified, but any previously existing catalog entry matching high level qualifier and jobname is not necessarily used to determine the active output volume. Option MODVOL can be used to override the volser retrieved from the catalog entry.

MODVOL

Specifies the primary output volume to be used for MERGE=MOD processing. MODVOL is valid with MERGE=MOD only. MODVOL overrides any volser determined from a catalog entry via option MODHLQ.

volser

Specifies the volser of a Filecopy output volume created in a previous CA Copycat Utility execution. CA Copycat Utility will continue stacking files on this volume, behind the existing data sets.

SCRTCH

Indicates that a scratch tape should be requested for the primary Filecopy output, though MERGE=MOD was specified.

MODVOL2

Specifies the duplex output volume to be used for MERGE=MOD processing. MODVOL2 is valid only with MERGE=MOD and DUPLEX=YES. MODVOL2 overrides any duplex volser determined from a catalog entry via option MODHLQ.

volser

Specifies the volser of a Filecopy output volume created in a previous CA Copycat Utility execution. CA Copycat Utility will continue stacking files on this volume, behind the existing data sets.

SCRTCH

Indicates that a scratch tape should be requested for the duplex Filecopy output, though MERGE=MOD was specified.

NOMERGE

This option is identical to the MERGE=NO parameter, described above. It is provided for compatibility with Version 1.0 of this product.

OUTDISP

Determines the retention for the output file.

RETPD

Assign the retention specified.

EXPDT

Assign the specified expiration date to the output file. CA tape keyword expiration dates may be used. For example, if permanent retention is required, OUTDISP=EXPDT=PERM can be coded. (See the topic "Specifying CA 1 Keywords" in the *CA 1 Utilities and Reports Reference Guide,* or Appendix B "Expiration Date Cross Reference" in the *CA TLMS User Guide,* for a list of valid JCL expiration date keywords.) Specification of non-keyword dates should be in the same format as that specified in the DATEFMT parameter if it is present in the JCL.

Note: Do not use the Julian numeric equivalents for keyword dates here. For example, use CATLG not 99000.

SAME

Assign the same retention on the output file that was on the input file. This is the default.

OUTDISP2

Determines the retention for the secondary output file. This parameter only applies if DUPLEX=YES is also specified.

RETPD

Assign the retention specified.

EXPDT

Assign the specified expiration date to the secondary output file. CA tape keyword expiration dates may be used. For example, if permanent retention is required, OUTDISP2=EXPDT=PERM can be coded. (See the topic "Specifying CA 1 Keywords" in the *CA 1 Utilities and Reports Reference Guide,* or Appendix B "Expiration Date Cross Reference" in the *CA TLMS User Guide,* for a list of valid JCL expiration date keywords.) Specification of non-keyword dates should be in the same format as that specified in the DATEFMT if it is present in the JCL.

SAME

Assign the same retention on the secondary output file that was on the input file. This is the default.

Note: Do not use the Julian numeric equivalents for keyword dates here. For example, use CATLG not 99000.

OUTSER

Specifies a volser to be allocated specifically as primary output tape. If more volumes are required for the primary output, all subsequent mounts will be non-specific and request PRIVAT tapes.

OUTSER2

Specifies a volser to be allocated specifically as secondary output tape (only valid with DUPLEX=YES). If more volumes are required for the duplex output, all subsequent mounts will be non-specific and request PRIVAT tapes.

OUTUNIT2

Specifies the unit name for the secondary output tape device. The JCL equivalent is UNIT= on the DD statement. OUTUNIT2 is only valid when DUPLEX=YES is also specified. Either OUTUNIT2 or STORCLA2 must be specified with DUPLEX=YES.

(Required if DUPLEX=YES is specified.) Specifies the unit name for the secondary output tape device. The JCL equivalent is UNIT= on the DD statement.

PREFIX

Specifies 1-8 characters that are used as the new high-level qualifier for all files being copied. If the current data set name exceeds 35 characters, truncation may occur.

PREFIX2

The same as PREFIX except that it applies to the output volumes created on OUTUNIT2. If the current data set name exceeds 35 characters, truncation may occur. The default is the same as PREFIX.

RECATLG

Determines the MVS catalog action to be performed for the output volumes created on OUTUNIT.

Note: If DUPLEX=YES, the cataloging of the secondary output data sets is controlled by RECATLG2.

ALL

The newly created files are cataloged to the new output volume(s) all of the time.

PREV

The newly created files are cataloged to the new output volume(s) if the corresponding input files were cataloged to MVS. RECATLG=PREV is not allowed if PREFIX= is specified.

NONE

The newly created files are not cataloged to MVS. This is the default.

RECATLG2

Determines the MVS catalog action to be performed on the output volumes created on OUTUNIT2. If RECATLG is also being used, use the PREFIX2 to ensure unique names are created on the duplex tape.

ALL

The newly created duplex files are cataloged to the new output volume(s) all of the time.

PREV

The newly created duplex files are cataloged to the new duplex volume(s) if the corresponding input files were cataloged to MVS.

NONE

The newly created duplex files are not cataloged to MVS. This is the default.

SAVEINFO

Specifies that tape creation data (date, time, job name, step name, DD name, program name) from the original file should be copied to the new TMC or VMF record for the file(s) created by this operation. More or less fields may be copied by using the CA Copycat Utility user exit (see USEREXIT).

YES

TMC or VMF records for newly created files will have creation data copied from the original files.

NO

TMC or VMF records for newly created files will not have creation data copied from the original files. This is the default.

SORT

Determines the order of the input files to be copied.

YES

The input files are sorted in the order of recording technique (TRTCH), density, first volume, file sequence number, and volume sequence number. This is the default.

NO

The input files are processed in the same order as the control statements presented to INPUT=.

STORCLAS

Specifies a 1 to 8 character name of a valid SMS Storage Class to be used for the dynamic allocation of all primary output tape volumes. STORCLAS is mutually exclusive with OUTUNIT; one of the two parameters is required.

STORCLA2

Specifies a 1 to 8 character name of a valid SMS Storage Class to be used for the dynamic allocation of all duplex output tape data sets. STORCLA2 is only valid if DUPLEX=YES is also specified. STORCLA2 is mutually exclusive with OUTUNIT2; one of the two parameters is required with DUPLEX=YES.

UNSTACK

A special control directive designed for use with virtual tape systems. The output files are each written to a separate volume. This allows the virtual system to physically stack the files within the virtual tape system while giving the external appearance of each file being on a separate volume. UNSTACK and MERGE processing of any kind are mutually exclusive.

USEREXIT

Specifies whether the CTCOPYUX user exit is called before tape file allocations and database updates are to be performed. See Chapter 5 "User Exit and Macros" *(see page 67)* for information on coding this exit.

YES

The user exit is called.

NO

The user exit is not called. This is the default.

VOLCHAIN

Can be used to prevent creation of multivolume output chains on physical cartridges.

YES

Indicates that end of volume is processed normally. When the end of a tape is reached on output, the remainder of the current data set is written to a new scratch tape, which is chained to the previous tape as secondary volume. VOLCHAIN=YES is the default.

NO

Indicates that multivolume chaining is to be suppressed when possible. At EOV, if the current data set has not used more than half of tape space, the partial file is expired on the tape system and the entire input file is recopied from the beginning to a new scratch tape as file sequence 1. The volumes are not chained. VOLCHAIN=NO may be used with MERGE=YES, MERGE=NO and MERGE=MOD, but is not valid with UNSTACK.

Note: VOLCHAIN=NO has no effect on reel tapes and on virtual tapes.VOLCHAIN=NO does not take effect when DUPLEX=YES and BUFFER=MULTIPLE are both specified.

WAITTIME

Specifies the number of minutes to wait before retrying when a tape resource is not available. This value controls wait interval when you reply WAIT to the CTC7303R console message. Replying WAIT to the CTC7303R message puts the allocation logic in a loop of waiting and then retrying until either the allocation completes or you reply to the CTC7306R message which remains outstanding during the wait/retry cycle. Values from 1 to 10 are accepted. The default is WAITTIME=5.

EXEC Parameters

The following parameters are used in the PARM= field for the EXEC JCL statement to specify an alternate date format, an alternate language, and to activate special testing features.

DATEFMT

Specifies the date format to be used when processing the INDISP or OUTDISP keyword. The date pattern is limited to ten bytes and must be enclosed in parentheses. This parameter is optional and, if omitted, the CA 1 or CA TLMS preferred date format is used. For detailed information on this parameter, see the *CA 1 Utilities and Reports Reference Guide* or the *CA TLMS Systems Programmer Guide*.

LANG

Designates which language table should be used when generating error messages and report titling. The default is LANG=ENG. Valid values include ENG=English, FRN=French, GER=German, ITA=Italian, and SPN=Spanish. Support for other languages will be provided based on client demand.

TEST

Performs preliminary validation of all keyword parameters coded, and reports the options that are in effect, as well as tapes that will qualify for this copy operation. The actual copy operation is not executed when the TEST parameter is specified, and no TMC or VMF updates are made.

Sample Job Control Statements

Sample JCL and control statements for a FILECOPY operation are provided in CAI.CTAPJCL, member FILECOPY.

The following pages provide examples illustrating the JCL, control statements and optional parameters which can be utilized for a FILECOPY operation.

Example 1

This example shows the statements that would be necessary to copy all active files from a set of two input tapes to a set of one or more tapes (output). This example does not appear in CAI.CTAPJCL.

```
//FILECOPY JOB                  .
//STEP1   EXEC PGM=COPYCAT,PARM='DATEFMT=(YYYY/MM/DD),LANG=FRN'A
//STEPLIB  DD  DSN=CAI.CAILINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//CCRPT    DD  SYSOUT=*  B
//SYSUSNAP DD  SYSOUT=*
//SYSUDUMP DD  SYSOUT=*
//SYSIN    DD  *
*=====================================================================*
*    THE FOLLOWING STATEMENTS COPY ALL OF THE FILES ON TAPES 123457 AND *
*    123456 ONTO ANOTHER OUTPUT TAPE. THE DATA SETS ARE RECATALOGED     *
*    TO THE PRIMARY OUTPUT TAPE IF PREVIOUSLY CATALOGED, AND THE CA 1   *
*    OR CA TLMS EXPIRATION DATE AND CREATION INFORMATION ARE PROPAGATED *
*    FROM THE ORIGINAL TAPES TO THE NEW TAPES. DATA SETS WILL BE        *
*    COPIED BY TAPE VOLUME SETS IN THE ORDER SPECIFIED (SORT=NO).       *
*=====================================================================*
FILECOPY
FILES=ALL,SAVEINFO=YES  C
RECATLG=PREV   D
INDISP=SAME  E
OUTDISP=SAME
DUPLEX=YES    F
INUNIT=TAPE
OUTUNIT=TAPE
OUTUNIT2=TAPE
COMP=YES    G
COMP2=YES    H
SORT=NO  I
INPUT=*
123457
123456
/*
```

Parameter Definitions

A

The DATEFMT parameter is requesting expiration dates to be reported in a different format. The LANG paramter is requesting all messages and reports be produced in French.

B

CCRPT produces a detailed report of all files copied.

C

FILES=ALL specifies all files are copied The creation data is propagated.

D

RECATLG=PREV specifies the new files are recataloged only if they were cataloged previously. Because RECATLG2 was not also specified, the new files written to the duplex volume are not cataloged.

E

INDISP=SAME specifies the original files keep the same expiration dates.

F

DUPLEX=YES specifies a duplex copy of the output is created.

G

COMP=YES specifies that the output is compacted. This optional parameter applies to 3480x or 3490 units only.

H

COMP2=YES specifies the compaction mode for the duplex output tape.

I

The data sets are copied from tape volume sets in the same order as the volumes specified in control statements.

Example 2

The following is an example of the job and CA Copycat Utility function control statements that would be necessary to copy all specified files onto a single tape (or set of tapes). This example does not appear in the CAI.CTAPJCL. For information on creating the selection list referenced by the DSNLIST DD statement used in Example 1, see Generating a Volume Selection List.

```
//jobname  JOB                      A
//STEP1   EXEC PGM=COPYCAT,PARM='LANG=GER'
//STEPLIB  DD   DSN=CAI.CAILINK.DISP=SHR
//SYSPRINT DD   SYSOUT=*
//CCRPT    DD   SYSOUT=*
//SYSUSNAP DD   SYSOUT=*
//SYSUDUMP DD   SYSOUT=*
//DSNLIST  DD   DSN=list.of.tape.data.sets.to.copy,DISP=OLD
//SYSIN    DD   *
FILECOPY
INPUT=DSNLIST,DSN=1,FILES=SPECIFIC  B
RECATLG=ALL,PREFIX=BACKUP    C
OUTDISP=RETPD=3650
INDISP=SAME  D
USEREXIT=YES  E
INUNIT=TAPE
OUTUNIT=TAPE
/*
```

Parameter Definitions

A

The language parameter is requesting all messages and reports be produced in German.

B

FILES=SPECIFIC stipulates only the specified files are copied. The creation data is not propagated.

C

RECATLG=ALL,PREFIX=BACKUP specifies the new files are cataloged, and have an additional prefix of BACKUP in the data set name.

D

INDISP=SAME specifies the original files will *not* be expired.

E

USEREXIT=YES specifies the CTCOPYUX user exit is called during tape file allocations and TMC or VMF updates.

Generating a Volume Selection List

Either CA Earl or the CA 1 Generalized Report Writer, TMSGRW, can be used to generate a volume selection list of the tapes to be copied.

Using CA Earl

Important! CA Earl Version 6.1 is the minimum release required for use with CA 1 Version 11.5 or CA TLMS Version 11.5.

The following example illustrates the JCL and control statements needed to create a list of volumes that meet the following criteria:

- Expiration date is a non-keyword value, greater than 180 days in the future.
- The last use date of the volume was more than 90 days previous.
- The volume is not in an out-of-area location.
- Positions 6 and 7 of the data set name are either 01 or 02.

```
//EARL     EXEC PGM=EARL,REGION=1024K
//EARLLIB  DD  DSN=YOUR.TAPE.CTAPSRC,DISP=SHR
//STEPLIB  DD  DSN=YOUR.TAPE.CAILINK,DISP=SHR
//TAPEDB   DD   DSN=your.tape.catalog,DISP=SHR
//SYSPRINT DD   SYSOUT=*
//EARLOBJ  DD   UNIT=SYSDA,SPACE=(CYL,(1,1))
//SORTIN   DD   UNIT=SYSDA,SPACE=(CYL,(5,5))
//SORTOUT  DD   UNIT=SYSDA,SPACE=(CYL,(5,5))
//SYSOUT   DD   SYSOUT=*
//OUTLIST  DD   DSN=&.&TEMP.,DISP=(,PASS),
//              UNIT=SYSDA,SPACE=(TRK,(5,5)),
//              DCB=(LRECL=80,BLKSIZE=3120,RECFM=FB)
//SORTWK01 DD   UNIT=SYSDA,SPACE=(CYL,(5,5))
//SORTWK02 DD   UNIT=SYSDA,SPACE=(CYL,(5,5))
//SORTWK03 DD   UNIT=SYSDA,SPACE=(CYL,(5,5))
//SORTWK04 DD   UNIT=SYSDA,SPACE=(CYL,(5,5))
//SORTWK05 DD   UNIT=SYSDA,SPACE=(CYL,(5,5))
//SORTWK06 DD   UNIT=SYSDA,SPACE=(CYL,(5,5))
//WORK1    DD   UNIT=SYSDA,SPACE=(CYL,(5,5))
//SYSUDUMP DD   SYSOUT=*
//SYSIN  DD  *
!
!     USE CA-EARL TO PRODUCE A LIST OF VOLUMES BASED ON

!                EXPIRATION DATE
!                LAST-USED DATE
!                DATA SET NAME
!                OUT-OF-AREA CODE
!
 COPY EARLDEFS                          ! CA 1 OR CA TLMS EARLDEFS
 OUTLIST: FILE OUTPUT RECORD=80         ! DEFINE AN OUTPUT LIST
          DEF OUT_REC 1-80 X            !    THAT WILL BE USED AS
          DEF OUT_VOLUME 1-6 X          !    INPUT TO CA COPYCAT
 DEF P_LAST_DATE     (P 7.0) = NONE     ! MINIMUM LAST USED DATE
 DEF P_SCRATCH_DATEL (P 7.0) = NONE     ! LOW-VALUE EXPIRATION
 DEF DSN6_7                  = DSN 6-7 X  ! PARTIAL DATASET NAME
 SET TYPRUN = R_VOLUME             ! ONLY LOOK AT VOLUME RECORDS

 SET FUNCTION = 'ADD_DAYS'         ! ADD TO TODAY THIS
 SET DAYS = 180                    !     MANY DAYS

 CALL CTSEDATE USING FUNCTION,RUNDATE,DAYS,P_SCRATCH_DATEL
 SET FUNCTION = 'SUB_DAYS'         ! SUBTRACT FROM TODAY
 SET DAYS = 90                     !     THIS MANY DAYS

 CALL CTSEDATE USING FUNCTION,RUNDATE,DAYS,P_LAST_DATE

 GET TAPEDB                        !   GET RECORDS
```

```
 SET FUNCTION = 'TO_EXPLODED'      ! GET DATE FORMAT INFO FIELDS
 CALL CTSEDATE USING FUNCTION,P_EXP_DATA,EXPDT

 SET   OUT_VOLUME = VOLSER         !   FOR OUTLIST OUTPUT FILE

  IF EXPDT >= P_SCRATCH_DATEL  AND ! WHEN EXPDT >= CDATE+180
        P_EXP_TYPDAT = T_JDATE AND ! AND EXPDT TYPE IS JULIAN
        LDATE <= P_LAST_DATE   AND ! AND LDATE <= CDATE-90
        OUTCODE = '    ',          ! AND OUTCODE IS BLANKS
                  'LIBR',          !             OR CA 1 KEYWORD LIBR
                  ' VMS',          !             OR CA 1 KEYWORD VMS
                  'DC  ',          !             OR CA TLMS DATACENTER ID
                  X'00000000'  AND !             OR HEX ZEROS
        DSN6_7 = '01','02'         ! AND POSITIONS 6 AND 7 OF THE
                                   ! DATASET NAME ARE EITHER 01 OR 02
   THEN                            !  THEN
 PUT  OUTLIST                      !    PUT THE RECORD TO OUTLIST
 ENDIF

 GOTO EOJ TAPEDB = 'E'
END
```

This example does not appear in CAI.CTAPJCL.

Using CA 1 TMSGRW

The following is an example of CA 1 TMSGRW control statements for 3420 to 3480 tape data set migration using CA Copycat Utility. Criteria are any 9-track tapes that are SL, expire 1998/180 or later, and are not marked "OUT OF AREA" or owned by the VMS keyword outcodes of ' LIB' and 'LIBR'. This example does not appear in CAI.CTAPJCL.

```
CONTROL-SECTION
TITLE '3420 TO 3480 DATA SET MIGRATION'
DEFINE TRKNO HX '80'
DEFINE LODATE DT '1998/180'
DEFINE SLLAB HX '02'
DEFINE OUT1 CH ' LIB'
DEFINE OUT2 CH 'LIBR'
DEFINE OUT3 HX '00'
PROCESS-SECTION
WHEN TRKNO NE TRTCH
REJECT
WHEN EXPDT LT LODATE
REJECT
WHEN OUTCODE EQ OUT1
OR OUTCODE EQ OUT2
OR OUTCODE GT OUT3
REJECT
WHEN LABEL EQ SLLAB
LIST
REPORT-SECTION
PRINT VOLSER 'VOLUME,SERIAL'
PRINT DSN 'DATA SET NAME'
PRINT EXPDT 'EXPIRE,DATE'
TRANSLATE LABEL 'LABEL,TYPE'
PRINT BLKCNT 'BLOCK,COUNT'
```

Sample FILECOPY Output Reports

CA Copycat Utility Filecopy Detail

```
FILECOPY                                    CA Copycat Utility r12                                    Page=00001

 Wednesday, November 11, 2009.315          C O P Y C A T   C O P Y   D E T A I L                        17:03:31

  Original Data Set Name
    Output Data Set Name                    File    Creation       Expiration   1st   Label Ctlg   Media        Data Set   Err
                                            Seq# Date       Time      Date     Volume Type   RC    Type       Block Count Ind

 * * CTLFILE * *
   SYST057.COPYCAT.CTLFILE                     1 2009/315   17.03  2010/150    V00009  SL        18TK38K             1

 SYST057.LMR.PD0458ST.INPUT                    1 2009/315   16.41  2009/317    V00036  SL   Y00  18TK38K           770
   SYST057.LMR.PD0458ST.INPUT                  2 2009/315   16.41  2010/130    V00009  SL   R00  18TK38K           770

 SYST057.LDX.DIAG.OUTPUT                       1 2009/315   15.49  2009/317    V00028  SL   Y00  18TK38K             7
   SYST057.LDX.DIAG.OUTPUT                     3 2009/315   15.49  2010/150    V00009  SL   R00  18TK38K             7

 SYST057.LDX.IPCS.PRINT                        2 2009/315   15.49  2009/317    V00028  SL   Y00  18TK38K            15
   SYST057.LDX.IPCS.PRINT                      4 2009/315   15.49  2010/073    V00009  SL   R00  18TK38K            15

 SYST057.LDX.EXTRACT                           3 2009/315   15.49  2009/317    V00028  SL   Y00  18TK38K             4
   SYST057.LDX.EXTRACT                         5 2009/315   15.49  2010/095    V00009  SL   R00  18TK38K             4

 SYST057.LDX.USER.DATA                         4 2009/315   15.49  2009/317    V00028  SL   Y00  18TK38K           864
   SYST057.LDX.USER.DATA                       6 2009/315   15.49  2010/138    V00009  SL   R00  18TK38K           864

 SYST057.LDX.LOG.DATA                          5 2009/315   15.49  2009/317    V00028  SL   Y00  18TK38K         2,001
   SYST057.LDX.LOG.DATA                        7 2009/315   15.49  2010/150    V00009  SL   R00  18TK38K         2,001


         End of report FILECOPY    Job=SYSTCOPY  Step=COPYCAT   Genlevel=000AUWC0
```

Field	Description
Original Data Set Name Output Data Set Name Duplex Data Set Name	Data set name for the corresponding tape file. ORIGINAL refers to the input data set (dynamically allocated as ddname CI1nnnnn). TAPEOUT refers to the primary output data set (dynamically allocated as ddname CO1nnnnn). TAPEOUT2 refers to the duplex output data set (dynamically allocated as ddname CO2nnnnn). The TAPEOUT2 line is only present if DUPLEX=YES is specified in the control statements.
File Seq#	File sequence number.
Creation Date/Time	Creation date and time for the data set.
Expiration Date	Expiration date for the data set.
1st Volume	First volume serial number of the volume set.
Label Type	Data set label type.
Ctlg RC	Catalog return code, in the format *xnn*. This report field is only present if RECATLG=PREV, RECATLG2=ALL, or RECATLG2=PREV was in effect.

Field	Description
	The possible values for *xnn* are different for the input and the output files. For *xnn* values listed for input files, the values of *x* can be: ■ Y for Yes (the catalog points to this file). ■ N for No (the catalog does not point to this file). The *nn* is the LOCATE return code. A value of '00' means a catalog entry exists under this name. For *xnn* values listed for output files, the values of *x* can be: ■ C for Cataloged (no catalog entry existed before, but the catalog now points to this file). ■ R for Recataloged (the catalog previously pointed to another file, but it now points to the output file). ■ L for Located (the catalog entry was found, but errors prevented cataloging or recataloging). ■ E for Error (logic conditions resulting in message CTC4009W prevent catalog attempts). The *nn* is the CATALOG or LOCATE return code.
Media Type	Type of media used for this data set. This field is a concatenation of recording technique and density, followed by 'IDRC' if the data set ised.
Data Set Block Count	Number of blocks in the data set.
Err Ind	Error indicator. If this field contains an asterisk '*', an error occurred with this data set. Look for messages CTC4004E, CTC4005E, CTC4006W, CTC4009W, CTC4010E, or CTC4011E with the CA Copycat Utility Messages output.

CA Copycat Utility Messages (1 of 5)

```
COPYCAT                                          CA Copycat Utility r12                                          Page=00001
 Wednesday, November 11, 2009.315                C O P Y C A T   M E S S A G E S                                   17:03:19
 CTC6001I *** Start COPYCAT genlevel=000AUWC0 ***
 *================================================================*
 *    COPY ALL FILES ON TAPES V00036 AND V00028 IN THE ORDER SPECIFIED *
 *    AND MERGE THEM ONTO ONE OUTPUT TAPE. USE MULTI-BLOCK BUFFERING   *
 *    FOR THE I/O WHEN APPROPRIATE. AS FIRST FILE ON THE OUTPUT TAPE,  *
 *    CREATE A CONTROL DATA SET 'SYST057.COPYCAT.CTLFILE'. RECATALOG   *
 *    ALL FILES TO THE OUTPUT TAPE IF THEY WERE PREVIOUSLY CATALOGED.  *
 *    PROPAGATE THE ORGINAL RETENTION AND CREATION INFORMATION TO THE  *
 *    OUTPUT DATA SETS. EXPIRE THE INPUT TAPES AFTER 2 DAYS.           *
 *================================================================*
 FILECOPY
 FILES=ALL
 INUNIT=3480
 OUTUNIT=3480
 BUFFER=MULTIPLE
 MERGE=YES
 SORT=NO
 SAVEINFO=YES
 RECATLG=PREV
 INDISP=RETPD=2
 OUTDISP=SAME
 CTLFILE=SYST057.COPYCAT.CTLFILE
 INPUT=*,VOL=1
 *================================================================*
 * Options in effect:                                             *
 *        FILECOPY                                                *
 *        BUFFER=MULTIPLE                                         *
 *        COMP=                                                   *
 *        CTLFILE=SYST057.COPYCAT.CTLFILE                         *
 *        DATACLAS=                                               *
 *        DATACLA2=                                               *
 *        DSN=                                                    *
 *        DUPLEX=NO                                               *
 *        ERASE=NO                                                *
 *        FILES=ALL                                               *
 *        INDISP=RETPD=0002                                       *
 *        INPUT=*                                                 *
 *        INUNIT=3480                                             *
 *        MAXFILES=9999                                           *
 *        MERGE=YES                                               *
 *        MGMTCLAS=                                               *
 *        MGMTCLA2=                                               *
 *        MODHLQ=                                                 *
 *        MODVOL=                                                 *
 *        MODVOL2=                                                *
 *        OUTDISP=SAME                                            *
 *        OUTSER=                                                 *
 *        OUTUNIT=3480                                            *
 *        PREFIX=                                                 *
 *        RECATLG=PREV                                            *
 *        SAVEINFO=YES                                            *
 *        SORT=NO                                                 *
 *        STORCLAS=                                               *
 *        STORCLA2=                                               *
 *        USEREXIT=NO                                             *
 *        VOL=001                                                 *
 *        VOLCHAIN=YES                                            *
 *        WAITTIME=5                                              *
 *================================================================*
 CTC1017I Input statements for FILECOPY
 V00036
 V00028
 CTC1016I Total input statements read: 2
 CTC1018I FILECOPY entries:   6
 VOL=V00036 FVL=V00036 FS=1     RFS=1     VS=1   F=      DSN=SYST057.LMR.PD0458ST.INPUT                TRTCH=18TK DEN=38K  0110130
 VOL=V00028 FVL=V00028 FS=1     RFS=1     VS=1   F=  F   DSN=SYST057.LDX.DIAG.OUTPUT                  TRTCH=18TK DEN=38K  0110150
 VOL=V00028 FVL=V00028 FS=2     RFS=2     VS=1   F=  F   DSN=SYST057.LDX.IPCS.PRINT                   TRTCH=18TK DEN=38K  0110073
 VOL=V00028 FVL=V00028 FS=3     RFS=3     VS=1   F=  F   DSN=SYST057.LDX.EXTRACT                      TRTCH=18TK DEN=38K  0110095
```

CA Copycat Utility Messages (2 of 5)

```
COPYCAT                                          CA Copycat Utility r12                                          Page=00002

 Wednesday, November 11, 2009.315                C O P Y C A T   M E S S A G E S                                  17:03:19

 ------------------------------------------------------------------------------------------------------------------------------------------

 CTC5131I SL processing mode
 CTC7004I Dynamic allocation start for CI100001 VOL=V00036 FS=1
 CTC5132I About to open CI100001
 CTC5110I CI100001 tape volser = V00036, device type = 3480
 CTC5111I Unit address = 0E51
 CTC5101I Input data set name = SYST057.LMR.PD0458ST.INPUT
 CTC5140I Initialization complete for 83 block buffering
 CTC7004I Dynamic allocation start for CO100001  FS=1
 CTC5132I About to open CO100001
 CTC7006I DEQ start for volume V00009
 CTC7004I Dynamic allocation start for CO100002 VOL=V00009 FS=2
 CTC5132I About to open CO100002
 CTC5110I CO100002 tape volser = V00009, device type = 3480
 CTC5111I Unit address = 0E50
 CTC5100I Output data set name = SYST057.LMR.PD0458ST.INPUT
 CTC5061I 770 blocks contained in data set
 CTC7006I DEQ start for volume V00009

 ------------------------------------------------------------------------------------------------------------------------------------------

 CTC7004I Dynamic allocation start for CI100002 VOL=V00028 FS=1
 CTC5132I About to open CI100002
 CTC5110I CI100002 tape volser = V00028, device type = 3480
 CTC5111I Unit address = 0E51
 CTC5101I Input data set name = SYST057.LDX.DIAG.OUTPUT
 CTC5140I Initialization complete for 11 block buffering
 CTC7004I Dynamic allocation start for CO100003 VOL=V00009 FS=3
 CTC5132I About to open CO100003
 CTC5110I CO100003 tape volser = V00009, device type = 3480
 CTC5111I Unit address = 0E50
 CTC5100I Output data set name = SYST057.LDX.DIAG.OUTPUT
 CTC5061I 7 blocks contained in data set
 CTC7006I DEQ start for volume V00009
 CTC7006I DEQ start for volume V00028
```

Note: The 'F=' in the FILECOPY input entries is a flag setting. The flag settings and their meanings are:

D

duplicate entry

E

expired file

F

more files follow on this volume

L

this is the last volume of a multivolume file

N

not selected due to CTLFILE DSN

V

this file spans multiple volumes (flag is on for all volumes of the file)

In a multifile/multivolume aggregate, 'V' and 'L' are only set for multivolume files, and 'F' is only set for multifile volumes.

CA Copycat Utility Messages (3 of 5)

```
COPYCAT                                          CA Copycat Utility r12                                          Page=00003

 Wednesday, November 11, 2009.315               C O P Y C A T   M E S S A G E S                                17:03:19

 ------------------------------------------------------------------------------------------------------------------------------------------------

 CTC7004I Dynamic allocation start for CI100003 VOL=V00028 FS=2
 CTC5132I About to open CI100003
 CTC5110I CI100003 tape volser = V00028, device type = 3480
 CTC5111I Unit address = 0E51
 CTC5101I Input data set name = SYST057.LDX.IPCS.PRINT
 CTC5140I Initialization complete for 11 block buffering
 CTC7004I Dynamic allocation start for CO100004 VOL=V00009 FS=4
 CTC5132I About to open CO100004
 CTC5110I CO100004 tape volser = V00009, device type = 3480
 CTC5111I Unit address = 0E50
 CTC5100I Output data set name = SYST057.LDX.IPCS.PRINT
 CTC5061I 15 blocks contained in data set
 CTC7006I DEQ start for volume V00009
 CTC7006I DEQ start for volume V00028

 ------------------------------------------------------------------------------------------------------------------------------------------------

 CTC7004I Dynamic allocation start for CI100004 VOL=V00028 FS=3
 CTC5132I About to open CI100004
 CTC5110I CI100004 tape volser = V00028, device type = 3480
 CTC5111I Unit address = 0E51
 CTC5101I Input data set name = SYST057.LDX.EXTRACT
 CTC5140I Initialization complete for 40 block buffering
 CTC7004I Dynamic allocation start for CO100005 VOL=V00009 FS=5
 CTC5132I About to open CO100005
 CTC5110I CO100005 tape volser = V00009, device type = 3480
 CTC5111I Unit address = 0E50
 CTC5100I Output data set name = SYST057.LDX.EXTRACT
 CTC5061I 4 blocks contained in data set
 CTC7006I DEQ start for volume V00009
 CTC7006I DEQ start for volume V00028

 ------------------------------------------------------------------------------------------------------------------------------------------------

 CTC7004I Dynamic allocation start for CI100005 VOL=V00028 FS=4
 CTC5132I About to open CI100005
 CTC5110I CI100005 tape volser = V00028, device type = 3480
 CTC5111I Unit address = 0E51
 CTC5101I Input data set name = SYST057.LDX.USER.DATA
 CTC5140I Initialization complete for 515 block buffering
 CTC7004I Dynamic allocation start for CO100006 VOL=V00009 FS=6
 CTC5132I About to open CO100006
 CTC5110I CO100006 tape volser = V00009, device type = 3480
 CTC5111I Unit address = 0E50
 CTC5100I Output data set name = SYST057.LDX.USER.DATA
 CTC5061I 864 blocks contained in data set
 CTC7006I DEQ start for volume V00009
 CTC7006I DEQ start for volume V00028
```

CA Copycat Utility Messages (4 of 5)

```
COPYCAT                                          CA Copycat Utility r12                                                Page=00004

 Wednesday, November 11, 2009.315                C O P Y C A T   M E S S A G E S                                         17:03:19

 ------------------------------------------------------------------------------------------------------------------------------------

 CTC7004I Dynamic allocation start for CI100006 VOL=V00028 FS=5
 CTC5132I About to open CI100006
 CTC5110I CI100006 tape volser = V00028, device type = 3480
 CTC5111I Unit address = 0E51
 CTC5101I Input data set name = SYST057.LDX.LOG.DATA
 CTC5140I Initialization complete for 603 block buffering
 CTC7004I Dynamic allocation start for CO100007 VOL=V00009 FS=7
 CTC5132I About to open CO100007
 CTC5110I CO100007 tape volser = V00009, device type = 3480
 CTC5111I Unit address = 0E50
 CTC5100I Output data set name = SYST057.LDX.LOG.DATA
 CTC5061I 2001 blocks contained in data set
 CTC7005I Dynamic unallocation start for CI100005
 CTC7005I Dynamic unallocation start for CI100004
 CTC7005I Dynamic unallocation start for CO100005
 CTC7005I Dynamic unallocation start for CO100006

 CTC6025I Total input files----------6
 CTC6026I Total output files---------7
 CTC6027I Total input tapes----------2
 CTC6028I Total output tapes---------1
 CTC6002I *** End COPYCAT ***
```

CA Copycat Utility Messages (5 of 5)

```
COPYCAT                                          CA Copycat Utility r12                                                Page=00005

 Wednesday, November 11, 2009.315                C O P Y C A T   M E S S A G E S                                         17:03:19

 ******* MESSAGE SUMMARY *******

 Error Level Messages (RC=8-16)

 Msg ID      Count    On Page(s)

 - None -

 Warning Level Messages (RC=4)

 Msg ID      Count    On Page(s)

 - None -

 *** End of Message Summary ****


          End of report COPYCAT     Job=SYSTCOPY  Step=COPYCAT   Genlevel=000AUWC0
```

Chapter 3: Copying Tapes

The CA Copycat Utility TAPECOPY function control statements are used to copy an entire tape volume to another volume. TAPECOPY is primarily intended to be used for media replacement. Multifile records are not created in the TMC or VMF for secondary output data sets when copying volumes with more than one data set. If multifile information is desired, use the FILECOPY function.

Important! The TAPECOPY function requires standard label (SL) tapes. BLP processing is used.

Upon successful completion of the TAPECOPY operation, the following TMC or VMF data fields are copied from the input volume to the output volume for the first (or only) file on the tape: data set name, expiration date, creation date, creation time, creation job, creation step, creation ddname, creation program, creation device, user accounting data, density, recording technique, label type, record format, record length, block size, block count. The following database fields are updated with information from the CA Copycat Utility job: last used job name, last used date, and last used unit. If the volume serial number of the output tape is the same as the input volser (with OUTVOL=SAME specified), any existing multifile and multivolume information of the database record remains unchanged.

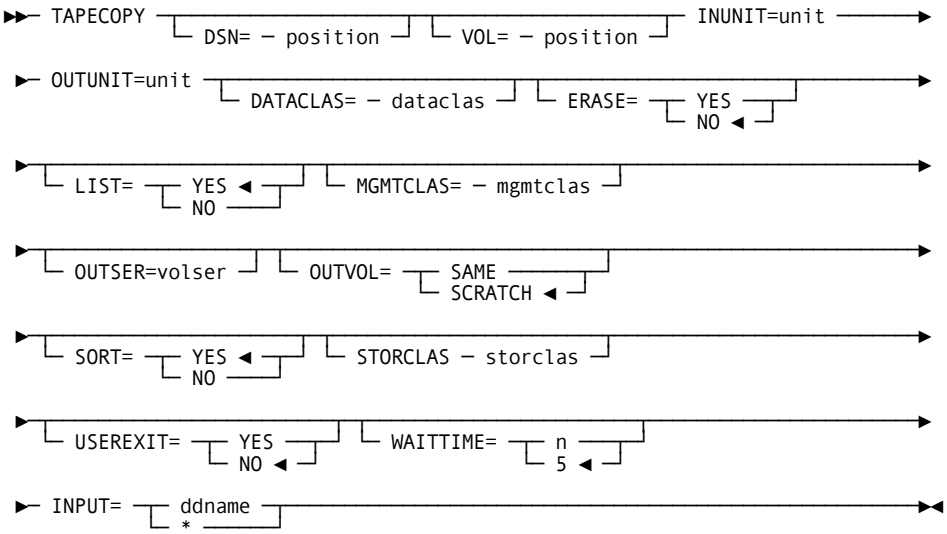
Coding TAPECOPY Control Statements

When coding TAPECOPY control statements, the first statement identifies the function as TAPECOPY. It is followed by control statements that let you indicate the position number in the input file where the data set name and/or volume serial number fields are located. Other optional statements allow you to copy the volume serial number and list all headers of files being copied. Comment statements may be included, and are identified as comments by coding an asterisk (*) in position 1.

CA Copycat Utility control statements are constructed using keyword parameters. Statements may be coded as one keyword per statement, or as multiple keywords which are separated by a comma. Keywords specified in a multiple keyword statement are not positional, and continuation characters are not required.

Note: CA Copycat Utility opens input and output files based on the following dispositions: DISP=(SHR,KEEP,KEEP) for input and DISP=(NEW,KEEP,KEEP) for output.

The formats for the TAPECOPY control statements are:



Control Statement Definitions

TAPECOPY

Identifies this as a tape copy function. This must be the first noncomment control statement, contain no other parameters, and must begin in position 1. The input and output device types must be identical.

INPUT

(Required.) Specified as one of the following:

INPUT=*ddname*

Specifies the ddname of the input data set containing the volume selection list and, optionally, related data set names.

INPUT=*

Indicates that the volume selection list immediately follows this INPUT control statement. If this form is used, the following rules apply:

- The optional parameters (OUTVOL and LIST) must be present *before* the INPUT control statement.
- Any DSN and VOL parameter associated with the INPUT control statement must be coded within *one* statement (separated by commas as shown above), rather than as a single control statement.

DSN

Specifies the starting position within the input data set where the 44-character data set name is found. (See rules following VOL parameter definition.)

VOL

Specifies the starting position within the input data set where the 6-character volume serial number is found.

The following rules apply when using the DSN and VOL parameters:

- *position* is a numeric value. If **INPUT=ddname** is used, it is in the range of 1-255. If **INPUT=*** is used, it is in the range of 1-80.
- The position number specified is relative to 1. For example, if the volume serial number starts in position 2, VOL=2 would be specified.
- If DSN is specified without the VOL parameter, the data sets listed must be cataloged to MVS.
- If neither DSN nor VOL is specified, VOL=1 is assumed.

INUNIT

(Required.) Specifies the unit name for the input tape device. The JCL equivalent is UNIT= on the DD statement.

OUTUNIT

Specifies the unit name for the output tape device. The JCL equivalent is UNIT= on the DD statement. As an alternative, the STORCLAS keyword can be specified. Either OUTUNIT or STORCLAS is required.

Optional Control Statement Definitions

DATACLAS

Specifies a 1 to 8 character name of a valid SMS Data Class to be used for the dynamic allocation of all output tape data sets.

ERASE

Specifies whether the remainder of a tape is to be erased after the copy has finished.

YES

Erases any remaining data that may exist on an output tape upon completion of a copy operation.

NO

No erase of remaining data is done. This is the default.

LIST

Specifies whether tape labels are to be reported.

YES

All detected VOL1, HDR1, HDR2, EOF1, EOF2, EOV, and tapemark indicators are listed on the report. This is the default.

NO

No tape labels or tapemark indicators are reported.

MGMTCLAS

Specifies a 1 to 8 character name of a valid SMS Management Class to be used for the dynamic allocation of all output tape data sets.

OUTSER

Specifies a volser to be allocated specifically as output tape. If the parameter is omitted, a non-specific mount request is issued.

Note: CA Copycat Utility dynamically allocates the output volume using EXPDT=98000 for TAPECOPY processing. CA TLMS users who have option FORSPEC set to YES need to specify the OUTSER parameter to satisfy CA TLMS mount processing even when OUTVOL=SAME is also being specified.

OUTVOL

Specifies which volume serial number should be used for the output tape from a TAPECOPY operation.

SAME

The volume serial number of the output tape is the same as the input tape volume serial number.

SCRATCH

The volume serial number is left the same as the original output SCRATCH tape volume serial number. This is the default.

SORT

Determines the order of the input volumes to be copied.

YES

The input files are sorted in the order of recording technique (TRTCH), density, first volume, file sequence number, and volume sequence number. This is the default.

NO

The input volumes are processed in the same order as the control statements presented to INPUT=.

STORCLAS

Specifies a 1 to 8 character name of a valid SMS Storage Class to be used for the dynamic allocation of all output tape volumes. STORCLAS is mutually exclusive with OUTUNIT; one of the two parameters is required.

USEREXIT

Specifies whether the CTCOPYUX user exit is called before tape file allocations and database updates are to be performed. See Chapter 5 "User and Exit Macros" (see page 67) for information on coding this exit.

YES

The user exit is called.

NO

The user exit is not called. This is the default.

WAITTIME

Specifies the number of minutes to wait before retrying when a tape resource is not available. This value controls wait interval when you reply WAIT to the CTC7303R console message. Replying WAIT to the CTC7303R message puts the allocation logic in a loop of waiting and then retrying until either the allocation completes or you reply to the CTC7306R message which remains outstanding during the wait/retry cycle. Values from 1 to 10 are accepted. The default is WAITTIME=5.

Restrictions

1. The input and output device types must be identical.
2. No multi-data set chaining is maintained.
3. No multivolume chaining is maintained.
4. If OUTVOL=SCRATCH was specified, and the input tape has a retention period, the output tape will have the same retention period.
5. TAPECOPY uses BLP and EXPDT=98000 for both input and output tape volumes during processing.

EXEC Parameters

The following parameters are used in the PARM= field for the EXEC JCL statement to specify an alternate date format, an alternate language, and to activate special testing features.

DATEFMT

Specifies the date format to be used. The date pattern is limited to ten bytes and must be enclosed in parentheses. This parameter is optional and, if omitted, the CA 1 or CA TLMS preferred date format is used. For detailed information on this parameter, see the *CA 1 Utilities and Reports Reference Guide* or the *CA TLMS Systems Programmer Guide*.

LANG

Designates which language table is to be used in generating error messages and report titling. The default is LANG=ENG. Valid values include ENG=English, FRN=French, GER=German, ITA=Italian, and SPN=Spanish. Support for other language will be provided based on client demand.

TEST

Performs preliminary validation of all keyword parameters coded, and reports the options that are in effect, as well as tapes that will qualify for this copy operation. The actual copy operation is not executed when the TEST parameter is specified, and no TMC or VMF updates are made.

Sample Job Control Statements

The following is an example of the control statements that would be necessary to copy the contents of one tape to another.

```
//TAPECOPY JOB
//STEP1 EXEC PGM=COPYCAT,PARM='DATEFMT=(YYYY/MM/DD),LANG=SPN'
//STEPLIB DD DSN=CAI.CAILNK,DISP=SHR
//SYSPRINT DD SYSOUT=*
//CCRPT DD SYSOUT=*
//SYSUSNAP DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//SYSIN DD *
*=====================================================================*
*              THE FOLLOWING STATEMENTS COPY TAPE 760194              *
*     NOTE: DEVICE TYPES FOR INPUT AND OUTPUT MUST BE THE SAME        *
*=====================================================================*
TAPECOPY
INUNIT=TAPE
OUTUNIT=TAPE
OUTVOL=SCRATCH
OUTSER=760189
INPUT=*
760194
/*_
```

Sample TAPECOPY Detail Report

CA Copycat Utility Tapecopy Detail

```
TAPECOPY                                    CA Copycat Utility r12                                    Page=00001

 Wednesday, November 11, 2009.315                T A P E C O P Y   D E T A I L                          17:25:33

                                        Input volume=V00000 - Output volume=V00031
  File    Data Set       Pass    Create     Expire               Block   Blocks          Block ID      Bytes     Creator
  Seq#      Name         Word     Date       Date    Recfm  Lrecl   Size   Copied Media Den    at EOF     Copied Job Name/Stepname

     1  .C2009184.T113418 NONE  2009/184    2010/365    U         0  32760        1  3480 18TK        6        3210 SYSTMERG/COPY

                                       Total user data copied            1                            3210


         End of report TAPECOPY    Job=SYSTCOPY  Step=COPYCAT   Genlevel=000AUWC0
```

Field	Description
File Seq#	The file sequence number.
Data Set Name	The 17-character data set name found in the HDR1 tape label.

Field	Description
Pass Word	Indicates the level of pass word protection. It may indicate READ, WRITE or NONE.
Create Date	The date this file was originally written.
Expire Date	The expiration date of this file.
Recfm	The record format of the data set.
Lrecl	The logical record length of this file.
Block Size	The maximum physical block length recorded on tape for this file.
Blocks Copied	The number of data blocks copied in this file. Label blocks are not included in this count.
Media	The type of media being copied.
Den	The recording density used for the copy operation.
Block ID at EOF	The block ID read from the output device immediately following the data file's end-of-file marker. That is, the block ID of the EOF1 trailer label.
Bytes Copied	The number of data bytes copied in this file. The number of bytes copied of label blocks is not included in this count.
Creator Name/Stepname	The job name and the step name where this file was created.

Sample TAPECOPY Output Report with LIST=NO

```
COPYCAT                                          CA Copycat Utility r12                                          Page=00001

 Wednesday, November 11, 2009.315                C O P Y C A T   M E S S A G E S                                  17:25:33

 CTC6001I *** Start COPYCAT genlevel=000AUWC0 ***
 *=================================================================*
 *           THE FOLLOWING STATEMENTS COPY TAPE V00000              *
 *    NOTE: DEVICE TYPES FOR INPUT AND OUTPUT MUST BE THE SAME      *
 *=================================================================*
 TAPECOPY
 INUNIT=3480
 OUTUNIT=3480
 OUTVOL=SCRATCH
 OUTSER=V00031
 LIST=NO
 INPUT=*
 *=================================================================*
 * Options in effect:                                              *
 *        TAPECOPY                                                 *
 *        DATACLAS=                                                *
 *        DSN=                                                     *
 *        ERASE=NO                                                 *
 *        INPUT=*                                                  *
 *        INUNIT=3480                                              *
 *        LIST=NO                                                  *
 *        MGMTCLAS=                                                *
 *        OUTSER=V00031                                            *
 *        OUTUNIT=3480                                             *
 *        OUTVOL=SCRATCH                                           *
 *        SORT=YES                                                 *
 *        STORCLAS=                                                *
 *        USEREXIT=NO                                              *
 *        VOL=001                                                  *
 *        WAITTIME=5                                               *
 *=================================================================*
 CTC1017I Input statements for TAPECOPY
 V00000
 CTC1016I Total input statements read: 1
 CTC1018I TAPECOPY entries:   1
 VOL=V00000 1STVOL=V00000 DSN=GERCAI.DISKOS.MERGCOPY.DMSN.C2009184.T113418

 ------------------------------------------------------------------------------------------------------------------------

 CTC5130I BLP processing mode
 CTC7004I Dynamic allocation start for CI100001 VOL=V00000 FS=0
 CTC5132I About to open CI100001
 CTC5110I CI100001 tape volser = V00000, device type = 3480
 CTC5111I Unit address = 0E51
 CTC5101I Input data set name = GERCAI.DISKOS.MERGCOPY.DMSN.C2009184.T113418
 CTC7004I Dynamic allocation start for CO100001 VOL=V00031 FS=0
 CTC5132I About to open CO100001
 CTC5110I CO100001 tape volser = V00031, device type = 3480
 CTC5111I Unit address = 0E50
 CTC5100I Output data set name = GERCAI.DISKOS.MERGCOPY.DMSN.C2009184.T113418
```

```
COPYCAT                                          CA Copycat Utility r12                                          Page=00002

 Wednesday, November 11, 2009.315                C O P Y C A T   M E S S A G E S                                   17:25:33

 ------------------------------------------------------------------------------------------------------------------------------

 CTC5063I Copying DSN=.C2009184.T113418, fileseq=1
 CTC5061I 1 blocks contained in data set

 CTC6025I Total input files----------1
 CTC6026I Total output files---------1
 CTC6027I Total input tapes----------1
 CTC6028I Total output tapes---------1
 CTC6002I *** End COPYCAT ***
```

```
COPYCAT                                          CA Copycat Utility r12                                          Page=00003

 Wednesday, November 11, 2009.315                C O P Y C A T   M E S S A G E S                                   17:25:33

 ******* MESSAGE SUMMARY *******

 Error Level Messages (RC=8-16)

 Msg ID      Count    On Page(s)

 - None -

 Warning Level Messages (RC=4)

 Msg ID      Count    On Page(s)

 - None -

 *** End of Message Summary ****


          End of report COPYCAT     Job=SYSTCOPY  Step=COPYCAT   Genlevel=000AUWC0
```

Sample TAPECOPY Output Report with LIST=YES

```
COPYCAT                                          CA Copycat Utility r12                                          Page=00001

Wednesday, November 11, 2009.315                 C O P Y C A T   M E S S A G E S                                 17:26:18

CTC6001I *** Start COPYCAT genlevel=000AUWC0 ***
*=================================================================*
*    THE FOLLOWING STATEMENTS COPY TAPE V00000 AND LIST THE CONTENTS. *
*    NOTE: DEVICE TYPES FOR INPUT AND OUTPUT MUST BE THE SAME        *
*=================================================================*
TAPECOPY
INUNIT=3480
OUTUNIT=3480
OUTVOL=SCRATCH
OUTSER=V00032
LIST=YES
INPUT=*
*=================================================================*
* Options in effect:                                             *
*        TAPECOPY                                                *
*        DATACLAS=                                               *
*        DSN=                                                    *
*        ERASE=NO                                                *
*        INPUT=*                                                 *
*        INUNIT=3480                                             *
*        LIST=YES                                                *
*        MGMTCLAS=                                               *
*        OUTSER=V00032                                           *
*        OUTUNIT=3480                                            *
*        OUTVOL=SCRATCH                                          *
*        SORT=YES                                                *
*        STORCLAS=                                               *
*        USEREXIT=NO                                             *
*        VOL=001                                                 *
*        WAITTIME=5                                              *
*=================================================================*
CTC1017I Input statements for TAPECOPY
V00000
CTC1016I Total input statements read: 1
CTC1018I TAPECOPY entries:   1
VOL=V00000 1STVOL=V00000 DSN=GERCAI.DISKOS.MERGCOPY.DMSN.C2009184.T113418

-------------------------------------------------------------------------------------------------------------------------------

CTC5130I BLP processing mode
CTC7004I Dynamic allocation start for CI100001 VOL=V00000 FS=0
CTC5132I About to open CI100001
CTC5110I CI100001 tape volser = V00000, device type = 3480
CTC5111I Unit address = 0E50
CTC5101I Input data set name = GERCAI.DISKOS.MERGCOPY.DMSN.C2009184.T113418
CTC7004I Dynamic allocation start for CO100001 VOL=V00032 FS=0
CTC5132I About to open CO100001
CTC5110I CO100001 tape volser = V00032, device type = 3480
CTC5111I Unit address = 0E51
CTC5100I Output data set name = GERCAI.DISKOS.MERGCOPY.DMSN.C2009184.T113418
```

```
COPYCAT                                          CA Copycat Utility r12                                          Page=00002

 Wednesday, November 11, 2009.315                C O P Y C A T   M E S S A G E S                                  17:26:18

 VOL1V00032

 ------------------------------------------------------------------------------------------------------------------------------

 CTC5063I Copying DSN=.C2009184.T113418, fileseq=1
 HDR1.C2009184.T113418V0003200010001      0091840103650000000IBM OS/VS 370        001
 HDR2U3276000000000SYSTMERG/COPY            47000
 **                              T A P E M A R K                             **
 **                                  D A T A                                 **
 **                              T A P E M A R K                             **
 CTC5061I 1 blocks contained in data set
 EOF1.C2009184.T113418V0003200010001      0091840103650000001IBM OS/VS 370
 EOF2U3276000000000SYSTMERG/COPY            47000
 **                              T A P E M A R K                             **
 **                              T A P E M A R K                             **

 CTC6025I Total input files----------1
 CTC6026I Total output files---------1
 CTC6027I Total input tapes----------1
 CTC6028I Total output tapes---------1
 CTC6002I *** End COPYCAT ***
```

```
COPYCAT                                          CA Copycat Utility r12                                          Page=00003

 Wednesday, November 11, 2009.315                C O P Y C A T   M E S S A G E S                                  17:26:18

 ******* MESSAGE SUMMARY *******

 Error Level Messages (RC=8-16)

 Msg ID      Count    On Page(s)

 - None -

 Warning Level Messages (RC=4)

 Msg ID      Count    On Page(s)

 - None -

 *** End of Message Summary ****


          End of report COPYCAT     Job=SYSTCOPY  Step=COPYCAT   Genlevel=000AUWC0
```

Chapter 4: Mapping Tapes

Use the TAPEMAP function to produce reports of file names, attributes and length. Most of the information is obtained from the header and trailer labels.

Important! The TAPEMAP function requires standard label (SL) tapes. BLP processing is used.

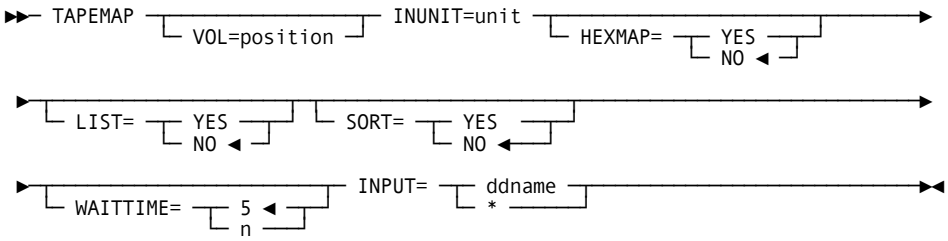
The volumes provided in SYSIN will have their header and trailer labels listed, file sequence, and the approximate length in feet the data set occupies on the tape for 3420 devices. High block ID is listed for cartridge tapes. No files are copied during this operation.

Coding TAPEMAP Control Statements

CA Copycat Utility control statements are constructed using keyword parameters. Statements may be coded as one per statement, or as multiple keywords which are separated by a comma. Keywords specified in a multiple statement are not positional, and continuation characters are not required.

Note: CA Copycat Utility opens input tapes based on the disposition DISP=(SHR,KEEP,KEEP).

The formats for the TAPEMAP control statements are:



Control Statement Definitions

TAPEMAP

Identifies this as a tape map function. This must be the first noncomment control statement, contain no other parameters, and must begin in position 1.

INPUT

(Required.) Specified as one of the following:

INPUT=ddname

Specifies the ddname of the input data set containing the volume selection list.

INPUT=*

Indicates that the volume selection list **immediately follows** this INPUT control statement. If this form is used, all other parameters must be present *before* the INPUT control statement.

VOL

Specifies the starting position within the input data set where the 6-character volume serial number is found.

The following rules apply when using the VOL parameter:

- *position* is a numeric value. If **INPUT=ddname** is used, it is in the range of 1-255. If **INPUT=*** is used, it is in the range of 1-80.
- The position number specified is relative to 1. For example, if the volume serial number starts in position 2, VOL=2 would be specified.
- If VOL is not specified, VOL=1 is assumed.

INUNIT

(Required.) Specifies the unit name for the input tape device. The JCL equivalent is UNIT= on the DD statement.

Optional Control Statement Definitions

HEXMAP

Determines the format of the output report to be produced.

YES

Specifies that the internal tape labels are to be reported on and shown in hexadecimal. All detected VOL1, HDR1, HDR2, EOF1, EOF2, EOV, and tapemark indicators are listed on the report.

Refer to the IBM Tape Labels documentation for information on the fields contained within the tape labels.

NO

Specifies that the standard report listing information for each tape file is produced. This is the default.

LIST

Specifies whether tape labels are to be reported.

YES

All detected VOL1, HDR1, HDR2, EOF1, EOF2, EOV, and tapemark indicators are listed on the report.

NO

No tape labels or tapemark indicators are reported on. This is the default.

SORT

Determines the order of the input volumes to be mapped.

YES

The input volumes are sorted in the order of recording technique (TRTCH), density, and volume serial number.

NO

The input volumes are processed in the same order as the control statements presented to INPUT=. This is the default.

WAITTIME

Specifies the number of minutes to wait before retrying when a tape resource is not available. This value controls wait interval when you reply WAIT to the CTC7303R console message. Replying WAIT to the CTC7303R message puts the allocation logic in a loop of waiting and then retrying until either the allocation completes or you reply to the CTC7306R message which remains outstanding during the wait/retry cycle. Values from 1 to 10 are accepted. The default is WAITTIME=5.

EXEC Parameters

The following parameters are used in the PARM= field for the EXEC JCL statement to specify an alternate date format, an alternate language, and to activate special testing features.

DATEFMT

Specifies the date format to be used. The date pattern is limited to ten bytes and must be enclosed in parentheses. This parameter is optional and, if omitted, the CA 1 or CA TLMS preferred date format is used. For detailed information on this parameter, see the *CA 1 Utilities and Reports Reference Guide* or the *CA TLMS Systems Programmer Guide.*

LANG

Designates which language table should be used when generating error messages and report titling. The default is LANG=ENG. Valid values include ENG=English, FRN=French, GER=German, ITA=Italian, and SPN=Spanish. Support for other languages will be provided based on client demand.

TEST

Performs preliminary validation of all keyword parameters coded, and reports the options that are in effect, as well as tapes that will qualify for this tapemap operation. The actual tapemap operation is not executed when the TEST parameter is specified.

Sample Job Control Statements

The following is an example of the control statements that would be necessary to map the contents of one cartridge. This example does not appear in the CAI.CTAPJCL.

```
//TAPEMAP JOB
//STEP1  EXEC PGM=COPYCAT,PARM='LANG=ITA'
//STEPLIB  DD DSN=CAI.CAILNK,DISP=SHR
//SYSPRINT DD SYSOUT=*
//CCRPT    DD SYSOUT=*
//SYSUSNAP DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//SYSIN DD *
*=====================================================================*
*       THE FOLLOWING STATEMENTS LIST ALL FILES ON TAPE 760130        *
*=====================================================================*
TAPEMAP
INUNIT=CART
LIST=NO
HEXMAP=NO
INPUT=*
760130
/*
```

Sample TAPEMAP Reports

Sample TAPEMAP Detail with HEXMAP=NO

```
TAPEMAP                                        CA Copycat Utility r12                                        Page=00001

 Wednesday, November 11, 2009.315                  T A P E M A P   D E T A I L                                  17:40:31

 Requested Volume=TLM100  Internal Volume=TLM100  Owner=
  File    Data Set        Pass    Create      Expire                Block   Blocks             Length Tot Length     Creator
  Seq#      Name          Word     Date        Date    Recfm  Lrecl   Size    Used  Media Den    Blk ID Percentage Job Name/Stepname

     1  .TLD5.DIAG.OUTPUT NONE  2009/315    2010/150    FB      121  23474         7 3480 18TK      13*        0   BK01837T/STEP0001
     2  I.TLD5.IPCS.PRINT NONE  2009/315    2010/073    VB       83  23476        15 3480 18TK      35*        1   BK01837T/STEP0002

                                              Total block count is         22


 NOTE:  Length(s) are in feet computed on block size, block count, and density for 3420 devices.
        * High block ID and percent utilization are listed for cartridge devices.


          End of report TAPEMAP     Job=TAPEMAP   Step=COPYCAT   Genlevel=000AUWC0
```

Field	Description
Requested Volume	Tape volume serial number requested by control statement.

Field	Description
Internal Volume	Tape volume serial number read from the label of the actual tape mounted.
Owner	Owner information from the volume label.
File Seq#	File sequence number.
Data Set Name	Data set name.
Pass Word	The type of password protection assigned to the tape volume. This may be NONE, READ, or WRITE.
Create Date	Creation date.
Expire Date	Expiration date.
Recfm	Record format.
Lrecl	Logical record length.
Block Size	Maximum length in bytes in a block.
Blocks Used	Number of blocks.
Media	Type of media used.
Den	Density as detected in the DCB.
Length Blk ID	Length in feet computed on block size, block count, and density for 3420 devices. The asterisk "*" indicates high block ID for cartridge devices.
Total Length	The cumulative length of the tape that is shown for 3420 devices, or the cumulative percent utilization for cartridge devices.
Creator Job Name/ Stepname	Creation jobname and stepname.
Total Block Count Is	Cumulative total of all the blocks used for the tape volume.

Sample TAPEMAP Report with HEXMAP=NO

```
COPYCAT                                          CA Copycat Utility r12                                          Page=00001

 Wednesday, November 11, 2009.315                C O P Y C A T   M E S S A G E S                                  17:40:31

 CTC6001I *** Start COPYCAT genlevel=000AUWC0 ***
 TAPEMAP
 INUNIT=3480
 HEXMAP=NO
 LIST=NO
 INPUT=*
 *================================================================*
 * Options in effect:                                             *
 *        TAPEMAP                                                 *
 *        HEXMAP=NO                                               *
 *        INPUT=*                                                 *
 *        INUNIT=3480                                             *
 *        LIST=NO                                                 *
 *        SORT=NO                                                 *
 *        VOL=001                                                 *
 *        WAITTIME=5                                              *
 *================================================================*
 CTC1017I Input statements for TAPEMAP
 TLM100
 CTC1016I Total input statements read: 1
 CTC1018I TAPEMAP  entries:   1
 VOL=TLM100 FVL=TLM100 FS=1     RFS=1     VS=1   F=      DSN=                                                TRTCH=     DEN=     0000000
 CTC5130I BLP processing mode

 ------------------------------------------------------------------------------------------------------------------------------------------

 CTC7004I Dynamic allocation start for CI100001 VOL=TLM100 FS=1
 CTC5132I About to open CI100001
 CTC5110I CI100001 tape volser = TLM100, device type = 3480
 CTC5111I Unit address = 0E51

 CTC7005I Dynamic unallocation start for CI100001

 CTC6025I Total input files----------2
 CTC6026I Total output files---------0
 CTC6027I Total input tapes----------1
 CTC6028I Total output tapes---------0
 CTC6002I *** End COPYCAT ***
```

```
COPYCAT                                          CA Copycat Utility r12                                          Page=00002

 Wednesday, November 11, 2009.315                C O P Y C A T   M E S S A G E S                                  17:40:31

 ******* MESSAGE SUMMARY *******

 Error Level Messages (RC=8-16)

 Msg ID      Count    On Page(s)

 - None -

 Warning Level Messages (RC=4)

 Msg ID      Count    On Page(s)

 - None -

 *** End of Message Summary ****


          End of report COPYCAT     Job=TAPEMAP   Step=COPYCAT   Genlevel=000AUWC0
```

Sample TAPEMAP Detail with HEXMAP=YES

CA Copycat Utility Header Listing (Hexadecimal Format)

```
TAPEMAP                                          CA Copycat Utility r12                                          Page=00001

 Wednesday, November 11, 2009.315              T A P E   H E A D E R   L I S T I N G                              17:42:48

 Requested Volume=TLM100  Internal Volume=TLM100  Owner=

                   VOL1TLM100
                   EDDFEDDFFF44444444444444444444444444444444444444444444444444444444444444444444444444
                   56313341000000000000000000000000000000000000000000000000000000000000000000000000000000
                  01...5...10...15...20...25...30...35...40...45...50...55...60...65...70...75...80

                   HDR1.TLD5.DIAG.OUTPUTTLM10000010001      00931501015000000000IBM OS/VS 370
                   CCDF4EDCF4CCCC4DEEDEEEDDFFFFFFFFFFF444444FFFFFFFFFFFFFFFFFFFFCCD4DE6EE4FFF4444444
                   8491B3345B4917B643743334100000100010000000093150101500000000924062152037000000000
                  01...5...10...15...20...25...30...35...40...45...50...55...60...65...70...75...80

                   HDR2F2347400121002201837312357000100102000470000000000000000000000000000000000000
                   CCDFCFFFFFFFFFFFCDFFFFFE6EECDFFFF44C4C444FFFFF444444444444444444444444444444444444
                   84926234740012100220183731235700010010200047000000000000000000000000000000000000
                  01...5...10...15...20...25...30...35...40...45...50...55...60...65...70...75...80

                   EOF1.TLD5.DIAG.OUTPUTTLM10000010001      00931501015000000007IBM OS/VS 370
                   CDCF4EDCF4CCCC4DEEDEEEDDFFFFFFFFFFF444444FFFFFFFFFFFFFFFFFFFFCCD4DE6EE4FFF4444444
                   5661B3345B4917B643743334100000100010000000093150101500000007924062152037000000000
                  01...5...10...15...20...25...30...35...40...45...50...55...60...65...70...75...80

                   EOF2F2347400121002201837312357000100102000470000000000000000000000000000000000000
                   CDCFCFFFFFFFFFFFCDFFFFFE6EECDFFFF44C4C444FFFFF444444444444444444444444444444444444
                   56626234740012100220183731235700010010200047000000000000000000000000000000000000
                  01...5...10...15...20...25...30...35...40...45...50...55...60...65...70...75...80

                   HDR1I.TLD5.IPCS.PRINTTLM10000010002      00931501007300000000IBM OS/VS 370
                   CCDFC4EDCF4CDCE4DDCDEEDDFFFFFFFFFFF444444FFFFFFFFFFFFFFFFFFFFCCD4DE6EE4FFF4444444
                   84919B3345B9732B799533341000001000200000000931501007300000000924062152037000000000
                  01...5...10...15...20...25...30...35...40...45...50...55...60...65...70...75...80

                   HDR2V234760008300BK01837T/STEP0002  A B   47000
                   CCDFEFFFFFFFFFFFCDFFFFFE6EECDFFFF44C4C444FFFFF444444444444444444444444444444444444
                   84925234760008300220183731235700020010200047000000000000000000000000000000000000
                  01...5...10...15...20...25...30...35...40...45...50...55...60...65...70...75...80

                   EOF1I.TLD5.IPCS.PRINTTLM10000010002      00931501007300000015IBM OS/VS 370
                   CDCFC4EDCF4CDCE4DDCDEEDDFFFFFFFFFFF444444FFFFFFFFFFFFFFFFFFFFCCD4DE6EE4FFF4444444
                   56619B3345B9732B799533341000001000200000000931501007300000159240621520370000000
                  01...5...10...15...20...25...30...35...40...45...50...55...60...65...70...75...80

                   EOF2V234760008300BK01837T/STEP0002  A B   47000
                   CDCFEFFFFFFFFFFFCDFFFFFE6EECDFFFF44C4C444FFFFF444444444444444444444444444444444444
                   56625234760008300220183731235700020010200047000000000000000000000000000000000000
                  01...5...10...15...20...25...30...35...40...45...50...55...60...65...70...75...80


          End of report TAPEMAP     Job=TAPEMAP    Step=COPYCAT    Genlevel=000AUWC0
```

Sample TAPEMAP Report with HEXMAP=YES

```
COPYCAT                                          CA Copycat Utility r12                                          Page=00001

 Wednesday, November 11, 2009.315                C O P Y C A T   M E S S A G E S                                  17:42:48

 CTC6001I *** Start COPYCAT genlevel=000AUWC0 ***
 TAPEMAP
 INUNIT=3480
 HEXMAP=YES
 LIST=NO
 INPUT=*
 *================================================================*
 * Options in effect:                                             *
 *        TAPEMAP                                                 *
 *        HEXMAP=YES                                              *
 *        INPUT=*                                                 *
 *        INUNIT=3480                                             *
 *        LIST=NO                                                 *
 *        SORT=NO                                                 *
 *        VOL=001                                                 *
 *        WAITTIME=5                                              *
 *================================================================*
 CTC1017I Input statements for TAPEMAP
 TLM100
 CTC1016I Total input statements read: 1
 CTC1018I TAPEMAP  entries:   1
 VOL=TLM100 FVL=TLM100 FS=1     RFS=1     VS=1   F=      DSN=                                                TRTCH=     DEN=     0000000
 CTC5130I BLP processing mode

 ------------------------------------------------------------------------------------------------------------------------------------------

 CTC7004I Dynamic allocation start for CI100001 VOL=TLM100 FS=1
 CTC5132I About to open CI100001
 CTC5110I CI100001 tape volser = TLM100, device type = 3480
 CTC5111I Unit address = 0E50

 CTC7005I Dynamic unallocation start for CI100001

 CTC6025I Total input files----------2
 CTC6026I Total output files---------0
 CTC6027I Total input tapes----------1
 CTC6028I Total output tapes---------0
 CTC6002I *** End COPYCAT ***
```

```
COPYCAT                                          CA Copycat Utility r12                                          Page=00002

 Wednesday, November 11, 2009.315                C O P Y C A T   M E S S A G E S                                  17:42:48

 ******* MESSAGE SUMMARY *******

 Error Level Messages (RC=8-16)

 Msg ID      Count    On Page(s)

 - None -

 Warning Level Messages (RC=4)

 Msg ID      Count    On Page(s)

 - None -

 *** End of Message Summary ****


          End of report COPYCAT     Job=TAPEMAP   Step=COPYCAT   Genlevel=000AUWC0
```

Chapter 5: User Exit and Macros

CA Copycat Utility provides the CTCOPYUX user exit to tailor the supplied code to meet your data center requirements. The CTCOPYUX user exit is discussed in this chapter.

User exit activation is performed by including in the input control statement USEREXIT=YES. If the INPUT=* control statement is used, the USEREXIT=YES parameter must precede it.

Install User Exit Using SMP/E

The CA Copycat Utility user exit is supplied as a dummy source and load module. It may be customized after the SMP/E installation is complete. To code your own exit, use member CTCUXREC of library CAI.CTAPJCL. The source code for the exit, which is modified by the USERMOD, resides in CAI.CTAPSRC as member CTCOPYUX.

To install the user exit using SMP/E

1. Copy CTAPJCL member CTCUXREC to your own Sample JCL library and insert the appropriate source updates.

   USERMOD CTCAUWC is created.

2. Customize and submit Sample JCL library member CTCUXREC to perform an SMP/E RECEIVE and APPLY of the USERMOD.

   User exit CTCOPYUX is re-assembled and linked into load library CAI.CAILINK.

   Important! The USERMOD should only be RECEIVED and APPLIED, never ACCEPTED.

3. Copy CTAPJCL member CTCUXRST to your Sample JCL library, and then customize and submit it, if corrections or modifications to the user exit are required.

   An SMP/E RESTORE of the USERMOD is performed and the supplied dummy version of the user exit is relinked.

4. Go back to step 1 to modify and re-install the USERMOD.

CTCOPYUX - User Exit

The CTCOPYUX user exit is supplied as an interface to CA Copycat Utility. In addition to housekeeping calls for initialization and termination, this exit receives control just prior to certain critical processing events. These events include the tape system update request for both input and output data sets and dynamic allocation requests for both input and output data sets.

Description

CTCOPYUX provides the ability to view or update tape system fields through the common tape system records supplied at exit call time. Both original and modified tape system common records are supplied. These common records are mapped by macro CTMCDREC.

CTCOPYUX also provides the ability to view and change the dynamic allocation request. In particular, the file names may be modified for the output data sets. This area is mapped by macro CTMCDYNA.

Six separate calls are provided for the FILECOPY function and three for TAPECOPY. The user exit is not called for function TAPEMAP. FILECOPY calls CTCOPYUX just prior to input file allocation, output file allocation, and duplex output allocation, at the End-Of-File (EOF) on the primary output tape (ddname CO1nnnnn), the duplex output tape (ddname CO2nnnnn), and the input tape (ddname CI1nnnnn). TAPECOPY calls CTCOPYUX prior to input tape allocation and output tape allocation, and at End-Of-Tape (EOT) on the output tape.

The following CA Copycat Utility macros generate mappings for program work areas which are provided for exit reference during these function calls:

CTMCOPTS

Maps OPTDSECT, a program work area which contains input option switches. An example of this macro is shown in the DSECT Listings section, OPTDSECT Listing, Using CTMCOPTS Macro.

CTMCDREC

Maps DBRECORD and DCRECORD, the common tape system format definition. This is the same as used by CA 1 and CA TLMS for the CA Earl interface. An example of this macro is shown in the DSECT Listings section, DBRECORD Listing, Using CTMCDREC Macro.

CTMCDYNA

Maps ALOCAREA, the dynamic allocation work area. This area can be used to control input, output, and duplex output file allocations. An example of this macro is shown in the DSECT Listings section, ALOCAREA Listing, Using CTMCDYNA Macro.

Register Usage

The registers on entry to CTCOPYUX are defined as follows. They may be redefined by the exit if desired.

R0

Work register.

R1

Input parameter list. Register points to a 5-word list.

UXANCHOR

Points to a full word value which is initially cleared before user exit initialization, but will maintain any value through the exit termination call.

UXPARM1

Pointer to function code. Reason for exit entry. See *Function Codes*, below.

UXPARM2

Pointer to CA Copycat Utility Options area. Mapped by CTMCOPTS.

UXPARM3

Pointer to the dynamic allocation work area for allocation calls. Pointer to original common tape system record area for tape system update calls.

UXPARM4

Pointer to modified common tape system record area for tape system update calls.

R2 - R5

Not used.

R6

Pointer to the dynamic allocation work area for allocation calls. Pointer to original common tape system record area for tape system update calls.

R7

Pointer to modified common tape system record area for tape system update calls.

R8

Reserved.

R9

Pointer to passed parm list.

R10

Pointer to CA Copycat Utility Options area. Mapped by CTMCOPTS.

R11

Not used.

R12

Default program base register.

R13

User exit save area or rent work area.

R14

Return address or work register.

R15

Return code or work register.

Function Codes

The CTCOPYUX call function codes are provided in the input parameter pointed to by UXPARM1. The function code values are as follows:

CODE = 0

Exit initialization call. This provides the exit with a call to obtain any additional program work areas (GETMAIN) and/or open any user control or report files. DSECT mapping register 10 (CTMCOPTS) is the only valid work area during this call.

CODE = 4

FILECOPY: Update output data set copy volume. This exit call occurs when a data set is closed for the output tape (ddname CO1nnnnn). DBRECORD is the original common tape system record area. It contains tape system catalog information as it currently exists for the input tape (ddname CI1nnnnn). DCRECORD is the modified common tape system record area. It contains tape system catalog information, with changes, for the output tape (ddname CO1nnnnn). It is this record (DCRECORD) that the user exit may change to reflect values to be supplied to the tape system for update processing. Information that is not normally transferred from the input (original) data set volume record to the output data set volume can be updated on this call. For example, the user data cell (also known as the job accounting data), field name DBUSRDTA, may be copied from the original to the modified area (DCUSRDTA).

CODE = 8

FILECOPY: Update duplex data set copy volume. This exit call occurs when a data set is closed for the duplex output tape (ddname CO2nnnnn). DBRECORD is the original common tape system record area. It contains tape system catalog information as it currently exists for the input tape (ddname CI1nnnnn). DCRECORD is the modified common tape system record area. It contains tape system catalog information, with changes, for the duplex output tape (ddname CO2nnnnn). It is this record (DCRECORD) that the user exit may change to reflect values to be supplied to the tape system for update processing. Information that is not normally transferred from the input (original) data set volume record to the output data set volume can be updated on this call. For example, the user data cell, field name DBUSRDTA, may be copied from the original to the modified area (DCUSRDTA).

CODE = 12

FILECOPY: Update input data set copy volume. This exit call occurs when the input dat set is closed for ddname CI1nnnnn. DBRECORD is the original common tape system record area. It contains tape system catalog information as it currently exists for the input tape (ddname CI1nnnnn). DCRECORD is the modified common tape system record area. It contains tape system catalog information, with changes, for the input tape (ddname CI1nnnnn). It is this record (DCRECORD) that the user exit may change to reflect values to be supplied to the tape system for update processing. Information that is not normally transferred from the original input data set volume record to the modified input data set volume can be updated on this call.

Note: This call is made only if the input control statement contains an input disposition change. (For example: INDISP=, RETPD=, or EXPDT= was specified.)

CODE = 16

TAPECOPY: Update output data set copy volume. This exit call occurs when the output volume (ddname CO1nnnnn) is closed. DBRECORD is the original common tape system record area. It contains tape system catalog information as it currently exists for the input tape (ddname CI1nnnnn). DCRECORD is the modified common tape system record area. It contains tape system catalog information, with changes, for the output tape (ddname CO1nnnnn). It is this record (DCRECORD) that the user exit may change to reflect values to be supplied to the tape system for update processing. Information that is not normally transferred from the input (original) data set volume record to the output data set volume can be updated on this call.

CODE = 20

Exit termination call. This provides the exit with a call to free any additional program work areas (FREEMAIN) and close any user control or report files that were obtained at user exit initialization.

CODE = 24

FILECOPY and TAPECOPY: Input allocation. This exit call occurs when the input data set is about to be allocated for ddname CI1nnnnn. ALOCAREA is the dynamic allocation work area. It contains allocation information as it currently exists for the input tape (ddname CI1nnnnn). It is this area (ALOCAREA) that the user exit may change to alter the allocation. The user may change the file name and volume serial number if desired.

CODE = 28

FILECOPY and TAPECOPY: Primary output allocation. This exit call occurs when the output data set is about to be allocated for ddname CO1nnnnn. ALOCAREA is the dynamic allocation work area. It contains allocation information as it currently exists for the output tape (ddname CO1nnnnn). It is this area (ALOCAREA) that the user exit may change to alter the allocation. The user may change the file name and volume serial number if desired.

CODE = 32

FILECOPY: Duplex output allocation. This exit call occurs when the output data set is about to be allocated for ddname CO2nnnnn. ALOCAREA is the dynamic allocation work area. It contains allocation information as it currently exists for the output tape (ddname CO2nnnnn). It is this area (ALOCAREA) that the user exit may change to alter the allocation. The user may change the file name and volume serial number if desired.

Program Work Areas

The CTCOPYUX user exit source example, supplied in the CAI.CTAPSRC data set, contains three program work area DSECTs. Other than selected fields of the modified common tape data area and the dynamic allocation work area, no other data fields should be altered. Any changes to these program work areas could cause a program failure and are therefore to be used as a data reference only.

OPTDSECT

This is the CA Copycat Utility options data area. Pointed to by register 10 for all calls. This work area is used by all CA Copycat Utility programs. It contains all the program option switches set when the SYSIN control statements were processed and allows the user exit to see what CA Copycat Utility options are in effect. It is for reference only, and must not be modified by the user exit.

DxRECORD

This is the common tape data area. Pointed to by registers 6 and 7 for calls when the function code is 4, 8, 12, or 16. The DBRECORD (original) and DCRECORD (modified) areas are identical in format.

ALOCAREA

This is the dynamic allocation work area. Pointed to by register 6 for calls when the function code is 24, 28, or 32.

User Exit Return Codes

The user exit cannot decide whether an update is to take place for a data set or volume record. This is done by CA Copycat Utility based on the input control statements and the data set volumes copied. However a provision was made to allow the user exit to display (SNAP DUMP) the program work areas made available at exit call to assist in debugging.

To activate user exit work area display, supply the input control statement DEBUG=(UXA). All SNAP DUMPS are written to DD SYSUSNAP which must be provided in the JCL.

Specifications

- NOT AUTHORIZED
- EXECUTABLE
- AMODE 31
- RMODE ANY

This exit is activated by specifying YES for the USEREXIT parameter.

DSECT Listings

This section provides listings using the following macros:

- CTMCOPTS
- CTMCDREC
- CTMCDYNA

OPTDSECT Listing, Using CTMCOPTS Macro

OPTDSECT DSECT, Using CTMCOPTS Macro - Maps CA Copycat Utility Options (1 of 4)

```
CTMCOPTS D S E C T  -  C T M C O P T S                                                    Page    3
  Active Usings: None

  Loc  Object Code    Addr1 Addr2  Stmt   Source Statement                          HLASM R4.0  2004/01/16 16.25

000000                00000 00000     2 CTMCOPTS CSECT ,
                                      3 *
                                      4          CTMCOPTS DSECT=YES
                                      5+*-------------------------------------------------------------------*
                                      6+**                 C O P Y C A T   O P T I O N S                  **
                                      7+*-------------------------------------------------------------------*

000000                00000 000F4     9+         DSECT                                                      01-CTMCO
000000                               10+CCOPTST  DS    0X               START OF OPTIONS                    01-CTMCO
                                     11+*
000000 00                            12+CC@NCTN  DC    XL1'00'          COPYCAT FUNCTION                    01-CTMCO
                      00080          13+CC@NCTAP EQU   X'80'            - TAPECOPY                          01-CTMCO
                      00040          14+CC@NCFIL EQU   X'40'            - FILECOPY                          01-CTMCO
                      00020          15+CC@NCMAP EQU   X'20'            - TAPEMAP                           01-CTMCO
                                     16+*                               CTCTEXT FUNCTION:
                      00008          17+CC@NCCMP EQU   X'08'            - COMPARE                           01-CTMCO
                      00004          18+CC@NCLST EQU   X'04'            - PRINT                             01-CTMCO
                      00002          19+CC@NCINS EQU   X'02'            - INSTALL                           01-CTMCO
                                     20+*
000001 00                            21+CC@COMP  DC    XL1'00'          COMP=                               01-CTMCO
                      00080          22+CC@COYES EQU   X'80'            - YES                               01-CTMCO
                      00040          23+CC@CONO  EQU   X'40'            - NO                                01-CTMCO
                                     24+*
000002 00                            25+CC@COMP2 DC    XL1'00'          COMP2=                              01-CTMCO
                                     26+*C@COYES EQU   X'80'            - YES
                                     27+*C@CONO  EQU   X'40'            - NO
                                     28+*
000003 4040404040404040              29+CCNTLDSN DC    CL44' '          CTLFILE=                            01-CTMCO
                                     30+*
00002F 00                            31+CCOLDSN  DC    XL1'00'          DSN= (COLUMN NUMBER)                01-CTMCO
                                     32+*
000030 00                            33+CC@DUPLX DC    XL1'00'          DUPLEX=                             01-CTMCO
                      00080          34+CC@DUYES EQU   X'80'            - YES                               01-CTMCO
                      00040          35+CC@DUNO  EQU   X'40'            - NO                                01-CTMCO
                                     36+*
000031 00                            37+CC@ERASE DC    XL1'00'          ERASE=                              01-CTMCO
                      00080          38+CC@ERYES EQU   X'80'            - YES                               01-CTMCO
                      00040          39+CC@ERNO  EQU   X'40'            - NO                                01-CTMCO
                                     40+*
000032 00                            41+CC@FILE  DC    XL1'00'          FILES=                              01-CTMCO
                      00080          42+CC@FISPC EQU   X'80'            - SPECIFIC                          01-CTMCO
                      00040          43+CC@FIALL EQU   X'40'            - ALL                               01-CTMCO
                      00020          44+CC@FIACT EQU   X'20'            - ACTIVE                            01-CTMCO
                                     45+*
000033 00                            46+CCFLSEQB DC    XL1'00'          FILESEQB= (BB)                      01-CTMCO
                                     47+*
000034 00                            48+CCFLSEQC DC    XL1'00'          FILESEQC= (CCCC)                    01-CTMCO
                                     49+*
000035 00                            50+CC@HMAP  DC    XL1'00'          HEXMAP=                             01-CTMCO
                      00080          51+CC@HMYES EQU   X'80'            - YES                               01-CTMCO
                      00040          52+CC@HMNO  EQU   X'40'            - NO                                01-CTMCO
                                     53+*
000036 00                            54+CC@INDSP DC    XL1'00'          INDISP=                             01-CTMCO
                      00080          55+CC@INEXP EQU   X'80'            - EXPDT=XXXXXXXXXX                  01-CTMCO
                      00040          56+CC@INRET EQU   X'40'            - RETPD=NNNN                        01-CTMCO
```

OPTDSECT DSECT, Using CTMCOPTS Macro - Maps CA Copycat Utility Options (2 of 4):

```
CTMCOPTS D S E C T  -  C T M C O P T S                                                    Page    4
  Active Usings: None

D-Loc  Object Code    Addr1 Addr2  Stmt   Source Statement                              HLASM R4.0  2004/01/16 16.25

                      00020          57+CC@INSAM EQU   X'20'            - SAME                                01-CTMCO
                                     58+*
000037 4040404040404040              59+CC@INUNI DC    CL8' '           INUNIT= (XXXXXXXX)                    01-CTMCO
                                     60+*
00003F 00                            61+CC@LIST  DC    XL1'00'          LIST=                                 01-CTMCO
                      00080          62+CC@LIYES EQU   X'80'            - YES                                 01-CTMCO
                      00040          63+CC@LINO  EQU   X'40'            - NO                                  01-CTMCO
                                     64+*
000040 00                            65+CCMAXERR DC    XL1'00'          MAXERR=NN  (RESERVED)                 01-CTMCO
                                     66+*
000041 00                            67+CC@MERGE DC    XL1'00'          MERGE=                                01-CTMCO
                      00080          68+CCNOMERG EQU   X'80'            - NOMERGE OR MERGE=NO SPECIFIED       01-CTMCO
                      00040          69+CCNEWSET EQU   X'40'            - THIS IS NEW VOLUME SET              01-CTMCO
                      00020          70+CCMERGOK EQU   X'20'            - PROCESSED SET SUCCESSFULLY          01-CTMCO
                      00010          71+CCMERGEY EQU   X'10'            - MERGE=YES OPTION SPECIFIED          01-CTMCO
                      00008          72+CCMERGEU EQU   X'08'            - UNSTACK operation          @UNSTCK  01-CTMCO
                                     73+*
000042 00                            74+CC@NWDSN DC    XL1'00'          NEWDSN= (COLUMN NUMBER)  (RESERVED)   01-CTMCO
                                     75+*
000043 00                            76+CC@N2DSN DC    XL1'00'          NEWDSN2= (COLUMN NUMBER) (RESERVED)   01-CTMCO
                                     77+*
000044 00                            78+CC@OTDSP DC    XL1'00'          OUTDISP=                              01-CTMCO
                      00080          79+CC@OTEXP EQU   X'80'            - EXPDT=XXXXXXXXXX                    01-CTMCO
                      00040          80+CC@OTRET EQU   X'40'            - RETPD=NNNN                          01-CTMCO
                      00020          81+CC@OTSAM EQU   X'20'            - SAME                                01-CTMCO
                                     82+*
000045 00                            83+CC@O2DSP DC    XL1'00'          OUTDISP2=                             01-CTMCO
                      00080          84+CC@O2EXP EQU   X'80'            - EXPDT=XXXXXXXXXX                    01-CTMCO
                      00040          85+CC@O2RET EQU   X'40'            - RETPD=NNNN                          01-CTMCO
                      00020          86+CC@O2SAM EQU   X'20'            - SAME                                01-CTMCO
                                     87+*
000046 404040404040                  88+CC@OTSER DC    CL6' '           OUTSER=XXXXXX                         01-CTMCO
                                     89+*
00004C 404040404040                  90+CC@OTSE2 DC    CL6' '           OUTSER2=XXXXXX                        01-CTMCO
                                     91+*
000052 4040404040404040              92+CC@OTUNI DC    CL8' '           OUTUNIT=XXXXXXXX                      01-CTMCO
                                     93+*
00005A 4040404040404040              94+CC@OTUN2 DC    CL8' '           OUTUNIT2=XXXXXXXX                     01-CTMCO
                                     95+*
000062 00                            96+CC@VOLOT DC    XL1'00'          OUTVOL=                               01-CTMCO
                      00080          97+CC@VOSCR EQU   X'80'            - SCRATCH                             01-CTMCO
                      00040          98+CC@VOSAM EQU   X'40'            - SAME                                01-CTMCO
                                     99+*
000063 4040404040404040             100+CCPREFIX DC    CL8' '           PREFIX=                               01-CTMCO
                                    101+*
00006B 4040404040404040             102+CCPR2FIX DC    CL8' '           PREFIX2=                              01-CTMCO
                                    103+*
000073 00                           104+CC@RECAT DC    XL1'00'          RECATALOG=                            01-CTMCO
                      00080         105+CC@RECAL EQU   X'80'            - ALL                                 01-CTMCO
                      00040         106+CC@RENON EQU   X'40'            - NONE                                01-CTMCO
                      00020         107+CC@REPRV EQU   X'20'            - PREV                                01-CTMCO
                                    108+*
000074 00                           109+CC@SVINF DC    XL1'00'          SAVEINFO=                             01-CTMCO
                      00080         110+CC@SVYES EQU   X'80'            - YES                                 01-CTMCO
                      00040         111+CC@SVNO  EQU   X'40'            - NO                                  01-CTMCO
```

OPTDSECT DSECT, Using CTMCOPTS Macro - Maps CA Copycat Utility Options (3 of 4)

```
CTMCOPTS D S E C T  -  C T M C O P T S                                                    Page    5
  Active Usings: None

D-Loc  Object Code    Addr1 Addr2  Stmt   Source Statement                          HLASM R4.0  2004/01/16 16.25

                                   112+*
000075 00                          113+CC@SORT  DC    XL1'00'           SORT=                                 01-CTMCO
                      00080        114+CC@SRYES EQU   X'80'             - YES                                 01-CTMCO
                      00040        115+CC@SRNO  EQU   X'40'             - NO                                  01-CTMCO
                                   116+*
000076 00                          117+CC@SYS   DC    XL1'00'           TAPE SYSTEM                           01-CTMCO
                      00080        118+CC@CA1   EQU   X'80'             - CA 1                                01-CTMCO
                      00040        119+CC@TLMS  EQU   X'40'             - TLMS                                01-CTMCO
                                   120+*
000077 00                          121+CCTEST   DC    XL1'00'           "TEST" OPTION FROM EXEC PARM          01-CTMCO
                      00080        122+CC@TEST  EQU   X'80'             - TEST ACTIVE                         01-CTMCO
                                   123+*
000078 00                          124+CC@USREX DC    XL1'00'           USEREXIT=                             01-CTMCO
                      00080        125+CC@USYES EQU   X'80'             - YES                                 01-CTMCO
                      00040        126+CC@USNO  EQU   X'40'             - NO                                  01-CTMCO
                                   127+*
000079 00                          128+CCOLVSN  DC    XL1'00'           VOL= (COLUMN NUMBER)                  01-CTMCO
                                   129+*
                                   130+**   DATE AREAS
                                   131+*
00007A 0000000C                    132+CCDATCUR DC    PL4'0'            TODAY'S DATE                          01-CTMCO
00007E 0000000C                    133+CCTIMCUR DC    PL4'0'            TODAY'S TIME                          01-CTMCO
                                   134+*
000082 4040404040404040            135+CCOTXPDT DC    CL10' '           OUTDISP EXPDT                         01-CTMCO
00008C 40404040                    136+CCOTRTPD DC    CL4' '            OUTDISP RETPD                         01-CTMCO
000090 0000000C                    137+CCOTDATE DC    PL4'0'            OUTDISP CONVERTED DATE                01-CTMCO
                                   138+*
000094 4040404040404040            139+CCO2XPDT DC    CL10' '           OUTDISP2 EXPDT                        01-CTMCO
00009E 40404040                    140+CCO2RTPD DC    CL4' '            OUTDISP2 RETPD                        01-CTMCO
0000A2 0000000C                    141+CCO2DATE DC    PL4'0'            OUTDISP2 CONVERTED DATE               01-CTMCO
                                   142+*
0000A6 4040404040404040            143+CCINXPDT DC    CL10' '           INDISP EXPDT                          01-CTMCO
0000B0 40404040                    144+CCINRTPD DC    CL4' '            INDISP RETPD                          01-CTMCO
0000B4 0000000C                    145+CCINDATE DC    PL4'0'            INDISP CONVERTED DATE                 01-CTMCO
                                   146+*
                                   147+***      End of Date Areas
                                   148+*
                      000B8        149+CCOPTEND1 EQU  *                 END OF OPTIONS RELEASE 11             01-CTMCO
                                   150+*
0000B8 4040404040404040            151+CCWAITTM DC    CL8' '            WAITTIME=              1.1 SP3 @WAIT  01-CTMCO
                                   152+*
0000C0 270F                        153+CCMAXFIL DC    H'9999'           MAXFILES=               1.1 SP3 @65K  01-CTMCO
                                   154+*
0000C2 00                          155+CC@RECAT2 DC   XL1'00'           RECATALOG2=          1.1 SP3 @DUPENH  01-CTMCO
                                   156+*CC@RECAL EQU  X'80'             - ALL                1.1 SP3 @DUPENH
                                   157+*CC@RENON EQU  X'40'             - NONE               1.1 SP3 @DUPENH
                                   158+*CC@REPRV EQU  X'20'             - PREV               1.1 SP3 @DUPENH
                                   159+*
0000C3 00                          160+CC@FORN  DC    XL1'00'           FOREIGN=            1.1 SP3 @FOREIGN  01-CTMCO
                      00080        161+CC@FNYES EQU   X'80'             - YES               1.1 SP3 @FOREIGN  01-CTMCO
                      00040        162+CC@FNNO  EQU   X'40'             - NO                1.1 SP3 @FOREIGN  01-CTMCO
                                   163+*
0000C4 4040404040404040            164+CCNTLDSN2 DC   CL44' '           CTLFILE2=            1.1 SP3 @DUPENH  01-CTMCO
                                   165+*
0000F0 00                          166+CCFLSEQD DC    XL1'00'           FILESEQD=               1.1 SP3 @65K  01-CTMCO
```

OPTDSECT DSECT, Using CTMCOPTS Macro - Maps CA Copycat Utility Options (4 of 4)

```
CTMCOPTS D S E C T  -  C T M C O P T S                                                    Page    6
  Active Usings: None

D-Loc  Object Code    Addr1 Addr2  Stmt   Source Statement                          HLASM R4.0  2004/01/16 16.25

                                   167+*
0000F1 404040                      168+CCLANG   DC    CL3' '            LANG=                 1.1 SP3 @LANG  01-CTMCO
                                   169+*
                      000F4        170+CCOPTEND EQU   *                 END OF OPTIONS                       01-CTMCO
                      000F4        171+CCOPTLEN EQU   CCOPTEND-CCOPTST  LENGTH OF OPTIONS                    01-CTMCO
```

DBRECORD Listing, Using CTMCDREC Macro

DBRECORD DSECT, Using CTMCDREC Macro- Common Tape Data Area (1 of 4)

```
CTMCDREC D S E C T  -  D B R E C O R D                                                    Page    3
  Active Usings: None

  Loc  Object Code    Addr1 Addr2  Stmt   Source Statement                          HLASM R4.0  2004/01/16 16.25

000000                00000 00000     2 CTMCDREC CSECT ,
                                      3 *
                                      4          CTMCDREC PREFIX=DB,DSECT=YES
                                      5+*H--------------------------------------------------------------------*
                                      6+*                                                                    *
                                      7+*  Filename   : C T M C D R E C                                       *
                                      8+*                                                                    *
                                      9+*                                                                    *
                                     10+*  Description: Macro/Header file to define the Common Tape          *
                                     11+*               data base record.                                    *
                                     12+*                                                                    *
                                     13+*  Usage      : Assembler - CTMCDREC ...                             *
                                     14+*                                                                    *
                                     15+*H--------------------------------------------------------------------*
                                     16+*
                                     17+************************************************************************
                                     18+*                                                                    *
                                     19+*       CA 1 / TLMS  -  DATA     BASE RECORD DESCRIPTION                 *
                                     20+*                                                                    *
                                     21+************************************************************************
                                     22+*
000000                00000 00200    23+DBRECORD DSECT                                                        01-CTMCD
                                     24+*
                                     25+*    COMMON AREA
                                     26+*
000000 FF                            27+DBFORMAT DC    XL1'FF'           FORMAT INDICATOR                     01-CTMCD
000001 40                            28+DBRECTYP DC    CL1' '            RECORD TYPE                          01-CTMCD
000002 4040                          29+DBPROD   DC    CL2' '            PRODUCT CODE                TC29173  01-CTMCD
000004 4040                          30+DBREL    DC    CL2' '            PRODUCT RELEASE             TC29173  01-CTMCD
000006 404040404040                  31+DBVOLSER DC    CL6' '            VOLUME SERIAL NUMBER                 01-CTMCD
00000C 0000                          32+DBVOLSEQ DC    H'0'              VOLUME SEQUENCE                      01-CTMCD
00000E 404040404040                  33+DBBASVOL DC    CL6' '            FIRST VOLUME (BASE VOLUME)           01-CTMCD
000014 0000                          34+DBFILSEQ DC    H'0'              FILE SEQUENCE NUMBER                 01-CTMCD
000016 0000                          35+DBFILCNT DC    H'0'              FILE COUNT                           01-CTMCD
000018 0000000C                      36+DBEXPDT  DC    PL4'0'            EXPIRATION DATE                      01-CTMCD
00001C 4040404040404040              37+DBDSN    DC    CL44' '           DATA SET NAME                        01-CTMCD
000048 40404040                      38+DBRECFM  DC    CL4' '            RECORD FORMAT                        01-CTMCD
00004C 00000000                      39+DBLRECL  DC    F'0'              LOGICAL RECORD LENGTH                01-CTMCD
000050 00000000                      40+DBBLKSIZ DC    F'0'              BLOCK SIZE                           01-CTMCD
000054 00000000                      41+DBBLKCNT DC    F'0'              BLOCK COUNT                          01-CTMCD
000058 0000000C                      42+DBCDATE  DC    PL4'0'            CREATION DATE                        01-CTMCD
00005C 0000000C                      43+DBCTIME  DC    PL4'0'            CREATION TIME                        01-CTMCD
000060 4040404040404040              44+DBCJOB   DC    CL8' '            CREATION JOB                         01-CTMCD
000068 4040404040404040              45+DBCSTEP  DC    CL8' '            CREATION STEP                        01-CTMCD
000070 4040404040404040              46+DBCDDNME DC    CL8' '            CREATION DDNAME                      01-CTMCD
000078 40404040                      47+DBCUNIT  DC    CL4' '            CREATION UNIT                        01-CTMCD
00007C 40                            48+DBCLSIND DC    CL1' '            CLOSE INDICATOR                      01-CTMCD
00007D 0000000C                      49+DBLDATE  DC    PL4'0'            LAST USE DATE                        01-CTMCD
000081 0000000C                      50+DBLTIME  DC    PL4'0'            LAST USE TIME                        01-CTMCD
000085 4040404040404040              51+DBLJOB   DC    CL8' '            LAST USE JOBNAME                     01-CTMCD
00008D 40404040                      52+DBLUNIT  DC    CL4' '            LAST USE UNIT ADDRESS                01-CTMCD
000091 D5                            53+DBCPYCAT DC    CL1'N'            COPYCAT CREATED TAPE                 01-CTMCD
000092 40404040                      54+DBDEN    DC    CL4' '            DENSITY                              01-CTMCD
000096 404040                        55+DBLABTYP DC    CL3' '            LABEL TYPE                           01-CTMCD
000099 D5                            56+DBSCRIND DC    CL1'N'            SCRATCH INDICATOR                    01-CTMCD
```

DBRECORD DSECT, Using CTMCDREC Macro- Common Tape Data Area (2 of 4)

```
CTMCDREC D S E C T  -  D B R E C O R D                                                    Page    4
  Active Usings: None

D-Loc  Object Code    Addr1 Addr2  Stmt   Source Statement                              HLASM R4.0  2004/01/16 16.25

00009A 40404040                    57+DBTRTCH  DC    CL4' '            RECORDING TECHNIQUE                  01-CTMCD
00009E 0000                        58+DBUSECLN DC    H'0'              USES CLEANED                         01-CTMCD
0000A0 0000                        59+DBTMSCLN DC    H'0'              TIMES CLEANED                        01-CTMCD
0000A2 0000000C                    60+DBDTECLN DC    PL4'0'            DATE CLEANED                         01-CTMCD
0000A6 0000000C                    61+DBINTDTE DC    PL4'0'            INITIAL DATE                         01-CTMCD
0000AA 0000                        62+DBUSETOT DC    H'0'              TOTAL USES                           01-CTMCD
0000AC 0000000C                    63+DBDTEMOV DC    PL4'0'            DATE MOVED                           01-CTMCD
0000B0 40404040                    64+DBOUTLOC DC    CL4' '            OUT LOCATION CODE                    01-CTMCD
0000B4 D5                          65+DBINUSE  DC    CL1'N'            IS THE VOLUME IN-USE          TC29173 01-CTMCD
0000B5 D5                          66+DBNOSTAK DC    CL1'N'            IS THE VOLUME NOT STACKABLE   TC29173 01-CTMCD
0000B6 D5                          67+DBSTACK  DC    CL1'N'            FILES DYNAMICALLY STACKED     TC29173 01-CTMCD
0000B7 00                          68+DBVPERC  DC    XL1'00'           PERCENT OF VOLUME IN USE      TC29400 01-CTMCD
0000B8 00                          69+DBFPERC  DC    XL1'00'           PERCENT OF VOL USED BY FILE   TC29400 01-CTMCD
0000B9 00                          70+DBCOMPRS DC    XL1'00'           COMPRESSION RATE              TC29400 01-CTMCD
0000BA 0000                        71+DBTRDCLN DC    H'0'              TEMP READ CLEAN                      01-CTMCD
0000BC 0000                        72+DBTWTCLN DC    H'0'              TEMP WRITE CLEAN                     01-CTMCD
0000BE 0000                        73+DBPRDCLN DC    H'0'              PERM READ CLEAN                      01-CTMCD
0000C0 0000                        74+DBPWTCLN DC    H'0'              PERM WRITE CLEAN                     01-CTMCD
0000C2 0000                        75+DBTRDINT DC    H'0'              TEMP READ INIT                       01-CTMCD
0000C4 0000                        76+DBTWTINT DC    H'0'              TEMP WRITE INIT                      01-CTMCD
0000C6 0000                        77+DBPRDINT DC    H'0'              PERM READ INIT                       01-CTMCD
0000C8 0000                        78+DBPWTINT DC    H'0'              PERM WRITE INIT                      01-CTMCD
0000CA 4040404040404040            79+DBVENDOR DC    CL8' '            VENDOR                               01-CTMCD
0000D2 40404040                    80+DBSRVIND DC    CL4' '            OUT OF SERVICE INDICATOR      TC29400 01-CTMCD
                    000D2 00004    81+DBOUTSRV EQU   DBSRVIND,L'DBSRVIND      (OLD NAME)               TC29400 01-CTMCD
0000D6 40404040                    82+DBCPUID  DC    CL4' '            CPUID                                01-CTMCD
0000DA 4040404040404040            83+DBVOLOWN DC    CL8' '            VOLUME OWNER (EDM ID)                01-CTMCD
0000E2 4040404040404040            84+DBUSRDTA DC    CL60' '           USER DATA                            01-CTMCD
00011E 0000                        85+DBVOLCNT DC    H'0'              VOLUME COUNT                         01-CTMCD
000120 4040404040404040            86+DBCPGM   DC    CL8' '            CREATING PROGRAM                     01-CTMCD
000128 4040404040404040            87+DBLPGM   DC    CL8' '            LAST USED PROGRAM                    01-CTMCD
000130 4040404040404040            88+DBROBTY  DC    CL8' '            ROBOT DEVICE TYPE                    01-CTMCD
000138 404040                      89+DBROBID  DC    CL3' '            ROBOT DEVICE NUMBER                  01-CTMCD
00013B 404040404040                90+DBACTVOL DC    CL6' '            ACTUAL VOLSER OF TAPE         CL052B0 01-CTMCD
000141 40                          91+DBACTUAL DC    CL1' '            ACTUAL VOLSER IN USE INDICATR CL052B0 01-CTMCD
000142 4040404040404040            92+DBSMSMC  DC    CL8' '            SMS MANAGEMENT CLASS          CL052B0 01-CTMCD
00014A 40                          93+DBAGENT  DC    CL1' '            TAPE AGENT                    TC29400 01-CTMCD
00014B D5                          94+DBVDEGAU DC    CL1'N'            VOLUME HAS BEEN DEGAUSSED     CL052B0 01-CTMCD
00014C D5                          95+DBFISCAT DC    CL1'N'            FILE IS ON OS CATALOG         CL052B0 01-CTMCD
00014D D5                          96+DBVSR    DC    CL1'N'            TAPE VAULTED DUE TO SPEC REQ  CL052B0 01-CTMCD
00014E D5                          97+DBNRS    DC    CL1'N'            TAPE IS NON-RESIDENT          CL052B0 01-CTMCD
00014F 40404040404040              98+DBOUTSLT DC    CL7' '            OUT SLOT                      TC29173 01-CTMCD
000156 4040404040404040            99+DBRESVA1 DC    CL14' '           RESERVED                      TC29173 01-CTMCD
                                  100+*
                                  101+*     TLMS SPECIFIC AREA
                                  102+*
000164 4040404040404040           103+DBRESVD2 DC    CL74' '           RESERVED                    TC29400  01-CTMCD
0001AE                            104+DBOUTCOD DS    CL4' '            OUT-OF-SERVICE CODES        TC29400  01-CTMCD
0001B2 0000000C                   105+DBOUTDAT DC    PL4'0'            OUT-OF-SERVICE DATE         TC29400  01-CTMCD
0001B6 0000                       106+DBACTFIL DC    H'0'              ACTIVE FILES                         01-CTMCD
0001B8 0000                       107+DBTAPLEN DC    H'0'              TAPE LENGTH                          01-CTMCD
0001BA 4040                       108+DBTAPTYP DC    CL2' '            TAPE TYPE                            01-CTMCD
0001BC 0000                       109+DBUSECRT DC    H'0'              USES CERTIFY                         01-CTMCD
0001BE 0000                       110+DBTIMCRT DC    H'0'              TIMES CERTIFY                        01-CTMCD
0001C0 0000000C                   111+DBDATCRT DC    PL4'0'            DATE CERTIFIED                       01-CTMCD
```

DBRECORD DSECT, Using CTMCDREC Macro- Common Tape Data Area (3 of 4)

```
CTMCDREC D S E C T  -  D B R E C O R D                                                    Page    5
  Active Usings: None

D-Loc  Object Code    Addr1 Addr2  Stmt   Source Statement                          HLASM R4.0  2004/01/16 16.25

0001C4 0000                        112+DBCDSSEQ DC    H'0'              CDS FILE SEQUENCE                    01-CTMCD
0001C6 0000000C                    113+DBDATSCR DC    PL4'0'            DATE SCRATCHED                       01-CTMCD
0001CA 4040404040404040            114+DBRTNDAT DC    CL32' '           RETENTION DATA                       01-CTMCD
0001EA 0000000C                    115+DBDKPDTE DC    PL4'0'            DATA SET KEEP DATE                   01-CTMCD
0001EE 4040404040404040            116+DBUSRID  DC    CL8' '            USER ID (TRANSACTONS)       TC29400 01-CTMCD
                     001EE 00008   117+DBUNUS1  EQU   DBUSRID,L'DBUSRID                            TC29400 01-CTMCD
0001F6 0000000C                    118+DBVKPDTE DC    PL4'0'            VOLUME KEEP DATE                     01-CTMCD
0001FA 0000000C                    119+DBVEXDTE DC    PL4'0'            VOLUME EXPIRATION DATE               01-CTMCD
0001FE 40                          120+DBSCRSOR DC    CL1' '            SCRATCH SOURCE                       01-CTMCD
0001FF 40                          121+DBFLG006 DC    CL1' '            SPARE TLMS FLAG                      01-CTMCD
                                   122+*
                                   123+*     CA 1 SPECIFIC AREA
                                   124+*
000200                 00200 00164 125+         ORG   DBRESVD2                                             01-CTMCD
000164 4040404040404040            126+DBRESVD3 DC    CL24' '           RESERVED                             01-CTMCD
00017C 40                          127+DBSCRFLG DC    CL1' '            SCRATCH FLAG                         01-CTMCD
00017D 40                          128+DBTMPIND DC    CL1' '            TEMPORARY DATA SET INDICATOR         01-CTMCD
00017E 404040404040                129+DBPREVOL DC    CL6' '            PREVIOUS VOLUME                      01-CTMCD
000184 404040404040                130+DBNXTVOL DC    CL6' '            NEXT VOLUME                          01-CTMCD
00018A 404040404040                131+DBFSTVOL DC    CL6' '            FIRST VOLUME                         01-CTMCD
000190 00000000                    132+DBFSTDSN DC    F'0'              FIRST DSNB                           01-CTMCD
000194 00000000                    133+DBLSTDSN DC    F'0'              LAST DSNB                            01-CTMCD
000198 00000000                    134+DBCURDSN DC    F'0'              CURRENT DSNB                         01-CTMCD
00019C 00000000                    135+DBPRVDSN DC    F'0'              PREVIOUS DSNB                        01-CTMCD
0001A0 00000000                    136+DBNXTDSN DC    F'0'              NEXT DSNB                            01-CTMCD
0001A4 4040404040404040            137+DBHD1DSN DC    CL17' '           DSN17                                01-CTMCD
0001B5 4040                        138+DBUNUS2  DC    CL2' '            ========> UNUSED            TC29400 01-CTMCD
0001B7 00                          139+DBCATCNT DC    XL1'00'           CATALOG COUNT               TC29400 01-CTMCD
0001B8 40                          140+DBRDSOVR DC    CL1' '            RDS OVERRIDE INDICATOR               01-CTMCD
0001B9 40                          141+DBDELIND DC    CL1' '            DELETE INDICATOR                     01-CTMCD
0001BA 40                          142+DBCLNIND DC    CL1' '            CLEAN INDICATOR                      01-CTMCD
0001BB 40                          143+DBUSRIND DC    CL1' '            UPDATED USER INDICATOR               01-CTMCD
0001BC 40                          144+DBINTCIN DC    CL1' '            INTERNAL CHANGE INDICATOR            01-CTMCD
0001BD 40                          145+DBXBYJUL DC    CL1' '            EXPIRED BY JULIAN                    01-CTMCD
0001BE 40                          146+DBXBYLDT DC    CL1' '            EXPIRED BY LAST DATE                 01-CTMCD
0001BF 40                          147+DBXBYCYC DC    CL1' '            EXPIRED BY CYCLE                     01-CTMCD
0001C0 40                          148+DBXBYCAT DC    CL1' '            EXPIRED BY CATALOG                   01-CTMCD
0001C1 40                          149+DBXBYSMS DC    CL1' '            EXPIRED BY SMS                       01-CTMCD
0001C2 40                          150+DBXBYTMS DC    CL1' '            EXPIRED BY TMS INTERFACE             01-CTMCD
0001C3 40                          151+DBRECIND DC    CL1' '            RECREATED INDICATOR                  01-CTMCD
0001C4 40                          152+DBOOUTIN DC    CL1' '            OPENED FOR OUTPUT INDICATOR          01-CTMCD
0001C5 40                          153+DBRDCAT  DC    CL1' '            READ VIA CATALOG INDICATOR           01-CTMCD
0001C6 40                          154+DBDYNIND DC    CL1' '            DYNAM/T CONTROLLED INDICATOR         01-CTMCD
0001C7 40                          155+DBEDMIND DC    CL1' '            EDM CONTROLLED INDICATOR             01-CTMCD
0001C8 40                          156+DBBADIND DC    CL1' '            BAD TAPE INDICATOR                   01-CTMCD
0001C9 4040404040404040            157+DBLUPDAT DC    CL8' '            LAST UPDATE CAUSE                    01-CTMCD
0001D1 0000000C                    158+DBAUDDTE DC    PL4'0'            AUDIT DATE                           01-CTMCD
0001D5 0000000C                    159+DBAUDTIM DC    PL4'0'            AUDIT TIME                           01-CTMCD
0001D9 4040404040404040            160+DBUSERID DC    CL8' '            USER ID                              01-CTMCD
0001E1 00                          161+DBAUCODE DC    X'00'             AUDIT CODE                           01-CTMCD
0001E2 404040                      162+DBRESVD4 DC    CL3' '            RESERVED                             01-CTMCD
0001E5 40                          163+DBDSNACT DC    CL1' '            ACTIVE DSNB INDICATOR                01-CTMCD
0001E6 404040                      164+DBAUBLK  DC    CL3' '            EXCEPTION CODES                      01-CTMCD
0001E9 00                          165+DBVFLAG1 DC    XL1'00'           VOLUME FLAG1                         01-CTMCD
0001EA 00                          166+DBVFLAG2 DC    XL1'00'           VOLUME FLAG2                         01-CTMCD
```

DBRECORD DSECT, Using CTMCDREC Macro- Common Tape Data Area (4 of 4)

```
CTMCDREC D S E C T  -  D B R E C O R D                                                    Page    6
  Active Usings: None

D-Loc  Object Code    Addr1 Addr2  Stmt   Source Statement                          HLASM R4.0  2004/01/16 16.25

0001EB 00                          167+DBVFLAG3 DC    XL1'00'           VOLUME FLAG3                          01-CTMCD
0001EC 00                          168+DBVFLAG4 DC    XL1'00'           VOLUME FLAG4                          01-CTMCD
0001ED 00                          169+DBVFLAG5 DC    XL1'00'           VOLUME FLAG5                          01-CTMCD
0001EE 00                          170+DBVFLAG6 DC    XL1'00'           VOLUME FLAG6                          01-CTMCD
0001EF 40                          171+DBRESVD5 DC    CL1' '            RESERVED                              01-CTMCD
0001F0 00                          172+DBDFLAG1 DC    XL1'00'           DSNB FLAG1                            01-CTMCD
0001F1 00                          173+DBDFLAG2 DC    XL1'00'           DSNB FLAG2                            01-CTMCD
0001F2 4040                        174+DBRESVD6 DC    CL2' '            RESERVED                              01-CTMCD
0001F4 40                          175+DBRELEVM DC    CL1' '            RELEASED BY EXTERNAL VAULT MGR        01-CTMCD
0001F5 40                          176+DBERASE  DC    CL1' '            DATA SET ERASE REQUIRED               01-CTMCD
0001F6 40                          177+DBDEFEXP DC    CL1' '            DEFAULT EXPDT USED AT OPEN            01-CTMCD
0001F7 40                          178+DBMULTIF DC    CL1' '            ADDITIONAL FILES EXIST ON TAPE        01-CTMCD
0001F8 4040404040404040            179+         DC    CL8' '            UNUSED                                01-CTMCD
                      00200        180+DBENDCMN EQU   *                 END OF NORMAL AREA                    01-CTMCD
                                   181+*
                      00200        182+DBRECL   EQU   *-DBRECORD        RECORD LENGTH                         01-CTMCD
                                   183+*
                                   184 *
                                   185          END
```

ALOCAREA Listing, Using CTMCDYNA Macro

ALOCAREA DSECT, Using CTMCDYNA Macro - Maps CA Copycat Utility Allocation Area

```
ALOCAREA D S E C T  -  A L O C A R E A                                                    Page    3
  Active Usings: None

  Loc  Object Code    Addr1 Addr2  Stmt   Source Statement                          HLASM R4.0  2004/01/16 16.25

000000                00000 00000     2 AL0CAREA CSECT ,
                                      3 *
                                      4 ALOCAREA CTMCDYNA DSECT=YES,PREFIX=DY

000000                00000 00060     6+ALOCAREA DSECT                                                    01-CTMCD
000000 4040404040404040               7+DYDDDNM   DC    CL8' '            ddname                          01-CTMCD
000008 4040404040404040               8+DYDDSN    DC    CL44' '           data set name                   01-CTMCD
000034 4040404040404040               9+DYDUNIT   DC    CL8' '            unit name or address            01-CTMCD
00003C 00000000                      10+DYDVOLL   DC    A(0)              volser list ptr                 01-CTMCD
000040 00                            11+DYDRECF   DC    XL1'00'           recfm=                          01-CTMCD
                      00008          12+DYRS      EQU   X'08'            -     S (standard)              01-CTMCD
                      00010          13+DYRB      EQU   X'10'            -     B (blocked)               01-CTMCD
                      00040          14+DYRV      EQU   X'40'            -     V (variable)              01-CTMCD
                      00080          15+DYRF      EQU   X'80'            -     F (fixed)                 01-CTMCD
                      000C0          16+DYRU      EQU   X'C0'            -     U (undefined)             01-CTMCD
000041 00                            17+DYDDISP   DC    XL1'00'           disp=                           01-CTMCD
                      00001          18+DYDOLD    EQU   X'01'            -    old                        01-CTMCD
                      00002          19+DYDMOD    EQU   X'02'            -    mod                        01-CTMCD
                      00004          20+DYDNEW    EQU   X'04'            -    new                        01-CTMCD
                      00008          21+DYDSHR    EQU   X'08'            -    shr                        01-CTMCD
000042 0000                          22+DYLREC    DC    AL2(0)            record length                   01-CTMCD
000044 0000                          23+DYDBLKSZ  DC    AL2(0)            block size                      01-CTMCD
                                     24+*                                 If zero, use xxxLBLKSZ        @LBI
000046 0000                          25+DYDVLSQ   DC    AL2(0)            volume sequence                 01-CTMCD
000048 0000                          26+DYDFLSQ   DC    AL2(0)            file sequence                   01-CTMCD
00004A 00                            27+DYDVLCT   DC    AL1(0)            volume count                    01-CTMCD
00004B 00                            28+DYDLBLT   DC    XL1'00'           label type                      01-CTMCD
                      00001          29+DYLNL     EQU   X'01'            -    NL (no label)              01-CTMCD
                      00002          30+DYLSL     EQU   X'02'            -    SL (standard label)        01-CTMCD
                      00004          31+DYLNSL    EQU   X'04'            -    NSL (non-standard label)   01-CTMCD
                      0000A          32+DYLSUL    EQU   X'0A'            -    SUL (standard and user label) 01-CTMCD
                      00010          33+DYLBLP    EQU   X'10'            -    BLP (bypass label processing) 01-CTMCD
                      00040          34+DYLAL     EQU   X'40'            -    AL (ANSII label)           01-CTMCD
00004C 00                            35+DYDTRTCH  DC    XL1'00'           tape recording technique (trtch) 01-CTMCD
                      00004          36+DYTNCOMP  EQU   X'04'            -    non-compaction mode        01-CTMCD
                      00008          37+DYTCOMP   EQU   X'08'            -   ion mode                 01-CTMCD
00004D 00                            38+DYDDEN    DC    XL1'00'           tape density                    01-CTMCD
00004E 00                            39+DYDUNTYP  DC    XL1'00'           unit type                       01-CTMCD
                      00080          40+DYDUGEN   EQU   X'80'            -    generic (named) device     01-CTMCD
                      00040          41+DYDUADR   EQU   X'40'            -    device unit address        01-CTMCD
00004F 00                            42+DYDDTYP   DC    XL1'00'           date type                       01-CTMCD
                      00080          43+DYDTEXP   EQU   X'80'            -    expdt=XXXXXXXXXX           01-CTMCD
                      00040          44+DYDTRET   EQU   X'40'            -    retpd=nnnn                 01-CTMCD
                      00020          45+DYDTSAM   EQU   X'20'            -    same                       01-CTMCD
000050 F0F0F0F0F0F0F0                46+DYDDATE   DC    CL7'0000000'      expiration date                 01-CTMCD
000057 0000                          47+DYDRETP   DC    AL2(0)            retention period                01-CTMCD
                                     48+*
000059 000000                          +
00005C 00000000                      49+DYLBLKSZ  DC    F'0'              Large block size              @LBI  01-CTMCD
                      00060          50+DYBLEN    EQU   (((*-DYDDDNM+7)/8)*8)  length of dyna block          01-CTMCD
                                     51+*
                                     52 *
                                     53          END
```

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