CA TLMS® Tape Management

TLMS_User_ENU
Release 12.6 Second Edition

CA technologies

CA Technologies Product References

This document references the following CA products:

- CA 1® Tape Management (CA 1)
- CA ACF2™ for z/OS (CA ACF2)
- CA TLMS® Tape Management (CA TLMS)
- CA Top Secret® Security for z/OS (CA Top Secret)

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Contents

Chapter 4: Using the Online Interface 75

Chapter 5: Volume Master File Inquiry and Update 101

Chapter 6: Reports 125

Chapter 7: Common Tape System 203

Appendix A: VMF Keywords 221

Glossary   259

Index   267

Chapter 1: Introduction

This section contains the following topics:

About This Guide

This guide serves as a primary reference for clients using CA TLMS Tape Management. This publication supplies the system administrator, tape librarian, and operator with the information needed to use CA TLMS on a daily basis. The guide presents detailed discussions on preparing your tape library, understanding tape retention, using CA TLMS screens and commands, and generating reports.

About CA TLMS

CA TLMS is an automated tape library management system that manages tape resources and protects tape data sets from accidental destruction. In today's sophisticated data centers, decisions must be made every day to determine which tape volumes are eligible for reuse and which contain critical data that should be moved to a secure, off-site storage location. With CA TLMS, you can automate the management of your tape resources, improve the efficiency and productivity of operations personnel, and reduce the human error inherent in manual intervention.

CA TLMS provides benefits in these key areas:

Data Protection

CA TLMS automatically protects data on tape by gaining control at every OPEN, CLOSE or EOV (end of volume) and recording pertinent information, which it then uses to determine when the data expires. A tape volume must be in scratch status in the CA TLMS Volume Master File (VMF) before a job can overwrite it. An External Data Manager (EDM) or other volume owner is required to scratch tapes which it owns. If an active volume is accidentally mounted, CA TLMS automatically unloads the volume and requests a new mount. Multivolume data sets and multi-data set volumes are also protected:

- If there is space on a volume for more than one data set, CA TLMS verifies that there are no active data sets on the part of the volume where a new data set is to be added.

- If a data set spans multiple volumes, CA TLMS protects all of the volumes until the controlling data set (CDS) expires.

Data set security is further enhanced by the input data set name verification feature, which extends data set name validation from the system default of 17 characters to the entire 44-character data set name.

Other data protection features may be activated using system options specified in member TLMSIPO of the CA common options library, CAI.CTAPOPTN.

Automated Tape Retention

Tape data sets are retained for a user-specified period. They can then be returned automatically to the scratch pool for reuse. Tapes that contain critical data sets and those that require long-term storage can be moved to off-site storage areas using CA TLMS control. Different retention criteria can be defined at the data center and for each of any off-site storage locations. CA TLMS keeps track of tapes at each off-site storage location and lets you know when they are ready to be returned to the data center for reuse. Tape volumes that are used as temporary work space are immediately available for reuse as scratch tapes.

Retention Methods

Different retention methods are available, including catalog control, date control, cycle control, usage control and manual control. Date control allows you to use the RETPD or EXPDT JCL parameters to define keep dates for individual data sets. A default TRS retention control statement lets you select a default retention method to control all data sets that do not have their own specific retention criteria.

Tape Library Flexibility

CA TLMS can control standard labeled, nonlabeled, or bypass- label-processing tapes. Tape volume serial numbers can be any combination of up to six alphanumeric characters. Tapes can be stored in any order in cabinets, boxes, or user-defined storage at up to five off-site storage locations. CA TLMS can control multi-data set volumes, multivolume data sets, and multiple data sets on multiple volumes. All volumes associated with a given data set or data set group are automatically chained together in the Volume Master File.

Volume Information

The Volume Master File keeps track of all tapes under CA TLMS control and all data sets on those tapes. CA TLMS records pertinent information into this file every time a tape data set is opened or closed or a volume ends. This file can also keep track of cleaning and certification dates and historical information on tape types, lengths, purchase dates, and manufacturers. The VMF is updated dynamically, but can also be updated manually using either the full-screen online interface or the batch update commands.

Online Interface

The information in the Volume Master File can be displayed and updated using online interface displays while running under various teleprocessing monitors. The screens are menu-driven. Volume information can be accessed by either the volume serial number or a data set name. VMF information can also be displayed or updated in batch mode if you do not have access to a console or want to perform batch updates quickly.

Critical Update Commands

A special set of update commands can be used, if necessary, to clear fields in the Volume Master File and break or rebuild volume chains. These are documented in the *Configuration Guide*.

Auxiliary Messages

Auxiliary messages provide special handling, routing or disposition instructions. These messages are automatically displayed at the operator's console when the appropriate data set is closed. The AUX system option lets you relate specific messages to entire groups of data sets.

Gummed Labels

CA TLMS can automatically produce either standard external gummed labels for each new data set when created, or special gummed labels for volumes that are nonscratch, out of service, or outside a specified range. The gummed labels can be customized by changing the z/OS EARL Service statements.

Reports

The z/OS EARL Service report writer produces completely customized reports by selecting whatever information you need from the Volume Master File and transaction log.

Other reports can be produced with predefined report programs.

Forecasts

The Tape Retention System can be executed in forecast mode. The forecast reports in advance which volumes will be scratched and which volumes will be moved the next time the Tape Retention System is run. Forecast reports can also be used to validate changes to the retention criterion before executing the actual scratch run.

System Options

User-defined system options allow you to customize processing by overriding various decisions that CA TLMS has automated. These options include those related to system security, CTS, EDM (External Data Manager) tape processing, System Message Control and the activation of various CA TLMS user exits. These options are detailed in the *Configuration Guide.*

User Exits

A number of user exits provide extended control over tape utilization and retention processing. These exits allow you to store job accounting information in the Volume Master File, change or add data to the transaction record at either OPEN or CLOSE/EOV, restrict users who can update the Retention Master File, modify VMF records so they are processed differently by the Tape Retention System, and bypass scratch processing or data set protection. All exits are documented in the *Configuration Guide.*

Gummed labels and VMF reports are fully customizable because they are written in z/OS EARL Service.

Backup and Recovery

The Volume Master File can be backed up without affecting current tape processing. The Volume Master File can be recovered, if necessary, by restoring the most recent backup and automatically applying transactions that occurred following the backup.

Preparing the Tape Library

CA TLMS is designed to provide management for tapes written in the following formats:

- Standard Labeled (SL)
- Nonlabeled (NL)
- Bypass Label Processing (BLP)
- Nonstandard Labeled (NSL)
- ANSI Labeled (AL)

CA TLMS gets the volume serial numbers for SL tapes from either

- The job control language (JCL) or
- The z/OS system catalog

Since NL tapes do not have internal labels and BLP tapes bypass standard labels, you must use one of the following methods to supply the volume serial numbers of these tapes to CA TLMS:

- The job control language (JCL) or
- The console operator

For the console operator to supply the volume serial number, you must specify the system option VSNREQD=YES. This will prompt the operator for the volume serial number before an NL or BLP volume is opened for output.

NSL tapes may be controlled either by user-written routines which invoke the TLMSOSMM (operating system management module) or by manual updates to the CA TLMS Volume Master File.

More information:

Volume Serial Numbers

CA TLMS lets you use any combination of tape volume serial numbers, as long as each volume serial number is unique. Volume serial numbers may be from one to six alphabetic or numeric characters. For example, 11223, A1A222.

All volume serial numbers in the VMF are six characters. If you have tapes with a VSN of five or less characters, use the VSNPAD option to extend the VSN to six characters. The VSNPAD option specifies a character that left pads the tape VSN to make it six characters in length.

For example, VSNPAD=V pads VSN 123 to VVV123. Your JCL specifies VOL=SER=123, the VMF tracks it as VVV123, and displays and reports show VVV123.

CA TLMS manages VSNs in ranges. VSNs in a range have a matching prefix and an incremental numeric suffix. The prefix is the left most part of a VSN which contains alphabetic characters. For example:

- The prefix for VSN A1A050 is A1A

- The prefix for VSN 123C81 is 123C

- The prefix for VSNs with all numbers like 001513 and 980012 is considered blank

Assigning Scratch Pool Volumes

Non specific mounts can be requested for predefined pools. The name of the pool appears in the mount message instead of 'SCRTCH' or 'PRIVAT'. Pools can be requested directly through VOL=SER=poolid or can be assigned through information on the DD statement.

Pools can be assigned by DSN, JOB, STEP, UNIT, EXPDT, or VOL=SER=.

Any number of tape ranges and rules can be assigned to a pool, and any number of rules can be assigned to a pool.

Assigning External Data Manager (EDM) Volumes

Full pattern masking is used to assign ownership and an EDM ID to tapes. Once an owner ID has been assigned to a tape, an EDM with the same ID has full control of the content of that tape. No other user or EDM can write on or scratch that tape.

Tape pools can also be assigned to an EDM.

Volume Data Structure

CA TLMS supports the following tape data structures:

■ Multi-data set volumes

These are volumes that contain two or more data sets. One data set is identified as the controlling data set (CDS) so that you can define retention for the most critical data set on the volume. This defaults to the first data set on the volume. To change this, see the section Changing the Controlling Data Set (see page 68).

VOL1	DSN1 (CDS)	DSN2

■ Multivolume data sets

Data sets start on a base volume and are continued on one or more additional volumes. CA TLMS automatically chains together all volumes associated with a data set so that the retention criteria you define for the data set controls all of its volumes.

VOL1	DSN1

VOL2	DSN1

- Multivolume multi-data sets

  Any volume in a multivolume data set can also have multiple data sets.

VOL1	DSN1	DSN2

VOL2	DSN2

VOL3	DSN2	DSN3

More information:

Data Set Naming Standards

Data set naming standards will allow you to define groups of data sets, rather than defining each data set individually. One recommended standard is the z/OS tree structure. This structure uses levels of qualifiers. Each level allows you to divide data sets into smaller and smaller groups. You can use these levels to establish data set naming standards that correspond to the organization of your company.

This figure illustrates how qualified data set names can relate directly to the organization chart:
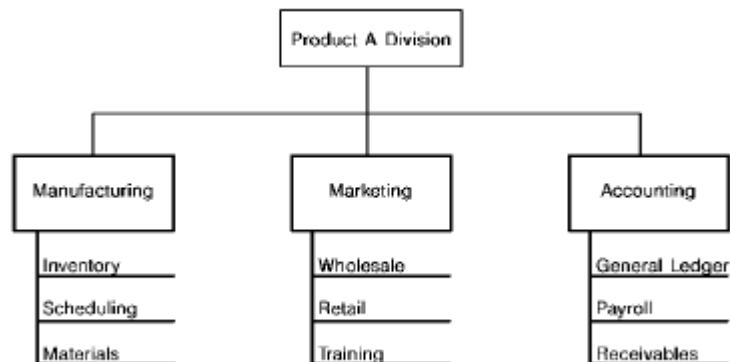
The naming standards could specify that every data set that relates to Product A Division begin with the high-level qualifier PDA.

The second level of qualifiers could identify the department. For example, you could identify all data sets that relate to the manufacturing department by starting their names with the qualifiers PDA.MAN.

The third level of qualifiers could identify the name of a group, a product, or a function. For example, you could identify all data sets that relate to Product A's manufacturing inventory by starting their names with the qualifiers PDA.MAN.INV.

The fourth level of qualifiers could identify the type of activity the data set was used for. For example, you could identify all data sets that are used for Product A's manufacturing inventory year-end reports by starting their names with the qualifiers PDA.MAN.INV.YEAREND.

Qualifying Data Set Names

This figure illustrates how qualified data set names can relate directly to the organization chart:
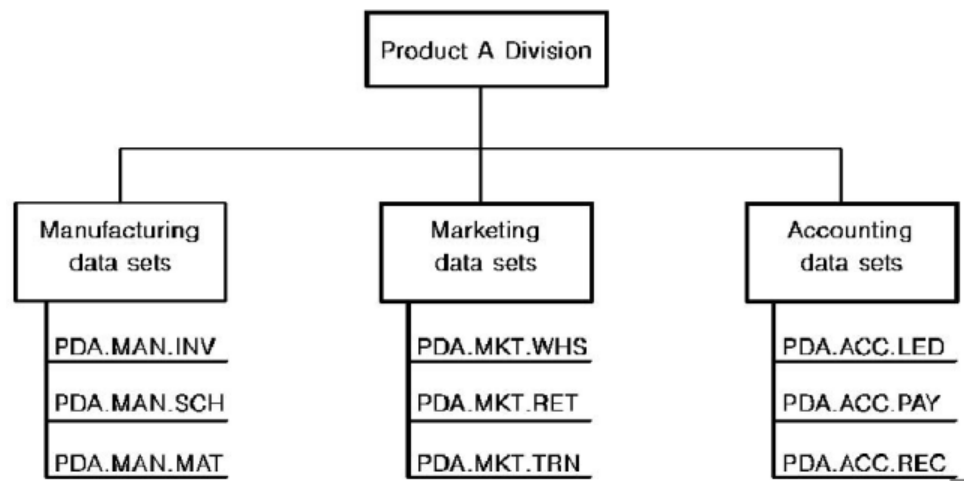
When you use levels of qualifiers to define data set names, you create three different methods to indicate to CA TLMS which data sets are to be included in the action being requested:

1. You can give a fully qualified data set name. This action applies only to the data set that has that exact name.

2. You can give a partially qualified data set name. This is a generic data set name, terminated by a dash(-). This action applies to all data sets that begin with the generic characters (not including the dash).

3. You can give an IBM-qualified data set name. This is a generic data set name, terminated by a period and dash(.-). This action applies to all data sets that start with the generic characters, including the period.

When CA TLMS searches for data set names that match the data set definition, it matches as many characters as it can. Therefore, a fully qualified DSN takes precedence over a partially qualified DSN. A partially qualified DSN with more qualifiers takes precedence over a partially qualified DSN with fewer qualifiers.

The following chart illustrates examples of those data sets that would be included in each type of definition. (The order of the examples corresponds to the numbered list in Qualifying Data Set Names.)

Definition	Data Sets Included	Data Sets Not Included
PDA.MAN.INV.YREND.Y1992	PDA.MAN.INV.YREND.Y1992	PDA.INV.YREND.Y1992A
PDA.MAN.INV-	PDA.MAN.INV.YREND.Y1992 PDA.MAN.INV.BLD PDA.MAN.INVENTORY	PDA.MAN.SCH.YREND.Y1992
PDA.MAN.INV-	PDA.MAN.INV.YREND.Y1992 PDA.MAN.INV.DMP PDA.MAN.INV.BLD	PDA.MAN.INVENTORY PDA.MAN.INV

At this point, it is only important to understand that you can use data set naming standards to group data sets that have the same retention criteria. This can later reduce the number of definitions you have to code.

More Information:

Determining Tape Storage Requirements

CA TLMS automatically tracks tape data sets through your data center, notifying you when to scratch them or move them to a storage location. Therefore, before you can start using CA TLMS, you must establish:

- The data set retention period requirements

- What action is to be taken when the retention period expires

- The volume storage sequence (order)

- Where to store tape volumes

- How to store tape volumes

Establishing Retention Period Requirements

A data set retention period must be defined to CA TLMS in the Retention Master File (RMF) to preserve tape data sets as long as required, and then reuse the tapes as quickly as possible when the data is no longer needed. You will need to analyze your retention needs and determine retention standards that both protect data and make full use of your tape resources. Generally, you will want to retain all permanent data sets for some minimum period of time. This could be a fixed number of days, or any number of days since the data set was last used. Another standard could allow data sets to remain on tape as long as they are in the z/OS catalog.

In addition to the retention standards you establish for all data sets, you will have critical data sets that need to be moved off site in case of disaster. Various groups of critical data sets may need to be handled in different ways. For example, if different versions of a data set are created by a job that executes regularly, you probably only want to retain the most current version of that data set.

By carefully analyzing your retention requirements and using data set naming standards to group data sets that have similar requirements, you can minimize the number of definitions you must supply to the Retention Master File.

More information:

When the Retention Period Expires

At the end of the retention period, tapes can be scratched or moved to another location. The purpose of moving critical data sets to an off-site location is to protect them from possible data center disasters. You can systematically move the next-to-the-latest versions of your critical data sets to a remote location. If a major catastrophe or natural disaster destroys the volumes at the data center, you can rebuild your critical applications from the off-site backup tapes.

If you decide to move critical tapes to an off-site location, you must determine which tapes to move, where you want them moved, how long you want them retained at that location, and what to do with them at the end of the new retention period. At this point, you have the choice of scratching the tape and returning it to the data center, or moving it to another storage location.

Tape Storage Sequence

CA TLMS imposes no restriction on the order in which you place the tapes in the library. You may store your tapes sequentially by volume serial number or group them by application. You may even store some of the tapes sequentially and group the rest of them by application. Those stored by application should normally be the cyclic, highly repetitive volumes and these volumes should have volume serial numbers that segregate them from the rest of the volumes.

If you still process a few second-generation tapes with nonstandard labels, you might also want to segregate them.

Your off-site storage facilities can help determine the best organization for your tape library. If many volumes are kept off site and your library filing system is strictly by volume serial number, there will be empty slots in the library resulting in wasted space. If the majority of the volumes stored off site belong to specific applications, these volumes could be stored in the library by application. This would reduce large numbers of unused tape slots for volumes that are stored elsewhere for long periods.

Where to Store Tape Volumes

Tapes can be stored in any of the following locations:

- Your data center
- Off-site storage locations (vaults)
- Other data centers
- Outside companies

Each location must be defined to CA TLMS using a two-character alphanumeric location ID and a 1- to 40-character location description. You may find it convenient to assign more than one location ID to a single physical location in order to identify and select a special storage facility for certain tapes. For example, an off-site storage location might have both open-shelf and locked cabinets. The open-shelf cabinets could be called location A1 and the locked cabinets could be called location A2. CA TLMS can then direct tapes to the right type of cabinet.

How to Store Tape Volumes

You must also decide the type of storage you will use for tapes, both at the data center and at off-site locations. Your choices are

- Cabinets/filing slots

- Boxes

- Undefined storage

It is recommended that you use cabinets because CA TLMS will assign each tape to a unique cabinet slot, thus making it easy to find the tape when you need it.

You may have more than one type of storage at a location. For example, you may have both cabinet storage and box storage. But if you do, you cannot mix storage types under the same location ID. You must assign a different location ID to each type of storage at the same physical location. This allows CA TLMS to treat one physical location as multiple logical locations without any special handling on your part.

Cabinets

If you decide to use cabinets, you must give each cabinet at an off-site storage location a unique two-character alphanumeric cabinet identifier. You must also specify the number of filing slots in each cabinet. The maximum is 100 slots, so a cabinet that has more than 100 slots must be defined as two or more logical cabinets.

When a tape is to be moved, it will be identified on a report by both its cabinet ID and its slot number.

Boxes

If you decide to use boxes, you must give each box a unique four-character alphanumeric box identifier. You must also specify the maximum capacity of each box.

If boxes are assigned, only complete boxes (and not individual tapes) can be moved from one storage location to another. Therefore, when a tape is to be moved, it will be identified on a report by its box ID.

Box storage also has restrictions:

- Boxes must be filled or partially filled at the data center before movement to an off-site storage location. CA TLMS fills boxes by specific retention control statements. That is, all data sets matching a specific retention control statement will be used to fill a box or set of boxes. Data sets matching other retention control statements will be used to fill other boxes. Therefore, you may want to define box storage only for groups of data sets, rather than for individual data sets. Otherwise, you may end up moving boxes with one data set per box.

■ Box control detail records are defined only at the data center.

■ Box storage can be used only for the following retention methods: date control (type 2), elapsed days control (type 5), or manual control (type 7).

Undefined Storage

Use this category for any type of storage that cannot be classified as cabinet storage or box storage.

More information:

Storage Definition Worksheet

The worksheet below may be copied or modified and used to gather the information you will need to define each storage location to CA TLMS.

```
Location ID (2 characters) __

Location Description (1-40 characters) _____

Type of Storage (select one) ___ cabinet (off-site locations only)
                             ___ box
                             ___ undefined


List all of the cabinets or boxes at this location.

~ If cabinets, give each cabinet a 2-character ID.

~ If boxes, give each box a 4-character ID.

Then give the maximum number of volumes that can be stored.

ID   Number       ID   Number       ID   Number       ID   Number

____ __           ____ __           ____ __           ____ __

____ __           ____ __           ____ __           ____ __

____ __           ____ __           ____ __           ____ __

____ __           ____ __           ____ __           ____ __

____ __           ____ __           ____ __           ____ __

____ __           ____ __           ____ __           ____ __

____ __           ____ __           ____ __           ____ __

____ __           ____ __           ____ __           ____ __

____ __           ____ __           ____ __           ____ __

____ __           ____ __           ____ __           ____ __
```

Defining Your Tape Library to CA TLMS

The primary database for CA TLMS is the Volume Master File. The VMF is used to record and maintain tape data set information for all volumes under CA TLMS control. Not only are volume and retention information recorded, but historical data such as certification, cleaning and temporary read/write errors.

During CA TLMS installation, the VMF can be constructed and supplied with the information on your current tape data sets in several different ways:

- The VMF is initialized using program TLMSVMFU and loaded with any available information on the tape data sets currently active in the environment.

- Volume information can be retrieved from other sources, such as SMF records or the system catalog, and converted to the proper format.

- A user-supplied utility can also be used to add machine readable information.

- If you plan to use the Distributed Tape Support feature, you must also define the volume serial numbers in use on the distributed systems you plan to manage. These volumes must be added to the VMF and defined as "AGENT" tapes. The UPV command can be used to mark the volumes as "AGENT" tapes.

After installation, the VMF is dynamically updated as you use tapes while CA TLMS is active, maintaining current volume and data set information. The VMF is also updated automatically on a daily basis when the Tape Retention System (TRS) is run, reflecting any changes in tape movement and scratch status. You can update the VMF manually using either the online screens or the commands.

The information in the VMF can be printed on reports or displayed online.

More information:

Chapter 2: Understanding Tape Retention

Every data center has its own tape retention philosophy, but the following conditions generally apply to most data centers:

■ Most data sets can be retained by a data center standard.

■ Specific data sets require unique handling.

■ Critical data sets, such as backups of major applications, are moved offsite for safe storage. They are stored in various facilities, including cabinets, and boxes. In case of a disaster, they are returned to the data center for recovery purposes. Some data sets are moved from one offsite location to another. When the data set is no longer needed, the tape is returned to the data center for reuse as a scratched tape. Different data sets have different retention criteria and movement patterns.

CA TLMS furnishes the Retention Master File (RMF), which enables you to satisfy these and other data set retention and movement requirements.

Retention Master File (RMF)

The Retention Master File (RMF) maintains the retention instructions for your tape data sets. These instructions are supplied by you in the form of control statements which create records in the RMF.

■ Retention control statements allow you to define different retention periods for data sets that require unique handling. You can code the retention statements to include individual data sets or groups of data sets by using data set name qualifiers.

■ A default retention statement allows you to define your data center standard retention period to those data sets not covered by specific retention requirements.

■ Location control statements permit you to define movement of data sets from one storage location to another. These statements describe the location, the kind of storage that will be used there (cabinet/slot, box or undefined), and the maximum number of tapes that can be stored. When you define retention for your critical data sets, you can specify that they be moved to an off-site storage location at the end of their data center retention period. When the retention period ends at the off-site location, you can specify that they then be moved to other locations. When no other location is specified, the tapes will be returned to the data center for reuse as scratch tapes.

After you have defined this movement, the Tape Retention System (TRS) automates its implementation, deciding when and where to move the tapes, recording their location so they can be found when needed, telling you when to move the tapes to another location and when to return them to the data center for reuse.

You may also use the TRS to control movement of External Data Manager (EDM) volumes. EDM tapes may be processed separately or in a group with other tapes. Since CA TLMS will not scratch an EDM owned tape, each EDM is responsible for scratching tapes it no longer needs.

You can define different retention instructions for the data center and each off-site storage location. Each set of retention instructions may cover a specific data set, or a group of data sets with common data set name qualifiers.

TRS generates pseudo-data set names to allow flexible retention for tapes created with the Tape Stacking feature. Since the names of the data sets stacked on a tape may not be known, TRS generates a pseudo-DSN for each tape which has the stacking flag set. The DSNs will have the form:

CATAPE.STACKING.*xxxx*.poolname

where *xxxx* is PART or FULL, indicating whether the tape is partially or completely full. The last node is the eight character stacking scratch pool for the tape. The pseudo-DSN may be used like a normal DSN when coding retention rules. However, CATLG and CYCLE retentions should not be used.

TRS has no special processing for WORM (Write Once Read Many) tapes but CA makes some "best practices" recommendations. WORM tapes cannot be rewritten so the tapes cannot be physically reused as scratch tapes. CA TLMS does not prevent WORM tapes from being scratched but will automatically set the tape to "out-of-service" with an OUTCODE of "WORM." This will prevent CA TLMS from doing any further processing.

As a best practice, CA recommends that WORM tapes have a TRS schedule which does not scratch the tape. That is, the last location will have manual control. CA recommends a "Destroy WORM" location be added to the RMF and this location have a type 7 manual control. This should be the last location after the other rules where the tape is retained for as long as it is needed. When the other retentions are exhausted, the tape will be moved to the "destroy WORM" location. It is not intended that the WORM tape be retained at this final location. It is a signal that the tape can be destroyed without being scratched. After the tape is destroyed the VMF record can be cleared and a new WORM tape initialized with the same VOLSER.

Process

RMF records are created from:

- Location control statements which describe each location
- Retention control statements which contain the retention instructions

A specific control statement is also provided to delete RMF records.

These control statements are input to the RMF update procedure CATRMFE.

RMF records are processed daily when TRS is executed.

More information:

Using the Tape Retention System (TRS) (see page 45)

Realtime Retention Assignment

The RMF schedule may be assigned in realtime by creating a memory resident retention table. This table will be created when CA TLMS is initialized or reinitialized and used by TLMSUPDT to assign a retention schedule when a tape is closed for OUTPUT. Add a DD statement for the RMF to the CAIRIM PROC to cause the optional table to be built.

Note: For information, see the *Configuration Guide*.

Retention Hierarchy

If retention is defined in more than one place, CA TLMS uses this hierarchy to determine which definition to use:

- Specific Retention Master File entries
- A unique CA TLMS keyword value coded on the JCL EXPDT parameter
- The Retention Master File default entry

For example, if a data set has an *EXPDT keyword* value, that value will override the RMF entry created by the default retention control statement. However, the EXPDT keyword value will, in turn, be overridden by an RMF entry created by a retention control statement that has been coded to cover this specific data set.

Note: This is true only if it is a specific keyword, and does not necessarily apply to an IBM EXPDT or RETPD coded in the JCL. Examples of keywords are EXPDT=98ddd, 99000 and 99ccc.

More information:

Expiration Date JCL Keywords (see page 227)

Retention Methods

Retention methods determine how you will use CA TLMS to handle your retention requirements. Twelve retention types correspond to the methods discussed below, which you will specify on the retention control statements.

User exit TLMSXTRS is provided to allow you to devise additional retention methods, if necessary.

The following retention methods vary in the degree of automation involved:

- Manual-This method of retention does not use any automation. It places control of the data set in the hands of the user, rather than in the hands of the tape retention system. It is as though the data set is permanently on hold; it will never be automatically scratched or moved. Its status can only change if the VMF is manually updated.

- Catalog Based-The retention period lasts as long as the data set is cataloged. TRS automatically interrogates the z/OS catalog to see if the data set is cataloged. The tape volume is considered available for scratch or movement when the data set is:
  - Not cataloged, or
  - Cataloged to a different volume
    - This is a good way to control programmers' test tapes. As soon as the programmer is through with the tape, the data set is uncataloged. When TRS no longer finds the data set in the catalog, the tape is considered available for scratch or movement.

  This is also a good way to retain generation data groups (GDGs). When the oldest generation rolls off the catalog, the tape is considered available for scratch or movement.

- Immediate Movement-The tape qualifies for scratch or movement as soon as TRS runs. This is a good way to ensure that critical tape backups are automatically moved to the first off-site location as soon as possible after they are created.

- Cycle Related-A cycle is one version of a specific data set. When a job creates data set ABC.XYZ, multiple executions of that job create multiple cycles of the same data set. The most recently created data set is cycle 1. The rest of the data sets are numbered sequentially in order by descending creation date and time. The oldest version becomes available for scratch or movement when a specified number of cycles has been retained. (This concept is similar to GDG processing.)

  This is a good way to handle transaction-driven applications that create several log tapes. You can automatically retain the most current versions, which are the only ones that need to be retained for recovery purposes. It is especially good in situations where weekly or monthly data sets are created; you can automatically retain the current data set and the versions from the previous two months.

The following retention methods are all automatic and all use dates:

- Elapsed Days-A data set is retained at the current location until a specified number of days has passed; at that time the tape is available for scratch or movement. This method of retention can be used for data sets that are created daily in a scheduled production job and must be retained for a specified number of days.

- Days Since Last Used-A data set is retained at the data center until a specified number of days has passed since the last time the data set was used for input or output. The tape is then available for scratch or movement. This is a good way to handle data sets that have no predetermined retention period, like programmers' test tapes. For example, if you specify the number of days as 30, a data set that has not been referenced for 30 days will be scratched. Every use of the data set restarts the 30-day retention period. This way the tape is automatically scratched when the programmer stops testing with it.

- Keep Date-A data set is retained at the current location until its keep date has passed. The tape is then available for scratch or movement. The keep date is determined by CA TLMS in a variety of ways, which are explained in the following paragraphs. This is a good way to handle data sets that have retention periods that fluctuate depending on specific situations. It is also another good way to handle programmers' test tapes.

More information:

Keep Date Determination

In this section, IBM expiration dates are compared to CA TLMS Keep Dates.

IBM Expiration Dates

If your data center does not have an automated tape library management system, you must rely on the limited data set protection provided by standard IBM expiration date processing; that is, if the expiration date on the internal tape label is equal to or less than today's date, the tape can be reused. Moreover, this protection is valid only for SL tapes. No protection at all is afforded for NL, BLP or NSL tapes.

The IBM expiration date on the SL tape is supplied through a standard z/OS JCL keyword, LABEL=EXPDT=yyyy/ddd, in Julian date format. An alternative method is to supply a retention period using the RETPD=nnnn keyword, which is then translated by IBM file processing into an EXPDT value.

The IBM expiration date facility has a few major drawbacks:

■ All production JCL must specify an expiration date. This requires extensive manual effort to define it initially and then to maintain it if retention requirements change.

■ There is no way to extend the expiration date once a tape data set has been created.

■ If tape data sets are created without an EXPDT, or if it is supplied incorrectly, data sets can be overwritten before the intended data set expiration.

More information:

CA TLMS Keep Date

To protect tape data sets from being overwritten, CA TLMS automatically assigns a keep date to every tape data set when it is created. This means you do not have to specify EXPDT or RETPD in the JCL of every job that creates a tape data set. A keep date is automatically calculated. This keep date can later be modified, either manually or automatically, to ensure that changing retention requirements are satisfied. The keep date provides the means to assign retention based on the data set name.

The keep date is calculated as follows:

■ It is a certain number of days after the creation date. CA TLMS provides the DEF system option (CAI.CTAPOPTN, member TLMSIPO), which allows you to specify:

 – The minimum number of days that specific data sets should be retained.

 – The minimum number of days that groups of data sets should be retained. You can identify the data set groups by giving any part of the data set name. Therefore, you can define the same retention period for all data sets of a specific type or application.

 – A default minimum number of days for any data set that does not match any of the specific or group entries. (A default of 7 days is provided.) This ensures that every tape data set that is created has a keep date.

■ It is the same as EXPDT in the JCL, if this date comes after the date calculated above.

This method of calculation ensures that every tape data set that is created has a keep date that is at least the minimum number of days defined by the tape library administrator, but it allows the creator of the data set to extend the keep date when circumstances require it. (If your data center does not allow users to modify keep dates, CA TLMS has a technique you can use to force a specific number of days to be used for keep date generation.

Note: Although a keep date is calculated for every data set, the keep date is ignored if TRS uses another type of retention for a specific data set.

The KDATE system option can be used to determine whether JCL, if coded, overrides the default retention.

More information:

Types of Retention

CA TLMS provides twelve tape data set retention types. Each of these types allows you to use different criteria to determine how long to keep a tape at the data center or at one of the off-site storage locations. At the end of the retention period, the tape will either be logically moved to the next location specified on the retention control statement or logically scratched if no other location is specified.

- If the tape is to be moved, it will appear on a list of volumes that are to be moved when you run TRS.

- If the tape is to be scratched, it will appear on a list of volumes that are to be scratched.

The types of retention are summarized in this chart and explained in more detail in the paragraphs that follow.

Method	Type	Use At
Catalog Control	1	Any location
Keep Date Control	2	Any location
Catalog/Date Control	3	Any location
Cycle Control	4	Any location
Elapsed Days Control	5	Any location
Move Immediate Control	6	Data center only
Manual Control	7	Last location only
Days Since Last Used Control	8	Data center only
Expiration Date Keyword Control	9	Data center only
Catalog Control	A	For all data sets
Keep Date Control	B	For all data sets

Method	Type	Use At
Catalog/Date Control	C	For all data sets

Note: Data sets whose creation jobs abended while creating the data set are not processed; they are automatically scratched when the specified number of hours after creation is exhausted. This process is controlled by the ABEND system option, which is detailed in the *Configuration Guide*.

More information

External Data Manager (EDM) Volumes

Since only the EDM can scratch its volumes, it is a good practice to use type 7 (manual control) for the last location of EDM volumes. TRS will not scratch the tapes no matter what Retention Master File rules are applied, but it will issue error messages showing the tape was retained for the EDM.

Catalog Control - Type 1 and A

Data sets are retained at the current location as long as the data set name exists in the z/OS system catalog (SYSCATLG), regardless of the keep date. The first time you execute TRS after the data set is uncataloged, the tapes containing this data set will be either scratched or moved to the next location.

Data sets under catalog control will not be scratched or moved if they are less than 2 days old. To change this number, specify the system option CATDAYS (CAI.CTAPOPTN, member TLMSIPO), with a value of 0 to 3 days.

Use type A to apply to all data sets on chain.

Keep Date Control - Type 2 and B

Data sets are retained at the current location until the CA TLMS keep date has passed. When the keep date has passed, the data set is either scratched or moved.

The librarian can use the UPD command to extend the keep date, if instructed to do so by the data set owner (unless a number is entered in the count field as explained below).

The KDATE system option can be used to determine whether JCL, if coded, overrides the default retention. If you do not want to use the keep date in the JCL, and do not have it defined by the DEF system option, you can specify a number of days in the count field. The number of days you specify is added to the creation date to determine the keep date each time TRS is run. This is useful for data sets that must be kept for a certain number of days, for example, 90 days or 365 days. If you use this method to determine the keep date, you **cannot** extend the keep date manually as stated above, because the recalculated date will be used by TRS.

Note: Specifying a number of days in the count field overrides RETPD or EXPDT in the JCL.

A data set is not available for scratch until the day after its keep date. For example, if a data set is created on May 1 and uses the default number of 3 days, the keep date will be May 4. This means that this data set will not be available for scratch until May 5.

See the *Configuration Guide* for an explanation of the KDATE system option.

Use type B to apply to all data sets on chain.

Catalog/Date Control - Type 3 and C

This type combines the first two types. Data sets are retained at the current location until the keep date has passed and the data set no longer resides in the SYSCATLG.

Use type C to apply to all data sets on chain.

Cycle Control - Type 4

Data sets are retained at the current location until the number of data sets at the location exceeds the quantity specified. Then the oldest data set, based on creation date and time, is either moved or scratched. Use the count field to specify the quantity. To use cycle control with Generation Data Groups (GDGs), data sets must be identified in the retention control statement as partially qualified with the dash specified in place of the generation number. No matter how the DSN parm is specified, the entire data set name (without GnnnnVnn) is used to determine how many cycles exist.

Elapsed Days Control - Type 5

Data sets are retained at the current location for the number of days specified. When the specified number of days has elapsed, the tape is either scratched or moved. Use the count field to specify the number of days. If the tape is at the data center, the number of days starts when the data set is created. If the tape is at an off-site location, the number of days starts from the moved date.

A day is a 24-hour period, from midnight to midnight. Therefore, if a tape is created at 2:00 PM on May 1 and retention is defined as one day (5DC0001), the tape will not be scratched or moved until after midnight on May 2, which is actually May 3.

Move Immediate Control - Type 6

Tapes are either scratched or moved from the data center the first time you run TRS after the data set is created. This type is valid only at the data center, the first location.

Manual Control - Type 7

Data sets are retained at the current location until they are either scratched or moved by specific manual instructions. The tape will never be scratched automatically. This retention type is valid only at the last location specified; therefore, it may be used at the data center only if there is no off-site movement specified.

Days Since Last Used Control - Type 8

Data sets are retained at the current location until a specified number of days has passed. When the data set has not been used for input or output for a certain number of days, it will be scratched or moved. Use the count field to specify the number of days. This type is valid only at the data center.

Expiration Date Keyword Control - Type 9

Data set retention is controlled by special values coded on the JCL parameter LABEL=EXPDT=*value*.

In this parameter, *value* can be one of the following:

Value	Retention is based on	Which is the same as type
970mm	Auxiliary message number (01-50)	
98000	Foreign tape, bypass TLMS processing	
98ddd	The number of days (ddd) since last used	8
99000	Catalog control	1
990cc	The number of cycles (cc)	4
991dd	Catalog/date control, where dd is the number of days since creation	3

992dd	Days since creation	
99365	Manual control (permanent)	7
99366	Manual control (permanent)	

This type allows you to specify data center retention in the JCL but still move the tape through off-site storage locations. If no keyword value is supplied, the CA TLMS keep date is used. This retention type is valid only at the data center.

Retention Examples

Example 1 - Test Tapes

The retention requirements for some data sets depend entirely on their owner's needs. An example of this is the programmers' test tapes. You can use a number of different retention methods to define retention for this kind of data set. These methods are described below.

Note: We recommend that you read all of the examples before selecting the ones you want to use. This will introduce you to all of the different techniques available to you.

- **Manual Control (type 7)**

    The tape will never be scratched automatically. It must be manually scratched by the tape librarian. This ensures data set protection and also builds a pool of "permanent hold" tapes until someone determines which tapes can be scratched. In the example below, the retention control statements define manual control for all data sets having a DSN beginning with TESTTAPE:
    ```
    ADDRTN DSN(TESTTAPE.-)        OWNER(TAPE LIBRARIAN)   +
           RTN(7DC)
    ```

- **Catalog Control (types 1 and A)**

    The owner catalogs the data set at creation and manually uncatalogs it when it is no longer needed. Since uncataloging a data set is not an automated process, and manual steps tend to be forgotten, you may end up retaining unneeded tapes which correspond to unneeded entries in the system catalog. Code the retention control statements as shown in this example:
    ```
    ADDRTN DSN(TESTTAPE.-)     OWNER(TAPE LIBRARIAN)     +
           RTN(1DC)
    ADDRTN DSN(CATAPE.STACKING.FULL.-)                   +
           OWNER(TAPE LIBRARIAN)                         +
    RTN(ADC)
    ```

- **Keep Date Control (types 2 and B)**

  The owner supplies a RETPD value in the JCL used to create the data set or lets it default to the minimum number of days, as defined in TLMSDTAB. This is a good idea if the original definition is accurate. If the testing takes longer than expected, the tape librarian must update the keep date manually to extend the data set's retention. (Keep date can only be changed if specified as below, with no number in the count field.) If the owner overestimates the length of time required for testing, tapes will be unavailable for scratch for too long a time. Code the retention control statements as shown in the following:

  ```
  ADDRTN DSN(TESTTAPE.-)    OWNER(TAPE LIBRARIAN)       +
         RTN(2DC)
  ADDRTN DSN(TESTTAPE.-)    OWNER(TAPE LIBRARIAN)       +
         RTN(BDC)
  ```

- **Keep Date Control (types 2 and B) with Count Field**

  Whether the owner specifies a retention value in the JCL, the tape is to be kept for 15 days from the creation date. Because a count value is specified in the RMF entry, any manual updates to the KEEPDT field will be ignored. Code the retention control statements as shown in this example:

  ```
  ADDRTN DSN(TESTTAPE.-)    OWNER(TAPE LIBRARIAN)       +
         RTN(2DC0015)
  ADDRTN DSN(TESTTAPE.-)    OWNER(TAPE LIBRARIAN)       +
         RTN(BDC0001)
  ```

- **Days Since Last Used Control (type 8)**

  This is the best way to protect tapes from scratch while protecting the data center from misuse of tapes. If the retention period is defined as 30 days-since-last-used, this allows time for the owner to be away on vacation or temporarily assigned to another project. Code the retention control statements as shown in the following:

  ```
  ADDRTN DSN(TESTTAPE.-)    OWNER(TAPE LIBRARIAN)       +
         RTN(8DC0030)
  ```

- **Days Since Last Used Control (type 8) and Elapsed Days Control (type 5)**

  An additional technique is to define a secondary holding site for tapes before they are scratched. For example, after the 30 day retention period, the tapes are moved to the secondary holding site for a period of two weeks. The owner is then notified of the impending scratch, which gives him time to reuse the tape if he wants to continue testing. As soon as the tape is used, the 30-day/two-week process starts over again. (Instead of using the tape, the owner can instruct the tape librarian to update the LDATE [days since last used] field in the VMF and change the LOC field to DC. This has the same effect as actually reusing the tape.)

  To define 30 days since last used (8DC0030) at the data center (DC) and two weeks elapsed time at a holding site (HS), code these retention control statements:

  ```
  ADDRTN DSN(TESTTAPE.-)    OWNER(TAPE LIBRARIAN)       +
         RTN(8DC0030,5HS0014)
  ```

■ **Date Control (types 2 and B) and Elapsed Days Control (type 5)**

To combine keep date control at the data center with two weeks at the holding site, code the retention control statements like this:
```
ADDRTN DSN(TESTTAPE.-)          OWNER(TAPE LIBRARIAN)       +
       RTN(2DC,5HS0014)
ADDRTN DSN(TESTTAPE.-)          OWNER(TAPE LIBRARIAN)       +
       RTN(2DC,BHS0010)
```

■ **Date Control (types 2 and B) and Manual Control (type 7)**

Another variation uses keep date at the data center, then moves the tape to the holding site until it is manually scratched. This allows the tape librarian to more easily identify the "permanent hold" tapes and prompt the owner for the tape's disposition. Code these retention control statements:
```
ADDRTN DSN(CATAPE.STACKING.PART.-)   OWNER(TAPE LIBRARIAN) +
       RTN(2DC, 7HS)
```

Example 2 - Backup Tapes

Every data center has tape data sets that are so critical that they must be moved offsite in case of disaster. By using CA TLMS to automate the retention and movement of these data sets, you reduce the risk of manual error or poor judgment. This example shows you how to handle three different types of critical tape data sets that are used for payroll processing:

Backup of payroll master file	(DSN=PAY.MASTER.BKUP)
Month-to-date time card file	(DSN=PAY.TRANMTD)
Daily time card file	(DSN=PAY.TRANDAY)

Assume that a special offsite storage location, PS, has been defined for payroll storage. You can use a number of different retention methods to define retention for these data sets. These methods are as follows:

■ **Move Immediate Control (type 6) and Elapsed Days Control (type 5)**

Assume that the payroll master file backup tapes must be kept for 10 years, according to the legal requirements of our sample company. The tapes can be moved offsite immediately, since they are critical tape data sets which will not be used unless required for recovery. Retention needs to be defined so that all data sets that start with the qualifiers PAY.MASTER are moved offsite as soon as they are created and kept in the payroll storage area for 10 years (or 3650 days). The retention control statements are coded as shown:
```
ADDRTN  DSN(PAY.MASTER.-)    OWNER(TAPE LIBRARIAN)     +
        RTN(6DC, 5PS3650)
```

■ **Cycle Control (type 4) and Elapsed Days Control (type 5)**

The month-to-date time card transactions are created on the first of the month, then copied and extended every day of the month. Therefore, the latest version must be available at the data center when the next day's version is created. To ensure the latest version is available, retention at the data center is defined as one cycle. This means that every day the next-to-latest version is moved off-site to the payroll storage area, and is retained there for one month. Code the retention control statements like this:

```
ADDRTN  DSN(PAY.TRANMTD)   OWNER(TAPE LIBRARIAN)   +
        RTN(4DC0001,5PS0031)
```

■ **Move Immediate Control (type 6) and Cycle Control (type 4)**

The last production payroll run of the month is a job named PAYMONTH. It creates the final month-to-date time card transaction file, which can be moved offsite immediately, where it must be kept for seven years. To distinguish this version of the file from the other versions, the job name can be specified on the retention statement. (See Adding a Version Number (see page 52)) We can also specify that this file be kept offsite for 84 cycles (12 months times 7 years). Code the retention statement like this:

```
ADDRTN  DSN(PAY.TRANMTD)  JOB(PAYMONTH)     +
        OWNER(TAPE LIBRARIAN)               +
        RTN(6DC, 4PS0084)
```

■ **Move Immediate Control (type 6) and Elapsed Days Control (type 5)**

The daily time card transaction files are to be kept for a week and then scratched. Since there is no way to recover these files, they are sent offsite immediately. They would only be returned to the data center to recreate a version of the PAY.TRANMTD file. Code the retention control statements as follows:

```
ADDRTN  DSN(PAY.TRANDAY)   OWNER(TAPE LIBRARIAN)   +
        RTN(6DC, 5PS0007)
```

■ **Move Immediate Control (type 6) and Date Control (types 2 and B)**

You will notice that we have not used keep date in any of the previous examples. This is because the sample company has explicit rules governing the retention of payroll data sets. Keep date control is designed for tapes such as test tapes, where the data set's owner is the best judge of how long the data set needs to be retained.

It is, however, possible to use date control for data sets that must be retained for a standard amount of time if you specify a number of days in the count field. Specifying a number of days in the count field forces CA TLMS to recalculate the keep date every time TRS runs. (Each time, the number of days in the count field is added to the creation date to arrive at the same keep date.) Should someone attempt to change the keep date manually, this change would be overridden when CA TLMS recalculates the keep date.

Therefore, if you want to use date control for critical data sets, code their retention period in the count field as follows. (This statement is the same as the first payroll statement except that date control is used instead of elapsed days control.)

```
ADDRTN  DSN(PAY.MASTER.-)   OWNER(TAPE LIBRARIAN)    +
        RTN(6DC, 2PS3650)
```

Chapter 3: Using the Tape Retention System (TRS)

The CA TLMS Tape Retention System (TRS) uses the information stored in the Retention Master File (RMF) to control volume storage and retention. The records contained in the RMF are created as a result of control statements which you code to define storage and retention requirements.

Control statements supply information such as the location of cabinet and box storage, and movement to another location. Retention criteria is applied based on pattern masked data set and job names. The control statements are in a free form with a command and keywords. They may be continued on as many records as needed but a keyword may not be continued.

The procedure which executes the Tape Retention System is CATTRS. An optional report may be produced which shows how individual volumes are being retained at their current location, and to which location they are moved when the current retention criteria are met. After a volume has moved through the entire retention schedule, it is returned as a scratch tape to the data center.

Location Control Statements

Location control statements are used to create records in the Retention Master File which define each location where tapes can be stored. You must create one location record in the RMF for each location, regardless of the type of storage.

Note: If you use more than one type of storage (cabinet, box, or undefined) at a location, you must give each type of storage a different location ID and define it in a separate set of location statements. (Defining different logical locations at the same physical location allows you to define special storage for certain types of tapes.)

Adding a Location

To add a location to the Retention Master File, code this control statement:

```
ADDLOC ID(id)  DESC(d………………..d)
```

Where,

> id
>
>> Is two alphanumeric chars which are a short identifier
>
> d…d
>
>> Is a 1 to 40 character description of the location

This is the only statement required to define a location with undefined (type U) storage. If storage for the location is specified as cabinet (type C) or box (type B), you must code as many additional statements as required to identify those cabinets and/or boxes.

Example

This statement defines storage at the data center that is neither cabinet storage nor box storage. Only the first statement is required to describe undefined storage.

```
ADDLOC ID(DC)  DESC(UNDEFINED STORAGE AT DATA CENTER)
```

Note: If you intend to utilize the alternate data center ID in a RMF rule, you must also add the alternate data center ID.

```
ADDLOC ID(D1) DESC(UNDEFINED STORAGE AT ALTERNATE DATA CNETER)
```

Defining Cabinet Storage

If you are coding a location statement defining cabinet (type C) storage, you must code at least one CABLIST parameter. You can code as many CABLIST parameters as you need but a CABLIST parm cannot be continued. Each CABLIST parm can contain one or more cabinet definitions separated by commas or blanks. A cabinet definition is as follows:

```
ccss
```

Where

> cc
>
>> Is a character alphanumeric id for the cabinet
>
> ss
>
>> Is the number of slots that it contains 00-99.
>>
>> For a maximum of 100 slots.

Example

This statement defines cabinet storage at an off-site storage location. The ID of the storage location is OA. The first cabinet is identified as A1, the second cabinet is identified as A2, the third cabinet is identified as A3, and the fourth cabinet is identified as A4. Each cabinet holds 100 tapes.

```
                                                                          C
OL
//TLMSRMFE  JOB
80
//TLMSRMFE  EXEC CATRMFE
 |
//SYSIN     DD *
ADDLOC  ID(OA) DESC(CABINETS AT OFF-SITE 1)   +
                CABLIST(A199,A299)            +
                CABLIST(A399,A499)
//
```

Defining Box Storage

If you are coding a location statement defining box (type B) storage, you must code at least one BOXLIST parameter. You can code as many BOXLIST parameters as you need but a BOXLIST parm can not be continued. Each BOXLIST parm can contain one or more box definitions separated by commas or blanks. A box definition is as follows:

bbbbnn

Where

> bbbb
>
> > Is a 4 character alphanumeric id for the box
>
> nn
>
> > Is the number of tapes that it can hold 00-99.
> >
> > For a maximum of 100 tapes.

Example

These two statements define box storage. Box ID and capacity can only be defined at the data center. The location ID of the data center is DC. Three boxes are described. Each box can hold ten tapes.

```
//TLMSRMFE JOB
//TLMSRMFE EXEC CATRMFE
//SYSIN    DD    *
ADDLOC  ID(DC) DESC(BOXES AT DATA CENTER)   +
        BOXLIST(BOX110,BOX210)              +
        BOXLIST(BOX310)
//
```

Deleting a Location

To delete a location from the Retention Master File, code this statement:

```
DELLOC ID(id)
```

Example

This control statement deletes the previously defined location OA with undefined storage.

```
DELLOC ID(OA)
```

Changing a Location

To change a location, you must first delete the old location, and then add the new location, as in:

```
DELLOC ID(OF)
ADDLOC ID(OF)   DESC(OFFSITE STORAGE LOCATION)
```

Retention Control Statements

Retention methods details the criteria used by CA TLMS in determining how long to keep each type of data set on tape and what to do with the volumes when they become eligible for movement and scratch.

This information is supplied to CA TLMS using retention control statements which create retention records in the Retention Master File. One (and only one) retention control statement is coded which supplies the data center default retention to be applied to those data sets not having specific retention requirements. The other retention control statements may be coded for each data set (or data set group) to:

- Identify the data set or data set group, further qualify the data sets with job name and identify the individual or group who created or last updated the control statement.

- Provide the retention criteria (type, location ID, number of days or cycles), and data set version number, if required.

The following paragraphs use examples to explain the retention control statements.

More information:

About CA TLMS (see page 13)
Understanding Tape Retention (see page 29)
Summary of Retention Control Statement (see page 52)

Specifying the Default Retention

The Retention Master File must contain one (and only one) record which indicates the type of retention to apply to all data sets for which specific retention criteria cannot be supplied.

To create this record, you must select one of the twelve retention types as the default retention type at the data center. This retention type will be applied to all data sets that are not assigned retention using specific retention statements (those that identify data sets by either a fully qualified or partially qualified data set name).

Choose the retention type that will be used most commonly at your site. It is recommended that you select type 2 date control. This means that all of your data sets will be retained according to the DEF system option or the EXPDT parameter in their JCL. (If a date is present in both places, the later date will be used.) You can then use additional retention statements to add specific entries to the RMF as you need them.

Example

```
ADDRTN DSN(DEFAULT)  OWNER(TAPE LIBRARIAN)     +
       RTN(2DC)
```

This example illustrates the two statements used to define date control as the default retention type at the data center.

When types 2, 3, B, or C are used as the default retention, the count field cannot be coded.

Unlike other retention definitions statements the DEFAULT retention can not specify JOB or VER parameters.

More information:

Identifying the Data Sets

You must code a retention statement which identifies each data set or data set group.

- To define retention for a specific data set, give the complete name of the data set, in the ADDRTN statement. For example:

  `ADDRTN DSN(PDA.MAN.INV.YEAREND.YR2010) OWNER(TAPE LIBRARIAN)`

  This statement will apply only to a data set with this exact name.

- To define retention for a group of data sets, code all of the common characters followed by a dash to indicate that the definition covers all data sets that start with those characters. For example:

  `ADDRTN DSN(PAD.MAN.INV-)     OWNER(TAPE LIBRARIAN)`

This statement will cover all of these data sets:

```
PDA.MAN.INV.YEAREND.YR2010
PDA.MAN.INVENTORY
```

- To define retention for a group of data sets that use the IBM tree structure system of qualification, code the common qualifiers including the dot to indicate that the definition covers data sets that start with all of the characters including the dot:

  `ADDRTN DSN(PDA.MAN.INV.-)  OWNER(TAPE LIBRARIAN)`

  This statement would not cover a data set named PDA.MAN.INVENTORY, but it would cover the following data sets:

  ```
  PDA.MAN.INV.YEAREND.YR2010
  PDA.MAN.INV.DMP
  PDA.MAN.INV.BLD
  ```

  Remember that CA TLMS uses pattern masking for the values specified in the DSN and JOB parameters. See chapter 7 of the *Configuration Guide* for information about pattern masking. This chapter will explain coding and order of precedence. In general CA TLMS will select the most specific rule and rules where the DSN values are equal and the JOB parameter determines the precedence.

  `PDA.MAN.INVE??ORY`

  should take precedence over:

```
PDA.MAN.INV.-
```

and

```
PDA.MAN.INV.-
```

should take precedence over:

```
PDA.MAN.INV-
```

Adding Further Qualification

- You can use the JOB parm to identify the job that created the data set. This is optional. Coding the job name lets you define different retentions for the same data set when it is created by different jobs. For example, a demand deposit job at a bank might create a daily master file called DDA.MASTER.FILE which must be kept five days; the job that creates this file is named DDDAILY. The same application has a monthly job that creates the same master file but the three most current copies must be kept; the job that creates this file is named DDMNTHLY. By adding the job name to one of the definitions, you can define the retention of these two data sets on separate statements. One definition could keep the daily version of DDA.MASTER.FILE for five days; the other definition could keep the monthly version for three cycles:

Data Set Name	Job Name	Length of Retention
DDA.MASTER.FILE	(blank)	5 days
DDA.MASTER.FILE	DDMNTHLY	3 cycles

- Use the OWNER parm to identify the individual or group who created or last updated this control statement. **This is required.**

A complete statement will look like one of these:

```
ADDRTN DSN(DDA.MASTER.FILE)   OWNER(JOHN DOE) +
       RTN(5DC0005)
ADDRTN DSN(DDA.MASTER.FILE)   JOB(DDMNTHLY)  OWNER(JOHN DOE) +
       RTN(4DC0003)
```

Providing the Retention Criteria

You must code a retention schedule for each data set that gives the retention method, location ID, and count field (if necessary) for the data center, and up to five off-site storage locations. Describe each of the six locations in seven characters, like this:

```
8DC0005
```

Specify the seven characters as follows:

- Use the first position to identify a retention type.

- Use the second and third positions to give the location ID as previously defined on the associated location statement.

- Use positions 4 through 7 for the count field. Use it only if you need to specify a number of days or cycles with retention types 2, 3, 4, 5, 8, B, or C. Otherwise, code 0000 or leave the field blank. Types 1, 6, 7, and 9 should always be coded with either 0000 or blank.

More information

Understanding Tape Retention (see page 29)

Adding a Version Number

Use positions 50 to 53 on this statement if you want to specify a version number. (The current version of the data set is version 1, the one created before that is version 2 and so on, not including abend-flagged data sets.) When this number is specified, this version of the data set is immediately moved to the first off-site location. If there is no off-site location defined, the version is immediately scratched. All other versions of the data set remain at the data center under the control of whichever retention method has been defined for the data center. When the data center's retention criteria has been met for each of the other versions, they are scratched without movement. Only the version specified here is moved through the off-site locations that have been defined.

Note: You cannot specify a version number with cycle control (type 4) or manual control (type 7).

The statement will look something like this without a version number:

RTN(8DC0005,50A00003,50B0005,20C0030,50D0000,70E)

Or like this with a version number in positions 50-53:

RTN(8DC0005,50A0003,50B0005,20C0030,50D0000) VER(0003)

Summary of Retention Control Statement

This statement is used to specify default retention, and to identify a data set or group of data sets:

```
ADDRTN DSN(d……d)          JOB(j…….j)   OWNER(o……o)    +
      RTN(ridnnnn,ridnnnn,ridnnnn,ridnnnn,ridnnnn,ridnnnn)
VER(vvvv)
```

Where

d....d

1 to 64 characters for data set name pattern mask

j......j

1 to 16 characters for job name pattern mask

o....o

1 to 25 characters to identify the creator or updater

Enter one to six retention rules in the RTN parameter. The format for each retention rule is as follows:

Positions	Parameter	What To Enter
1	r	The retention type you want used at the data center : **1 -** Catalog control **2 -** Keep date control **3 -** Catalog/date control **4 -** Cycle control **5 -** Elapsed days control **6 -** Move immediate control **7 -** Manual control **8 -** Days since last used control **9 -** Expiration date keyword control **A -** Catalog control (all data sets on chain) **B -** Keep date control (all data sets on chain) **C -** Catalog/date control (all data sets on chain)
2-3	id	The location ID of the data center.
4-7	nnnn	Count value or a number of days/cycles. If specified, this will be used with retention types 2, 3, 4, 5, 8, B, and C.

The first rule must be for retention at the "data center" and you may specify up to five retention rules for off site locations. Specify these in the order you want the tapes to move. The tapes will be retained at each location according the rule. When all rules at all location have been exhausted, the tape is returned to the data center as a scratch tape.

VER Parameter	What To Enter
vvvv	The relative version number of a data set at the data center. This version will be moved immediately to the first off-site location or scratched immediately if no off-site location is coded. Not valid with DEFAULT.

To delete a retention record, code the following control statement:

```
DELRTN DSN(d…………….d) JOB(j……….j) OWNER(o………o)
```

Important! To change a retention record, you must first delete the old record, and then add a new record. To change the DEFAULT record, you must delete it and then add it in the same run. When deleting an RMF rule, the command must be exactly the same as when it was added.

The values for the DSN, JOB, and OWNER parameters should be specified exactly as they were for the ADDRTN when it was created.

More information:

Tape Retention Selection Records (Report TLMS016)

The "Tape Retention Selection Records" report lists all retention records in the Retention Master File. The first column of the report indicates the type of pattern masking of the data set with the following values:

0   SPECIFIC

1   RESERVED FOR SPECIAL SEARCH

2   ONE-FOR-ONE MASK (# @ !)

3   PREFIXED/CONTAINING/SUFFIXED

4	PREFIXED/SUFFIXED
5	PREFIXED ONLY
6	RESERVED FOR SPECIAL SEARCH
7	SUFFIXED ONLY
8	CONTAINING ONLY
9	MAX INTERNAL CLASS VALUE

Qualified Data Set Type Verses Pattern Masking

The old retention rules specified data sets by how they where qualified. The following Is how they correspond with the pattern masking type:

F

Fully qualified data set name. This is the same as type "0". The DSN of the retention rule must match the entire 44 character data set name.

P

Partially qualified data set name. This is the same as type "5". The first 1 to 43 characters of the data set name must match the first character of the pattern. The pattern matching character is a "-" instead of a "/". Type "5" pattern masking also allows you to specify a jobname which this does not.

Q

IBM-qualified data set name. This is also the same as type "5" but a "." Must proceed the "-" pattern masking character

More information:

Reports (see page 125)

Adding Data Sets to Locations

Example 1

The following statement defines retention for a *fully qualified* data set named ABC.MAINT.FILE when it has been created by a job called JOB060. The tape containing this data set is to be retained at the data center (DC) under days-since-last-used control (type 8). The number of days is five. Then the tape is to be moved to the first off-site storage location (AB) where it is to be retained under cycle control (type 4). The number of cycles is 3. Then it is to be moved to the second off-site storage location (CD) where it is to be retained under elapsed-days control (type 5). The number of days is five. Then it is to be moved to the last off-site location (EF) where it is to be retained under manual control (type 7). It must be manually scratched and returned to the data center for reuse.

```
//TLMSRMUP   JOB
//TLMSRMUP   EXEC CATRMFE
//SYSIN      DD *
  ADDRTN DSN(ABC.MAINT.FILE)   JOB(JOB060)  OWNER(TAPE LIBRARIAN)
   +
   RTN(8DC0005,4AB0003,5CD0005,7EF)
```

Example 2

These two statements define retention for all *partially qualified* data sets that start with the characters PDA.MAN.INV. All tapes that contain these data sets are to be retained at the data center (DC) under date control (type 2). Then they are to be scratched. Since no number of days is specified, they will be retained until their keep date. The keep date for these data sets either defaults to the keep date for all data sets or must be specified in the JCL or in the user date table (TLMSDTAB).

```
ADDRTN DSN(PDA.MAN.INV-)  OWNER(TAPE LIBRARIAN) +
RTN(2DC)
```

Example 3

This statement defines retention for all data sets with names starting with LOW.COST.ITEMS.@ and followed by the price. This demonstrates the use to the "#" for specifying a mask for numbers. It also shows the use of the "\" as an escape character. In this case the "@" is the literal value and not the pattern masking character.

```
ADDRTN DSN(LOW.COST.ITEMS.\@#####)  OWNER(TAPE LIBRARIAN) +
RTN(2DC)
```

The following data sets would match this pattern:

```
LOW.COST.ITEMS.@00099
LOW.COST.ITEMS.@00001
LOW.COST.ITEMS.@12345
```

But not the following:

```
LOW.COST.ITEMS.@99  (# does not allow the absence of a number in this
position)
LOW.COST.ITEMS.@0000A  (alpha character)
LOW.COST.ITEMS.@123456    (only 5 numeric characters allowed in
pattern)
```

More information:

Data Set Naming Standards (see page 19)

Retention Control Statement Worksheet

Copies of this worksheet may be used to gather the information you need to define the default retention statement and any additional retention statements.

```
ADDRTN DSN(DEFAULT)   OWNER(Tape Librarian)     +
     RTN(ridnnnn,ridnnnn,ridnnnn,ridnnnn,ridnnnn,ridnnnn)
ADDRTN DSN(some.dataset.name)                 +
     JOB(jobname) VER(vvvvv) OWNER(someone)   +
     RTN(ridnnnn,ridnnnn,ridnnnn,ridnnnn,ridnnnn,ridnnnn)
```

where:

r

Is the retention method you want to use:

1

Catalog control

2

Keep date control

3

Catalog/date control

4

Cycle control

5

Elapsed days control

6

Move immediate control

7

Manual control

8

Days since last used control

9

Expiration date keyword control

A

Catalog control (all data sets on chain)

B

Keep date control (all data sets on chain)

C

Catalog/date control (all data sets on chain)

id

Is the location ID as defined on a location statement (the first location must be the data center)

nnnn

Is the count field used with retention types 2, 3, 4, 5, 8, B, and C.

ver

Is the version number.

More information:

Running the Tape Retention System

You will normally run the Tape Retention System as a daily production job. It will use the information in the Volume Master File and Retention Master File to determine whether to:

■ Release tape volumes to the scratch pool if their retention period has expired and no other locations have been specified.

■ Move them from the data center to another location.

- Move them from one location to another location.

- Move them back to the data center for scratching when all retention periods have expired and no other locations have been specified.

It will then produce the following reports:

- A movement report showing which volumes must be moved from location to location.

- A scratch report showing which volumes are ready for release to the scratch pool.

- An optional Volumes By Retention Method report in data set name sequence showing how individual volumes are being retained at their current location, and where they are destined to move when their current retention criteria are satisfied.

- An error/exception report showing retention errors and exceptions, as well as conflicts between controlling data sets on multi-data set volumes.

Important! If the SCRATCH=ALL option is coded in TLMSIPO, tapes do not go scratch until all data sets expire by type 3 retention, regardless of the retention type in effect before the CDS. This option may prevent proper vault movement or a shortage of available scratch tapes.

SCRATCH=ALL is **not** recommended. Retention type A, B, or C should be assigned as needed.

More information:

Process

The procedure that runs the Tape Retention System, CATTRS, has two steps:

- TLMSTRS processes the Tape Retention System and generates a transaction file for processing by the next step.

- TLMSTRAN updates the Volume Master File.

There are two reasons for this:

- You can run TLMSTRS alone in forecast mode without updating the Volume Master File.

- In case of an error in the first step, you can rerun TLMSTRS without having to restore the Volume Master File.

If the first step executes without error, the second step will execute. If you are forecasting, the transaction file will be null (empty), so the second step will not update the Volume Master File. If TLMSTRS terminates in error or abends, TLMSTRAN will not execute. Correct the errors and rerun the entire job.

As an extra precaution, TRS compares the data set name and volser of CAIVMFS against the name of the active VMF, and if they are different, TRS does not write any transactions.

CATTRS Procedure JCL

```
//****************************************************************
//*              ****  PROCNAME=CATTRS  ****                     *
//****************************************************************
//** PROCEDURE TO EXECUTE CA TLMS TAPE RETENTION SYSTEM-TLMSTRS *
//****************************************************************
//CATTRS    PROC A='*',
//             BLK1='2760',
//             BLK2='3600',
//             BLK3='3510',
//             BLK4='4080',
//             BUFNO='80',
//             LOAD='CAI.CTAPLINK',
//             OPTS='CAI.CTAPOPTN(TLMSIPO)',
//             RMF='CAI.TLMS.RMF',
//             SORTLIB='SYS1.SORTLIB',
//             SPC1='(CYL,(5,1))',
//             SPC2='(CYL,(10),,CONTIG)',
//             PRM='100,100,50',
//             VMF='CAI.TLMS.VMF',
//             WORK='SYSDA'
//*
//TLMSTRS   EXEC PGM=TLMSTRS,
//             PARM='&PRM. '   BLANK FOLLOWING &PRM. REQUIRED
//*
//***************   PRM='XXXX,YYYY,ZZZZ '  ********************
//**** WHERE  XXXX = NUMBER OF ENTRIES IN FULLY QUALIFIED TABLE *
//****        YYYY = NUMBER OF ENTRIES IN GLOBAL TABLE          *
//****        ZZZZ = NUMBER OF ENTRIES IN LOCATION TABLE        *
//**** OMITTED PARM TAKE DEFAULTS   PRM='825,,25'              *
//****************************************************************
//STEPLIB  DD  DSN=&LOAD.,DISP=SHR
//*
//TLMSOPTS DD  DSN=&OPTS.,DISP=SHR
//*
//SORTLIB  DD  DSN=&SORTLIB.,DISP=SHR
//*
```

```
//CAIVMF   DD  DSN=&VMF.,DISP=SHR
//*
//CAIVMFS  DD  DSN=&VMF.,DISP=SHR,
//            DCB=(BUFNO=&BUFNO.,OPTCD=C)
//*
//CAIRMF   DD  DSN=&RMF.,DISP=OLD
//*
//VMFTRANS DD  DSN=&.&TRANS.,
//            DISP=(,PASS,DELETE),
//            UNIT=&WORK.,
//            SPACE=&SPC2.,
//            DCB=BLKSIZE=&BLK4.
//*
//SYSPRINT DD  DCB=BLKSIZE=133,SYSOUT=&A.
//*
//SYSOUT   DD  SYSOUT=&A.
//*
//SYSUDUMP DD  SYSOUT=&A.
//*
//TRETWORK DD  UNIT=&WORK.,
//            SPACE=&SPC1.,
//            DCB=BLKSIZE=&BLK1.

//*
//LOG1FILE DD  UNIT=&WORK.,
//            SPACE=&SPC1.,
//            DCB=BLKSIZE=&BLK1.
//*
//LOG2FILE DD  UNIT=&WORK.,
//            SPACE=&SPC1.,
//            DCB=BLKSIZE=&BLK1.
//*
//LOG3FILE DD  UNIT=&WORK.,
//            SPACE=&SPC1.,
//            DCB=BLKSIZE=&BLK1.
//*
//LOG4FILE DD  UNIT=&WORK.,
//            SPACE=&SPC1.,
//            DCB=BLKSIZE=&BLK1.
//*
//LOG5FILE DD  UNIT=&WORK.,
//            SPACE=&SPC1.,
//            DCB=BLKSIZE=&BLK1.
//*
//LOG6FILE DD  UNIT=&WORK.,
//            SPACE=&SPC1.,
//            DCB=BLKSIZE=&BLK1.
//*
```

```
              //MOVEFILE DD  UNIT=&WORK.,
              //            SPACE=&SPC1.,
              //            DCB=BLKSIZE=&BLK1.
              //*
              //ALLSTOR  DD  UNIT=&WORK.,
              //            SPACE=&SPC1.,
              //            DCB=BLKSIZE=&BLK2.
              //*
              //USEDSTOR DD  UNIT=&WORK.,
              //            SPACE=&SPC1.,
              //            DCB=BLKSIZE=&BLK3.
              //*
              //AVBLSTOR DD  UNIT=&WORK.,
              //            SPACE=&SPC1.,
              //            DCB=BLKSIZE=&BLK2.
              //*
              //TEMPRPTS DD  UNIT=&WORK.,
              //            SPACE=&SPC1.,
              //            DCB=BLKSIZE=&BLK1.
              //*
              //TYPERPT  DD  UNIT=&WORK.,
              //            SPACE=&SPC1.,
              //            DCB=BLKSIZE=&BLK1.
              //*
              //TRETSORT DD  UNIT=&WORK.,
              //            SPACE=&SPC1.,
              //            DCB=BLKSIZE=&BLK1.
              //*
              //SORTWK01 DD  UNIT=&WORK.,
              //            SPACE=&SPC2.
              //*
              //SYSIN    DD  DUMMY
              //*
              //************************************************************
              //* STEP TLMSTRAN APPLIES TRANSACTIONS TO VOLUME MASTER FILE *
              //*  *** NOTE THAT THE ON-LINE RECORDER MUST BE ACTIVE  ***  *
              //*  *** AND THAT TRANSACTIONS ARE APPLIED TO THE VMF   ***  *
              //*  *** POINTED TO BY THE ONLINE RECORDER.             ***  *
              //************************************************************
              //TLMSTRAN EXEC PGM=TLMSTRAN,
              //            COND=(4,LT)
              //*
              //STEPLIB  DD  DSN=&LOAD.,DISP=SHR
              //*
              //SYSPRINT DD  DCB=BLKSIZE=133,SYSOUT=&A.
              //*
              //TLMSOPTS DD  DSN=&OPTS.,DISP=SHR
              //*
```

```
//VMFTRANS DD  DSN=&.&TRANS.,DISP=(OLD,DELETE)
//*
//SYSUDUMP DD  SYSOUT=&A.
//*
//************************************************************
```

Starter JCL for Production Runs

```
//TLMSTRS  JOB
//TLMSTRS  EXEC CATTRS
//SYSIN    DD *
  <optional report statements>
//
```

Starter JCL for Forecasts

```
//TLMSTRS  JOB
//FORECAST EXEC CATTRS
//SYSIN    DD *
  FORECAST
  <optional report statements>
//
```

TRS Processing Considerations

If you are preparing to do a normal production TRS (Tape Retention System) run, execute the supplied procedure using the starter JCL as shown. If any of the following conditions apply to you, modify the procedure or starter JCL as explained below.

Reduce Execution Time

To dramatically reduce execution time at large sites, increase the BLK and BUFNO parameters with a corresponding increase in region size.

Increase/Decrease Definitions

The tape retention system requires all entries on the RMF beginning with the same first character to be in memory at the same time. By default, TLMSTRS can only process 100 fully qualified data set definitions, 100 partially qualified data set definitions (those ending with a slash or dot), and 50 location definitions at a time.

To increase or decrease these limits, change the execution parameter as follows:

`//TLMSTRS EXEC CATTRS,PARM.TLMSTRS='xxxx,yyyy,zzzz'`

xxxx

> Specifies the number of fully qualified definitions

yyyy

> Specifies the number of partially qualified definitions

zzzz

> Specifies the number of location definitions

You must supply *all* parameters. An error in the parameter field results in a user 0990 abend without a dump.

Scratch Only Run

If you want to produce scratch tapes without movement, execute CATTRS with SCRATCH=ONLY as the SYSIN control statement. This control statement processes tapes in the data center that have no movement defined in the Retention Master File.

`SCRATCH=ONLY`

Forecast

This SYSIN control statement prevents TRS from creating update transactions. Use it to determine the effect of running TRS without actually making changes and instead of overriding the CATTRS PROC.

`FORECAST`

More Information:

RUNDATE

Using the following SYSIN control statement, a date (other than the current date) can be specified to cause the results to appear as though TRS has been executed on the date supplied:

```
RUNDATE=mm/dd/yyyy,ACCEPT
```

where mm/dd/yyyy is the date desired. Processing applies only to types 2, 3, 5, 8, B and C. The ACCEPT operand is required only if the date is three or more days from the current date. This date is reflected on reports TLMS042, TLMS043, and TLMS044. The RUNDATE statement must precede the TLMS044 statement.

Note: It is recommended that you perform a forecast run after making changes to the RMF. It can be used to verify that your changes have affected only the applicable data sets.

Print Rule

This SYSIN control statement causes TRS to print the RMF or TRS rule following each entry on the TLMS042, TLMS043 and TLMS044 reports. This is useful for diagnosing retention or movement problems. Be aware, however, that it will double the size of the reports.

```
PRINT-RULE
```

```
XE90 TLMS DEVELOPMENT                 ALL VOLUMES BY CURRENT RETENTION METHOD TYPE = CYCLES (4)                TLMS044    PAGE   2
CA TLMS       NW.n  yymmTLrrr                                                                                   mm-dd-yyyy  13.04.37


                                      FILE   VOLUME  VOL  CURRENT   NEXT I----- CREATE -----I  I------- LAST -------I
------------- DATASET NAME --------------I   SEQ    SERIAL  CNT  LOC  CCSS LOC    DATE       TIME      MOVED        USED      VER
-----------------------------------------   -----  ------  ---  --   ---- --  ----------  --------  ----------  ----------  ----

OT23.RMFA4.FILE01                             1   040000     1  DC        **  mm-dd-yyyy  10.55.18              mm-dd-yyyy    1
  RMF** ENT=OT23.RMFA4-                              JOB=*          VER=0000 POS=2 BY 1 ADC00004V40004
OT23.RMF4.N02MORE.AND.NODES                   1   TDI003     1  DC        **  mm-dd-yyyy  15.46.09              mm-dd-yyyy    1
  RMF** ENT=OT23.RMF4.N02-                           JOB=*          VER=0000 POS=1 BY 1 4DC0002
```

Double-Space

The Double-Space SYSIN control statement double spaces the TLMS042 and TLMS043 TRS scratch and movement reports.

```
DOUBLE-SPACE
```

DUP-G0000V00-AS-UNIQUE

The DUP-G0000V00-AS-UNIQUE SYSIN control statement prevents TRS from generating a CAT4538E message if more than one volume is found in the VMF with duplicate GDG names. Using this SYSIN control statement allows TRS to process these volumes as unique GDG's. The creation date and time determines the data set processing order.

```
DUP-G0000V00-AS-UNIQUE
```

Producing an Optional Report

The optional TLMS044 "All Volumes By Current Retention Method" report can be produced through CATTRS execution. This report reflects how volumes are currently being retained by their controlling data sets, where they are currently located, and what the disposition will be when their current retention criteria are met. The TLMS044 control must be the first control card in the SYSIN. The SYSIN control statement required to produce the report. Reports TLMS041, TLMS042, TLMS043 and TLMS044 output will be sent to the SYSPRINT DD.

More information:

Reports

Changing the Retention Period

Although we do not advise overriding retention criteria once it has been defined, it is possible to shorten or extend retention periods that have been defined using the following retention methods:

- Catalog Control-To shorten the retention period, uncatalog the data set. There is no way to extend the retention period.

- Keep Date Control-If no days are specified in the count field, you can either shorten or extend the retention period by manually changing the keep date (KEEPDT) field in the VMF.

  If a number of days has been specified in the count field of the retention statement, changing KEEPDT will not help because the keep date is automatically recalculated each time TRS runs. The only way to shorten or extend the retention period is to manually change the creation date (CDATE) field (see discussion below). Changing the date from which the keep date is calculated will also change the keep date.

■ Cycle Control-Code a new retention statement with a different number of cycles.

The following two methods may be used although we do not recommend changing the creation date. This can cause serious problems for cycle-controlled data sets. It also destroys any chronological information which could be used for tracing possible problems.

■ Elapsed Days Control-Code a new retention statement or manually change either CDATE, or MOVEDT if the volume has moved to an off-site location.

■ Days Since Last Used Control-Code a new retention statement or manually change either CDATE or LDATE.

More information:

Volume Master File Inquiry and Update

Changing Retention for a Specific Version of a Data Set

To modify the retention of one version of a data set so that it is retained differently from other data sets with the same name, specify UPV with the SCHED parameter. This will not alter any of the creation information and TRS will never override this schedule.

TLMSIPO option Manual=Yes must be specified in order to alter a schedule. Be careful when modifying data sets that are under cycle control.

Modifying TRS Processing

Code user exit TLMSXTRS so that it checks for specific values in one or more of the VMF fields and ignores volumes that have those values. (Recommended fields to use for this purpose are fields such as USER, CJOB, LJOB, OUTSRV, or MFG.) Then, manually update all volumes which you want ignored so that they contain these values in the fields you are checking. This has the effect of a global TRS bypass, which can also be used for other purposes. The value in the SMS field is also available to the user exit.

Scratching Tapes

Tapes are logically changed from nonscratch to scratch status in any of the following ways:

■ Automatically during the TRS run.

■ Manually by changing SCRATCH=NO to SCRATCH=YES on the Update screen.

- Manually by using the UPV command and specifying SCRATCH=YES. If there is more than one data set on the volume, you must also specify CDS=nnnn, where nnnn is the file sequence number (FILESEQ) of the data set. (To see the file sequence number, use the DV command.)

- By specifying DISP=(OLD,DELETE) in the JCL, if TLMSIPO option DISP=YES is specified.

Changing the Controlling Data Set

If a volume contains two or more data sets, one data set is identified as the controlling data set (CDS). This is the first data set by default. If another data set is more critical, you can change control to another data set:

- Specify the SPACE=(1,(1,4)) parameter on the DD statement of the controlling data set. This allows you to define the CDS at execution time through JCL.

- Add the CDS= system option into member TLMSIPO of CAI.CTAPOPTN to identify the controlling data set (see Chapter 3 of the *Configuration Guide*). This allows you to redefine the CDS without making modifications to the JCL.

- Use the UPV command with the CDS keyword to manually change the controlling data set to another data set. For example: UPV 123456,CDS=2.

If all data sets on the volume have the same retention criteria or if the first data set is the most critical, you can just let control default to the first data set on the volume.

Use the reports and displays to identify controlling data sets. They are flagged with an asterisk (*). If more than one CDS is identified, the second and subsequent CDSs are flagged with dollar signs ($) to indicate a conflict. Conflicting CDSs are also reported in the Tape Retention System Error/Exception Report, where they appear until the volume is manually scratched.

Automatic Tape Libraries and Virtual Tapes

TRS performs some special processing for tapes in an ATL and virtual tapes. These tapes require special manual procedures when TRS schedules them for movement. Tapes in an ATL are displayed on TRS reports with location DC and 'ATL ' in the cabinet/slot field. Virtual tapes have no physical tape for a VOLSER. They exist only in cache within the ATL or as special data sets on a 'container' tape volume when EXPORTed. Virtual tapes in an ATL are displayed on TRS reports with a location of DC and 'VTS ' in the cabinet/slot field. When TRS schedules movement for a virtual tape it shows the new location for the tape and a cabinet/slot of 'VTS ' or 'VTX '. There is no physical volume or cabinet/slot used, but it is necessary for TRS to logically move the tape through its entire retention schedule before scratching it. TRS reports show 'VTS ' while the virtual tape is on cache within the ATL and 'VTX ' when it is on a container tape. These values are independent of the TRS logical location.

Free Scratch Chains After a Set Number of Days

You can use a SYSIN control statement to use TRS to free unneeded records from the VMF.

When CA TLMS scratches a tape volume it normally retains the information on that tape until it is reused. This information can be used for reference or to unscratch the tape volume. CA TLMS keeps information for each file and volume. For modern high capacity tapes, CA TLMS may be retaining a large number of records containing information on scratch tapes. Some robotic devices use tapes in a circular fashion where a tape is not reused until all of the tapes have been used.

To free records used for unneeded information on scratch tapes, specify the following control card:

FREE-SCRATCH-CHAIN-AFTER DAYS=*nnnn*

nnnn

Specifies the number of days after a volume is scratched.

Before the scratch chains are freed all of the following conditions must be met:

- The volume must have been scratched for more than *nnnn* days.

- TRS must have processed the volume and moved it to the Data Center.

- The volume must have a multi-volume or multi-data set chain in the VMF.

- The DSN must be non-blank.

Notes:

- To prevent excessive overhead, this feature only frees 200 chains per TRS run.

- This feature does *not* affect scratch tapes which do not have multi-volume or multi-file chains because no records can be freed.

Determining the Current Retention for a Volume

One of the following methods may be used to determine the current retention for a volume:

1. Use CATLISPF to access panel DS02. At the bottom of the panel, look at field RTN-SCHD.

2. Use the DVR command and specify the volume serial number.

3. Use the PRINT RULE control statement for Report TLMS044.

More information:

Updating the Retention Master File

The RMF is not updated automatically; it can only be updated manually. If you need to add or change locations or retention criteria, use the location and retention control statements described earlier in this chapter.

Important! It is necessary to first delete an entry that is to be updated, and then again add the entry in order to affect a change. This can be accomplished in one job step.

Example

```
//SYSIN DD *
 DELRTN DSN(ABC.DSN) OWNER(JOHN DOE)
 ADDRTN DSN(ABC.DSN) OWNER(JOHN DOE) RTN(1DC)
```

Data set entries can only be added after the location has been defined using the ADDLOC command.

Process

Code the retention control statements as described earlier in this chapter. Then use the starter JCL to execute procedure CATRMFE. Submit both location and retention statements in the same run, with the location statements first.

CATRMFE Procedure JCL

```
//*****************************************************************
//*               ****  PROCNAME=CATRMFE  ****                   *
//*****************************************************************
//*  PROCEDURE TO UPDATE CA TLMS TAPE RETENTION MASTER FILE      *
//*            FOR PATTERN MASKING RMF ONLY                      *
//*****************************************************************
//CATRMFE  PROC A='*',
//           LOAD='CAI.CTAPLINK',
//           OPTS='CAI.CTAPOPTN(TLMSIPO)',
//           PRM=' ',
//           RMF='CAI.TLMS.RMF'
//*
//*
//UPDTRMF  EXEC PGM=TLMSRMFE,
//           PARM='&PRM'
//*

//*********   PRM='1ST,2ND,3RD,4TH,5TH *************************
//*  WHERE   1ST = NUMBER OF ENTRIES TO BE CONVERTED      2000 *
//*          2ND = NUMBER OF UPDATES                       500 *
//*          3RD = NUMBER OF CABINETS (MAX FOR ONE LOCATION 160 *
//*          4TH = NUMBER OF BOXES                         104 *
//*          5TH = NUMBER OF LOCATION RECORDS             1024 *
//*       OMITTED PARM TAKE DEFAULTS    PRM=',825,,50'        *
//*****************************************************************
//*
//STEPLIB  DD  DSN=&LOAD,DISP=SHR
//*
//TLMSOPTS DD  DSN=&OPTS,DISP=SHR     OPTIONS WHEN TLMS IS DOWN
//*
//CAIRMF   DD  DSN=&RMF,DISP=OLD          RETENTION MASTER FILE
//*
//SYSPRINT DD  DCB=BLKSIZE=133,SYSOUT=&A   REPORTS
//*
//SYSUDUMP DD  SYSOUT=&A                   ABEND DUMPS
//*
//SYSIN    DD  DUMMY                   OVERRIDE FOR COMMANDS
//*
//*****************************************************************
```

Starter JCL

```
//TLMSRMF   JOB
//TLMSRMF   EXEC CATRMFE
//SYSIN    DD   *
<retention statements>
//
```

CATRMFE Output

When CATRMFE is executed, CA TLMS scans all statements for syntax errors and produces the TLMS040 Retention Master Updates/Errors report. If there are any syntax errors, they will be listed on this report and no updates will be made. You must correct the errors and resubmit the entire job.

When no errors are found, CA TLMS updates the file and lists the updates on the report.

Converting the Retention Master File

The RMF can be in one of the following two formats:

Old Format

Uses partially qualified data set names for retention assignment and the new format uses full pattern masking. The samples in this guide show the full pattern masking format.

New Format

Supports all the retention assignment rules of the old format and the full pattern masking described in the *CA TLMS Configuration Guide*. TRS and *real time* retention work with either format, but always display the data as it is in the pattern masking format. The new RMF print program in CATRMFP will also work with both RMF formats.

You can continue to use the old RMF utilities (CATRMFU) and the new print program (CATRMFP). However, you must plan to convert to the pattern masking format. The new RMF edit program in procedure CATRMFE will perform the conversion and also initialize a newly allocated RMF, replacing the function of TLMSRMUT.

The conversion process is simple and fast. The RMF is converted *in place* with no need to re-allocate the RMF.

1. Backup your RMF. This can be accomplished using CATRMFB.

2. Edit the new PROCs CATRMFP and CATRMFE to point to your existing RMF.

3. Run CATRMFP requesting reports TLMS014, TLMS015 and TLMS016.

4. Run CATRMFE with the single command of CONVERT. This converts your RMF.

5. Run CATRMFP again requesting TLMS014, TLMS015, and TLMS016.

6. Use the two reports to verify if your RMF convert is successful.

Note: After conversion, the old procedures will not work with the RMF. CATRMFU will fail.

Steps to Convert the Retention Master File

Backup RMF

```
//BACKUP   EXEC CATRMFB
//BKUPRMF.SYSIN   DD   *
  REPRO IDS(CAI.RMF)  ODS(CAI.RMF.BKUP)
/*
```

Print old RMF

```
//PRINT    EXEC CATRMFP
//REPTRMF.SYSIN DD *
TLMS014
TLMS015
TLMS016
//
```

Convert old RMF

```
//UPDATE   EXEC CATRMFE
//UPDTRMF.SYSIN DD *
   CONVERT
/*
```

Print new RMF

```
//PRINT    EXEC CATRMFP
//REPTRMF.SYSIN DD *
TLMS014
TLMS015
TLMS016
```

Chapter 4: Using the Online Interface

The CA TLMS online interface lets you display and update information stored in the Volume Master File (VMF). Choose the functions you want to perform from the menu. You control the display or input by responding to prompts on the screens.

Some screens are online reports displaying requested information in a list. Other screens allow you to update values in the VMF.

Although these screens replace batch commands, you can still enter commands in batch mode or online using MCS (Multiple Console Support), TSO.

A Tape Inquiry (TI) command lets you display selected fields from the VMF for cataloged data sets when you are using the ISPF Data Set List panels. See ISPF Tape Inquiry (TI) Display for information on this display.

Accessing the Screens

To access the CA TLMS screen interface, enter CATLISPF under ISPF.

The names of the CLISTs/transactions can change during the installation. Contact your systems programmer for the correct procedure to use at your site.

The following table summarizes the purpose of each CA TLMS online screen:

To perform this function:	Use this screen:
Start the full-screen transaction	Security (SC01)
Choose what to do next	Primary Menu (SL01)
Add clean and certification information	Miscellaneous Functions (MS01)
Add auxiliary messages	Auxiliary Messages (AU01)
Change data set or volume information	Update (DS02)
Delete auxiliary messages	Auxiliary Messages (AU01)
Display auxiliary messages	Auxiliary Messages (AU01)
Display data set information	Update (DS02)
Display the date in a different format	Miscellaneous Functions (MS01)
Display system options	Options (OP01)

To perform this function:	Use this screen:
Display volume information based on dataset name	Data Set Selection (DS01)
Display volume information for one specific volume	Update (DS02)
Display volume information based on volume serial number	Volume Selection (VL01)
List all volumes on which a dataset resides	MVS/VSAM Catalog (CT01)
List each dataset in a group	DSN Directory (DR01)
List information about all volumes	VSN Directory (DR02)
List all data sets on a specific volume	VSN List (DL01)

The flow chart

shows how the screens are organized. You move through the screens by branching from the Primary Menu (SL01). For example, if you select Volume Selection from the Primary Menu, the Volume Selection screen (VL01) is displayed.

If you know the screen you want to use, you can type the screen ID preceded by an equal sign. For example, to display the Volume Selection screen, type =VL01 on the command line of any other screen. Each screen has only certain valid IDs so you cannot get to all screens from any other screen. See the following chart for a list of the valid IDs from each screen.

When running under ISPF, the CA TLMS online interface usurps the jump-to (=) function.

Screen Hierarchy
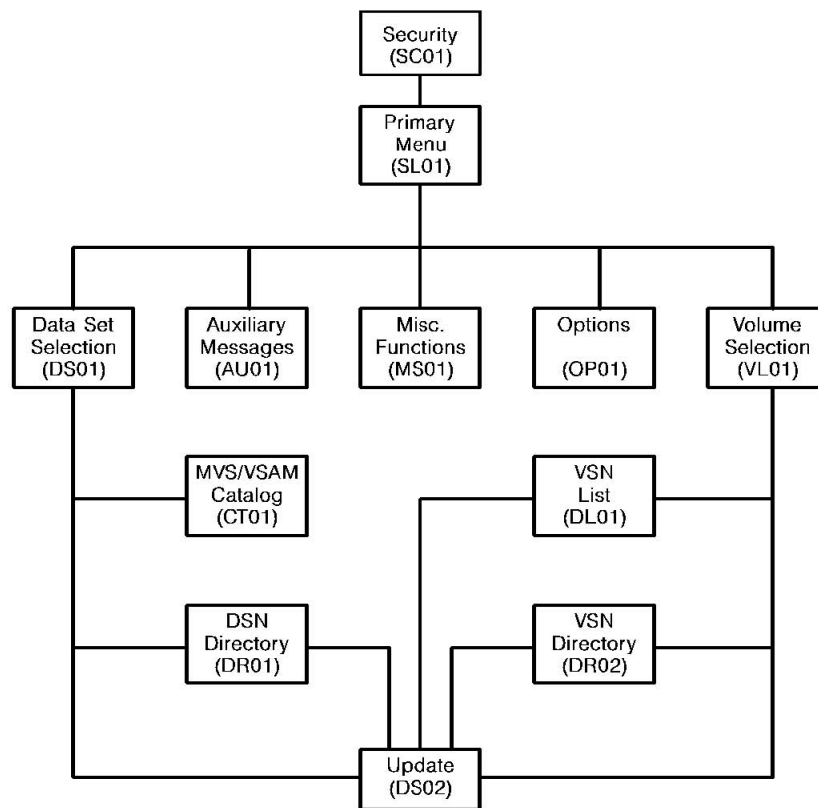
Screen Examples

Online screen examples are presented in this chapter in alphabetical order by screen ID.

Auxiliary Messages (AU01)

Used to display, delete, or add auxiliary messages.

```
TLMS-AU01                ** AUXILIARY MESSAGES **                CA TLMS
===>

D NUM  TEXT

  001  RETURN TO SYSTEM PROGRAMMER TAPE RACK
  002  RETURN TO AUDITOR'S VAULT
  003  HOLD TAPE(S) FOR SYSTEM PROGRAMMER
  004  SEND TAPE THE CUSTOMER SERVICE WINDOW
  005  ------> MESSAGE 5 <----
  006
*** REQUEST COMPLETED ***

        **** TO ADD A MESSAGE - ENTER DETAILS BELOW ****
___  _____
```

How to Display

If you are here:	Do this before pressing Enter:
Primary Menu	Move cursor to AUXILIARY MESSAGES.
Any other screen	Type =AU01 on the command line.

What to Do

All current messages are automatically displayed.

To delete a message, type a D to the left of the message number.

To add a message, type the message number (under NUM) and the message text (under TEXT) at the bottom of the screen. Then press **Enter**. The number must be one that is not currently assigned and must be 50 or less. The text cannot be more than 70 characters long.

How to Leave

To:	Do this:
Return to Primary Menu.	Press **PF3** or **PF4**.
Go directly to another screen.	Type =screen-ID on the command line (see valid IDs below).

To:	Do this:
End the full-screen transaction.	Press **PF12**.

Valid IDs

SL01, DS01, MS01, OP01, VL01

Data Set Selection (DS01)

Used to access other screens that display information about one or more data sets.

```
TLMS-DS01                    ** DATA SET SELECTION **                CA TLMS
===>

        DSN= DAILY.PAYROLL.JOURNAL

        VERSION=

        ORDER OF SEARCH

        VMF INDEX........ 1
        MVS/VSAM CATALOG.. 2
```

How to Display

If you are here:	Do this before pressing Enter:
Primary Menu	Move cursor to DATA SET SELECTION.
Any other screen	Type =DS01 on the command line.

What to Do

To display the DSN Directory, use the DSN prompt to enter a partially qualified data set name. (A partially qualified data set name is one or more high-level qualifiers, followed by an asterisk. To code the partially qualified data set name, stop at the node level but do not code the period at the end of the node.) To see data sets on the DSN Directory, the data sets must be in the VMF index file.

To display information about one specific data set, use the DSN prompt to enter the complete name of the data set. If there is more than one version of the data set, use the VERSION prompt to identify the version you want. (The most current data set is version 1, the one created before that is version 2, and so on.)

The screen you see next will depend on where the data set is found. CA TLMS searches for the data set in the order indicated by the numbers on the screen: First, it looks in the VMF index file, and then in the z/OS catalog.

If the data set is found in the:	You will see this screen:
VMF index file	Update (DS02)
z/OS catalog	MVS/VSAM Catalog (CT01)

If a data set can be found in both the VMF index file and the z/OS catalog and you want to display the MVS/VSAM Catalog screen instead of the Update screen, change the ORDER OF SEARCH like this:

```
VMF INDEX......... 2
MVS/VSAM CATALOG.. 1
```

How to Leave

To:	Do this:
Display DSN Directory.	Enter partially qualified DSN and press **Enter**.
Display Update screen or MVS/VSAM Catalog, depending on order of search.	Enter fully qualified DSN and press **Enter**.
Return to Primary Menu.	Press **PF3** or **PF4**.
Go directly to another screen.	Type =screen-ID on the command line (see valid IDs below).
End the full-screen transaction.	Press **PF12**.

Valid IDs

SL01, AU01, MS01, OP01, VL01.

DSN Directory (DR01)

Lists the name, VSN, and file sequence number of each data set in a group. (Data sets must be in the VMF index file to be listed here.)

```
 TLMS-DR01                      ** DSN DIRECTORY **              CA TLMS
 ===>

     VSN      FILESEQ    DATA SET NAME

     TST001   0001       PDA.ACC.PAY.UPDATE1
     TST001   0002       PDA.ACC.PAY.UPDATE2
     TST013   0001       PDA.MKT.TRN.CLASSES
     TST012   0001       PDB.MAN.SCH.YEAREND
     *** REQUEST COMPLETED ***
```

How to Display

On the Data Set Selection screen, type a partially qualified DSN.

What to Do

You will see the following information for each data set in the group:

VSN

The volume serial number of the volume that contains each data set. (If the data set spans more than one volume, the base VSN is displayed.)

FILESEQ

The order in which the data set appears on the volume.

DATA SET NAME

The name of the data set.

If the list overflows the screen, scroll forward through the list by pressing **PF8**. Press **PF7** to scroll backward.

How to Leave

To:	Do this:
Display the Update screen for one specific data set.	Move cursor to the name of that data set and press **Enter**.
Return to Data Set Selection.	Press **PF3**.
Return to Primary Menu.	Press **PF4**.

To:	Do this:
Go directly to another screen.	Type =screen-ID on the command line (see valid IDs below).
End the full-screen transaction.	Press **PF12**.

Valid IDs

SL01, DS01, AU01, MS01, OP01, VL01

Miscellaneous Functions (MS01)

Used to convert the format of a date and to update tape volume cleaning or certification information in the Volume Master File. (You can only update information in the VMF if your user ID was defined with ACCESS=UPDATE.)

```
    ===>
            DATEFMT= MM/DD/YYYY
            DATE = yyddd        -    yyyy/ddd    mm/dd/yyyy


            CLEAN =         -

            CERTIFY =       -
```

How to Display

If you are here:	Do this before pressing Enter:
Primary Menu	Move cursor to MISCELLANEOUS FUNCTIONS.
Any other screen	Type =MS01 on the command line.

What to Do

To change the format of a date for the current session only, specify the DATEFMT prompt (mm/dd/yyyy). To convert a date to century format, specify the DATE prompt.

To update cleaning information, use the CLEAN prompt. Enter either a single VSN or a range of VSNs and press **Enter**. You will receive a message confirming your request and asking you to press **Enter**. To cancel your request, press any other key. Updating cleaning information sets the volume cleaning date to the current date, increments the cleaning count (adds one to the number of times a tape has been cleaned) and sets the number of write errors and use count fields back to zero.

To update certification information, use the CERTIFY prompt. Enter either a single VSN or a range of VSNs and press **Enter**. You will receive a message confirming your request and asking you to press **Enter**. To cancel your request, press any other key. Updating certification information sets the volume cleaning date to the current date, increments the certification count (adds one to the number of times a tape has been certified) and sets the number of write errors and use count fields back to zero.

How To Leave

To:	Do this:
Return to Primary Menu.	Press **PF3** or **PF4**.
Go directly to another screen.	Type =screen-ID on the command line (see valid IDs below).
End the full-screen transaction.	Press **PF12**.

Valid IDs

SL01, DS01, AU01, OP01, VL01

MVS/VSAM Catalog (CT01)

Used to display all volumes on which a specific data set resides. The data set must be in the z/OS catalog.

```
TLMS-CT01                    ** MVS/VSAM CATALOG **              CA TLMS
 ===>


      DATA SET NAME= CUSTOMER.LOG.FILE

      VSN
      LOG051 LOG053 LOG143 LOG058 LOG059 LOG060
      LOG103 LOG072 LOG108 LOG109 LOG110 LOG114
      LOG112 LOG144 LOG146 LOG148 LOG075 LOG231
      LOG117 _____ _____ _____ _____ _____
      _____ _____ _____ _____ _____ _____
      _____ _____ _____ _____ _____ _____
      _____ _____ _____ _____ _____ _____
      _____ _____ _____ _____ _____ _____
      _____ _____ _____ _____ _____ _____
      _____ _____ _____ _____ _____ _____
```

How to Display

On the Data Set Selection screen, type the data set name found in the z/OS catalog.

What to Do

You will see the name of the data set and the VSN of each volume containing this data set. If the list overflows the screen, press **PF8** to scroll forward through the list. Press **PF7** to scroll backward.

How to Leave

To:	Do this:
Return to Data Set Selection.	Press **PF3**.
Return to Primary Menu.	Press **PF4**.
Go directly to another screen.	Type =screen-ID on the command line (see valid IDs below).
End the full-screen transaction.	Press **PF12**.

Valid IDs

SL01, DS01, AU01, MS01, OP01, VL01

System Options (OP01)

Displays the CA TLMS system options that are currently in effect at your data center.

```
TLMS-OP01                      ** OPTIONS **                     CA TLMS
 ===>

 CA TLMS OPTIONS FOR       YOUR COMPANY NAME
 RELEASE NN.n      GENLEVEL  1104TLC60          BACKUP=01/09/2010   10:19:28


 GENERAL:
   DATACENTER=DC  ALTCENTER=D1    DATEFMT=MM/DD/YYYY              PAGESIZ=58
 TECHNICAL:
   FORSPEC=N      LBLDTRY=Y     QSIZE=064      SMS=N            LOGID=240
   ROUTINQ=Y14YD  ROUTAUX=N
 PROCESSING:
   ABEND=24       DLBLDRIV=N      KDATE=MAX      RECVRY=ALT    UNCATLG=Y
   BRKCHAIN=0     DLBTIME=000000 MANUAL=N        SCRATCH=CDS
   CATDAYS=1      IDSNVER=Y      NOTLMS=A        SERIND=Y
   DISP=0         INPUT=YNYYY    PROTECT=A       VSNREQD=Y
 USER EXITS:
   CLSEXIT=N      CMDEXIT=N      EDMEXIT=N      NITEXIT=N      OPNEXIT=N
   SCREXIT=N      SECEXIT=Y      SPLEXIT=N      TRSEXIT=N      UPDEXIT=N
 SECURITY:
  SECURE=N        BLPSEC=N       FORSEC=N       PROMPT=N
  INQACC=Y        NLSEC=N        NSLSEC=N
```

How to Display

If you are here:	Do this before pressing Enter:
Primary Menu	Move cursor to OPTIONS.
Any other screen	Type =OP01 on the command line.

What to Do

The following system options are displayed. These options cannot be changed online. For a detailed description of the system options and instructions on changing them, see Chapter 3 of the *Configuration Guide*.

Header

This value:	Specifies:
BACKUP	Last VMF backup date and time.
COMPANY	Name printed on reports.
GENLEVEL	Maintenance level of your version.
RELEASE	Release of CA TLMS currently operating.

General

This value:	Specifies:
ALTCENTER	Two-character ID of alternate data center.
DATACENTER	Two-character ID of data center.
DATEFMT	Format of the preferred date (TLMSIPO).
PAGESIZ	Maximum lines per page of printed report.

Technical

This value:	Specifies:
FORSPEC	Foreign volume specific volume request, Y or N.
LBLDTRY	Dynamic destruction of standard labels, Y or N.
LOGID	SMF user log record ID number.

This value:	Specifies:
ROUTAUX	First character Y (yes) or N (no). Second two characters indicate printer route code. Fourth character (VSN) is Y (yes) or N (no). Fifth character (MSG) is N (nondeletable) or D (deletable).
ROUTINQ	First character is Y (yes) or N (no). Next two characters indicate printer route code. Fourth character (UPD) is Y (yes) or N (no). Fifth character (MSG) is N (nondeletable) or D (deletable).
SMS	Indicates whether the Storage Management Subsystem interface is active, Y or N.

Processing

This value:	Specifies:
ABEND	scratch abended tapes: NO if option off, or the number of hours before a tape can be scratched (1-99).
BRKCHAIN	Break volume/data set chains at C (CLOSE), O (OPEN) or S (scratch).
CATDAYS	Creation date retention catalog check, number of days (1-9).
DISP	Final disposition processing of JCL, Y (yes), N (no), or O (output).
DLBLDRIV	Verify same device on double OPEN of a data set, Y or N.
DLBTIME	Allow/disallow double OPENs of same data set, 000000 (disallow). Otherwise, hhmmss in time for next OPEN.
IDSNVER	Input data set name verification, Y or N.
INPUT	Five position display with each of the following indicated by Y (yes) or N (no). First character is INPUT, second character is CHN, third character is BLP, fourth character is NL, fifth character is SL.
KDATE	Keep date DEF, JCL, or MAX.
MANUAL	Manual changes for batch and online, Y or N.
NOTLMS	CA TLMS NOT ACTIVE processing, A (abend) or C (continue).
PROTECT	Restrict crash protection to selected data sets, A (all) or S (select).
RECVRY	Create backup records, SMF, NONE, or ALT(LOG).
SCRATCH	Volume scratch control, ALL or CDS.

This value:	Specifies:
SERIND	User of type 4 service indicated tapes, Y or N.
UNCATLG	Uncatalog action, Y (yes), N (no), or D (DLTX).
VSNREQD	Volume serial number required at OPEN for NL, Y or N.

User Exits

This value:	Specifies:
CLSEXIT	CLOSE/EOV exit, Y| N | exitname.
CMDEXIT	Command exit, Y| N | exitname.
EDMEXIT	EDM table lookup exit, Y| N | exitname.
NITEXIT	Tape Label user exit, Y| N | exitname.
OPNEXIT	OPEN exit, Y| N | exitname.
SCREXIT	Update Scratch user exit, Y| N | exitname.
SECEXIT	Security user exit, Y| N | exitname.
SPLEXIT	Scratch subpool user exit, Y| N | exitname.
TRSEXIT	Tape Retention System exit, Y| N | exitname.
UPDEXIT	VMF update exit, Y| N | exitname.

Security

This value:	Specifies:
BLPSEC	Bypass label security, Y or N.
FORSEC	Foreign volume security, Y or N.
INQACC	Online inquiry/update security, Y or N.
NLSEC	No label security, Y or N.
NSLSEC	Nonstandard label security, Y or N.
PROMPT	TLTP user password prompt, Y or N.
SECURE	Global system security, N (off), S (RACF/SAF), A (CA ACF2) or T (CA Top Secret).

How to Leave

To:	Do this:
Return to Primary Menu.	Press **PF3** or **PF4**.
Go directly to another screen.	Type =screen-ID on the command line (see valid IDs below).
End the full-screen transaction.	Press **PF12**.

Valid IDs

SL01, DS01, AU01, MS01, VL01

Primary Menu (SL01)

Used to select one of the CA TLMS screen functions.

```
TLMS-SL01                  ** PRIMARY MENU **          CA TLMS
 ===>

          VOLUME SELECTION........... VL01

          DATA SET SELECTION......... DS01

          AUXILIARY MESSAGES......... AU01

          OPTIONS.................... OP01

          MISCELLANEOUS FUNCTIONS.... MS01

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```

How to Display

If you are here:	Do this:
Security screen	Type your user ID and password.
Any other screen	Press **PF4** or type = SL01 on the command line.

What to Do

To:	Before pressing Enter, move cursor to:
Do inquiries and updates based on data set name.	DATA SET SELECTION
Do inquiries and updates based on volume serial number.	VOLUME SELECTION
Display, add, or delete messages.	AUXILIARY MESSAGES
Display system options.	OPTIONS
Convert date format, update, cleaning and certification information.	MISCELLANEOUS FUNCTIONS

How to Leave

To:	Do this:
Go to the screen selected by the cursor.	Press **Enter**.
Go to a first-level screen without moving the cursor.	Type =screen-ID on the command line (see valid IDs below).
End the full-screen transaction.	Press **PF12**.

Security (SC01)

Used to override USERID and password from ISPF.

```
TLMS-SC01                         ** SECURITY **                    CA TLMS
===>

       USERID    ===>
       PASSWORD  ===>
```

How to Display

Access the CA TLMS screen interface in one of the following ways:

- Enter CATLTSO or CATLISPF under TSO.

- Enter CATLTSO or CATLISPF under ISPF.

The actual names of these CLISTs/transactions may be changed at installation time. Contact your systems programmer for the correct procedure to use at your site.

What to Do

Type your USERID and PASSWORD and press **Enter**. These must be defined to CA TLMS in the USERTABLE, which is defined by the USER= parameter in CAI.CTAPOPTN(TLMSIPO). If, after three attempts, you have not entered the correct user ID and password, you will be denied access to the system.

How to Leave

As soon as you enter your correct password, the CA TLMS Primary Menu is displayed.

Valid IDs

DS01, AU01, MS01, OP01, VL01

Update (DS02)

Used to display a specific volume's retention, maintenance, history, and status information. Also displays information about one of the data sets on the volume. This is the first data set unless you specify another data set when you request this screen.

If your user ID was defined in TLMSUTAB with ACCESS=UPDATE, you can change any of the fields except ACTIVE, BASE VOLUME, CDS, FILESEQ, FILECNT, VERSION, VOLSEQ, VOLCNT or VSN.

```
TLMS-DS02                      ** UPDATE **                      CA TLMS
  ===>
  VSN     TDI024   SCRATCH  NO  CDS      0000
  SERVICE  IN      VOLSEQ   001 VOLCNT   002   FILESEQ  0001  FILECNT  0003
               **** DATASET INFORMATION ****
  ACTIVE              DSN   TEST.PERCENT.USED11
  LRECL   00080     BLKSIZE  032000    RECFM    FB        MGMTCLAS
  BLKCNT  0005500   CPU      XE90      ABEND              TRTCH        N
  EXPDT             KEEPDT 10/17/2002                     PERCENT 001 60
  CJOB    PCTUSED   CSTEP    STP01     CDATE    mm/dd/yyyy
  CUNIT   4E80      CTIME    13:25:33  USER     JDVR TEST JOB
  LJOB              LDATE              LUNIT
               **** VOLUME INFORMATION ****
  CERTDT            CERT-CNT 0000      CLEANDT            CLN-CNT   0000
  ERG     0000      MAX-ERG  0000      READERR  0000      OWNER
  CLN-USE 0011      CER-USE  0011      LOC      DC        BOXCCSS
  LENGTH  0000 100  PURCHDT            TAPETYPE           MFG
  OUTSRV            OUTDATE            DEN      CART      LABEL     SL
  SCRDT             MOVEDT             EXPDT              KEEPDT  mm/dd/yyyy
  RTN-SCHED(1)  BY JCL 2DC
```

How to Display

If you are here:	Do this before pressing Enter:
Data Set Selection screen	Enter the DSN of a data set that is in either the VMF index file or the Dynam catalog.
DSN Directory	Move the cursor next to a DSN.
Volume Selection screen	Type a VOLSER. Also specify FILESEQ if you want to see a data set other than the first one.
VSN Directory	Move the cursor next to a VSN.
VSN List	Move the cursor next to a DSN or a VSN.

What to Do

The following VMF values are displayed. To change them online, type a new value over the old value and press **Enter**. For more information on the VMF values, see Appendix A.

Header

This value:	Gives this information about the volume:
CDS	Relative sequence number of the controlling data set (must be changed using the UPV command)
FILECNT	Total number of data sets on this volume
FILESEQ	Relative file sequence number of this data set
SCRATCH	If it was scratched: YES or NO
SERVICE	If it is IN or OUT of service
VOLCNT	Total number of volumes used for this data set
VOLSEQ	Its relative volume sequence number
VSN	Its volume serial number

Data Set Information

This value:	Gives this information about a data set:
ABEND	1 if the last job abended or blank for normal completion (to change the value from 1, type a zero over the 1)
BLKCNT	Number of blocks this data set fills up
BLKSIZE	Number of characters per block

This value:	Gives this information about a data set:
CDATE	Creation date
CERTDT	Date the tape was last certified
CER-CNT	Number of times the tape has been certified
CJOB	Name of the job that created this data set
CLEANDT	Date the tape was last cleaned
CLN-CNT	Number of times the tape has been cleaned
CSTEP	Name of the job step that created this data set
CTIME	Creation time
CUNIT	Device address for the creation tape drive
DEN	Density of the tape, in bytes per inch (BPI): 200, 556, 800 1600, 6250, CART, IDRC, 36TK
DSN	Name of the first data set, unless another one was requested
EXPDT	IBM expiration date (from LABEL=EXPDT)
KEEPDT	Data set keep date as calculated by CA TLMS
LABEL	Type of label: S, N, U, A, X (for NSL), B
LDATE	Date data set was last used
LJOB	Name of the job that last used the data set
LRECL	Number of characters per record (record length)
LUNIT	Drive address of tape drive that last used the data set
PCTVOL	Total percent of volume used. **Note:** The PCTVOL value will display as the second value in the LENGTH field.
PCTFIL	Percent of volume used for this data set. **Note:** The PCTFIL value displays as the first value in the PERCENT field.
PCTCMP	Percent of compaction achieved for this data set. **Note:** The PCTCMP value displays as the second value in the PERCENT field.
RECFM	Record format: F, V, FB, VB, VBS, FBS or U
TRTCH	Type of track recording for a 7-track tape: E, T, C, X
USAGE	Percent of the length of tape that the data set uses. Also, the percent of compression of the data set.

This value:	Gives this information about a data set:
USER	User field. Default is job accounting code taken from the JOB statement when the data set was created

Volume Information

This value	Gives this information about the volume:
BOXCCSS	Code for specific box or cabinet slot
CER-USE	Number of times used since last certification
CLN-USE	Number of times used since last cleaning
ERG	Number of permanent write errors when the current data sets were created
EXPDT	Volume expiration date: the highest date on the volume. (Informational only and does not affect retention.)
KEEPDT	Volume keep date: the highest date on the volume. (Informational only and does not affect retention.)
LENGTH	Physical length of the tape, in feet. It will also display the total percent of volume used.
LOC	Code for physical storage location
MAX-ERG	Maximum number of permanent write errors found during data set creation over the life of the volume
MFG	Manufacturer code defined at your site to identify tape brands
MOVEDT	Date the volume was last moved
OUTDATE	Date the tape volume was made out-of-service
OUTSRV	Any non-blank code means tape is out of service
OWNER	The EDM (if any) which own the volume
PURCHDT	Date the tape was purchased
READERR	Number of temporary read errors when the tape was last processed

This value	Gives this information about the volume:
RTN-SCHED	Retention schedule applied by the RMF:
	■ (0) Volume cleared or not processed by TRS
	■ (1) Data center or first entry in the RMF rule
	■ (2) 2nd location in the RMF rule
	■ (3) 3rd location in the RMF rule
	■ (4) 4th location in the RMF rule
	■ (5) 5th location in the RMF rule
	■ (6) 6th location in the RMF rule
TAPETYP	A code defined at your site to identify tape types
SCRDT	Date the volume was scratched

How To Leave

To:	Do this:
Return to previous screen.	Press **PF3**.
Return to Primary Menu.	Press **PF4**.
Go directly to another screen.	Type =screen-ID on the command line (see valid IDs below).
End the full-screen transaction.	Press **PF12**.

Valid IDs

SL01, DS01, AU01, MS01, OP01, VL01

Volume Selection (VL01)

Used to access other screens that display information about one or more volumes.

```
TLMS-VL01                    ** VOLUME SELECTION **                    CA TLMS
===>

          VOLSER=            FILESEQ=
          VSN DIRECTORY       NO  (YES)
          VSN LIST            NO  (YES)


```

How to Display

If you are here:	Do this before pressing Enter:
Primary Menu	Move cursor to VOLUME SELECTION.
Any other screen	Type =VL01 on the command line.

What to Do

To display all of the information in the VMF about one volume, use the VOLSER prompt to enter the volume serial number. You will also see information about the first data set on the volume. If you want to see information about another data set, use the FILESEQ prompt to give its file sequence number.

To list the tape volumes under CA TLMS control, enter a VOLSER and type **YES** next to VSN DIRECTORY. (The VOLSER must end with a number.) The list will start with the VOLSER you specify.

To list the names of all data sets on a volume, enter a VOLSER and type **YES** next to VSN LIST.

How to Leave

To:	Do this:
Display the Update screen.	Type VOLSER, and FILESEQ if you do not want the first data set, and press **Enter**.
Display the directory of all VSNs.	Type VOLSER, and also type YES over NO next to VSN DIRECTORY, and press **Enter**.
Display the list of all VSNs on one volume.	Type VOLSER,also type YES over NO next to VSN LIST, and press **Enter**.
Return to Primary Menu.	Press **PF3** or **PF4**.
Go directly to another screen.	Type =screen-ID on the command line (see valid IDs below).
End the full-screen transaction.	Press **PF12**.

Valid IDs

SL01, DS01, AU01, MS01, OP01

VSN Directory (DR02)

Used to display information about some or all volumes under CA TLMS control.

```
 TLMS-DR02                    ** VSN DIRECTORY **              CA TLMS
 ===>
     VOLSER   KEEPDT      EXPDT      SCRDT        MOVEDT      LOC BOX/CCS

     000198                                                   DC
     000199                                                   DC
     000200   mm/dd/yyyy             mm/dd/yyyy               DC
     000201   mm/dd/yyyy                                      DC
     000202                          mm/dd/yyyy               DC
     000203   mm/dd/yyyy             mm/dd/yyyy               DC
     000204   mm/dd/yyyy                                      DC
     000205   mm/dd/yyyy             mm/dd/yyyy               DC
     000206   mm/dd/yyyy                                      DC
     000207   mm/dd/yyyy                                      DC
     000208                                                   DC
     000209                                                   DC
     000210                                                   DC
     000211   mm/dd/yyyy                                      DC
     000212   mm/dd/yyyy                                      DC
```

How to Display

On the Volume Selection screen, type a VOLSER and type **YES** next to VSN DIRECTORY. The list will start with the VOLSER you specified.

What to Do

You will see the following information about each volume:

Heading	Description
BOXCCSS	Box number or cabinet and slot number where the volume is stored.
EXPDT	The EXPDT field in the JCL that created the data set. If this is a multi-data set volume, this is the highest EXPDT on the volume.
KEEPDT	An internal date, calculated by CA TLMS when a data set is created. Can be used as one of the criteria by which the data set is scratched or moved. If this is a multi-data set volume, this is the highest KEEP DATE on the volume.
LOC	The location ID where the volume is stored.
MOVEDT	The date the volume was moved to another location.
SCRDT	The date the volume was scratched.

VOLSER	Volume serial number of each volume under CA TLMS control, starting with the volume you specified on the Volume Selection screen.

If any field is blank, CA TLMS has not yet processed this volume, or one of the following conditions exists:

If this field is blank:	The reason may be:
BOXCCSS	The volume is not stored in a box or cabinet.
KEEPDT	CA TLMS has not yet processed the volume.
MOVEDT	The volume has not been moved from its first location.
SCRDT	The volume has not been scratched or has been scratched and reused.

If the information overflows the screen, press **PF8** to scroll forward and **PF7** to scroll backward.

How to Leave

To:	Do this:
Display the Update screen for one volume.	Move cursor to VSN and press **Enter**.
Return to Volume Selection screen.	Press **PF3**.
Return to Primary Menu.	Press **PF4**.
Go directly to another screen.	Type =screen-ID on the command line (see valid IDs below).
End the full-screen transaction.	Press **PF12**.

Valid IDs

SL01, DS01, AU01, MS01, OP01, VL01

VSN List (DL01 - ADD)

Used to list the data sets on one volume. If any of the data sets spans more than one volume, the VSNs of 16 related volumes are listed at the bottom of the screen.

```
TLMS-DL01                  ** VSN LIST **                    CA TLMS
  ===>
       VSN=  000200

       STATUS    FILE   DATA SET NAME
       EXPIRED   0001   DAILY.PAYROLL.JOURNAL
       *** REQUEST COMPLETED ***

       VSN LIST
    000200     000205     000203
```

How to Display

On the Volume Selection Screen, type a VOLSER and type **YES** next to VSN LIST.

What to Do

You will see the volume serial number and information about each data set on the volume. This includes the data set name and file sequence number.

If you want to go directly to the Update screen, move the cursor to either a data set name or a VSN listed under VSN LIST. If you select a data set name, the volume and data set information for that data set will be displayed. If you select a VSN, the display will contain the volume and data set information for the first data set on that volume.

How to Leave

To:	Do this:
Display the Update screen for this volume and its first data set.	Press **Enter** after moving cursor to the first data set name.
Display the Update screen for this volume and a later data set.	Press **Enter** after moving cursor to another data set name.
Display the Update screen for a related volume.	Press **Enter** after moving cursor to a VSN under VSN LIST.
Return to Primary Menu.	Press **PF4**.
Return to Volume Selection screen.	Press **PF3**.
Go directly to another screen.	Type =screen-ID on the command line (see valid IDs below).

To:	Do this:
End the full-screen transaction.	Press **PF12**.

Valid IDs

SL01, DS01, AU01, MS01, OP01, VL01

ISPF Tape Inquiry (TI) Display

CA TLMS provides a quick way to check on the status of a CA Dynam Cataloged tape data set from the ISPF 3.4 Data Set List (DSLIST) display. The Tape Inquiry (TI) panel shows basic information from the VMF for the cataloged data set in a format that is consistent with other ISPF 3.4 displays. The TI panel allows you to quickly get information about a cataloged data set without starting the full CA TLMS online system.

By entering "TI" on the line command field for a specific data set presented in the DSLIST panel, the following panel is displayed.

```
-------------------- CA TLMS TAPE INQUIRY --------------------
Command ===>

Data Set Name . . . : APC.TEST.TRANFILE

  General Data                    Creation Information
   Volume Serial. . . : 320009     Date . . . . . . : yyyy/mm/dd
   Alternate Volume . :            Time . . . . . . : 16:43:00
   Media type   . . . : CART       Jobname  . . . . : APCT007
   Record Format. . . : FB         Program  . . . . : IEBDG
   Record Length. . . : 80        Last Used Information
   Block Size   . . . : 32000      Date . . . . . . : yyyy/mm/dd
   Number of blocks . : 2487       Jobname  . . . . : CATMG
   Percent utilized.  : 23         Unit . . . . . . : 0E19
   Status   . . . . . : NON-SCRATCH Retention Information
                        IN-SERVICE  Location: L1
   File  / Volume Set              Cabinet Slot . . : AA99
   Base Volume. . . . : 320009     Movedate. . . .  : yyyy/mm/dd
   File sequence  . . : 1          Retention Rule . : 2L10002
                                   Keep Date  . . . : yyyy/mm/dd
  Secondary volumes: 321429   290016   319621
  User Data: AUTO PROCESS TEST TRANSACTIONS
```

Note: The above display also provides total number of volumes and files for the data set requested and the volume serial numbers for the first five secondary volumes. This panel is read-only.

Chapter 5: Volume Master File Inquiry and Update

This chapter provides instructions on performing manual inquiries and updates to the Volume Master File. The following functional areas are detailed:

- Issuing VMF batch commands

- Issuing VMF commands online

The VMF *batch* commands let you display information in the Volume Master File or manually update fields in the VMF without access to a console. These commands perform the same functions as the screens but allow you to accomplish a large number of updates quickly.

Operator commands can be issued at an operator console to communicate with the online recorder. (The online recorder is the CA TLMS component that controls realtime tape processing and receives volume information during OPEN, CLOSE and EOV.)

Inquiry and update commands may be issued online under TSO and z/OS console.

More information:

Using the Online Interface (see page 75)

How CA TLMS Updates the VMF

The Volume Master File is automatically updated to reflect any changes in tape movement or scratch status:

- Dynamically by the online recorder each time a tape is processed

- Daily, when CATTRS is executed to run the tape retention system (TRS)

The following information is maintained:

- Volume status information

    - Multivolume and multi-data set information

    - Service/scratch indicator

    - Relative file sequence, number, and count

    - Relative volume number and count

- Data set characteristics

  – Data set name

  – Creation information

  – Last used information

  – Abend status

  – DCB information

  – Tape drive address

- Volume maintenance information

  – Temporary read errors

  – Erase gaps

  – Use counts

The online recorder also automatically updates the VMF Index file to reflect the volume serial number for the data set.

Performing Manual Updates

Although much information in the VMF is updated automatically, you may occasionally need to perform manual updates to this file. CA TLMS provides both batch and online commands which can be used to manually update the data set and volume information that is stored in the VMF.

You will use these commands to manually update only selective information in the VMF, for example, update cleaning information, add auxiliary messages, or change the current date format. Again, information about retention, movement and scratch status are updated automatically during realtime tape processing or when CATTRS is executed.

If you need to add or delete volume serial numbers from the VMF, you can use the same program (TLMSVMFU) that you used to initialize the VMF when CA TLMS was installed. You will also use this program to expand or decrease either the multi-data set/multivolume record area or the auxiliary message record area. Refer to "CATVMFI - Initialize the Volume Master File" in the *Configuration Guide.*

Online updates may be performed using the CATLTSO CLIST. The commands are the same as used with the batch program in the examples.

VMF Inquiry/Update Command Summary

The following charts provide a summary of the Volume Master File inquiry/update commands and the format of each. The appendix "VMF Keywords" of this guide contains information on VMF keywords and their values. Also note that the same commands may be entered using the CATLTSO CLIST.

To display:	Use this command:
Information on a specific volume (identified by VSN) - volume status and data set characteristics	DVD volser[nnn]
Information on a specific volume (identified by VSN) - volume status and history information	DVH volser
Information on a specific volume (identified by VSN) - volume status and maintenance information	DVM volser
Information on a specific volume (identified by VSN) - volume status and retention information	DVR volser
Information on a specific volume (identified by VSN) - a list of VSNs and DSNs	DVL volser
Information on a specific volume (identified by VSN) - all of the above information	DVA volser
Information on a specific volume (identified by DSN)	DN DSN=dsn|VER=v
Information on a data set in the z/OS catalog	DC dsn[(gen)]
The date in another format	DDT date
The text of an auxiliary message	DM mm
Information on data set values in the VMF	UPD volser keyword=value[,keyword=value]
Information on volume values in the VMF	UPV volser keyword=value[,keyword=value]
Information on cleaning	CLN volser[-volser]
Information on certification	CER volser[-volser]
Add auxiliary messages	AMA mm text
Delete auxiliary messages	AMD mm
Date format (set)	SDT datefmt

Where:

volser

Is the volume serial number.

nnn

Is the relative file number.

dsn

Is the fully qualified data set name.

ALL

Specifies *all* versions of the requested data set.

VER=n

Specifies only the requested version of the data set, where *v* is the relative version number.

gen

Is the relative generation data set number (GDG) enclosed in parentheses.

date

Is the actual date.

mm

Is the message number.

keyword

Is a CA TLMS keyword which is being updated to a new value.

value

Is the new value for a CA TLMS keyword

text

Is the text of the new message.

datefmt

Is the date format for subsequent displays and reports.

Issuing VMF Batch Commands

In order to use batch commands, you must first code the command control statements, and then execute procedure CATINQR.

Process

Code the command control statements. Then use the starter JCL to execute procedure CATINQR. Command control statements are in positions 1 through 71.

If you have a large volume of updates to perform, it is recommended that you back up the VMF shortly before executing CATINQR.

Note: Refer to "Backing Up the Volume Master File" in the *Configuration Guide*.

More information:

Starter JCL

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
<display, update and report command statements>
//
```

Output

The output of the CATINQR procedure is a hardcopy of the message log just as if you had run the INQR task under CTS in the online mode. TLMSINQR can be run as a subtask of CTS or as a started task under MVS. Either way, it will communicate through a hot or outstanding WTOR. If it is a subtask of CTS, it may be started at any time from a CTS WTOR or modify. If it runs as a MVS-started task, it will automatically terminate if no activity is detected for the wait period specified in the IPO. TLMSINQR can also be stopped with the reply of STOP or P to its WTOR.

As a CTS subtask, TLMSINQR accepts the standard commands from CTS such as STOP, CANCEL, and so forth.

TLMSINQR can be run as a batch program by specifying 'BATCH' in the EXEC PARM. When running in the batch mode, output goes to the CAIMSG DD and input comes from the CAIIPT DD.

VMF Inquiry/Update Commands

The remainder of this chapter describes each VMF inquiry/update command statement in alphabetical order.

AMA Command—Add an Auxiliary Message

If your data center uses auxiliary messages to display special instructions, use the AMA command to add new messages.

This command has the following format:

AMM *nn text*

nn

Specifies a unique number for the message.

Range: 1 to 50

text

Specifies the text of the message. If the text contains an embedded space or comma, it must be enclosed in single quotes.

Range: 1 to 70 characters

Example: JCL for the AMA Command

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
AMA 6,'CALL DATA CENTER MANAGER BEFORE SCRATCHING THIS TAPE'
//
```

AMD Command—Delete an Existing Message

If your data center uses auxiliary messages to display special instructions, use the AMD command to delete an existing message.

This command has the following format:

AMD *nnn*

nnn

Specifies the number of the message to delete.

Example: JCL for the AMD Command

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
AMD 6
//
```

CER Command—Update Volume Certification Date

Use the CER command to update the volume certification date to today's date. This command also increments the certification count (adds one to the number of times a tape has been certified) and sets the number of temporary write errors and use count fields back to zero.

This command has the following format:

CER *volser*, *volser... [-volser]*

volser

> Specifies the volume serial numbers of one or more tapes that have been certified. Code a space or a comma between VSNs. Code as many VSNs as you want, as long as you end before position 72.

-volser

> (Optional) Specifies ranges of VSNs that have been certified. Limit each range to 100 VSNs. The first number of the range must be lower than the second number. Code as many ranges as you want, ending before position 72. You may code both ranges and individual VSNs on the same command, separated by spaces or commas.

Example: JCL for the CER Command

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
CER A00100-A00199,B00555
//
```

CLN Command—Clean Volume

Use the CLN command to update the volume cleaning date to today's date. This command also increments the cleaning count (adds one to the number of times a tape has been cleaned) and sets the number of temporary write errors and use count fields back to zero.

This command has the following format:

CLN *volser*, *volser [-volser]*

volser

> Specifies the volume serial numbers of one or more tapes that have been cleaned. Code a space or a comma between VSNs. Code as many VSNs as you want, as long as you end before position 72.

-volser

(Optional) Specify ranges of VSNs that have been cleaned. Limit each range to 100 VSNs. The first number of the range must be lower than the second number. Code as many ranges as you want, ending before position 72. You may code both ranges and individual VSNs on the same command, separated by spaces or commas.

Example: JCL for the CLN Command

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
CLN B00100-B00999
//
```

DC Command—Display Volume Serial Numbers Associated with a Data Set

Use the DC command to list all volume serial numbers associated with a specific data set in the z/OS catalog.

When the data set is *not a* part of GDG, this command has the following format:

DC *dsn*

When the data set is a part of GDG, this command has the following format:

DC *dsn* (*g*)

dsn

Specifies the name of the data set.

(g)

Specifies the generation number if the data set is part of a Generation Data Group (GDG). This is required if the data set is part of a GDG.

Valid values: (0) is the current version; (-1) is older than (0); (-2) is older than (-1), and so on.

Example: JCL for the DC Command

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
DC CAI.CUSTOMER.ACCT.DAILY(-1)
//
```

DDT Command—Convert Date

Use the DDT command to convert dates.

This command has the following format:

DDT *date*

date

> Specifies the date in either 21st Century Julian (yyyy/ddd) or your preferred date format as defined in the DATEFMT option of TLMSIPO. The exploded date information is returned.
>
> **Note:** For more information, see the *Configuration Guide*.

Example: JCL with the DDT Command

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
DDT 1991/123
//
```

The following display would be produced by the above JCL:

```
FRIDAY 03, MAY  mm/dd/yyyy 123 A WEEKDAY OF A NON-LEAP YEAR.
```

DM Command—Display Auxilliary Message Text

Use the DM command to display the text of an auxiliary message.

This command has the following format:

DM *nn*

nn

> Specifies the number of the message.

Example: JCL for the DM Command

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
DM 01
//
```

DN Command—Display Volume Status and Data Set Charactersitics

Use the DN command to display information about a volume by specifying the name of a data set. (The data set must be in the CA TLMS VMF Index file.) This information includes:

- Volume status (scratch status, CDS number and so on)

- Data set characteristics (BLKSIZE and so on)

This is the same display you will see if you use the DV command, except you do not have to know the volume serial number.

This command has the following format:

DN DSN=*dsn* [VER=*n*]

DSN=*dsn*

Specifies the name of the data set. You will see the most current version of the data set, unless you specify VER=v.

VER=*n*

(Optional) Specifies the relative version number if you want to see a specific version of the data set. The most current version of the data set is version 1, the one created before that is version 2, and so on.

Note: When an optional parameter is specified, it must be separated from the data set name by a space; a comma is not valid.

Example: JCL for the Current Version

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR,MODE=BATCH
//CAIIPT    DD    *
DN DSN=SVTS.TGRP51.P0106.DAT22
//
```

This JCL produces this display:

DN - Display Name

```
     VSN=000055    VOLSEQ=001  VOLCNT=007                    OWNER=
       SERVICE=IN   SCRATCH=NO   CDS=00000 FILECNT=00100
     *
     DSNAME=PROD2.MULTIVOL.FILE                         VER=001
       USER=4444-ACCOUNT-56   PROD2
       BLKSIZE=060000         LRECL=00250    RECFM= FB
       FILESEQ=00010          BLKCNT=001000000  CPU=XE95     ABEND=
       KEEPDT =MM/DD/YYYY     EXPDT=MM/DD/YYYY            BASEVOL=0000055
       CDATE  =MM/DD/YYYY     CUNIT=0381     CJOB=AA1J402 CSTEP= STEP01
       CTIME  =06.21.54                      CPGM=GREATEST___ CDDN=BIGFILE
       LDATE  =MM/DD/YYYY     LUNIT=0381     LJOB=AA1J402USAGE nnn% nnn%
```

Example: JCL for a Specific Version

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD    *
DN DSN=SVTS.TGRP51.P0106.DAT22 VER=3
//
```

This JCL produces this display:

DN - Display Name

```
     VSN=001511    VOLSEQ=001  VOLCNT=001                    OWNER=
       SERVICE=IN   SCRATCH=YES  CDS=00000 FILECNT=00100
     *
     DSNAME=CA.CUSTOMER.ACCT.DAILY                      VER=003
       USER=
       BLKSIZE =06400        LRECL=00320  RECFM=FB      MGMTCLAS=
       FILESEQ=00010         BLKCNT=046260000 CPU=A     ABEND
       KEEPDT =MM/DD/YYYY    EXPDT=MM/DD/YYYY            BASEVOL=
       CDATE  =MM/DD/YYYY    CUNIT=286      CJOB=CA1ACCTS CSTEP=CAS0010
       CTIME  =15.14.26                     CPGM=        CDDN =
       LDATE  =MM/DD/YYYY    LUNIT=         LJOB=        USAGE nnn% nnn%
```

DVA Command—Display all Volume Information

Use the DVA command to display the following information about a volume:

- Volume status (scratch status, CDS number and so on)

- Data set characteristics (BLKSIZE and so on)

- Retention and location information (EXPDT and so on)

- History information (past damage and so on)

- Maintenance information (cleaning and certification data)

This command has the following format:

DVA *volser*

volser

Specifies the volume serial number.

Example: JCL for the DVA Command

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
 DVA 001511
//
```

This JCL produces the following display:

DVA - Display Volume All

```
VSN=000048    VOLSEQ=001  VOLCNT=0002                OWNER=
  SERVICE=IN  SCRATCH=NO  CDS=00000 FILECNT=00300
*
DSNAME=TEST.PERCENT.USED11                           VER=
  USER=JDVR TEST JOB  UTILIZATION
  BLKSIZE=032000      LRECL=00080  RECFM=FB      MGMTCLAS=

  BLKCNT =000550000     FILESEQ=00010 CPU=XE90      ABEND=

  KEEPDT =mm/dd/yyyy  EXPDT=                    BASEVOL=000048

  CDATE  =mm/dd/yyyy  CUNIT=4E80    CJOB=PCTUSED  CSTEP=STP01

  CTIME  =13.25.33              CPGM=TEST    CDDN=DD010

  LDATE  =            LUNIT=      LJOB=       PRECENT 001 60



VOLUME

  PURCHDT=            TAPETYP=    MFG=        LENGTH=0000 100

  OUTDATE=            OUTSRV =    STACKING=   ATL=        /000

  CLEANDT=            CLN-CNT=0000 CLN-USE=0011  ERG/MAX=0000/0000

  CERTDT =            CER-CNT=0000 CER-USE=0011  READERR=0000

  KEEPDT =mm/dd/yyyy  EXPDT=           LOC=DC   BOXCCSS=

  MOVEDT =            SCRDT=          DEN=CART  LABEL=SL /N

  RTN-SCHED(1) BY JCL  2DC0000
```

DVD - Display Volume Data

Use this command to display the following information about a volume:

- Volume status (scratch status, CDS number and so on)

- Dataset characteristics (BLKSIZE and so on)

This command has the following format:

DVD *volser* [*nnn*]

volser

Specifies the volume serial number.

nnn

(Optional) Specifies the relative file number if the volume contains multiple data sets. If you do not give a relative file number, you will see the first file on the volume.

Example: JCL for the DVD Command

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
DVD 000048 2
//
```

This JCL produces this display:

DVD - Display Volume Data

```
VSN=000048     VOLSEQ=001  VOLCNT=0003                OWNER=

  SERVICE=IN  SCRATCH=NO  CDS=00000 FILECNT=00300

*

DSNAME=TEST.PERCENT.USED11                           VER=

  USER=JDVR TESTOB  UTILIZATION

  BLKSIZE=032000       LRECL=00080  RECFM= FB     MGMTCLAS=

  BLKCNT =000550000      FILESEQ=00010 CPU=XE90      ABEND=

  KEEPDT =mm/dd/yyyy  EXPDT=                    BASEVOL=000048

  CDATE  =mm/dd/yyyy  CUNIT=4E80    CJOB=PCTUSED3 CSTEP=STP01

  CTIME  =13.25.33              CPGM=TEST     CDDN=DD010

  LDATE  =            LUNIT=    LJOB=         PERCENT 001 60
```

DVH Command—Display Volume Status and History Information

Use the DVH command to display the following information about a volume:

- Volume status (scratch status, CDS number and so on)
- History information (past damage and so on)

This command has the following format:

DVH *volser*

volser

Defines the volume serial number.

Example: JCL for the DVH Command

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
DVH 000048
//
```

This JCL produces this display:

```
VSN=000048    VOLSEQ=001  VOLCNT=0002               OWNER=
  SERVICE=IN  SCRATCH=YES CDS=00000 FILECNT=00300
*
  PURCHDT=           TAPETYP=      MFG=          LENGTH=0000 001
  OUTDATE=           OUTSRV =      STACKING=     ATL=       /000
```

DVL Command—Display Volume Serial Numbers and Data Set Names

Use the DVL command to display a list of the volume serial numbers and data set names associated with a specific volume serial number.

This command has the following format:

DVL *volser*

volser

Specifies the volume serial number.

Example: JCL for the DVL Command

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
DVL 000048
//
```

This JCL produces the following display:

```
000048 0001        VNDEX.MLEL.DSN03
000048 000050
```

DVM Command—Display Volume Status and Maintenance Information

Use the DVM command to display the following information about a volume:

■ Volume status (scratch status, CDS number and so on)

■ Maintenance information (cleaning and certification data)

This command has the following format:

DVM *volser*

volser

Specifies the volume serial number.

Example: JCL for the DVM Command

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
DVM 000048
```

This JCL produces this display:

```
VSN=000048    VOLSEQ=001  VOLCNT=0002                OWNER=
  SERVICE=IN  SCRATCH=NO CDS=00000 FILECNT=00100
*
  CLEANDT=MM/DD/YYYY CLN-CNT=0002  CLN-USE=0000  ERG/MAX=0000/0000
  CERTDT =MM/DD/YYYY CER-CNT=0001  CER-USE=0000  READERR=0000
```

DVR Command—Display Volume Status and Retention Information

Use the DVR command to display the following information about a volume:

- Volume status (scratch status, CDS number and so on)

- Retention and location information (EXPDT and so on)

This command has the following format:

DVR *volser*

volser

Specifies the volume serial number.

Example: JCL for the DVR Command

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
DVR 000048
```

This JCL produces this display:

```
VSN=000048    VOLSEQ=001  VOLCNT=0002                  OWNER=
  SERVICE=IN  SCRATCH=NO  CDS=00000 FILECNT=00100
*
DSNAME=VNDEX.MLEL.DSN03                                VER=
  KEEPDT =mm/dd/yyyy  EXPDT=           LOC=CW   BOXCCSS=
  MOVEDT =            SCRDT=            DEN=CART LABEL=SL /P
  RTN-SCHED(1) BY JCL  2CW0000
```

SDT Command—Set the Date Format

Use the SDT command to set the date format to be used for subsequent displays.

This command has the following format:

DST *datefmt*

datefmt

Specifies the preferred date format.

Example: JCL for the SDT Command

```
// TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
SDT mm/dd/yyyy
//
```

Note: If the date format contains an embedded blank or comma, it must be enclosed in single quotes or parentheses.

UPD Command—Update Volume Information

 Use the UPD command to update volume data in the Volume Master File.

This command has the following format:

UPD *volser* keyword=*value* [,keyword=*value*]...

volser

Specifies the volume serial number.

keyword=*value*

Each value in the Volume Master File has a keyword associated with it. To change the value, code the keyword followed by an equal sign and the new value.

Note: For information on keywords and their values, see the section <u>VMF Keywords</u> (see page 221).

Usage Notes

You can code multiple keywords on the same command, ending before position 72. Separate keywords with a comma or a space after the value.

To delete a value, code the keyword followed by a comma or a space; for example CJOB=, or CJOB= .

To change dates, specify the date in either Julian or preferred date format. For EXPDT, use TLMS keywords. If the preferred date format contains blanks or commas, enclose it in single quotes or parentheses.

When you issue this command, you get a printout of the new dataset information, which you can verify.

If you are updating values for a data set that is contained on multiple volumes, you must specify the UPD command for each volume that contains the dataset.

If there is more than one dataset on the volume, use the FILESEQ keyword to give the relative file number of the dataset.

Example: JCL for the UPD Command

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
UPD 001511 BLKSIZE=4800
//
```

This example changes the block size for the dataset on volume 001511 to 4800.

This JCL produces this display:

```
VSN=001511    VOLSEQ=001  VOLCNT=001                OWNER=
  SERVICE=IN  SCRATCH=YES CDS=00000 FILECNT=00001
*
DSNAME=SVTS.TGRP51.P0106.DAT22                       VER=
  USER=121400000       FERR015
  BLKSIZE=004800     LRECL=00080   RECFM=FB      MGMTCLAS=
  BLKCNT =000000003  FILESEQ=00001 CPU=XE90      BESKEY=00000
  KEEPDT =09/25/2008 EXPDT=09/18/2008            BASEVOL=001511
  CDATE  =09/18/2008 CUNIT=078A    CJOB=GENDAT20 CSTEP=STEP02
  CTIME  =15.45.26   ABEND=        CPGM=IEBDG    CDDN=OUTPUT
  LDATE  =09/18/2008 LUNIT= 078B   LJOB=GENDAT20 PERCENT 001 00
```

UPV Command—Update Volume Information

Use the UPV command to update volume values in the Volume Master File.

This command has the following format:

UPV *volser* keyword=*value* [,keyword=*value*]...

volser

Specifies the volume serial number.

keyword=*value*

Each value in the Volume Master File has a keyword associated with it. To change the value, code the keyword followed by an equal sign and the new value.

Note: For information on keywords and their values, see the section <u>VMF Keywords</u> (see page 221).

Usage Notes

You can code multiple keywords on the same command, ending before position 72. Separate keywords with a comma or space after the value.

To delete a keyword value, code the keyword without a value.

To change dates, specify the date in either Julian or preferred format. For EXPDT, you can use TLMS keywords. If the preferred date format contains blanks or commas, enclose it in single quotes or parentheses.

When you issue this command, you will get a printout of the new volume information, which you can verify.

To manually change the scratch/nonscratch or in-service/out-of-service indicator, specify SCRATCH=YES|NO or SERVICE=IN|OUT. You must also specify CDS=n if there is more than one dataset on the volume. No other keywords are allowed with SCRATCH. These additional keywords are allowed with SERVICE: OUTSRV and OUTDATE. The CDS number (n) must be the same as the file sequence number (FILESEQ) of the controlling dataset for the volume. To see the controlling dataset file sequence number, use the DV command to display volume information.

When you specify SCRATCH=YES, CA TLMS will uncatalog the datasets in the z/OS catalog. EDM owned volumes must have the owner ID blanked out if issuing a SCRATCH command.

Sample JCL for clearing an OWNER field

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
UPV CAI130,OWNER=' '
//
```

Sample JCL for Scratching a Volume

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
UPV CAI130,SCRATCH=YES,CDS=0004
//
```

This example will scratch volume CAI130 and any additional continuation volumes under the following conditions: if CAI130 is the base volume (VOLSEQ=1) and if the CDS is the fourth data set on the volume (FILESEQ=4). Scratching volumes sets the expiration date for all data sets on all scratched volumes to the current date.

Sample JCL for Changing the Service Indicator

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
UPV CAI130,SERVICE=IN,CDS=0004
```

This example will put volume CAI130 back into service if the CDS is the fourth data set on the volume (FILESEQ=4).

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
/UPV CPX123,SERVICE=OUT,OUTDATE=03/13/1991
```

This example will change a volume to out-of-service and also update the destroy date field.

Sample JCL for Changing the Retention Schedule

Before a "SCHED" command can be issued, TLMSIPO option MANUAL=YES must be specified.

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
UPV CPX123,SCHED(6DC,7L2)
```

This example will change a volume's retention schedule to move the volume from the data center as soon as TRS runs, and retain the volume at location L2 under manual control.

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
UPV CPX123,SCHED(,,7L3)
```

This example will change the value of the third retention entry in the schedule to manual control. Other entries in the schedule remain unchanged.

The SCHED keyword allows you to update the RTN-SCHED of a tape without RMF changes, and restricts the changes to a single chain. TRS will not override a retention schedule updated with the SCHED keyword. The value of SCHED is 1 to 6 retentions of the same values as the RMF. These must be separated by blanks or commas. The tapes current location must be somewhere in the schedule, and the retention will automatically be set to match the current location. Retention methods are edited for required count fields. An omitted retention entry will be left unchanged. SCHED() clears the retention schedule and allows TRS to assign a new one.

Sample JCL for Changing the ATL Codes

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
UPV CPX123,ATL(MEMOREX,4)
```

This example will change the volume's automated tape library (ATL) information to indicate that the volume is in MEMOREX ATL number 4.

Sample JCL for Changing the SMS Management Class

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
UPD CPX123 MGMTCLAS=LAPD
```

This example will change the volume's SMS management class field to LAPD. This has no real effect on SMS processing, or SMS rules. This field is information only.

Sample JCL for Resetting the WORM Values

```
//TLMSINQR  JOB
//TLMSINQR  EXEC CATINQR
//CAIIPT    DD   *
UPV CPX123 CLRWRM
```

This example will change the volume's WORM fields to binary zeros. This will permit these values to be captured from the hardware when the tape is next accessed.

Chapter 6: Reports

This chapter provides instructions for generating reports using CA TLMS.

CA TLMS Reports

CA TLMS reports provide the following information:

Volume Reports

Report Name	Report Title
TLERPT02	Volumes Out of Service
TLERPT03	Scratched Volumes
TLERPT05	Clean Report
TLERPT06	Inventory Report for Location
TLERPT09	Volumes to Be Certified
TLERPT10	Volume Master
TLERPT13	Volume Status by Manufacturer
TLERPT17	Active Auxiliary Records
TLERPT18	User Generated Report
TLERPT21	Volumes to be Removed from ATL
TLERPT22	Tapes to be Imported
TLERPT23	Exported Virtual Tape Inventory
TLERPT20	Distributed Tape Volume Master

Data Set Reports

Report Name	Report Title
TLERPT04	Active Data Sets by Data Set Name
TLERPT06	Inventory Report for Location
TLERPT07	Active Data Sets for Accounting Code
TLERPT08	Active Volumes by EXPDT Keyword

Report Name	Report Title
TLERPT11	Data Sets Created on MM/DD/YYYY
TLERPT12	Data Sets Used as Input on MM/DD/YYYY
TLERPT18	User Generated Report

Miscellaneous Reports

Report Name	Report Title
TLMS014	Available Cabinet/Slot for Location
TLMS015	Tape Retention Location Records
TLMS016	Tape Retention Selection Records
TLERPT19	System Activity Analysis
TLMS054	Retention Master Updates/Errors

Tape Retention System Reports

Report Name	Report Title
TLMS041	Tape Retention Error/Exception
TLMS042	Volumes to Be Moved
TLMS043	Volumes Scratched by Tape Retention System
TLMS044	All Volumes by Current Retention Method

All standard CA TLMS reports are illustrated in this chapter in alphabetical order by report number.

All VMF and transaction (ALOG) data use z/OS EARL Service report writer for maximum customization. RMF data is reported by TLMSRMFP. The retention system reports come from TLMSTRS.

CA Easytrieve Report Generator Reports

For clients who wish to write their own reports with CA Easytrieve® Report Generator, two copy members are provided. CTEZTVCM which defines the common tape database record, and CTEZTVCN which defines common tape constants.

Generating Reports

The four tape retention reports (TLMS041, TLMS042, TLMS043 and TLMS044) are produced when you execute CATTRS to run the Tape Retention System. TLMS054 is produced when you execute CATRMFE to update the Retention Master File. Reports TLERPT02 through TLERPT13 and TLERPT18 through TLERPT23 are produced by running z/OS EARL Service and execute the CATEARL procedure. To produce the TLMS014, TLMS015 and TLMS016 reports, execute CATRMFP with TLMS0nn report command statements.

Specify each command statement in this format:

TLMS0*nn* ,*parm* ,*parm*...

TLMS0*nn*

Specifies the number of the report.

Position: Columns 5 to 7

,parm,parm,...

Specifies any report parameters. Each report has its own set of parameters, which are detailed in this chapter.

Position: Columns 8 to 71

Follow these rules when specifying TLMS0nn command statements:

- Specify as many commands as you want in any order, but specify only one report on each command.

- Start each command in position 1.

- Pad nnn to three positions by adding leading zeros. Omit leading zeros in parameters.

- Specify a comma before each parameter.

- Use an * in position 1 to identify a comment. All comments are printed in the TLMS001 report.

- Do not embed any spaces. A space terminates the command.

- Use the CA TLMS system options, PAGESIZ and DATEFMT, to change the size of the page and the format of the dates. The status of these two options is printed on the TLMS001 Report Request report.

- Specify date parameters in the preferred or Julian format.

- Combine the report commands (except TLMS044) with the display and update commands. All update commands will be processed before any reports.

- Use the **SDT (fmt)** command to set a new preferred date format for this report.

More information:

Volumes Out of Service (TLERPTO2)

TLERPTO2 lists all tapes volumes that are out of service (SERVICE=OUT) at the current time, regardless of whether they are scratch tapes or nonscratch tapes. Volumes are listed in order by volume serial number.

To execute CA Common Services for z/OS EARL Service reports, use the following:

```
//     EXEC CATEARL,
//     PRM=''
//CATECOGO.SYSIN DD *
   COPY TLERPTO2
```

Example

```
C O M P A N Y   N A M E        VOLUMES OUT OF SERVICE           TLERPT02  PAGE     1
CA TLMS NN.n yymmTLrrr                                          dd/mm/yy    hh.mm.ss
------------------------------------------------------------------------------------
VOLSER DATA SET NAME                      FILE    CREATE   CREATE  CREATE      DATE LOC SLOT    SRV
                                          SEQ       DATE     TIME  JOBNAME    MOVED  ID         IND
------------------------------------------------------------------------------------
100000 BNKDV.CL0CUR.CL10.QSPST1.DAY1         1  mm/dd/yyyy 12:21:27 CLCBKUP           DC         OUT
100001 MVSSYS.ARCHLOG1.B0000016              1  mm/dd/yyyy 01:08:48 DB2MSTR           DC         OUT
100002 BNKDV.PR4.PR50.ASBKUP.G0003V00        1  mm/dd/yyyy 13:29:14 A5D800            DC         LOST
100003 MVSSYS.ARCHLOG1.B0000094              1  mm/dd/yyyy 14:24:50 DB2MSTR           DC         OUT
100004 APDDM.VSMBKUP1                        1  mm/dd/yyyy 09:52:26 VSMBKUP           DC         OUT
100005 BNKDV.PR0.PR50.ASBKUP.G0002V00        1  mm/dd/yyyy 14:01:20 A5D800            DC         OUT
100006 BNKDV.PR4.PR50.ASBKUP.G0004V00        1  mm/dd/yyyy 14:05:08 A5D800            DC         LOST
100007 CSIINC.TESTGDG.TRKD001.BKUP.G0022V00  1  mm/dd/yyyy 16:40:59 TRKDAB01          DC         OUT
100008 BNKDV.PR0.PR50.ASBKUP.G0003V00        1  mm/dd/yyyy 15:05:06 A5D800            DC         BAD
100009 FAUMA01.NETBACK.IX                    1  mm/dd/yyyy 14:04:02 FAUMA01B          DC         OUT
100010 DB2R13.DB213.ARCHLOG1.B0000110        1  mm/dd/yyyy 11:12:31 DB23MSTR          DC         OUT
100011 MVSSYS.ARCHLOG2.B0000336              1  mm/dd/yyyy 10:52:25 DB2MSTR           DC         OUT
100013 MDBDM.APD5BKUP.BASE230.G0010V00       1  mm/dd/yyyy 08:29:20 SCHGE03B          DC         OUT
100014 DB2R13.ARCHLOG2.B0000029              1  mm/dd/yyyy 11:57:55 DB23MSTR          DC         OUT
100015 MVSSYS.ARCHLOG2.B0000095              1  mm/dd/yyyy 15:07:55 DB2MSTR           DC         BAD
100016 PCSSP.CICSCSP4.CSSFILE.BACKUP.G0050V00 1 mm/dd/yyyy 05:24:31 PCSSPDBC          DC         OUT
100017 PCSSP.CICSCSP4.CSSFILE.BACKUP.G0050V00 1 mm/dd/yyyy 05:32:52 PCSSPDBC          DC         OUT
100018                                                                                DC         OUT
100019 BNKDV.PR0NEW.PR80.ASBKUP.G0005V00     1  mm/dd/yyyy 21:54:02 A8D800            DC         LOST
100020 CL0.V53.DOS.M.SOURCE                  1  mm/dd/yyyy 10:27:15 FIZ530D           DC         OUT
100021 APDPS.LD300300.V1                     1  mm/dd/yyyy 16:31:28 ABSBKUP           DC         OUT
100022 MVSSYS.ARCHLOG1.B0000187              1  mm/dd/yyyy 16:35:26 DB2MSTR           DC         OUT
100023 BNKDV.CLQCUR.CL10.QSPST1.DAY6         1  mm/dd/yyyy 10:38:29 CLCBKUP           DC         OUT
100024 FAUMA01.NETBACK.CH                    1  mm/dd/yyyy 14:01:43 FAUMA01B          DC         OUT
100026 OFCS.V47.BACKUP.LIST                  1  mm/dd/yyyy 18:09:02 FSWBKUPL          DC         OUT
100027 BNKDM.MI0CUR.MI30.CFBUCF.G0013V00     1  mm/dd/yyyy 09:43:45 C3D800            DC         OUT
100028 CAI.INSTALL                           1  mm/dd/yyyy 12:32:46 MORTINST          DC         OUT
100029 FERWI01.MVSXAE4.VSEM002.BACKUP.G0002V00 1 mm/dd/yyyy 09:27:55 SEMINIB2         DC         OUT
100030 BNKDV.PR0NEW.PR80.ASBKUP.G0004V00     1  mm/dd/yyyy 19:17:40 A8D800            DC         OUT
100031 SPDQA.TL539012.SMP4.BACKUP            1  mm/dd/yyyy 16:06:03 BACKUP            DC         OUT
100032 DB2R13.DB213.ARCHLOG2.B0000052        1  mm/dd/yyyy 17:49:55 DB23MSTR          DC         OUT
100033 CSIINC.VBKUP.SEARS.OCSD001            1  mm/dd/yyyy 12:35:00 GDBVBK02          DC         OUT
100034 DB2V2206.ARCHLOG2.B0000001            1  mm/dd/yyyy 14:13:26 DB2MSTR           DC         OUT
100035 FCS.TEST.RDAM.GLF900.G0005V00         1  mm/dd/yyyy 18:44:50 FXGGDEF           DC         OUT
100036 FERWI01.MVSXAE4.VSEM001.BACKUP.G0002V00 1 mm/dd/yyyy 09:32:08 SEMINIB1         DC         OUT
100037 DB2R13.ARCHLOG2.B0000032              1  mm/dd/yyyy 12:38:58 DB23MSTR          DC         OUT
100038 WIDSE01.CA6.STATE.UTILS.IBM3390       1  mm/dd/yyyy 11:02:13 WIDSE01C          DC         OUT
100039 APDDM.BK1                             1  mm/dd/yyyy 16:50:23 ABSBKUP           DC         OUT
100040 PCSSP.CICSCSP4.CSSFILE.BACKUP.G0050V00 1 mm/dd/yyyy 04:43:57 PCSSPDBC          DC         OUT
100041 DB2TEST.ARCHLOG1.B0000014             1  mm/dd/yyyy 13:30:16 DB2MSTR           DC         OUT
100042                                                                                DC         OUT
100043 DB2TEST.ARCHLOG2.B0000014             1  mm/dd/yyyy 14:44:10 DB2MSTR           DC         OUT
100044 BNKDV.CICSBDVN.CAICSL.G0012V00        1  mm/dd/yyyy 09:30:30 CSLBKUP           DC         OUT
100045                                                                                DC         OUT
100046 FERWI01.MVSXAE4.VSEM001.BACKUP.G0002V00 1 mm/dd/yyyy 09:37:09 SEMINIB1         DC         OUT
100047 BNKDV.EF0.EF10.ESBKUP.G0007V00        1  mm/dd/yyyy 16:59:06 E1D800            DC         OUT
100048 BNKDV.EA6.EA60.NSBKUP.G0001V00        1  mm/dd/yyyy 09:58:55 N6D800            DC         OUT
100049 DB2R13.DB213.ARCHLOG2.B0000059        1  mm/dd/yyyy 11:31:34 DB23MSTR          DC         OUT
100051 BNKDV.ML0NEW.ML10.MTBKUP.DEC31        1  mm/dd/yyyy 14:56:24 MLD800T           DC         OUT
100052 PSV.CM73.DEMO.BKUP2.ASKCMI            1  mm/dd/yyyy 10:39:00 ASPAL01B          DC         OUT
100053 BNKDV.AN4NEW.MI40.MIBKUM.G0006V00     1  mm/dd/yyyy 18:13:37 MID800            DC         OUT
100054 SSDECS.L29106.FICHE.SOURCE            1  mm/dd/yyyy 16:34:17 DUREDDFT          DC         OUT
100055 NIEDI01.SJ0005.FDR.TAPE1              1  mm/dd/yyyy 20:20:45 NIEDI01F          DC         OUT
```

Scratched Volumes (TLERPT03)

TLERPT03 lists all tape volumes in the Volume Master File that are in scratch status (SCRATCH=YES). Tapes that have been reused since being scratched will not appear on this report. Optional parameters let you produce the report for a specific date or for all scratch volumes. If no parameters are specified, the report is for the current system date.

SAMPLE 1 - VOLUMES SCRATCHED ON THE CURRENT DATE

```
//        EXEC CATEARL,
//            PRM=''
//CATECOGO.SYSIN DD *
   COPY TLERPT03
```

SAMPLE 2 - VOLUMES SCRATCHED ON 02/04/1996

```
//        EXEC CATEARL,
//            PRM='02/04/1996'
//CATECOGO.SYSIN DD *
   COPY TLERPT03
```

SAMPLE 3 - ALL VOLUMES IN THE SCRATCH STATUS

```
//        EXEC CATEARL,
//            PRM='ALL'
//CATECOGO.SYSIN DD *
   COPY TLERPT03
```

Report Example

```
C O M P A N Y   N A M E        SCRATCHED VOLUMES              TLERPT03  PAGE    1
CA TLMS NN.n yymmTLrrr                                        dd/mm/yy   hh.mm.ss
-------------------------------------------------------------------------------------------
VOLSER  DATA SET NAME                          FILE    CREATE    CREATE  CREATE        LAST  LAST        DATE
                                               SEQ       DATE      TIME  JOBNAME       DATE  JOB     SCRATCHED
-------------------------------------------------------------------------------------------
000021  PHON.NTLY.BACKUP.TAPE.G1135V00          1    mm/dd/yyyy  21:10:14  0010BKUP                      mm/dd/yyyy
000066  RNYP.NTLY.BACKUP.TAPE.G1122V00          1    mm/dd/yyyy  02:28:08  0012BKUP                      mm/dd/yyyy
000096  SYS2.NTLY.BACKUP.G0502V00               1    mm/dd/yyyy  03:05:17  0218BKUP                      mm/dd/yyyy
000108  SYS2.SMF.DAILY.DUMP.G1705V00            1    mm/dd/yyyy  00:01:26  SMFDAY   mm/dd/yyyy  0041CICS  mm/dd/yyyy
000147  SYS2.NTLY.BACKUP.G0502V00               1    mm/dd/yyyy  02:25:16  0218BKUP                      mm/dd/yyyy
000166  CATBACK.CATALOG.RMS.DUPDMSX.EXPORT.G1236V00  1  mm/dd/yyyy  20:39:03  0020EXPT                  mm/dd/yyyy
000186  RNYP.NTLY.BACKUP.TAPE.G1122V00          1    mm/dd/yyyy  03:37:24  0012BKUP                      mm/dd/yyyy
000242  RNYP.NTLY.BACKUP.TAPE.G1122V00          1    mm/dd/yyyy  02:43:57  0012BKUP                      mm/dd/yyyy
000249  PRODLIB.NTLY.PARTTWO.BACKUP.TAPE.G0790V00  1  mm/dd/yyyy  03:45:44  0024BKUP                    mm/dd/yyyy
000270  RNYP.NTLY.BACKUP.TAPE.G1122V00          1    mm/dd/yyyy  03:09:16  0012BKUP                      mm/dd/yyyy
000272  OFFLOAD.T0517.ONE                       1    mm/dd/yyyy  07:56:41  JES2     mm/dd/yyyy  JES2      mm/dd/yyyy
000292  HIST.NTLY.BACKUP.TAPE.G1124V00          1    mm/dd/yyyy  21:07:26  0006HBKP                      mm/dd/yyyy
000312  SYS2.NTLY.BACKUP.G0502V00               1    mm/dd/yyyy  02:16:52  0218BKUP                      mm/dd/yyyy
000317  RNYP.NTLY.BACKUP.TAPE.G1122V00          1    mm/dd/yyyy  02:57:59  0012BKUP                      mm/dd/yyyy
000423                                                                                                   mm/dd/yyyy
000437  RNYP.NTLY.BACKUP.TAPE.G1122V00          1    mm/dd/yyyy  03:25:53  0012BKUP                      mm/dd/yyyy
000473  TEMP.R073.PREV.YTD.ORDER.INQ.R284       1    mm/dd/yyyy  00:58:05  R073REDI  mm/dd/yyyy  R073REDI  mm/dd/yyyy
000484  TEMP.D004.ANDTHIST.TEMP                 1    mm/dd/yyyy  02:51:44  D004ANDZ  mm/dd/yyyy  D004ANDZ  mm/dd/yyyy
000527                                                                                                   mm/dd/yyyy
000546  SYS2.NTLY.BACKUP.G0502V00               1    mm/dd/yyyy  02:54:11  0218BKUP                      mm/dd/yyyy
000553  SYS2.NTLY.BACKUP.G0502V00               1    mm/dd/yyyy  02:08:55  0218BKUP                      mm/dd/yyyy
000610  INFOPAC.ARCH.U022123.E950508            1    mm/dd/yyyy  16:49:02  0286IPAC                      mm/dd/yyyy
000612  DMRMS.DMMLYINQ.R284.G3119V00            1    mm/dd/yyyy  01:06:17  D521DLOG  mm/dd/yyyy  D521DLOG  mm/dd/yyyy
000658  HIST.NTLY.BACKUP.TAPE.G1124V00          1    mm/dd/yyyy  22:55:43  0006HBKP                      mm/dd/yyyy
000660  HIST.NTLY.BACKUP.TAPE.G1124V00          1    mm/dd/yyyy  22:48:00  0006HBKP                      mm/dd/yyyy
000663                                                                                                   
000679  DMRMS.DMMLYINQ.R284.G3544V00            1    mm/dd/yyyy  01:55:26  D096DLOG                      mm/dd/yyyy
000687  TEST.IU359.RBLANK.SORTED.KREI           1    mm/dd/yyyy  10:02:19  IU359KRE  mm/dd/yyyy  IU359KRE  mm/dd/yyyy
000759  PRODLIB.MTLY.PARTTWO.BACKUP.TAPE.G0043V00  1  mm/dd/yyyy  06:43:35  0026MBAK  mm/dd/yyyy  OP429RST  mm/dd/yyyy
000765  REDI.NTLY.BACKUP.TAPE.G1129V00          1    mm/dd/yyyy  21:56:48  0014BKUP                      mm/dd/yyyy
000766  PRODLIB.MTLY.PARTTWO.BACKUP.TAPE.G0043V00  1  mm/dd/yyyy  06:39:23  0026MBAK  mm/dd/yyyy  OP429RST  mm/dd/yyyy
000768  INFOPAC.ARCH.U090722.E950420            1    mm/dd/yyyy  16:42:00  0286IPAC                      mm/dd/yyyy
000775  SYS1.NTLY.BACKUP.G0228V00               1    mm/dd/yyyy  22:16:52  0307BKUP                      mm/dd/yyyy
000782  HIST.NTLY.BACKUP.TAPE.G1124V00          1    mm/dd/yyyy  21:35:26  0006HBKP                      mm/dd/yyyy
000789  DMRMS.NTLY.BACKUP.TAPE.G1129V00         1    mm/dd/yyyy  21:10:41  0004BKUP                      mm/dd/yyyy
000806  INFOPAC.ARCH.U022256.E950508            1    mm/dd/yyyy  16:48:32  0286IPAC                      mm/dd/yyyy
000813  DMRMS.NTLY.BACKUP.TAPE.G1129V00         1    mm/dd/yyyy  21:36:35  0004BKUP                      mm/dd/yyyy
000821  RMSP.NTLY.BACKUP.TAPE.G1130V00          1    mm/dd/yyyy  21:54:34  0011BKUP                      mm/dd/yyyy
000868  HIST.NTLY.BACKUP.TAPE.G1124V00          1    mm/dd/yyyy  21:52:56  0006HBKP                      mm/dd/yyyy
000869  MAIL.NTLY.BACKUP.TAPE.G1120V00          1    mm/dd/yyyy  03:56:30  0008BKUP                      mm/dd/yyyy
000887  DUPD.NTLY.BACKUP.TAPE.G1126V00          1    mm/dd/yyyy  21:56:54  0003BKUP                      mm/dd/yyyy
000906  PAPR.NTLY.BACKUP.TAPE.G1128V00          1    mm/dd/yyyy  21:45:29  0009BKUP                      mm/dd/yyyy
000921  SYS3.CAI.TLMS.BKUPVMF.G5258V00          1    mm/dd/yyyy  07:31:22  0121TLMS                      mm/dd/yyyy
000971  INFO.BACKUP.TYPE.MTD.DK.R181.G1344V00   1    mm/dd/yyyy  02:32:43  Y722RUPD  mm/dd/yyyy  Y772ESOP  mm/dd/yyyy
000972  INFOPAC.ARCH.U034045.E950506            1    mm/dd/yyyy  16:32:36  0286IPAC                      mm/dd/yyyy
000980  PHONTP.YSAFET01.R005.G0125V00           1    mm/dd/yyyy  03:52:14  C243SAFE                      mm/dd/yyyy
000987  CORP.CSAFEP01.R153.G0159V00             1    mm/dd/yyyy  03:22:54  C243SAFE                      mm/dd/yyyy
000999  TEST.IA987.ACURA.DLRS.GEO               1    mm/dd/yyyy  10:22:02  IA987ACU  mm/dd/yyyy  IA987ACU  mm/dd/yyyy
001038  TEST.IU359.RBLANK.ERAI3                 1    mm/dd/yyyy  09:38:37  IU359ERA  mm/dd/yyyy  IU359ERA  mm/dd/yyyy
001054  INFOPAC.ARCH.U023415.E950511            1    mm/dd/yyyy  16:46:25  0286IPAC                      mm/dd/yyyy
001072  PHONTP.YSAFEP01.R005.G0261V00           1    mm/dd/yyyy  03:23:32  C243SAFE                      mm/dd/yyyy
001085  TEST.IU359.YTD.ERAI3                    1    mm/dd/yyyy  09:35:38  IU359ERA  mm/dd/yyyy  IU359ERA  mm/dd/yyyy
001111  RNYP.Y007.SFXX.DEALER.MASTER.BKP.G0147V00  1  mm/dd/yyyy  03:10:06  Y007SFXX                    mm/dd/yyyy
```

Active Data Sets by Data Set Name (TLERPT04)

TLERPT04 lists all tape volumes in the Volume Master File that are not in scratch status (SCRATCH=NO). The list is in order by data set name. It can be used as a data set/volume cross-reference, to see which data sets are on which volumes.

If a data set spans more than one volume, all volumes are listed under the data set name.

SAMPLE 1 - ACTIVE VOLUMES

```
//          EXEC CATEARL,
//             PRM=''
//CATECOGO.SYSIN DD *
   COPY TLERPT04
```

Report Example

```
C O M P A N Y   N A M E        ACTIVE DATA SETS               TLERPT04  PAGE    1
CA TLMS NN.n yymmTLrrr                                         dd/mm/yy   hh.mm.ss
---------------------------------------------------------------------------------------------
DATA SET NAME                    FILE  VOLSER  SCR    CREATE     CREATE   CREATE        LAST      LAST
                                 SEQ           IND     DATE       TIME    JOBNAME       DATE      JOB
---------------------------------------------------------------------------------------------
                                       104604  N
#1267381.REST722.@CART             2   207643  N                          TIIDUMMY   mm/dd/yyyy  BABSI012
ADMIN.GENESYS.CPS20502.G0077V00    1   103403  N     mm/dd/yyyy  19:30:34  VICGEN    mm/dd/yyyy  VICGENT
ANDY.SMPELIBS.BKUP8601             1   103070  N     mm/dd/yyyy  15:55:26  ANDYBKUP  mm/dd/yyyy  ANDYREST
ANGIE01.BACKUP.SEM001.TAPE         1   103593  N     mm/dd/yyyy  17:38:57  SEMINIX
APD.MHER71.LD                      1   101986  N     mm/dd/yyyy  15:06:28  MVSLIBKP  mm/dd/yyyy  MVSLIBRS
APD.MHER71.LD                      1   106459  N     mm/dd/yyyy  07:05:42  MVSLIBKP  mm/dd/yyyy  MVSLIBRS
APD.STUWA01.BACKUP                 1   101854  N     mm/dd/yyyy  12:23:45  WJGDSSDM
APDAD.AP71.JCL                     3   104438  N     mm/dd/yyyy  16:17:34  APBKPBAS
APDAD.AP71.LD                      1   104438  N     mm/dd/yyyy  16:14:30  APBKPBAS
APDAD.AP71.OB                      4   104438  N     mm/dd/yyyy  16:18:48  APBKPBAS
APDAD.AP71.SRC                     2   104438  N     mm/dd/yyyy  16:17:22  APBKPBAS
APDAD.DEMOJCL                      1   101528  N     mm/dd/yyyy  10:32:53  APBDEMO
APDAD.MV71.JCL                     4   101399  N     mm/dd/yyyy  16:16:23  MVBKPBAS
APDAD.MV71.LD                      1   101399  N     mm/dd/yyyy  16:13:08  MVBKPBAS
APDAD.MV71.OB                      3   101399  N     mm/dd/yyyy  16:15:48  MVBKPBAS
APDAD.MV71.SRC                     2   101399  N     mm/dd/yyyy  16:15:36  MVBKPBAS  mm/dd/yyyy  HUMRO01C
APDAD.POR71.LD                     1   106529  N     mm/dd/yyyy  07:18:28  POBTEST   mm/dd/yyyy  POUPD1
APDAD.POR71.LD                     1   106941  N     mm/dd/yyyy  07:21:09  POBTEST   mm/dd/yyyy  LIBREST
APDAD.POR71.LD                     1   107413  N     mm/dd/yyyy  10:16:40  POBTEST   mm/dd/yyyy  POUPD1
APDAD.POR71.OB                     3   107413  N     mm/dd/yyyy  10:20:49  POBTEST
APDAD.POR71.OB                     3   106941  N     mm/dd/yyyy  07:22:16  POBTEST   mm/dd/yyyy  POUPD1
APDAD.POR71.OB                     3   106529  N     mm/dd/yyyy  07:20:06  POBTEST   mm/dd/yyyy  POUPD1
APDAD.POR71.SRC                    2   106529  N     mm/dd/yyyy  07:19:40  POBTEST   mm/dd/yyyy  POUPD1
APDAD.POR71.SRC                    2   106941  N     mm/dd/yyyy  07:21:57  POBTEST   mm/dd/yyyy  LIBREST
APDAD.POR71.SRC                    2   107413  N     mm/dd/yyyy  10:18:35  POBTEST   mm/dd/yyyy  POUPD1
APDBASE.AP71.JCL                   3   104146  N     mm/dd/yyyy  16:00:06  APBKPBAS
APDBASE.AP71.LD                    1   104146  N     mm/dd/yyyy  15:47:24  APBKPBAS
APDBASE.AP71.OB                    4   104146  N     mm/dd/yyyy  16:04:23  APBKPBAS
APDBASE.AP71.SRC                   2   104146  N     mm/dd/yyyy  15:59:15  APBKPBAS
APDBASE.AP71TST.JCL                3   102971  N     mm/dd/yyyy  08:39:30  APBKPTST  mm/dd/yyyy  APRTEST
APDBASE.AP71TST.JCL                3   102946  N     mm/dd/yyyy  10:14:16  APBKPTST
APDBASE.AP71TST.JCL                3   102936  N     mm/dd/yyyy  09:42:22  APBKPTST
APDBASE.AP71TST.LD                 1   102936  N     mm/dd/yyyy  09:28:21  APBKPTST
APDBASE.AP71TST.LD                 1   102946  N     mm/dd/yyyy  10:07:17  APBKPTST
APDBASE.AP71TST.LD                 1   102971  N     mm/dd/yyyy  08:34:22  APBKPTST  mm/dd/yyyy  APRTEST
APDBASE.AP71TST.OB                 4   102971  N     mm/dd/yyyy  08:42:15  APBKPTST  mm/dd/yyyy  APRTEST
APDBASE.AP71TST.OB                 4   102946  N     mm/dd/yyyy  10:18:22  APBKPTST
APDBASE.AP71TST.OB                 4   102936  N     mm/dd/yyyy  09:49:45  APBKPTST
APDBASE.AP71TST.SRC                2   102936  N     mm/dd/yyyy  09:37:57  APBKPTST
APDBASE.AP71TST.SRC                2   102971  N     mm/dd/yyyy  08:36:29  APBKPTST  mm/dd/yyyy  APRTEST
APDBASE.AP71TST.SRC                2   102946  N     mm/dd/yyyy  10:10:17  APBKPTST
APDBASE.MV71.JCL                   4   104181  N     mm/dd/yyyy  16:08:57  MVBKPBAS
APDBASE.MV71.JCL                   4   106047  N     mm/dd/yyyy  15:42:33  MVBKPBAS
APDBASE.MV71.LD                    1   106047  N     mm/dd/yyyy  15:40:09  MVBKPBAS
APDBASE.MV71.LD                    1   104181  N     mm/dd/yyyy  16:06:23  MVBKPBAS
APDBASE.MV71.LD                    1   103457  N     mm/dd/yyyy  07:44:01  MVBKPTST
APDBASE.MV71.LD                    1   103124  N     mm/dd/yyyy  08:26:18  MVBKPTST  mm/dd/yyyy  MVRTEST
APDBASE.MV71.LD                    1   102977  N     mm/dd/yyyy  07:29:27  MVBKPTST
APDBASE.MV71.OB                    3   102977  N     mm/dd/yyyy  07:32:33  MVBKPTST
APDBASE.MV71.OB                    3   103124  N     mm/dd/yyyy  08:29:34  MVBKPTST  mm/dd/yyyy  MVRTEST
APDBASE.MV71.OB                    3   104181  N     mm/dd/yyyy  16:08:50  MVBKPBAS
APDBASE.MV71.OB                    3   106047  N     mm/dd/yyyy  15:42:27  MVBKPBAS
```

Clean Report (TLERPT05)

TLERPT05 lists all volumes that qualify for cleaning for one or more of the following reasons:

- They have been used a specified number of times since they were last cleaned.

- They have a specified number of erase gaps.

- They have a specified number of temporary read errors.

- A specified number of days have gone by since they were last cleaned.

Volumes are listed in order by volume serial number.

SAMPLE 1 - CLEAN REPORT

```
//          EXEC CATEARL,
//              PRM='00009,00000,00001,00001',
//CATECOGO.SYSIN DD *
   COPY TLERPT05



ALL COUNTS MUST BE ENTERED AS FIVE DIGITS. ENTER 00000 TO SKIP A R
EPORT.

?????,00000,00000,00000    -USE COUNT SINCE LAST CLEANED

00000,?????,00000,00000    -TOTAL NUMBER OF ERASE GAPS

00000,00000,?????,00000    -TOTAL NUMBER OF TEMPORARY READ ERRORS

00000,00000,00000,?????    -NUMBER OF DAYS SINCE LAST CLEANED
```

Report Example

```
C O M P A N Y   N A M E          CLEAN REPORT              TLERPT05  PAGE    1
CA TLMS NN.n yymmTLrrr                                      dd/mm/yy    hh.mm.ss
------------------------------------------------------------------------------------------------------
VOLSER   DATA SET NAME                    SCR   SRV      DATE   CREATE   CREATE      LAST    LAST
                                          IND   IND   CLEANED     TIME   JOBNAME     DATE     JOB
------------------------------------------------------------------------------------------------------
100000   BNKDV.CL0CUR.CL10.QSPST1.DAY1      N   OUT  mm/dd/yyyy 12:21:27 CLCBKUP   mm/dd/yyyy CLCRESD
100003   MVSSYS.ARCHLOG1.B0000094          N   OUT  mm/dd/yyyy 14:24:50 DB2MSTR
100005   BNKDV.PR0.PR50.ASBKUP.G0002V00    N   OUT             14:01:20 A5D800
100006   BNKDV.PR4.PR50.ASBKUP.G0004V00    N   OUT             14:05:08 A5D800    mm/dd/yyyy A5M820
100007   CSIINC.TESTGDG.TRKD001.BKUP.G0022V00 N OUT            16:40:59 TRKDAB01
100008   BNKDV.PR0.PR50.ASBKUP.G0003V00    N   OUT             15:05:06 A5D800    mm/dd/yyyy A5D820
100009   FAUMA01.NETBACK.IX                N   OUT             14:04:02 FAUMA01B
100010   DB2R13.DB213.ARCHLOG1.B0000110    N   OUT             11:12:31 DB23MSTR
100011   MVSSYS.ARCHLOG2.B0000336          N   OUT             10:52:25 DB2MSTR
100012                                     Y
100013   MDBDM.APD5BKUP.BASE230.G0010V00   N   OUT             08:29:20 SCHGE03B  mm/dd/yyyy SCHGE03R
100014   DB2R13.ARCHLOG2.B0000029          N   OUT             11:57:55 DB23MSTR
100015   MVSSYS.ARCHLOG2.B0000095   NOUT                       15:07:55 DB2MSTR
100016   PCSSP.CICSCSP4.CSSFILE.BACKUP.G0050V00 N OUT          05:24:31 PCSSPDBC
100017   PCSSP.CICSCSP4.CSSFILE.BACKUP.G0050V00 N OUT          05:32:52 PCSSPDBC
100018                                     N   OUT
100019   BNKDV.PR0NEW.PR80.ASBKUP.G0005V00 N   OUT             21:54:02 A8D800
100020   CL0.V53.DOS.M.SOURCE              N   OUT             10:27:15 FIZ530D   mm/dd/yyyy FIZ530D
100021   APDPS.LD300300.V1                 N   OUT             16:31:28 ABSBKUP   mm/dd/yyyy ABSREST
100022   MVSSYS.ARCHLOG1.B0000187          N   OUT             16:35:26 DB2MSTR
100023   BNKDV.CLQCUR.CL10.QSPST1.DAY6     N   OUT             10:38:29 CLCBKUP
100024   FAUMA01.NETBACK.CH                N   OUT             14:01:43 FAUMA01B
100025                                     Y
100026   OFCS.V47.BACKUP.LIST              N   OUT             18:09:02 FSWBKUPL
100027   BNKDM.MI0CUR.MI30.CFBUCF.G0013V00 N   OUT             09:43:45 C3D800
100028   CAI.INSTALL                       N   OUT             12:32:46 MORTINST
100029   FERWI01.MVSXAE4.VSEM002.BACKUP.G0002V00 N OUT         09:27:55 SEMINIB2  mm/dd/yyyy SEMINI2
100030   BNKDV.PR0NEW.PR80.ASBKUP.G0004V00 N   OUT             19:17:40 A8D800    mm/dd/yyyy A8D820
100031   SPDQA.TL539012.SMP4.BACKUP        N   OUT             16:06:03 BACKUP    mm/dd/yyyy TAPECOPY
100032   DB2R13.DB213.ARCHLOG2.B0000052    N   OUT             17:49:55 DB23MSTR
100033   CSIINC.VBKUP.SEARS.OCSD001        N   OUT             12:35:00 GDBVBK02
100034   DB2V2206.ARCHLOG2.B0000001        N   OUT             14:13:26 DB2MSTR
100035   FCS.TEST.RDAM.GLF900.G0005V00     N   OUT             18:44:50 FXGGDEF
100036   FERWI01.MVSXAE4.VSEM001.BACKUP.G0002V00 N OUT         09:32:08 SEMINIB1  mm/dd/yyyy SEMINI1
100037   DB2R13.ARCHLOG2.B0000032          N   OUT             12:38:58 DB23MSTR
100038   WIDSE01.CA6.STATE.UTILS.IBM3390   N   OUT             11:02:13 WIDSE01C
100054   SSDECS.L29106.FICHE.SOURCE        N   OUT             16:34:17 DUREDDFT
100055   NIEDI01.SJ0005.FDR.TAPE1          N   OUT             20:20:45 NIEDI01F
```

Inventory Report for Location (TLERPT06)

TLERPT06 lists all tape volumes by location in DSN and VSN sequence. It includes all volumes, regardless of whether they are scratch, nonscratch, in service or out of service. Each volume at the locations requested will be listed with the first DSN of that volume. The volume will not be listed multiple times if it is a multi-file volume.

Optional parameters let you generate this report for a single location or multiple locations. Otherwise, all locations are listed. Reports are created in DSN order and then in VSN order.

SAMPLE 1 - INVENTORY REPORT FOR SELECTED LOCATIONS

```
//          EXEC CATEARL,
//              PRM='DC,L1,L2,L3,L4,0F,03'
//CATECOGO.SYSIN DD *
   COPY TLERPT06
```

SAMPLE 2 - INVENTORY REPORT FOR ALL LOCATIONS

```
//          EXEC CATEARL,
//              PRM=''
//CATECOGO.SYSIN DD *
   COPY TLERPT06
```

Report Example

```
C O M P A N Y   N A M E    INVENTORY REPORT BY DSN FOR  DC              TLERPT06  PAGE     1
CA TLMS NN.n yymmTLrrr                                                  dd/mm/yy hh.mm.ss
-------------------------------------------------------------------------------------------------
DATA SET NAME                    FILE     VOLSER   SCR SRV        DATE       CREATE    CREATE       DATE
                                 SEQ               IND IND       MOVED        DATE      TIME      CLEANED
-------------------------------------------------------------------------------------------------

                                          000025    Y
                                          TDI099    Y
                                          TDI098    Y
AAAA.DSN1                         1        000015    N                     mm/dd/yyyy  08:02:39
ASM2.ZZZZZZ.DSN02                 1        TDI095    Y                     mm/dd/yyyy  09:00:46
ASM2.ZZZZZZ.DSN02                 1        TDI094    Y                     mm/dd/yyyy  08:56:40
CRAJ001.TESTGDG.G0001V00          1        TDI083    Y                     mm/dd/yyyy  08:55:32
CRAJ001.TESTGDG.G0001V00          1        TDI082    Y                     mm/dd/yyyy  08:53:02
CRAJ001.TESTGDG.G0002V00          1        TDI084    N                     mm/dd/yyyy  09:01:33
CRAJ001.TESTGDG.G0002V00          1        TDI086    N                     mm/dd/yyyy  09:03:32
```

```
C O M P A N Y   N A M E        INVENTORY REPORT BY VSN FOR DC        TLERPT06  PAGE      1
CA TLMS NW.n yymmTLrrr                                                dd/mm/yy    hh.mm.ss
-------------------------------------------------------------------------------------------------
VOLSER    SCR SRV   DATA SET NAME                        FILE      DATE      CREATE    CREATE        DATE
          IND IND                                        SEQ       MOVED     DATE      TIME          CLEANED
-------------------------------------------------------------------------------------------------
TDI001    N         TEST.XXXXX.DSN01                     1                   mm/dd/yyyy 10:19:07
TDI011    N         TEST.YYYYY.DSN01                     1                   mm/dd/yyyy 11:25:38
TDI012    N         TEST.YYYYYY.DSN02                    2                   mm/dd/yyyy 11:26:25
TDI013    N         TEST.YYYYYY.DSN02                    2                   mm/dd/yyyy 11:30:02
TDI020    Y         NOBGE01.TSITIOS.GLNPOOL1             1                   mm/dd/yyyy 15:39:48
TDI021    N         NOBGE01.TSITIOS.GLNPOOL1             1                   mm/dd/yyyy 15:51:53
TDI022    N         NOBGE01.TSITIOS.GLNPOOL1             1                   mm/dd/yyyy 15:59:14
TDI023    N         NOBGE01.TSITIOS.GLNPOOL1             1                   mm/dd/yyyy 16:10:50
TDI024    Y         NOBGE01.TSITIOS.GLNPOOL1             1                   mm/dd/yyyy 15:04:42
TDI030    Y         TLMSII-CRASH-PROTECTED-TEST.ZZZZZ.DSN01                  mm/dd/yyyy 10:12:03
TDI031    N         FRED.FILE01                          1                   mm/dd/yyyy 13:24:15
TDI032    Y         TEST.FFFFF.DSN01                     1                   mm/dd/yyyy 15:19:08
TDI033    Y         TEST.HHHHH.DSN01                     1                   mm/dd/yyyy 15:38:44
TDI034    Y         TEST.DDDDD.DSN01                     1                   mm/dd/yyyy 14:59:57
TDI037    Y         TEST.EEEEE.DSN01                     1                   mm/dd/yyyy 15:08:07
TDI055    N         TEST.TAPER.DSN01                     1                   mm/dd/yyyy 13:09:45
TDI056    N         TEST.TAPER.DSN01                     1                   mm/dd/yyyy 13:37:40
TDI057    N         TEST.TAPE1.DSN01                     1                   mm/dd/yyyy 13:57:21
TDI058    N         TEST.TAPER.DSN01                     1                   mm/dd/yyyy 14:18:33
TDI059    N         TEST.TAPER.DSN01                     1                   mm/dd/yyyy 14:18:33
TDI060    N         TEST.TAPER.DSN01                     1                   mm/dd/yyyy 12:10:13
TDI061    N         TEST.TAPER.DSN01                     1                   mm/dd/yyyy 12:10:13
TDI062    N         TEST.TAPER.DSN01                     1                   mm/dd/yyyy 12:27:43
TDI063    N         TEST.TAPER.DSN01                     1                   mm/dd/yyyy 12:27:43
TDI064    N         TEST.TAPER.DSN01                     1                   mm/dd/yyyy 13:29:18
TDI065    N         TEST.TAPER.DSN01                     1                   mm/dd/yyyy 13:29:18
TDI066    N         TEST.IVP004.DSN04                    4                   mm/dd/yyyy 14:03:24
TDI067    N         TEST.IVP004.DSN04                    4                   mm/dd/yyyy 14:03:24
TDI068    N         TEST.TAPER.DSN01                     1                   mm/dd/yyyy 07:03:39
TDI070    N         TEST.TAPER.DSN01                     1                   mm/dd/yyyy 07:25:05
TDI071    N         TEST.TAPER.DSN01                     1                   mm/dd/yyyy 07:25:05
TDI074    N         TEST.TAPER.DSN01                     1                   mm/dd/yyyy 09:41:10
TDI080    N         NLTONL.FILE1                         1                   mm/dd/yyyy 08:08:47
TDI081    N         FRED.FILE01                          1                   mm/dd/yyyy 13:09:51
TDI082    Y         CRAJ001.TESTGDG.G0001V00             1                   mm/dd/yyyy 08:53:02
TDI083    Y         CRAJ001.TESTGDG.G0001V00             1                   mm/dd/yyyy 08:55:32
TDI084    N         CRAJ001.TESTGDG.G0002V00             1                   mm/dd/yyyy 09:01:33
TDI086    N         CRAJ001.TESTGDG.G0002V00             1                   mm/dd/yyyy 09:03:32
TDI087    N         CRAJ001.TESTGDG.G0003V00             1                   mm/dd/yyyy 09:08:37
TDI088    N         CRAJ001.TESTGDG.G0003V00             1                   mm/dd/yyyy 09:15:17
TDI089    Y         CRAJ001.TESTGDG.G0002V00             1                   mm/dd/yyyy 14:49:37
TDI090    Y         SYS96194.T134929.RA000.CRAJOTPR.FILE 1                   mm/dd/yyyy 13:51:41
TDI091    Y         SYS96194.T085833.RA000.CRAJOTPR.FILE02 1                 mm/dd/yyyy 09:01:27
TDI092    Y         FREDS.OWN.FILE                       1                   mm/dd/yyyy 09:29:36
TDI094    Y         ASM2.ZZZZZZ.DSN02                    1                   mm/dd/yyyy 08:56:40
TDI095    Y         ASM2.ZZZZZZ.DSN02                    1                   mm/dd/yyyy 09:00:46
TDI096    Y         TEST.FOREIGN                         1                   mm/dd/yyyy 08:53:38
TDI097    N         TEST.NOTLMS.FILE01                   1                   mm/dd/yyyy 07:53:47
TDI098    Y
TDI099    Y
TST009    N         VOLS.NLNL.FILE                       1                   mm/dd/yyyy 11:30:16
TST012    N         TEDS.SLNL.FILE                       1                   mm/dd/yyyy 12:11:32
TST014    N         TEDS.SLNL.FILE                       1                   mm/dd/yyyy 12:14:46
```

Active Data Sets for Accounting Code (TLERPT07)

TLERPT07 lists all nonscratch data sets by accounting code. Each code is on a separate page. Within each code, the report is in order by data set name. Optional parameters let you report on a specific job accounting code or a series of codes with a common prefix. Otherwise all accounting codes are listed.

SAMPLE 1 - ACTIVE DATA SETS FOR SELECTED ACCOUNT CODE

```
//            EXEC CATEARL,
//              PRM='1-22-333-4444  '
//CATECOGO.SYSIN DD *
   COPY TLERPT07
```

SAMPLE 2 - ACTIVE DATA SETS FOR ALL ACCOUNT CODE

```
//            EXEC CATEARL,
//              PRM=''
//CATECOGO.SYSIN DD *
   COPY TLERPT07
```

Report Example

```
C O M P A N Y   N A M E   ACTIVE DATASETS FOR ACCOUNTING CODE = 1-22-333-4444   TLERPT07  PAGE  1
CA TLMS NN.n yymmTLrrr                                        dd/mm/yy    hh.mm.ss
---------------------------------------------------------------------------------------------------
DATA SET NAME                       FILE    VOLSER   SCR SRV    DATE       CREATE   CREATE     DATE
                                    SEQ               IND IND   MOVED        DATE     TIME   CLEANED
---------------------------------------------------------------------------------------------------
APDPS.BK300100.V1                     1     100857   N                    mm/dd/yyyy  14:20:50
APDPS.BK300100.V2                     2     100857   N                    mm/dd/yyyy  14:21:32
APDPS.BK300100.V3                     3     100857   N                    mm/dd/yyyy  14:21:37
APDPS.BK300100.V4                     4     100857   N                    mm/dd/yyyy  14:21:43
APDPS.BK300100.V5                     5     100857   N                    mm/dd/yyyy  14:21:47
APDPS.BK300100.V6                     6     100857   N                    mm/dd/yyyy  14:21:52
BNKDM.ML0CUR.ML10.MTESCR.BKUP.G0001V00 1    100386   N                    mm/dd/yyyy  16:29:33
BNKDM.ML0CUR.ML10.MTHIST.BKUP         2     100386   N                    mm/dd/yyyy  16:29:40
BNKDM.ML0CUR.ML10.MTINVS.BKUP         3     100386   N                    mm/dd/yyyy  16:29:46
BNKDM.ML0CUR.ML10.MTMAST.BKUP         4     100386   N                    mm/dd/yyyy  16:29:53
```

Active Volumes by EXPDT Keyword (TLERPT08)

TLERPT08 lists all data sets that have any of the CA TLMS keyword values coded on the IBM keyword, LABEL=EXPDT=xxxxx. An optional parameter lets you limit the report to data sets that have only one of the special EXPDT values.

SAMPLE 1 - ACTIVE DATA SETS FOR SELECTED KEYWORD EXPDT

```
//            EXEC CATEARL,
//              PRM='LDATE'
//CATECOGO.SYSIN DD *
   COPY TLERPT08
```

SAMPLE 2 - ACTIVE DATA SETS FOR ALL KEYWORD EXPDTS

```
//            EXEC CATEARL,
//              PRM=''
//CATECOGO.SYSIN DD *
   COPY TLERPT08
```

Specify	To identify data sets with EXPDT set to
MSG	Show the existence of auxiliary messages
LDATE	Days-since-last-used control
CATLG	Catalog control
CYCLE	Cycle control
CATLG	Catalog/date control
AGE	CA TLMS keep date control
PERM	Manual control (99365 or 99366)
STATS	CA TLMS HOLD status
USER	User HOLD status

This report is in order by data set name. If a volume has more than one data set, all data sets are listed.

Note: This report does not show how the tapes are retained. Its function is to show you the EXPDT values that are being supplied by your users. But these values will be overridden if there are specific entries in the Retention Master File.

Report Example

```
C O M P A N Y   N A M E              ACTIVE VOLUMES BY EXPDT            TLERPT08 PAGE    1
CA TLMS NN.n yymmTLrrr                                                  dd/mm/yy    hh.mm.ss
-------------------------------------------------------------------------------------------------
VOLSER    EXPIRATION    DATA SET NAME                           CREATE   CREATE  CREATE   CREATE      LAST
          DATE                                                  DATE     TIME    JOBNAME  UNIT        DATE
-------------------------------------------------------------------------------------------------
101071    CATALOG       SYSPRG06.SYSLOG06.MONTHLY.G0005V00      mm/dd/yyyy  20:15:46  SYSLG06M  0782
101202    CATALOG       SYSPRG06.SYSLOG06.MONTHLY.G0007V00      mm/dd/yyyy  20:13:02  SYSLG06M  0781
101585    CATALOG       JARS.WEEKLY.EXTRACT.TEST                mm/dd/yyyy  13:35:34  TSOJJAW   0D74      mm/dd/yyyy
102804    CATALOG       APDDM.BK300901.V1                       mm/dd/yyyy  16:24:11  ABSBKUP   0D72
103154    CATALOG       APDDM.DEMR25.V1                         mm/dd/yyyy  12:16:41  ABSBKUP   0781      mm/dd/yyyy
103155    CATALOG       APDDM.BK300101.V1                       mm/dd/yyyy  12:55:30  ABSBKUP   0783
103187    CATALOG       SYSPRG06.SYSLOG06.MONTHLY.G0004V00      mm/dd/yyyy  20:03:06  SYSLG06M  0782
103269    CATALOG       SYSPRG06.SYSLOG06.MONTHLY.G0001V00      mm/dd/yyyy  11:57:40  SYSLG06M  0784
103425    CATALOG       SYSPRG06.SYSLOG06.MONTHLY.G0003V00      mm/dd/yyyy  20:45:04  SYSLG06M  0783
103445    CATALOG       SYSPRG06.SYSLOG06.MONTHLY.G0010V00      mm/dd/yyyy  19:57:11  SYSLG06M  0781
103548    CATALOG       APDDM.BK30HARS.V1                       mm/dd/yyyy  10:34:25  ABSBKUP   0D73
103586    CATALOG       APDDM.BK300601.V1                       mm/dd/yyyy  09:00:27  ABSBKUP   0782
104126    CATALOG       SYSPRG06.SYSLOG06.MONTHLY.G0009V00      mm/dd/yyyy  20:09:03  SYSLG06M  0D73
105030    CATALOG       SYSPRG06.SYSLOG06.MONTHLY.G0002V00      mm/dd/yyyy  09:08:29  SYSLG06M  0782
105380    CATALOG       SYSPRG06.SYSLOG06.MONTHLY.G0006V00      mm/dd/yyyy  20:24:47  SYSLG06M  0D71
106315    CATALOG       SYSPRG06.SYSLOG06.MONTHLY.G0008V00      mm/dd/yyyy  20:11:59  SYSLG06M  0782
108175    CATALOG       APDDM.BK30.V1                           mm/dd/yyyy  10:15:53  ABSBKUP   0D72      mm/dd/yyyy




END OF REPORT
```

More information:

Volumes to be Certified (TLERPT09)

TLERPT09 lists all scratch volumes that need certification for one of these reasons:

- Since the scratch volumes were last certified, they were used a specified number of times.

- Since the scratch volumes were last certified, they were cleaned a specified number of times.

SAMPLE 1 - VOLUMES TO BE CERTIFIED

```
//        EXEC CATEARL,
//            PRM='00009,00001'
//CATECOGO.SYSIN DD *
   COPY TLERPT09

ALL COUNTS MUST BE ENTERED AS FIVE DIGITS. ENTER 00000 TO SKIP A R
EPORT.
?????,00000               -NUMBER OF TIMES CLEANED

00000,?????               -NUMBER OF TIMES USED
```

Report Example

```
C O M P A N Y   N A M E        VOLUMES TO BE CERTIFIED          TLERPT09  PAGE     5
CA TLMS NN.n yymmTLrrr                                          dd/mm/yy   hh.mm.ss
------------------------------------------------------------------------------------------------
VOLSER   DATA SET NAME                           USE   CLN     DATE      TIMES      DATE     PREAD   PWRITE
                                                 CNT   CNT   CLEANED   CERTIFIED  CERTIFIED   INIT    INIT
------------------------------------------------------------------------------------------------
108905   BNKDV.CLQCUR.CL10.QSPST1.DAY3           138
108902   DB2R13.DB213.ARCHLOG1.B0000106           34    2   mm/dd/yyyy
108899   BNKDV.CLQCUR.CL10.QSPST1.BUP.BDAY4       19
108897                                           143    2   mm/dd/yyyy
108896   TLMSII-CRASH-PROTECTED-PCSSP.CICSCSP4.CSSFIL  12                                              26
108895   ISDDBA.PROD.MUF.RXX.G5349V00             12
108894   APDV.PDEV.VNDBKP                         13    1   mm/dd/yyyy
108873   MVSSYS.ARCHLOG2.B0000130                 68
108844   DB2R13.DB213.ARCHLOG1.B0000075           60
108811   MVSSYS.ARCHLOG1.B0000063                 68                                                   1
108753   APDDM.MHE713.XSFILE.BKUP.G0113V00        15
108742   E313.BKUP1204                            50                                                   1
108737   CAI.DEMO.DSGEN26.BASE01.BKUP.G0010V00    67
108731   CAI.DEVL.DSGEN23.BASE001.BKUP.G0009V00   56
108706   PCSSP.CICSCSP4.CSSFILE.BACKUP.G0082V00   18    1   mm/dd/yyyy
108699   CICSSYS.NETCICS.CONFIG.BACKUP.G0472V00   16    1   mm/dd/yyyy
108529   WIDSE01.CA63390.LOAD.TAPE                13    2   mm/dd/yyyy
108377   CAI.L230.LOADLIB.BACKUP                  83    1   mm/dd/yyyy
108334   CAI.HAUS.OPER.DSS.VAPD00B.BACKUP         13
108275   ISDDBA.PROD.MUF.RXX.G1506V00             22    1   mm/dd/yyyy
108250                                            15    1   mm/dd/yyyy
108244   T4.CA07.LOGTAPE.G0224V00                 22    2   mm/dd/yyyy                                  1
108223   SSDECS.UCC7.LOG.HISTORY.G0041V00         25    1   mm/dd/yyyy                                  2
108219   TAPE.CMO.SYSXREF                         18    1   mm/dd/yyyy
108149   CAI.DCMAD.AD28BK.ACTIV01.AD061291       166                                                   1
108148   CAI.DCMAD.M28BK.SAMPJCL.DT061291        198    1   mm/dd/yyyy
108146   DOVST02.CAIW20.B101689A                  21    1   mm/dd/yyyy                                  4
108145   PSV.MLSADS.T3.MMSESCR                    15
108130   ISDDBA.PROD.MUF.RXX.G1511V00             23    1   mm/dd/yyyy
108129   BNKDM.IO0CUR.IO32.IOBKUP.G0002V00        27
108117   APDDM.MSTQBAT.BKUP.G0112V00              15    1   mm/dd/yyyy
108107   FCS.DOS.IMP01                            45    2   mm/dd/yyyy
108092   CMI.V72.CENTRAL.DOS.MAINT.FILE1          21
108080   CAI.HAUS.OPER.DSS.VTSS002.BACKUP         13    1   mm/dd/yyyy
108048   CAI.HAUS.OPER.DSS.VM80CT2.BACKUP         23    1   mm/dd/yyyy
108035   APDDM.DEMR30.BKUP1.G0065V00              21
107938   ISDDBA.BKPDTAPE.PROD.IDCPSPNL.G0030V00   18
107937                                            13    1   mm/dd/yyyy                                  1
107899   CAI.HAUS.OPER.DSS.VMV136A.BACKUP         17    1   mm/dd/yyyy                                  2
107888   CAI.HAUS.OPER.DSS.VMXA552.BACKUP         14                                                    1
107886   SYSPROG.SMFSAV55.M1042189.T1629A2        53
107725   CAI.HAUS.OPER.DSS.VMVSCAT.BACKUP         11    1   mm/dd/yyyy                                  1
107582   CAI.CA7R30.LOADLIB.BACKUP                13
107581   MDBDM.APD5BKUP.CXX.G0026V00             129    1   mm/dd/yyyy
107580   MDBDM.APD5BKUP.BASE100.G0007V00         115
107573   CAI.HAUS.OPER.DSS.VMC0A36.BACKUP         14    1   mm/dd/yyyy
107569   DEIHE01.VMVXE66.BACK1025                 14    1   mm/dd/yyyy
107499   CAI.HAUS.OPER.DSS.VTSS001.BACKUP         38    1   mm/dd/yyyy                                  8
107344   PCSSP.CICSCSP4.CSSFILE.BACKUP.G0093V00   17    1   mm/dd/yyyy
107331   PCSSP.CICSCSP4.CSSFILE.BACKUP.G0087V00   24    1   mm/dd/yyyy                                  3
107303   CICSSYS.NETCICS.CONFIG.BACKUP.G0474V00   12
107296   BNKDV.CH0NEW.CH21.DLYBKUP.CTPCFB.G0002V00 11
```

Volume Master (TLERPT10)

TLERPT10 lists all volumes in the Volume Master File regardless of whether they are scratch, nonscratch, in service or out of service. An optional parameter lets you limit the report to a specific range of volume serial numbers. Otherwise, all volumes are listed.

SAMPLE 1 - RANGE OF VOLUMES

```
//        EXEC CATEARL,

//            PRM='CPX010,CPX050'
//CATECOGO.SYSIN DD *
   COPY TLERPT10
```

SAMPLE 2 - RANGE OF VOLUMES STARTING WITH CPX010

```
//        EXEC CATEARL,
//            PRM='CPX010'
//CATECOGO.SYSIN DD *
   COPY TLERPT10
```

SAMPLE 3 - RANGE OF VOLUMES ENDING WITH CPX050

```
//        EXEC CATEARL,
//            PRM='      ,CPX050'
//CATECOGO.SYSIN DD *
   COPY TLERPT10
ALL VOLSER MUST BE ENTERED AS SIX DIGITS. ENTER 6 BLANKS TO SKIP F
IRST VOLSER.
```

SAMPLE 4 - ALL VOLUMES

```
//        EXEC CATEARL,
//            PRM=''
//CATECOGO.SYSIN DD *
   COPY TLERPT10
```

Report Example

```
C O M P A N Y   N A M E           VOLUME MASTER LIST            TLERPT10  PAGE     13
CA TLMS NN.n yymmTLrrr                                          dd/mm/yy     hh.mm.ss
--------------------------------------------------------------------------------------------------
VOLSER  SCR  SRV  DATA SET NAME              FILE   CREATE      CREATE   CREATE    CREATE    LOC SLOT
        IND  IND                             SEQ     TIME        DATE    JOBNAME   UNIT      ID
--------------------------------------------------------------------------------------------------
TDI071  N         TEST.TAPER.DSN01             1   07:25:05   mm/dd/yyyy   JOB108    0E82     DC

TDI072  Y

TDI073  Y

TDI074  N         TEST.TAPER.DSN01             1   09:41:10   mm/dd/yyyy   CRAJOTPR  0E81     DC

TDI075  Y

TDI076  Y

TDI077  Y

TDI078  Y

TDI079  Y

TDI080  N         NLTONL.FILE1                 1   08:08:47   mm/dd/yyyy   CRAJOTPR  4E86     DC

TDI081  N         FRED.FILE01                  1   13:09:51   mm/dd/yyyy   CRAJOTPR  4E82     DC

TDI082  Y         CRAJ001.TESTGDG.G0001V00     1   08:53:02   mm/dd/yyyy   CRAJOTPR  0E81     DC
                                                  LAST USE   mm/dd/yyyy   CRAJOCON  0E80
TDI083  Y         CRAJ001.TESTGDG.G0001V00     1   08:55:32   mm/dd/yyyy   CRAJOTPR  4E83     DC
                                                  LAST USE   mm/dd/yyyy   CRAJOCON  0E80
TDI084  N         CRAJ001.TESTGDG.G0002V00     1   09:01:33   mm/dd/yyyy   CRAJOTPX  0E81     DC
                                                  LAST USE   mm/dd/yyyy   CRAJOCON  0E80
TDI085  Y

TDI086  N         CRAJ001.TESTGDG.G0002V00     1   09:03:32   mm/dd/yyyy   CRAJOTPX  4E81     DC
                                                  LAST USE   mm/dd/yyyy   CRAJOCON  0E8f
TDI087  N         CRAJ001.TESTGDG.G0003V00     1   09:08:37   mm/dd/yyyy   CRAJOTPY  0E81     DC
                                                  LAST USE   mm/dd/yyyy   CRAJOCON  0E80
TDI088  N         CRAJ001.TESTGDG.G0003V00     1   09:15:17   mm/dd/yyyy   CRAJOTPY  0E81     DC
                                                  LAST USE   mm/dd/yyyy   CRAJOCON  0E80
TDI089  Y         CRAJ001.TESTGDG.G0002V00     1   14:49:37   mm/dd/yyyy   CRAJOTPR  0E81     DC
                                                  LAST USE   mm/dd/yyyy   CRAJOCON  0E81
TDI090  Y         SYS96194.T134929.RA000.CRAJOTPR.FILE    1   13:51:41   mm/dd/yyyy   CRAJOTPR  0E81     DC

TDI091  Y         SYS96194.T085833.RA000.CRAJOTPR.FILE02  1   09:01:27   mm/dd/yyyy   CRAJOTPR  0E81     DC

TDI092  Y         FREDS.OWN.FILE               1   09:29:36   mm/dd/yyyy   CRAJOTPR  0E81     DC

TDI093  Y

TDI094  Y         ASM2.ZZZZZZ.DSN02            1   08:56:40   mm/dd/yyyy   CRAJOTPR  0E80     DC

TDI095  Y         ASM2.ZZZZZZ.DSN02            1   09:00:46   mm/dd/yyyy   CRAJOTPR  0E80     DC

TDI096  Y         TEST.FOREIGN                 1   08:53:38   mm/dd/yyyy   CRAJOTPR  0E80     DC
```

Data Sets Created on MM/DD/YYYY (TLERPT11)

TLERPT11 lists all data sets created on a specific date. An optional parameter lets you specify a date. Otherwise, the report lists data sets created on the current machine date.

SAMPLE 1 - LIST OF DATA SETS CREATED ON CURRENT DATE

```
//          EXEC CATEARL,
//              PRM=''
//CATECOGO.SYSIN DD *
   COPY TLERPT11
```

SAMPLE 2 - LIST OF DATA SETS CREATED ON 02/04/1996

```
//          EXEC CATEARL,
//              PRM='02/04/1996'
//CATECOGO.SYSIN DD *
   COPY TLERPT11
```

Report Example

```
C O M P A N Y   N A M E        DATASETS CREATED ON mm/dd/yyyy           TLERPT11  PAGE     1
CA TLMS NN.n yymmTLrrr                                                  dd/mm/yy     hh.mm.ss
-----------------------------------------------------------------------------------------------
DATA SET NAME                       FILE  VOLSER   VOL  VOLUME    DSN KEEP     CREATE     CREATE  CREATE    CREATE
                                    SEQ             SEQ  COUNT        DATE       DATE       TIME  JOBNAME   UNIT
-----------------------------------------------------------------------------------------------
BNKDV.EA6NEW.DP80.DSBKUP.G0001V00      1  100356     1      2   mm/dd/yyyy  mm/dd/yyyy  08:30:28  DSD800    0D71
BNKDV.EA6NEW.DP80.DSBKUP.G0001V00      1  100355     2      2   mm/dd/yyyy  mm/dd/yyyy  08:31:57  DSD800    0D71
BNKDV.EA0NEW.EA81.NSBKUP.G0007V00      1  100395     1      1   mm/dd/yyyy  mm/dd/yyyy  17:26:37  NSD800    0D70
BARRA01.BKUP0326                       1  105807     1      1   mm/dd/yyyy  mm/dd/yyyy  17:57:44  BARRA01B  0D70
BNKDV.CLQCUR.CL10.QSPST1.DAY4B         1  106169     1      1   mm/dd/yyyy  mm/dd/yyyy  12:34:12  CLCBKUP   0583
BNKDV.CLQCUR.CL10.QSPST1.DAY5B         1  106177     1      1   mm/dd/yyyy  mm/dd/yyyy  13:14:20  CLCBKUP   0582
NARRO01.DS50.D91086.T142307.F01        1  106182     1      1   mm/dd/yyyy  mm/dd/yyyy  14:25:45  NARXXTAR  0582

END OF REPORT
```

Data Sets Used as Input on MM/DD/YYYY (TLERPT12)

TLERPT12 lists all data sets that were last read on a specific date. An optional parameter lets you specify a date. Otherwise, the report lists data sets that were last read on the current machine date.

SAMPLE 1 - LIST OF DATA SETS USED ON CURRENT DATE

```
//          EXEC CATEARL,
//              PRM=''
//CATECOGO.SYSIN DD *
   COPY TLERPT12
```

SAMPLE 2 - LIST OF DATA SETS USED ON 02/04/1996

```
//          EXEC CATEARL,
//              PRM='02/04/1996'
//CATECOGO.SYSIN DD *
    COPY TLERPT12
```

Report Example

```
C O M P A N Y   N A M E        DATASETS USED ON mm/dd/yyyy        TLERPT12  PAGE    1
CA TLMS NN.n yymmTLrrr                                            dd/mm/yy    hh.mm.ss
---------------------------------------------------------    --------------------------------------------------------------
DATA SET NAME                   FILE  VOLSER  VOL  VOLU    ME    DSN KEEP    LAST       LAST       LAST
                                SEQ           SEQ  COU     NT      DATE      DATE       JOBNAME    UNIT
---------------------------------------------------------    --------------------------------------------------------------
BNKDV.EA6NEW.DP80.DSBKUP.G0001V00    1  100356    1          2   mm/dd/yyyy  mm/dd/yyyy  DSD800     0D71
BNKDV.EA6NEW.DP80.DSBKUP.G0001V00    1  100355    2          2   mm/dd/yyyy  mm/dd/yyyy  DSD800     0D71
BNKDV.EA0NEW.EA81.NSBKUP.G0007V00    1  100395    1          1   mm/dd/yyyy  mm/dd/yyyy  NSD800     0D70
BARRA01.BKUP0326                     1  105807    1          1   mm/dd/yyyy  mm/dd/yyyy  BARRA01B   0D70
BNKDV.CLQCUR.CL10.QSPST1.DAY4B       1  106169    1          1   mm/dd/yyyy  mm/dd/yyyy  CLCBKUP    0583
BNKDV.CLQCUR.CL10.QSPST1.DAY5B       1  106177    1          1   mm/dd/yyyy  mm/dd/yyyy  CLCBKUP    0582
NARRO01.DS50.D91086.T142307.F01      1  106182    1          1   mm/dd/yyyy  mm/dd/yyyy  NARXXTAR   0582

END OF REPORT
```

Volume Status by Manufacturer (TLERPT13)

TLERPT13 lists various statistical information about tape performance. Optional parameters let you report on a single manufacturer (by its code) or multiple manufacturers. Otherwise, all manufacturers are listed.

SAMPLE 1 - LIST OF ALL VOLUMES BY VENDOR

```
//          EXEC CATEARL,
//              PRM=''
//CATECOGO.SYSIN DD *
    COPY TLERPT13
```

SAMPLE 2 - LIST OF VOLUMES BY SELECTED VENDORS

```
//          EXEC CATEARL,
//              PRM='MEMOREX ,IBM     ,BASF'
//CATECOGO.SYSIN DD *
    COPY TLERPT13
```

Note: All vendor names should be padded with blanks for length of eight. The padding is not required for the last entry.

When specifying multiple vendor names in the PARM, you should ensure that each one occupies eight positions with each separated by a comma.

Report Example

```
C O M P A N Y   N A M E           VOLUME BY VENDOR  3M            TLERPT13  PAGE    28
CA TLMS NN.n yymmTLrrr                                            dd/mm/yy     hh.mm.ss
-------------------------------------------------------------------------------------------
           VOLSER     PURCHASE     LOC SLOT      TAPE      TAPE       DATE          DATE
                      DATE         ID            LENGTH    TYPE       CERTIFIED     CLEANED
-------------------------------------------------------------------------------------------
           103431     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103432     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103433     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103434     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103435     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103436     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103437     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103438     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103439     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103440     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103441     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103442     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103443     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103444     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103445     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103446     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103447     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103448     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103449     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103450     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103451     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103452     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103453     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103454     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103455     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103456     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103457     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103458     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103459     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103460     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103461     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103462     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103463     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103464     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103465     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103466     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103467     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103468     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103469     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103470     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103471     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103472     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103473     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103474     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103475     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103476     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103477     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103478     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy
           103479     mm/dd/yyyy   DC            2400      01         mm/dd/yyyy    mm/dd/yyyy

           301695
```

Available Cabinet/Slot for Location (TLMS014)

TLMS014 lists all the cabinets/slots that are available for use at a specific location. This report includes all boxes available at the data center. Optional parameters let you generate this report for a single location or multiple locations. Otherwise, all locations are listed.

This command has the following format:

TLMS014 ,*id, id...*

id

Specifies one or more locations that you want to report on. Use the 1- to 2-character location ID defined on a location command. List any number of locations, separated by commas, ending before position 72.

Example: List all Locations

This example lists all locations.

TLMS014

Example: List Location LH

This example lists location LH.

TLMS014,LH

Report Example

```
COMPANY NAME                AVAILABLE CABINET/SLOT FOR LOCATION LH           TLMS014      PAGE    1
CA TLMS NN.n yymmTLrrr                                                       dd/mm/yy      hh.mm.ss

        CABINET CL
             00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
             34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67
             68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99
        CABINET CM
             00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
             34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67
             68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99
        CABINET CN
             00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
             34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67
             68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99
        CABINET CO
             00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
             34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67
             68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99
        CABINET CP
             00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
             34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67
             68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99
```

More information:

Volume Master File Inquiry and Update (see page 101)

Tape Retention Location Records (TLMS015)

TLMS015 lists all the locations that have been added to the Retention Master File. You can use this report to see all of your tape storage facilities, both at the data center and off site.

This command has the following format:

TLMS015

Report Example

```
 COMPANY NAME                        TAPE RETENTION LOCATION RECORDS           TLMS015     PAGE    1
 CA TLMS NN.n yymmTLrrr                                                        dd/mm/yy     hh.mm.ss

                                                       STORAGE
            ID   I-------- LOCATION DESCRIPTION --------I  MEDIUM   ADD   DATE
            --   -------------------------------------- -------   ----------
            AV   AUDITOR'S VAULT                             C    mm/dd/yyyy
                    CABINET NUMBER  II
                    NUMBER OF SLOTS 29
            DC   DATA CENTER                                 U    mm/dd/yyyy
            DR   DISASTER RECOVERY VAULT                     C    mm/dd/yyyy
                    CABINET NUMBER  D1 D2 D3 D4 D5
                    NUMBER OF SLOTS 19 19 19 19 19
            D1   ALTERNATE DATA CENTER                       U    mm/dd/yyyy
            LH   LONG TERM HOLD                              C    mm/dd/yyyy
                    CABINET NUMBER  CL CM CN CO CP
                    NUMBER OF SLOTS 99 99 99 99 99
            LV   LOCAL FIRE PROOF VAULT                      C    mm/dd/yyyy
                    CABINET NUMBER  CA CB CC CD CE CF CG CH CJ CK
                    NUMBER OF SLOTS 99 99 99 99 99 99 99 99 99 99
            SH   SHORT TERM HOLD                             C    mm/dd/yyyy
                    CABINET NUMBER  CQ CR CS CT CU CV CW CX CY CZ
                    NUMBER OF SLOTS 99 99 99 99 99 99 99 99 99 99
            XC   TRANSMITTION CENTER                         U    mm/dd/yyyy
```

More information:

Location Control Statements (see page 45)

Tape Retention Selection Records (TLMS016)

TLMS016 lists all the retention commands in the Retention Master File. For each data set or group of data sets, you will see the retention type, location ID, and count field value (if any) at the data center and at each off-site location.

This command has the following format:

TLMS016

Report Example

```
Company Name                        REPORT REQUEST                      PAGE     1
CA TLMS         NN.n    yymmTLrrr                                   dd/mm/yy    hh.mm.ss
PAGESIZE=58
DATE=MM-DD-YYYY
TLMS016


Company Name                              TAPE RETENTION SELECTION RECORDS            TLMS016    PAGE    1
CA TLMS         NN.n    yymmTLrrr                                                     mm-dd-yyyy   08.14.34

    TYPE     DATASET PATTERN MASK                                    JOB PATTERN MASK        ADD   DATE
    -        -----------------------------------------------------   ----------------        ----------
             DSN=**DEFAULT**                                                                 10-09-2008
             RTN(2DC                                         )       OWNER(AUTHORITY      )
     5       DSN=ASM2-                                                     JOB=*            10-09-2008
             RTN(6DC    7AR                                  )       OWNER(AUTHORITY      )
     5       DSN=BOXIT-                                                    JOB=*            10-09-2008
             RTN(5DC0001 5B10005                             )       OWNER(AUTHORITY      )
     5       DSN=CATAPE.-                                                  JOB=*            10-09-2008
             RTN(5DC0001 7KP                                 )       OWNER(AUTHORITY      )
     5       DSN=CRAJ001.-                                                 JOB=*            10-09-2008
             RTN(1DC    5B20005                              )       OWNER(AUTHORITY      )
     5       DSN=DASTER.-                                                  JOB=*            10-09-2008
             RTN(6DC    7KP                                  )       OWNER(AUTHORITY      )
     5       DSN=FRED.-                                                    JOB=*            10-09-2008
             RTN(1DC    7ZZ                                  )       OWNER(AUTHORITY      )
     5       DSN=HSM-                                                      JOB=*            10-09-2008
             RTN(6DC    7AR                                  )       OWNER(AUTHORITY      )
     0       DSN=MGMT0000                                                  JOB=*            10-09-2008
             RTN(6DC    7L1                                  )       OWNER(AUTHORITY      )
     5       DSN=PROD1-                                                    JOB=*            10-09-2008
             RTN(6DC    5L10007                              )       OWNER(AUTHORITY      )
     5       DSN=PROD2-                                                    JOB=*            10-09-2008
             RTN(6DC    5L20007                              )       OWNER(AUTHORITY      )
     5       DSN=PROD3-                                                    JOB=*            10-09-2008
             RTN(6DC    5AR0007                              )       OWNER(AUTHORITY      )
     5       DSN=S-                                                        JOB=*            10-09-2008
             RTN(6DC    5L10017 5L20001 5AR0030 7KP          )       OWNER(AUTHORITY      )
     5       DSN=TEST-                                                     JOB=*            10-09-2008
             RTN(1DC    2ZZ0018                              )       OWNER(AUTHORITY      )
     5       DSN=TST1-                                                     JOB=*            10-09-2008
             RTN(8DC0003 AL1                                 )       OWNER(AUTHORITY      )
     5       DSN=TST2-                                                     JOB=*            10-09-2008
             RTN(8DC0003 3L10020                             )       OWNER(AUTHORITY      )
     0       DSN=UNIX.MASTER.TAPE.DUP                                      JOB=WILR009      10-09-2008
             RTN(2DC0007 4L20023                             )       OWNER(AUTHORITY      )
     0       DSN=UNIX.MASTER.TAPE.DUP                                      JOB=*            10-09-2008
             RTN(6DC    5L10021 7KP                          )       OWNER(AUTHORITY      )

Company Name                              TAPE RETENTION SELECTION RECORDS            TLMS016    PAGE    2
CA TLMS         NN.n    yymmTLrrr                                                     mm-dd-yyyy   08.14.34



             **************************************************
             *                  L E G E N D                  *
             *                                               *
             *    TYPE      DESCRIPTION                       *
             *    -         ----------------------------      *
             *    0         SPECIFIC                          *
             *    1         RESERVED FOR SPECIAL SEARCH       *
             *    2         ONE-FOR-ONE MASK (# @ !)          *
             *    3         PREFIXED/CONTAINING/SUFFIXED      *
             *    4         PREFIXED/SUFFIXED                 *
             *    5         PREFIXED ONLY                     *
             *    6         RESERVED FOR SPECIAL SEARCH       *
             *    7         SUFFIXED ONLY                     *
             *    8         CONTAINING ONLY                   *
             *    9         MAX ITERNAL CLASS VALUE           *
             *                                               *
             **************************************************
```

User Defined Report (TLERPT18)

The TLERPT18 report is a functional replacement for the TLMS018 report that was provided in earlier releases of CA TLMS. The JCL procedure CATERL18 and three z/OS EARL Service source members are provided. Users can request reports in a format almost identical to the earlier TLMS018 report. While this new report is created with z/OS EARL Service, knowledge of z/OS EARL Service is not required.

TLERPT18 lists user-specified fields in VSN or DSN order. The user specifies the fields to be reported on by listing the field names in the order they are to appear. You can specify the field names on any number of statements but the total of their lengths cannot exceed 130 characters.

You can use an optional parameter to specify the report order and a title. The default order is by dataset name. If the first 3 characters of the parm are not VSN, the report is one line for each dataset on the VMF in order by DSN then VSN. This is true no matter which field is specified first.

When the first 3 characters of the parm are VSN, the report is in VSN order with one line for each volume. The DSN field value is for the first DSN on each volume.

The field named DSN is 44 characters long. A shortened version of this field can be obtained by specifying a short DSN field name. For example, DSN_15 is a field containing the first 15 characters of the DSN. Fields DSN_3 through DSN_43 are available. The report is sorted by the entire 44 characters of the DSN.

Positions 5 through 45 of the parm are for an optional report title. If these positions are not blank, they are used for the title. If they are blank, the default title "USER DEFINED REPORT" is used.

See the appendices of this manual for Tape Data Base field names .

SAMPLE 1 - USER REPORT BY DATA SET NAME

```
//        EXEC CATERL18,
//          PRM='DSN,USER REPORT BY DSN '
//CATECOGO.SYSIN18 DD *
  DSN_20 VOLSER FILESEQ VOLSEQ VOLUME_COUNT DSN_KEEP_DATE
```

SAMPLE 2- USER REPORT BY VSN

```
//        EXECCATERL18,
//          PRM='VSN,USER REPORT BY VSN'
//CATECOGO.SYSIN18 DD *
  VSN DSN_5 FILESEQ VOLSEQ VOLUME_COUNT VOLUME_KEEP_DATE
```

Report Example

```
C O M P A N Y   N A M E    USER REPORT BY DSN   TLERPT18  PAGE    4
CA TLMS  NN.n yymmTLrrr                        dd/mm/yy    hh.mm.ss
------------------------------------------------------------------
DSN_20                  VOLSER   FILE   VOL   VOLUME   DSN KEEP
                                 SEQ    SEQ   COUNT      DATE
 -----------------------------------------------------------------
CRAJO01.FN0013.FILE0    001507    1      1      1     mm/dd/yyyy
EVAWI01.DEU.TAPE1       001506    1      1      1     mm/dd/yyyy
FRED.TEST.DSN01         001562    1      1      1     mm/dd/yyyy
PAT.EDMTEST.TEST1       001500    1      1      1     mm/dd/yyyy
PAT.EDMTEST2.TEST1      001500    2      1      1     mm/dd/yyyy
PAT.EDMTEST3.TEST1      001500    3      1      1     mm/dd/yyyy
PAT.EDMTEST4.TEST1      001500    4      1      1     mm/dd/yyyy
PAT.OCEOV4.TEST1        001505    1      1      1     mm/dd/yyyy
PAT.OCEOV5.TEST1        001554    1      1      1     mm/dd/yyyy
PERCENT.FILE01          001593    5      1      2     mm/dd/yyyy
PERCENT.FILE02          001593    6      1      2     mm/dd/yyyy
PERCENT.FILE03          001593    7      1      2     mm/dd/yyyy
PERCENT.FILE04          001593    8      1      2     mm/dd/yyyy
PERCENT.FILE05          001593    9      1      2     mm/dd/yyyy
PERCENT.FILE06          001593   10      1      2     mm/dd/yyyy
PERCENT.FILE07          001501   11      2      2     mm/dd/yyyy
PERCENT.FILE07          001593   11      1      2     mm/dd/yyyy
TAPE.TRACE.NL.FILE1     001590    1      1      1     mm/dd/yyyy
TAPE.TRACE.NL.FILE2     001590    2      1      1     mm/dd/yyyy
TAPE.TRACE.NL.FILE3     001590    3      1      1     mm/dd/yyyy
TAPE.TRACE.NL.FILE4     001590    4      1      1     mm/dd/yyyy
TAPE.TRACE.SL.FILE1     TDI090    1      1      1     mm/dd/yyyy
TAPE.TRACE.SL.FILE2     TDI090    2      1      1     mm/dd/yyyy
TAPE.TRACE.SL.FILE3     TDI090    3      1      1     mm/dd/yyyy
TAPE.TRACE.SL.FILE4     TDI090    4      1      1     mm/dd/yyyy
TEP.RES.SL.DSN01        001508    1      1      2     mm/dd/yyyy
TEP.RES.SL.DSN01        001514    1      2      2     mm/dd/yyyy
TEP.RES.SL.DSN02        001514    2      2      2     mm/dd/yyyy
TEP.TEST.CLOSE.DSN01    001561    1      2      2     mm/dd/yyyy
TEP.TEST.CLOSE.DSN01    001563    1      1      2     mm/dd/yyyy
TEP.TEST.CLOSE.DSN01    001564    1      1      1     mm/dd/yyyy
TEP.TEST.CLOSE.DSN02    001561    2      2      2     mm/dd/yyyy
TEP.TEST.CLOSE.DSN02    001564    2      1      1     mm/dd/yyyy
TEP.TEST.CLOSE.DSN11    001565    1      2      2     mm/dd/yyyy
TEP.TEST.CLOSE.DSN11    001566    1      1      2     mm/dd/yyyy
TEP.TEST.CLOSE.DSN12    001565    2      2      2     mm/dd/yyyy
TEP.TEST.CLOSE.DSN41    001567    1      1      2     mm/dd/yyyy
TEP.TEST.CLOSE.DSN41    001568    1      2      2     mm/dd/yyyy
TEP.TEST.CLOSE.DSN42    001568    2      2      2     mm/dd/yyyy
TEP.V1F4.SL11           001591    1      1      1     mm/dd/yyyy
TEP.V1F4.SL12           001591    2      1      1     mm/dd/yyyy
TEP.V1F4.SL13           001591    3      1      1     mm/dd/yyyy
TEP.V1F4.SL14           001591    4      1      1     mm/dd/yyyy
TEP.V1F4.SL21           001592    1      1      1     mm/dd/yyyy
TEP.V1F4.SL22           001592    2      1      1     mm/dd/yyyy
TEP.V1F4.SL23           001592    3      1      1     mm/dd/yyyy
TEP.V1F4.SL24           001592    4      1      1     mm/dd/yyyy
TEP.V1F4.SL31           001593    1      1      2     mm/dd/yyyy
TEP.V1F4.SL32           001593    2      1      2     mm/dd/yyyy
TEP.V1F4.SL33           001593    3      1      2     mm/dd/yyyy
TEP.V1F4.SL34           001593    4      1      2     mm/dd/yyyy
TEPTEST.VTAPE.V1F1.F    001580    1      1      1     mm/dd/yyyy
TEPTEST.VTAPE.V1F1.F    001581    1      1      1     mm/dd/yyyy
```

Report Example

```
 C O M P A N Y   N A M E   USER REPORT BY VSN    TLERPT18  PAGE   2
CA TLMS  NN.n   yymmTLrrr                dd/mm/yy    hh.mm.ss
-------------------------------------------------------------------
 VOLSER  DSN_20            FILE    VOL   VOLUME   VOL KEEP
                           SEQ     SEQ   COUNT    DATE
-------------------------------------------------------------------
 TDI047  TEST.VOL075.DSN01   1      47    75      mm/dd/yyyy
 TDI048  TEST.VOL075.DSN01   1      48    75      mm/dd/yyyy
 TDI049  TEST.VOL075.DSN01   1      49    75      mm/dd/yyyy
 TDI050  TEST.VOL075.DSN01   1      50    75      mm/dd/yyyy
 TDI051  TEST.VOL075.DSN01   1      51    75      mm/dd/yyyy
 TDI052  TEST.VOL075.DSN01   1      52    75      mm/dd/yyyy
 TDI053  TEST.VOL075.DSN01   1      53    75      mm/dd/yyyy
 TDI054  TEST.VOL075.DSN01   1      54    75      mm/dd/yyyy
 TDI055  TEST.VOL075.DSN01   1      55    75      mm/dd/yyyy
 TDI056  TEST.VOL075.DSN01   1      56    75      mm/dd/yyyy
 TDI057  TEST.VOL075.DSN01   1      57    75      mm/dd/yyyy
 TDI058  TEST.VOL075.DSN01   1      58    75      mm/dd/yyyy
 TDI059  TEST.VOL075.DSN01   1      59    75      mm/dd/yyyy
 TDI060  TEST.VOL075.DSN01   1      60    75      mm/dd/yyyy
 TDI061  TEST.VOL075.DSN01   1      61    75      mm/dd/yyyy
 TDI062  TEST.VOL075.DSN01   1      62    75      mm/dd/yyyy
 TDI063  TEST.VOL075.DSN01   1      63    75      mm/dd/yyyy
 TDI064  TEST.VOL075.DSN01   1      64    75      mm/dd/yyyy
 TDI065  TEST.VOL075.DSN01   1      65    75      mm/dd/yyyy
 TDI066  TEST.VOL075.DSN01   1      66    75      mm/dd/yyyy
 TDI067  TEST.VOL075.DSN01   1      67    75      mm/dd/yyyy
 TDI068  TEST.VOL075.DSN01   1      68    75      mm/dd/yyyy
 TDI069  TEST.VOL075.DSN01   1      69    75      mm/dd/yyyy
 TDI070  TEST.VOL075.DSN01   1      70    75      mm/dd/yyyy
 TDI071  TEST.VOL075.DSN01   1      71    75      mm/dd/yyyy
 TDI072  TEST.VOL075.DSN01   1      72    75      mm/dd/yyyy
 TDI073  TEST.VOL075.DSN01   1      73    75      mm/dd/yyyy
 TDI074  TEST.VOL075.DSN01   1      74    75      mm/dd/yyyy
 TDI075  TEST.VOL075.DSN01   1      75    75      mm/dd/yyyy
 TDI076  XXX.YYYY.VVE.V.K3456  1     1     1      mm/dd/yyyy
 TDI077  XXX.YYYY.VVE.V123456  1     1     1      mm/dd/yyyy
 TDI078  A1234567.B1234567.ZZ  1     1     1      mm/dd/yyyy
 TDI079  A1234567.B1234567.ZZ  1     1     1      mm/dd/yyyy
 TDI080  VTAPE.VVE.VTP0004.PR  1     1     1      mm/dd/yyyy
 TDI081  VTAPE.VVE.VTP0004.PR  1     1     1      mm/dd/yyyy
 TDI082  VTAPE.VVE.VTP000C.PR  1     1     1      mm/dd/yyyy
 TDI083  VTAPE.VVE.VTP00C0.DU  1     1     1      mm/dd/yyyy
 TDI084  VTAPE.VVE.VTP0004.PR  1     1     1      mm/dd/yyyy
 TDI085  VTAPE.VVE.VT.0V04.PR  1     1     1      mm/dd/yyyy
 TDI086  VTAPE.VVE.VTT.V04.PR  1     1     1      mm/dd/yyyy
 TDI087  VTAPE.VVE.V.T0V04.PR  1     1     1      mm/dd/yyyy
 TDI088  XXX.YYYY.VVE.V123456  1     1     1      mm/dd/yyyy
 TDI089  XXX.YYYY.VVE.V123456  1     1     1      mm/dd/yyyy
 TDI090  TAPE.TRACE.SL.FILE1   1     1     1      mm/dd/yyyy
 TDI091
 TDI092
 TDI093
 TDI094
 TDI095
 TDI096
 TDI097
```

SAMPLE 3 - USER REPORT BY VSN (TLMS018 field names)

```
//     EXEC  CATERL18,
//           PRM='VSN,USER REPORT BY VSN'
//CATECOGO.SYSIN18 DD *
  VSN DSN_20 FILESEQ VOLSEQ VOLCNT KEEPDT
```

For compatibility, TLERPT18 accepts most of the TLMS018 field names with the following exceptions:

- USER, LENGTH, and LABEL are CA EARL reserve words and cannot be used. Specify USER_DATA, TAPE_LENGTH, and LABEL_TYPE instead.

- CLN-USE and CER-USE must be specified as CLN_USE and CER_USE because a dash is not valid in a CA EARL field name.

- Short DSN fields are specified as DSN_30 instead of DSN(30).

The following fields were added to the TLERPT18 report to allow reporting on the data items:

Field	Length	Type	Source
USER_DATA1	15	CHAR	Positions 01-15 of USER_DATA
JOB_ACCT	15	CHAR	Positions 01-15 of USER_DATA
USER_DATA2	15	CHAR	Positions 16-31 of USER_DATA
PGMR_NAME	15	CHAR	Positions 16-31 of USER_DATA
USER_DATA3	29	CHAR	Positions 31-59 of USER_DATA
P_SCR_SOURCE	3	CHAR	Scratch source (TRS, JCL, MAN, EDM)
P_SCHD_PTR	1	NUM	Current position in schedule
P_RTN_SOURCE	3	CHAR	Retention source (JCL, RMF, MAN, RTR)
P_RTN_DATA	53	CHAR	Complete retention schedule
P_RTN_ENTRY1	8	CHAR	1st retention schedule entry
P_RTN_ENTRY2	8	CHAR	2nd retention schedule entry
P_RTN_ENTRY3	8	CHAR	3rd retention schedule entry
P_RTN_ENTRY4	8	CHAR	4th retention schedule entry
P_RTN_ENTRY5	8	CHAR	5th retention schedule entry
P_RTN_ENTRY6	8	CHAR	6th retention schedule entry
P_CUR_ENTRY	8	CHAR	Current retention schedule entry
P_LST_ENTRY	8	CHAR	Last retention schedule entry

Each P_RTN_ENTRYn is subdivided into the following fields for individual field-level reporting:

Field	Length	Type	Source
P_RTN_TYPEn	1	CHAR	nth retention entry type
P_RTN_LOCn	2	CHAR	nth retention entry location
P_RTN_COUNTn	5	NUM	nth retention entry count field

The P_CUR_ENTRY field is subdivided as follows:

Field	Length	Type	Source
P_CUR_TYPE	1	CHAR	Current retention entry type
P_CUR_LOC	2	CHAR	Current retention entry location
P_CUR_COUNT	5	NUM	Current retention entry count field

The P_LST_ENTRY field is subdivided as follows:

Field	Length	Type	Source
P_LST_TYPE	1	CHAR	Last retention entry type
P_LST_LOC	2	CHAR	Last retention entry location
P_LST_COUNT	5	NUM	Last retention entry count field

Two COPY members in the *hlq*.CTAPECPB library let the retention schedule data be used in user written TLMS programs. To use these fields, place the following copy statement after the COPY EARLDEFS statement in your code:

```
COPY TLERETND
```

To populate the print data fields for the retention data, add the following statement to your program logic, after the selection criteria logic:

```
COPY TLERETNE
```

System Activity Analysis (TLERPT19)

TLERPT19 provides an audit of CA TLMS activity and a summary of all CA TLMS transactions. The summary report is automatically printed when you issue the TLERPT19 command. All six audit reports are produced.

The input for these reports is either the SMF MANX/MANY dump tape or the CA TLMS alternate log dump tape, depending on the RECOVERY system option.

SAMPLE 1- SYSTEM ACTIVITY ANALYSIS

```
//      EXEC CATERL19,
//       TAPEDB=selected.alog.backup
```

```
C O M P A N Y   N A M E          TRANSACTION SUMMARY REPORT          TLERPT19  PAGE    1
CA TLMS NN.n yymmTLrrr                                               dd/mm/yy    hh.mm.ss




                  FROM  mm/dd/yyyy 01.19.16.31  TO  mm/dd/yyyy 11.48.42.95

                  NEW DATA SETS CREATED.........  .....   4,962
                      OLD DATA SETS READ.................   968
                      NEW FOREIGN DATA SETS WRITTEN......   768
                      OLD FOREIGN DATA SETS READ.........    96
                      TLMS COPYCAT INTERNAL TRANSACTIONS.     0
                      BATCH UPDATES.....................     1
                      ON-LINE UPDATES...................   168
                      TAPE RETENTION UPDATES............. 5,240
                      TAPE DATA SET OPENS............... 7,777

                      TOTAL CA TLMS TRANSACTIONS...   19,980

END OF REPORT
```

Note: Ensure the TAPEDB DD point to your ALOG or SMF when executing aTLERPT19 report. You must point to a backup file and not a live file.

The TLERPT19 replaces the TLMS019 which is no longer supported.

New Data Set Transactions Report Example

The New Data Set Transactions Report details all the transactions recorded for new data sets in the Volume Master File during the period of time covered by the input tape processed.

```
C O M P A N Y   N A M E        NEW DATA SETS CREATED            TLERPT19  PAGE     1
CA TLMS NW.n yymmTLrrr                                          dd/mm/yy   hh.mm.ss
------------------------------------------------------------------------------------------------
DATA SET NAME                          FILE    VOLSER       CREATE      CREATE   CREATE   CREATE     CPU
                                       SEQ                    DATE        TIME    UNIT     JOBNAME    ID
------------------------------------------------------------------------------------------------


CS21BKUP.SX20XAAA.LDYNPDVH.G0030V00       94    279394     mm/dd/yyyy   01:19:18   3402    ISCS21W5   XAL1
CS21BKUP.SX20XAAA.LDYNPDVG.G0030V00       92    279405     mm/dd/yyyy   01:19:31   3415    ISCS21W5   XAL1
CS21BKUP.SX20XAAA.LDYNPDVF.G0031V00       24    279418     mm/dd/yyyy   01:19:32   3423    ISCS21W5   XAL1
CS21BKUP.SX20XAAA.LDYNPDVF.G0031V00       24    279510     mm/dd/yyyy   01:20:07   3423    ISCS21W5   XAL1
OPS.WEEKLY.FDR.VBOOK02.BACKUP.G0224V00     5    625888     mm/dd/yyyy   01:20:30   3301    WKBKU4     XA55
OPS.LOCAL.FDR.VBOOK02.BACKUP.G0293V00      5    530553     mm/dd/yyyy   01:20:32   3200    WKBKU4     XA55
CS21BKUP.SX20XAAA.LDYNPDVF.G0031V00       24    279554     mm/dd/yyyy   01:20:43   3423    ISCS21W5   XAL1
CS21BKUP.SX20XAAA.LDYNPDVF.G0031V00       24    279559     mm/dd/yyyy   01:21:03   3423    ISCS21W5   XAL1
CAIMIS.DIV00.VRP020.ELEMOUT                1    279577     mm/dd/yyyy   01:21:26   341C    VRPDIV     XAL1
CAIMIS.DIV00.VRP020.ERROUT                 1    279580     mm/dd/yyyy   01:21:26   3409    VRPDIV     XAL1
CS21BKUP.SX30X999.SPROXLPT.G0016V00        1    279629     mm/dd/yyyy   01:21:35   340F    ISCS21W5   XAL1
CS21BKUP.SX30X999.D345T.G0033V00           1    279639     mm/dd/yyyy   01:21:35   340E    ISCS21W5   XAL1
CS21BKUP.SX30X999.TTREEXFL.G0017V00        2    279629     mm/dd/yyyy   01:21:35   340F    ISCS21W5   XAL1
CS21BKUP.SX30X999.DF41S.G0017V00           2    279639     mm/dd/yyyy   01:21:35   340E    ISCS21W5   XAL1
CS21BKUP.SX21X999.XSAP.G0016V00            1    279808     mm/dd/yyyy   01:21:36   3405    ISCS21W5   XAL1
CS21BKUP.SX40XAAA.SPROXDAT.G0018V00        3    279629     mm/dd/yyyy   01:21:36   340F    ISCS21W5   XAL1
CS21BKUP.SX40XAAA.LSPRODVH.G0016V00        3    279639     mm/dd/yyyy   01:21:36   340E    ISCS21W5   XAL1
CS21BKUP.SX40XAAA.LINDTDVH.G0016V00        4    279629     mm/dd/yyyy   01:21:36   340F    ISCS21W5   XAL1
CS21BKUP.SX40XAAA.LSPRODVG.G0016V00        2    279808     mm/dd/yyyy   01:21:37   3405    ISCS21W5   XAL1
CS21BKUP.SX40XAAA.DDXTF.G0018V00           5    279629     mm/dd/yyyy   01:21:37   340F    ISCS21W5   XAL1
CS21BKUP.SX40XAAA.LINDTDVG.G0016V00        4    279639     mm/dd/yyyy   01:21:37   340E    ISCS21W5   XAL1
CS21BKUP.SX30X999.TTREEI.G0016V00          6    279629     mm/dd/yyyy   01:21:38   340F    ISCS21W5   XAL1
CS21BKUP.SX30X999.PERMISSI.G0017V00        5    279639     mm/dd/yyyy   01:21:38   340E    ISCS21W5   XAL1
CS21BKUP.SX30X999.LSPRODVF.G0016V00        7    279629     mm/dd/yyyy   01:21:38   340F    ISCS21W5   XAL1
CS21BKUP.SX40XAAA.D301T.G0018V00           3    279808     mm/dd/yyyy   01:21:39   3405    ISCS21W5   XAL1
CS21BKUP.SX30X999.TCPUC.G0017V00           6    279639     mm/dd/yyyy   01:21:39   340E    ISCS21W5   XAL1
CS21BKUP.A000X990.MEREPX1.G0013V00         1    279648     mm/dd/yyyy   01:21:39   3419    ISCS21W2   XAL1
CS21BKUP.SX30X999.DD04L.G0019V00           8    279629     mm/dd/yyyy   01:21:39   340F    ISCS21W5   XAL1
CS21BKUP.A000X990.MEMGMTX.G0013V00         1    279866     mm/dd/yyyy   01:21:40   3417    ISCS21W2   XAL1
CS21BKUP.SX23X999.XSAP.G0020V00            4    279808     mm/dd/yyyy   01:21:40   3405    ISCS21W5   XAL1
CS21BKUP.A000X99Z.MEREPX2.G0013V00         2    279648     mm/dd/yyyy   01:21:40   3419    ISCS21W2   XAL1
CS21BKUP.SX30X999.LD345DVF.G0032V00        7    279639     mm/dd/yyyy   01:21:40   340E    ISCS21W5   XAL1
```

Old Data Sets Read Report Example

The Old Data Sets Read Report details all the transactions that read a data set as recorded in the Volume Master File during the specified time interval.

```
C O M P A N Y   N A M E        OLD DATA SETS READ          TLERPT19  PAGE    1
CA TLMS NN.n yymmTLrrr                                      dd/mm/yy    hh.mm.ss
-----------------------------------------------------------------------------------------------------------
DATA SET NAME                           FILE    VOLSER         LAST       LAST    LAST    LAST       CPU
                                        SEQ                    DATE       TIME    UNIT    JOB        ID
-----------------------------------------------------------------------------------------------------------

CAIMIS.TOPSDB.USA.LXX.BKUP.G8587V00       1     270026     mm/dd/yyyy   01:21:26   340A    VRPDIV     XAL1
CAIMIS.DIV00.VRP020.ELEMOUT               1     279577     mm/dd/yyyy   01:21:43   340A    VRPDIV     XAL1
CAIMIS.DIV00.VRP030.FIELDS                1     279756     mm/dd/yyyy   01:22:07   3412    VRPDIV     XAL1
SVTS120.QASVT2.G1170                      1     103344     mm/dd/yyyy   01:42:04   3518    QV2RX70    XE61
SVTS120.QASVT2.G1173                      1     103341     mm/dd/yyyy   01:42:07   3507    QV2RX73    XE61
SVTS120.QASVT2.G1170                      1     103347     mm/dd/yyyy   01:42:11   3504    QV2RX70    XE61
SVTS120.QASVT2.G1174                      1     103342     mm/dd/yyyy   01:42:12   350D    QV2RX74    XE61
SVTS120.QASVT2.G1170.VTS                  4     103347     mm/dd/yyyy   01:42:12   3504    QV2RX70    XE61
SVTS120.QASVT2.G1173                      1     103341     mm/dd/yyyy   01:42:16   3507    QV2RX73    XE61
SVTS120.QASVT2.G1173                      1     103350     mm/dd/yyyy   01:42:22   3513    QV2RX73    XE61
SVTS120.QASVT2.G1173.VTS                  4     103350     mm/dd/yyyy   01:42:23   3513    QV2RX73    XE61
SVTS120.QASVT2.G1170                      1     103344     mm/dd/yyyy   01:42:29   3501    QV2RX70    XE61
SVTS120.QASVT2.G1173.DFDSS                2     103350     mm/dd/yyyy   01:42:30   3512    QV2RX73    XE61
SVTS120.QASVT2.G1174                      1     103346     mm/dd/yyyy   01:42:38   3506    QV2RX74    XE61
SVTS120.QASVT2.G1174.VTS                  4     103346     mm/dd/yyyy   01:42:40   3506    QV2RX74    XE61
CAIMIS.STAR.NXACTION.EXTRACT.G0094V00     1     594434     mm/dd/yyyy   21:37:14   340B    PRODXCNT   XAT1
CAIMIS.STAR.SGINFO.EXTRDLY.G0098V00       1     567645     mm/dd/yyyy   21:37:21   3416    PRODXCNT   XAT1
CAIMIS.STAR.SGINFO.EXTRDLY.G0098V00       1     567645     mm/dd/yyyy   21:37:21   3416    PRODXCNT   XAT1
CAIMIS.STAR.EXTRACT.G0095V00              1     594461     mm/dd/yyyy   21:37:26   3416    PRODXCNT   XAT1
CAIMIS.STAR.DIINFO.EXTRDLY.G0098V00       1     567668     mm/dd/yyyy   21:37:35   3427    PRODXCNT   XAT1
CAIMIS.STAR.DIINFO.EXTRDLY.G0098V00       1     567668     mm/dd/yyyy   21:37:35   3427    PRODXCNT   XAT1
IDI.SYSTEST.T00988B.IC1                   1     569178     mm/dd/yyyy   21:37:40   3423    T00988B    CA11
CAIMIS.STAR.DIINFO.EXTRACT.G0095V00       1     594468     mm/dd/yyyy   21:37:40   3427    PRODXCNT   XAT1
IDT.T01747L.LOG1.SAMCSD03.G0003V00        1     569861     mm/dd/yyyy   21:37:48   3400    T01747L    CA11
CAIMIS.STAR.EARL.EXTR120.G2981V00         1     569708     mm/dd/yyyy   21:37:55   3427    PRODXCNT   XAT1
IDT.T01747L.IC1.SAMCSD03.LOAN.G0004V00    1     569856     mm/dd/yyyy   21:37:56   340B    T01747L    CA11
IDT.T01747L.IC1.SAMCSD03.LOAN.G0004V00    1     569856     mm/dd/yyyy   21:37:57   340B    T01747L    CA11
IDT.T01747L.LOG1.SAMCSD03.G0003V00        1     569861     mm/dd/yyyy   21:38:08   3400    T01747L    CA11
IDT.T01747L.IC1.SAMCSD03.LOANOVF.G0004V00 2     569856     mm/dd/yyyy   21:38:14   3407    T01747L    CA11
IDT.T01747L.IC1.SAMCSD03.LOANOVF.G0004V00 2     569856     mm/dd/yyyy   21:38:15   3407    T01747L    CA11
CAIMIS.STAR.EARL.EXTR120.G2981V00         1     569708     mm/dd/yyyy   21:38:19   3427    PRODXCNT   XAT1
```

New Foreign Data Sets Written Report Example

This foreign tape report audits the creation of any tapes not under CA TLMS control during the specified time interval.

```
C O M P A N Y   N A M E        NEW FOREIGN DATA SETS WRITTEN        TLERPT19  PAGE     1
CA TLMS NN.n yymmTLrrr                                              dd/mm/yy    hh.mm.ss
------------------------------------------------------------------------------------------------
DATA SET NAME                          FILE    VOLSER       CREATE      CREATE    CREATE    CREATE      CPU
                                       SEQ                  DATE        TIME      UNIT      JOBNAME     ID
------------------------------------------------------------------------------------------------


ADMIN.DISPPROD.ARCH.D05206.T091226.F01  1131   522399     mm/dd/yyyy   09:12:28  330E      DISPATCH    XAT1
ADMIN.DISPPROD.ARCH.D05206.T091231.F01  1132   522399     mm/dd/yyyy   09:12:33  330E      DISPATCH    XAT1
OUTPUT.MMCART5                          1      OUT5MM      mm/dd/yyyy   16:15:28  0E7C      CARTCPY5    XE61
OUTPUT.MMCART4                          1      OUT4MM      mm/dd/yyyy   16:15:28  0E7A      CARTCPY5    XE61
OUTPUT.MMCART3                          1      OUT3MM      mm/dd/yyyy   16:15:29  0E79      CARTCPY5    XE61
OUTPUT.MMCART2                          1      OUT2MM      mm/dd/yyyy   16:15:29  0E78      CARTCPY5    XE61
OUTPUT.MMCART1                          1      OUT1MM      mm/dd/yyyy   16:15:29  0E7D      CARTCPY5    XE61
OUTPUT.MMCART1                          1      OUT1MM      mm/dd/yyyy   16:32:21  0E78      CARTCPY5    XE61
OUTPUT.MMCART2                          1      OUT2MM      mm/dd/yyyy   16:32:22  0E7C      CARTCPY5    XE61
OUTPUT.MMCART3                          1      OUT3MM      mm/dd/yyyy   16:32:22  0E7A      CARTCPY5    XE61
OUTPUT.MMCART4                          1      OUT4MM      mm/dd/yyyy   16:32:23  0E79      CARTCPY5    XE61
OUTPUT.MMCART5                          1      OUT5MM      mm/dd/yyyy   16:32:23  0E7D      CARTCPY5    XE61
OUTPUT.MMCART1                          1      OUT1MM      mm/dd/yyyy   16:40:11  0E7B      CARTCPY5    XE61
OUTPUT.MMCART2                          1      OUT2MM      mm/dd/yyyy   16:40:11  0E79      CARTCPY5    XE61
OUTPUT.MMCART3                          1      OUT3MM      mm/dd/yyyy   16:40:12  0E7C      CARTCPY5    XE61
OUTPUT.MMCART4                          1      OUT4MM      mm/dd/yyyy   16:40:12  0E7D      CARTCPY5    XE61
OUTPUT.MMCART5                          1      OUT5MM      mm/dd/yyyy   16:40:13  0E7A      CARTCPY5    XE61
OUTPUT.MMCART1                          1      OUT1MM      mm/dd/yyyy   16:43:11  0E79      CARTCPY5    XE61
OUTPUT.MMCART2                          1      OUT2MM      mm/dd/yyyy   16:43:11  0E78      CARTCPY5    XE61
OUTPUT.MMCART3                          1      OUT3MM      mm/dd/yyyy   16:43:12  0E7A      CARTCPY5    XE61
OUTPUT.MMCART4                          1      OUT4MM      mm/dd/yyyy   16:43:12  0E7D      CARTCPY5    XE61
OUTPUT.MMCART5                          1      OUT5MM      mm/dd/yyyy   16:43:13  0E7B      CARTCPY5    XE61
ADMIN.DISPPROD.ARCH.D05207.T074556.F01  1307   522399     mm/dd/yyyy   07:47:23  330C      DISPATCH    XAT1
ADMIN.DISPPROD.ARCH.D05207.T074726.F01  1308   522399     mm/dd/yyyy   07:47:28  330C      DISPATCH    XAT1
ADMIN.DISPPROD.ARCH.D05207.T074730.F01  1309   522399     mm/dd/yyyy   07:47:32  330C      DISPATCH    XAT1
ADMIN.DISPPROD.ARCH.D05207.T074735.F01  1310   522399     mm/dd/yyyy   07:47:37  330C      DISPATCH    XAT1
ADMIN.DISPPROD.ARCH.D05207.T074739.F01  1311   522399     mm/dd/yyyy   07:47:41  330C      DISPATCH    XAT1
ADMIN.DISPPROD.ARCH.D05207.T074744.F01  1312   522399     mm/dd/yyyy   07:47:46  330C      DISPATCH    XAT1
ADMIN.DISPPROD.ARCH.D05207.T074748.F01  1313   522399     mm/dd/yyyy   07:47:50  330C      DISPATCH    XAT1
ADMIN.DISPPROD.ARCH.D05207.T074753.F01  1314   522399     mm/dd/yyyy   07:47:55  330C      DISPATCH    XAT1
ADMIN.DISPPROD.ARCH.D05207.T074757.F01  1315   522399     mm/dd/yyyy   07:47:59  330C      DISPATCH    XAT1
```

Old Foreign Data Sets Read Report Example

This foreign tape report audits the input use of any tapes not under the control of CA TLMS during the specified time interval.

```
 C O M P A N Y   N A M E        OLD FOREIGN DATA SETS READ        TLERPT19  PAGE     1
 CA TLMS NN.n yymmTLrrr                                           dd/mm/yy    hh.mm.ss
 -------------------------------------------------------------------------------------------------
 DATA SET NAME                     FILE     VOLSER          LAST          LAST   LAST   LAST        CPU
                                   SEQ                      DATE          TIME   UNIT   JOB         ID
 -------------------------------------------------------------------------------------------------

 TAPEMAP.TAPZ                        1      DS0509     mm/dd/yyyy      16:02:21   0E7F   DEFDDSB0    CA31
 INPUT.MMTAPE                        1      INMM       mm/dd/yyyy      16:15:30   0E7B   CARTCPY5    XE61
 TAPEQA.INPUT.TAPE                   1      QAIN       mm/dd/yyyy      16:21:23   0E7E   TAPEQA      XE61
 INPUT.MMTAPE                        1      INMM       mm/dd/yyyy      16:32:21   0E7B   CARTCPY5    XE61
 TAPEMAP.TAPE                        1      DS0509     mm/dd/yyyy      16:34:45   0E70   DSB0REC     CA31
 CAI.SMPMCS                         32      DS0509     mm/dd/yyyy      16:34:59   0E70   DSB0REC     CA31
 CAI.CDSB000.F1                     33      DS0509     mm/dd/yyyy      16:35:01   0E70   DSB0REC     CA31
 CAI.CDSB000.F1                     33      DS0509     mm/dd/yyyy      16:35:03   0E70   DSB0REC     CA31
 CAI.CDSB000.F1                     33      DS0509     mm/dd/yyyy      16:35:27   0E70   DSB0REC     CA31
 CAI.CDSB000.F2                     34      DS0509     mm/dd/yyyy      16:35:28   0E70   DSB0REC     CA31
 CAI.CDSB000.F2                     34      DS0509     mm/dd/yyyy      16:35:31   0E70   DSB0REC     CA31
 CAI.CDSB000.F2                     34      DS0509     mm/dd/yyyy      16:35:35   0E70   DSB0REC     CA31
 CAI.CDSB001.F1                     35      DS0509     mm/dd/yyyy      16:35:36   0E70   DSB0REC     CA31
```

Batch Update Transactions Report Example

The Batch Update Transactions Report details all the update commands entered during the specified time interval. These transactions are listed in the format in which they were entered.

```
 C O M P A N Y   N A M E           BATCH UPDATES                  TLERPT19  PAGE     1
 CA TLMS NN.n yymmTLrrr                                           dd/mm/yy    hh.mm.ss
 -------------------------------------------------------------------------------------------------
     SMF       SMF     SMF  JOBNAME    CMD VOLSER     TRANSACTION DATA
     TIME      DATE    ID   /USERID
 -------------------------------------------------------------------------------------------------

  08.58.26.25 mm/dd/yyyy XAD1 DISPTLMS   UPD 522399 KEEPDT=2032/345

 END OF REPORT
```

Online Updates Report Example

The Online Updates Report details all the update commands entered through the online inquiry/update system during the specified time interval. The commands are listed in the format in which they were entered.

```
C O M P A N Y   N A M E        ONLINE UPDATES                      TLERPT19   PAGE     1
CA TLMS NN.n yymmTLrrr                                             dd/mm/yy     hh.mm.ss
----------------------------------------------------------------------------------------------------------------
     SMF       SMF    SMF  JOBNAME    CMD VOLSER      TRANSACTION DATA
     TIME      DATE   ID   /USERID
----------------------------------------------------------------------------------------------------------------

 21.37.51.34 mm/dd/yyyy XE61 SVTSAS       UPV 109863 BOXCCSS=VTX ATL(VTAPE,0)
 21.37.51.37 mm/dd/yyyy XE61 SVTSAS       UPD 322295
 21.37.58.99 mm/dd/yyyy XE61 SVTSAS       UPV 109870 BOXCCSS=VTX ATL(VTAPE,0)
 21.37.59.02 mm/dd/yyyy XE61 SVTSAS       UPD 322295
 16.07.19.63 mm/dd/yyyy XE61 SVTSAS       UPV 101968 BOXCCSS=VTX ATL(VTAPE,0)
 16.07.19.66 mm/dd/yyyy XE61 SVTSAS       UPD 520424
 09.57.07.20 mm/dd/yyyy XE61 SVTSAS       UPV 101969 BOXCCSS=VTX ATL(VTAPE,0)
 09.57.07.22 mm/dd/yyyy XE61 SVTSAS       UPD 626981
 09.57.18.77 mm/dd/yyyy XE61 SVTSAS       UPV 101970 BOXCCSS=VTX ATL(VTAPE,0)
 09.57.18.80 mm/dd/yyyy XE61 SVTSAS       UPD 626981
 11.13.29.52 mm/dd/yyyy XE61 SVTSAS       UPV 108463 BOXCCSS=VTX ATL(VTAPE,0)
 11.13.29.54 mm/dd/yyyy XE61 SVTSAS       UPD 520416
 11.16.04.21 mm/dd/yyyy XE61 SVTSAS       UPV 108465 BOXCCSS=VTX ATL(VTAPE,0)
 11.16.04.23 mm/dd/yyyy XE61 SVTSAS       UPD 520416
 11.18.35.42 mm/dd/yyyy XE61 SVTSAS       UPV 101972 BOXCCSS=VTX ATL(VTAPE,0)
 11.18.35.46 mm/dd/yyyy XE61 SVTSAS       UPD 322306
 11.19.01.64 mm/dd/yyyy XE61 SVTSAS       UPV 101982 BOXCCSS=VTX ATL(VTAPE,0)
 11.19.01.68 mm/dd/yyyy XE61 SVTSAS       UPD 524444
 11.19.49.19 mm/dd/yyyy XE61 SVTSAS       UPV 101983 BOXCCSS=VTX ATL(VTAPE,0)
 11.19.49.33 mm/dd/yyyy XE61 SVTSAS       UPD 524444
 11.19.52.64 mm/dd/yyyy XE61 SVTSAS       UPV 101973 BOXCCSS=VTX ATL(VTAPE,0)
 11.19.52.66 mm/dd/yyyy XE61 SVTSAS       UPD 322306
 11.20.37.31 mm/dd/yyyy XE61 SVTSAS       UPV 101989 BOXCCSS=VTX ATL(VTAPE,0)
 11.20.37.35 mm/dd/yyyy XE61 SVTSAS       UPD 524444
```

Retention System Updates Report Example

```
C O M P A N Y   N A M E         RETENTION SYSTEM UPDATES           TLERPT19   PAGE     1
CA TLMS NN.n yymmTLrrr                                             dd/mm/yy     hh.mm.ss
----------------------------------------------------------------------------------------------------------------
     SMF       SMF    SMF  JOBNAME    CMD VOLSER      TRANSACTION DATA
     TIME      DATE   ID   /USERID
----------------------------------------------------------------------------------------------------------------

 06.38.51.94 mm/dd/yyyy XAD1 TLMSTRS       UPV 556896 SCHED(2DC)
 06.38.51.99 mm/dd/yyyy XAD1 TLMSTRS       UPV 270468 SCRATCH=YES SERVICE=IN SCRDT=yyyy/ddd SCHED()
 06.38.52.09 mm/dd/yyyy XAD1 TLMSTRS       UPV 584136 SCHED(2DC)
 06.40.54.25 mm/dd/yyyy XAD1 TLMSTRS       UPV 567688 SCRATCH=YES SERVICE=IN SCRDT=yyyy/ddd SCHED()
 06.40.54.26 mm/dd/yyyy XAD1 TLMSTRS       UPV 269170 SCHED(2DC)
 06.40.54.29 mm/dd/yyyy XAD1 TLMSTRS       UPV 563085 SCHED(2DC)
 06.40.54.29 mm/dd/yyyy XAD1 TLMSTRS       UPV 520464 SCHED(2DC)
 06.40.54.45 mm/dd/yyyy XAD1 TLMSTRS       UPV 584802 SCRATCH=YES SERVICE=IN SCRDT=yyyy/ddd SCHED()
 06.40.54.57 mm/dd/yyyy XAD1 TLMSTRS       UPV 584803 SCRATCH=YES SERVICE=IN SCRDT=yyyy/ddd SCHED()
 06.40.54.58 mm/dd/yyyy XAD1 TLMSTRS       UPD 584237 FILESEQ=1 KEEPDT=2006/022
 06.40.54.59 mm/dd/yyyy XAD1 TLMSTRS       UPV 584237 SCHED(2DC18)
 06.41.38.43 mm/dd/yyyy XAD1 TLMSTRS       UPV 108364 SCHED(2DC)
 06.41.38.49 mm/dd/yyyy XAD1 TLMSTRS       UPV 109012 SCRATCH=YES SERVICE=IN SCRDT=yyyy/ddd SCHED()
 06.41.38.50 mm/dd/yyyy XAD1 TLMSTRS       UPV 108361 SCHED(2DC)
 06.41.38.57 mm/dd/yyyy XAD1 TLMSTRS       UPV 109009 SCRATCH=YES SERVICE=IN SCRDT=yyyy/ddd SCHED()

END OF REPORT
```

Distributed Tape Volume Master List (TLERPT20)

TLERPT20 lists all volumes in the Volume Master File flagged as Distributed system tapes (also known as Agent tapes) regardless of whether they are scratch, nonscratch, in service or out of service. An optional parameter lets you limit the report to a specific range of volume serial numbers. Otherwise, all volumes are listed.

SAMPLE 1 - RANGE OF VOLUMES

```
//        EXEC CATEARL,
//            PRM='CPX010,CPX050'
//CATECOGO.SYSIN DD *
   COPY TLERPT20
```

SAMPLE 2 - RANGE OF VOUMES STARTING WITH CPX010

```
//        EXEC CATEARL,
//            PRM='CPX010'
//CATECOGO.SYSIN DD *
   COPY TLERPT20
```

SAMPLE 3 - RANGE OF VOUMES ENDING WITH CPX050

```
//        EXEC CATEARL,
//            PRM='      ,CPX050'
//CATECOGO.SYSIN DD *
   COPY TLERPT20
ALL VOLSER MUST BE ENTERED AS SIX DIGITS. ENTER 6 BLANKS TO SKIP F
IRST VOLSER.
```

SAMPLE 4 - ALL VOLUMES

```
//        EXEC CATEARL,
//            PRM=''
//CATECOGO.SYSIN DD *
   COPY TLERPT20
```

Report Example

```
C O M P A N Y   N A M E         AGENT VOLUME MASTER LIST        TLERPT20  PAGE   1
CA TLMS NN.n yymmTLrrr                                          dd/mm/yy   hh.mm.ss
----------------------------------------------------------------------------------------------------
VOLSER SCR  SRV   DATA SET NAME                     FILE   CREATE    CREATE    CREATE    CREATE   LOC SLOT
       IND  IND                                     SEQ     TIME      DATE     JOBNAME   UNIT     ID
----------------------------------------------------------------------------------------------------
TDI001 Y    IN    SAVE1.SOME.DSN1                     1    06:37:33  mm/dd/yyyy  JOB101   0E80     AR  A105

TDI005 N    IN    PROD1.SOME.DSN1                     1    06:37:32  mm/dd/yyyy  JOB101   0E80     DC

TDI011 N    IN    PROD1.SOME.DSN1                     1    06:37:32  mm/dd/yyyy  JOB101   0E80     DC

TDI022 N    IN    CATAPE.HOLDS.EXPORTED.VIRTUAL.TAPES.VTDI022  1  09:56:37  mm/dd/yyyy  OAM      0E80     DC

TDI030 N    IN    PROD1.SOME.DSN1                     1    06:37:32  mm/dd/yyyy  JOB101   0E80     DC

TDI079 Y    IN    SAVE1.SOME.DSN1                     1    06:37:33  mm/dd/yyyy  JOB101   0E80     AR  A106

TDI080 Y    IN    SAVE1.SOME.DSN1                     1    06:37:33  mm/dd/yyyy  JOB101   0E80     AR  A107

TDI082 Y    IN    SAVE1.SOME.DSN1                     1    06:37:33  mm/dd/yyyy  JOB101   0E80     AR  A108


END OF REPORT
```

Volumes to be Removed from Automatic Tape Library (TLERPT21)

This report lists the volumes in the ATL which are candidates for EXPORT or EJECT. The candidate volumes have been scheduled for movement by TLMSTRS and the VMF shows their location is not in the ATL. The appropriate EXPORT or EJECT commands are written to the OUTFILE DD. ADD a //OUTFILE DD statement to the CATEARL step.

These EXPORT and EJECT commands can be used as input to CTSSYNC, which will issue the EJECT and EXPORT commands to the ATL.

CTSSYNC provides support for the IBM 3495/3494 only.

```
//          EXEC CATEARL,
//              OUTFILE='CAI.TLMS.SELECT.EJECT.LIST',
//              PARM=''
//CATECOGO.SYSIN DD *
  COPY TLERPT21
//
```

Report Example

```
C O M P A N Y   N A M E   VOLUMES TO BE REMOVED FROM AUTOMATIC TAPE LIBRARY   TLERPT21  PAGE   1
CA TLMS NN.n yymmTLrrr                                                dd/mm/yy  hh.mm.ss
-----------------------------------------------------------------------------------------------------
             FUNC      VOLSER    ROBOT    ROBOT    LOC    DATA SET NAME
                                 TYPE     NUM      ID
-----------------------------------------------------------------------------------------------------
             EXPORT    TDI061    VIBM              AR     HSM.BACKUP.DFDSS
             EJECT     TDI062    IBM      4        AR     HSM.BACKUP.DFDSS
             EJECT     TDI063    IBM      4        AR     HSM.BACKUP.DFDSS
             EJECT     TDI067    IBM      4        AR     HSM.BACKUP.DFDSS
             EXPORT    TRN013    VIBM     2        L1     PROD1.EOV.DSN
             EXPORT    TRN014    VIBM     2        L2     PROD2.EOV.DSN


END OF REPORT
```

Note: Reports TLERPT21, TLERPT22, and TLERPT23 are available from support on request.

Tapes to be Imported (TLERPT22)

This report lists the exported virtual tapes on the selected container volume. The container volume for import should be specified via the 'PRM=' keyword of the CATEARL procedure. Import commands for each volume will be written to the OUTFILE file. Add a //OUTFILE DD statement to the CATEARL step.

These IMPORT commands can be used as input to CTSSYNC, which will issue IMPORT commands to the ATL.

CTSSYNC provides support for the IBM 3495/3494 only.

SAMPLE 1

```
//            EXEC CATEARL,
//                OUTFILE='CAI.TLMS.SELECT.IMPORT.LIST',
//                PARM=''
//CATECOGO.SYSIN DD *
  COPY TLERPT22
//
```

Report Example

```
C O M P A N Y   N A M E     TAPES TO BE IMPORTED FROM PHYSICAL TAPE TRN010     TLERPT22  PAGE  1
CA TLMS NN.n yymmTLrrr                                                 dd/mm/yy  hh.mm.ss
--------------------------------------------------------------------------------------------------
   VOLSER    DATA SET NAME                             SCR   LOC    EXPIRATION       CREATE      CREATE
                                                       IND   ID         DATE           DATE      JOBNAME
--------------------------------------------------------------------------------------------------
   TRN030    PROD1.VTS.DSN11                            Y    DC                      mm/dd/yyyy   JOB001
   TRN031    PROD1.VTS.DSN11                            Y    DC                      mm/dd/yyyy   JOB001
   TRN032    PROD1.VTS.DSN11                            Y    DC                      mm/dd/yyyy   JOB001
   TRN036    PROD3.VTS.DSN11                            Y    DC                      mm/dd/yyyy   JOB001
   TRN037    PROD3.VTS.DSN12                            Y    DC                      mm/dd/yyyy   JOB001
   TRN038    PROD3.VTS.DSN13                            Y    DC                      mm/dd/yyyy   JOB001
   TRN039    PROD1.VTS.DSN11                            Y    DC    PERMANENT         mm/dd/yyyy   JOB003

END OF REPORT
```

Exported Virtual Tape Inventory (TLERPT23)

This report lists the exported virtual tapes and the container volumes they reside on. Tapes are listed by creation date within container volume. The scratch status of each tape is shown. This report may be used to determine when the virtual and container tapes should be re-imported into the ATL. Generally they should be imported when all the virtual volumes are scratched. The container volume is created as an EDM and will not be automatically scratched. The container volume may be scratched using 'UPV' commands in a job which is defined as the EDM 'VIBM'.

This report can generate the 'UPV volser SCRATCH=YES' command for each container tape whose virtual tapes are scratch or have been previously imported.

SAMPLE 1

```
//          EXEC CATEARL,
//             OUTFILE='CAI.TLMS.UPDATE.CMDS',
//             PARM=''
//CATECOGO.SYSIN DD *
  COPY TLERPT23
//
```

Report Example

```
C O M P A N Y   N A M E        EXPORTED VIRTUAL TAPE INVENTORY        TLERPT23  PAGE     1
CA TLMS NN.n yymmTLrrr                                                dd/mm/yy    hh.mm.ss
--------------------------------------------------------------------------------------------------
CONTAINER  VOLSER   DATA SET NAME                          SCR    LOC SLOT   EXPIRATION     CREATE      CREATE
VOLUME                                                     IND    ID                DATE       DATE    JOBNAME
--------------------------------------------------------------------------------------------------
NONVMF     TST003   PROD1.EOV.DSN                          N      DC  VTX                   mm/dd/yyyy  BOBTEST
TDI022     TDI006   PROD3.FOR.FRED                         Y      DC  VTX                   mm/dd/yyyy  FREDJOB
           TDI022   CATAPE.HOLDS.EXPORTED.VIRTUAL.TAPES.VTDI022  N  DC                      mm/dd/yyyy  OAM
TRN010     TRN030   PROD1.VTS.DSN11                        Y      DC                        mm/dd/yyyy  JOB001
           TRN031   PROD1.VTS.DSN11                        Y      DC                        mm/dd/yyyy  JOB001
           TRN032   PROD1.VTS.DSN11                        Y      DC                        mm/dd/yyyy  JOB001
           TRN036   PROD3.VTS.DSN11                        Y      DC                        mm/dd/yyyy  JOB001
           TRN037   PROD3.VTS.DSN12                        Y      DC                        mm/dd/yyyy  JOB001
           TRN038   PROD3.VTS.DSN13                        Y      DC                        mm/dd/yyyy  JOB001
           TRN039   PROD1.VTS.DSN11                        Y      DC      PERMANENT         mm/dd/yyyy  JOB003
           TRN010   CATAPE.HOLDS.EXPORTED.VIRTUAL.TAPES.VTRN010  N  KP  KA00                mm/dd/yyyy  OAM
TRN063     TDI061   HSM.BACKUP.DFDSS                       N      AR  VTX                   mm/dd/yyyy  JOBBKUP
XMIT51     TST001   PROD2.EOV.DSN                          N      DC  VTX    mm/dd/yyyy      mm/dd/yyyy  BOBTEST
           XMIT51   CATAPE.HOLDS.EXPORTED.VIRTUAL.TAPES.VXMIT51  N  DC                      08/13/1999  OAM


END OF REPORT
```

Retention Master Updates/Errors (TLMS040)

TLMS040 is produced automatically when you execute CATRMFU to update the Retention Master File. It lists all updates made to the retention master file or all input errors. The transactions are listed in the same format as they were entered.

Report Example

```
COMPANY NAME                RETENTION MASTER UPDATES / ERRORS     TLMS040                PAGE    1
 CA TLMS NN.n yymmTLrrr                                              dd/mm/yy  hh.mm.ss

DELIBERATE ERROR

CAT2701E COMMAND PREFIX NOT EQUAL TO TDA OR TDD OR SCA OR SCD                    ****       ERROR       ****

CAT2760E DEFAULT INFORMATION NOT SUPPLIED AND IS REQUIRED                        ****       ERROR       ****


****        NO UPDATES DONE - ERRORS FOUND IN UPDATE CARDS        ****
****                     THERE WERE     2     ERRORS FOUND        ****
                                   E N D   O F   J O B
```

Tape Retention Error/Exception (TLMS041)

TLMS041 is automatically produced when you execute CATTRS to run the tape retention system. It lists error and exception messages that are generated during tape retention processing. It also lists any conflicting controlling data sets so that you may correct the conflict. These messages follow the corresponding CA TLMS volume record data identifying the item involved. (See the *Message Reference Guide* for an explanation of each message.)

Report Example

```
CA, INC                TAPE RETENTION ERROR/EXCEPTION              TLMS041    PAGE    1
CA TLMS NN.n yymmTLrrr                                             dd/mm/yy   hh.mm.ss


VOLUME       BOX                                       VOL VOL
SERIAL  LOC CCSS  I------------ DATA SET NAME -------------I SEQ CNT  I-----------------ERROR MESSAGES -----------------I
------    --  ----  ---------------------------------------- --- ---  --------------------------------------------------


TLMS044,ALL
RUNDATE(mm/dd/yyyy),ACCEPT
```

```
CA, INC                TAPE RETENTION ERROR/EXCEPTION              TLMS041    PAGE    2
CA TLMS NN.n yymmTLrrr                                             dd/mm/yy   hh.mm.ss

VOLUME       BOX                                       VOL VOL
SERIAL  LOC CCSS  I------------ DATA SET NAME -------------I SEQ CNT  I------------------ ERROR MESSAGES --------------------I
------    --  ----  ---------------------------------------- --- ---  ------------------------------------------------------


TDI022  DC        CATAPE.HOLDS.EXPORTED.VIRTUAL.TAPES.VTDI022 1  1  CAT4509E - RETENTION RUN DATE IS LESS THAN CREATION DATE
TDI094  DC VTS    BACKUP.TEST                                 1  1  CAT4509E - RETENTION RUN DATE IS LESS THAN CREATION DATE
XMIT51  DC        CATAPE.HOLDS.EXPORTED.VIRTUAL.TAPES.VXMIT51 1  1  CAT4509E - RETENTION RUN DATE IS LESS THAN CREATION DATE
TDI005  DC        PROD1.SOME.DSN1                             1  4  CAT4537E - LOCATION-ID ON VMF NOT ON RMF QUALIFIER RECORD
TRN014  L2 VTS    PROD2.EOV.DSN                               1  1  CAT4537E - LOCATION-ID ON VMF NOT ON RMF QUALIFIER RECORD
TRN023  L2 VTS    PROD2.EOV.DSN                               1  2  CAT4537E - LOCATION-ID ON VMF NOT ON RMF QUALIFIER RECORD
TDI057  L2 BA01   PROD2.EOV.DSN                               1  1  CAT4537E - LOCATION-ID ON VMF NOT ON RMF QUALIFIER RECORD
TDI031  L2 BA00   PROD2.EOV.DSN                               1  1  CAT4537E - LOCATION-ID ON VMF NOT ON RMF QUALIFIER RECORD
```

Volumes to be Moved (TLMS042)

TLMS042 is automatically produced when CATTRS determines that tape movement should occur. It lists all tape volumes that are to be moved from one location to another. The order in which volumes are listed depends on the type of storage defined:

- For cabinet storage, volumes are listed in order by cabinet and slot number. This makes it easy to move volumes out of a cabinet.

- For box storage, all volumes in the box are listed under the box ID. This is because a box is moved as a single entity.

- If storage is undefined, volumes are listed in order by volume serial number.

Report Example

```
CA, INC          VOLUMES TO BE MOVED                        TLMS042    PAGE   1
CA TLMS NN.n yymmTLrrr                                       dd/mm/yy    hh.mm.ss


                              FROM  AR  ARCHIVE BACKUPS
                              TO    DC  DATA CENTER
FROM  TO  VOLUME                              VOL VOL  I-------- CREATION -------I DATE LAST
CCSS  N/A SERIAL I------------- DATASET NAME ----------I SEQ CNT  JOB-NAME    DATE       TIME     MOVED       I-- REMARKS ---I
----  ---- ------ ------------------------------------- --- ---  -------- ---------- -------- ---------- ----------------

A105      TDI001 SAVE1.SOME.DSN1                    1   4  JOB101   mm/dd/yyyy 06.37.33  mm/dd/yyyy  SCRATCH       6
A106      TDI079 SAVE1.SOME.DSN1                    3   4  JOB101   mm/dd/yyyy 06.37.33  mm/dd/yyyy  SCRATCH       6
A107      TDI080 SAVE1.SOME.DSN1                    2   4  JOB101   mm/dd/yyyy 06.37.33  mm/dd/yyyy  SCRATCH       6
A108      TDI082 SAVE1.SOME.DSN1                    4   4  JOB101   mm/dd/yyyy 06.37.33  mm/dd/yyyy  SCRATCH       6
```

```
CA, INC          VOLUMES TO BE MOVED                        TLMS042    PAGE   2
CA TLMS NN.n yymmTLrrr                                       dd/mm/yy    hh.mm.ss


                              FROM  DC  DATA CENTER
                              TO    L1  OFFSITE STAGE 1
FROM  TO  VOLUME                              VOL VOL  I-------- CREATION -------I DATE  LAST
 N/A CCSS SERIAL I------------- DATASET NAME ----------I SEQ CNT  JOB-NAME    DATE       TIME     MOVED       I-- REMARKS ---I
----  ---- ------ ------------------------------------- --- ---  -------- ---------- -------- ---------- ----------------

VTX  VTX   TST003 PROD1.EOV.DSN                    1   1  BOBTEST  mm/dd/yyyy 10.52.24
```

Volumes Scratched by Tape Retention System (TLMS043)

TLMS043 is automatically produced when you execute CATTRS to run the tape retention system. It lists all data sets that are ready to be scratched.

Note: Any time a tape data set is scratched, CA TLMS searches the z/OS catalog for the same data set name and volume serial number as the one being scratched. If found, and the UNCATLG system option has been set to YES, the entry is automatically uncataloged.

If this report produces a CC=16 or fails for any reason, check TLMS041 for error messages. Correct the errors and resubmit the job.

The following table lists the retention types shown in the report.

Method	Type	Use At
Catalog Control	1	Any location
Keep Date Control	2	Any location
Catalog/Date Control	3	Any location
Cycle Control	4	Any location
Elapsed Days Control	5	Any location

Method	Type	Use At
Move Immediate Control	6	Data center only
Manual Control	7	Last location only
Days Since Last Used Control	8	Data center only
Expiration Date Keyword Control	9	Data center only
Catalog Control	A	For all data sets
Keep Date Control	B	For all data sets
Catalog/Date Control	C	For all data sets

Report Example

```
CA, INC          VOLUMES SCRATCHED BY TAPE RETENTION SYSTEM          TLMS043    PAGE    1
CA TLMS NN.n yymmTLrrr                                               dd/mm/yy    hh.mm.ss

VOLUME                                      VOL VOL      BOX  I-------- CREATION --------I    KEEP
SERIAL  I----------- DATASET NAME -------------I SEQ CNT LOC CCSS  JOB-NAME    DATE      TIME      DATE      I-- REMARKS ---I
------  -----------------------------------     --- --- -- ----  -------- ---------- --------  ----------  ----------------

TDI001  SAVE1.SOME.DSN1                      1   4  AR A105  JOB101   mm/dd/yyyy 06.37.33 mm/dd/yyyy  RETURN TO   DC 6
TDI050  TEST.KR3.LOADLIB                     1   1  DC       BKUPTEST mm/dd/yyyy 06.37.33 mm/dd/yyyy  BY EDM SCRATCH 6
TDI051  TEST.KR1.LOADLIB                     1   1  DC       BKUPTEST mm/dd/yyyy 06.37.34 mm/dd/yyyy  BY EDM SCRATCH 6
TDI079  SAVE1.SOME.DSN1                      3   4  AR A106  JOB101   mm/dd/yyyy 06.37.33 mm/dd/yyyy  RETURN TO   DC 6
TDI080  SAVE1.SOME.DSN1                      2   4  AR A107  JOB101   mm/dd/yyyy 06.37.33 mm/dd/yyyy  RETURN TO   DC 6
TDI082  SAVE1.SOME.DSN1                      4   4  AR A108  JOB101   mm/dd/yyyy 06.37.33 mm/dd/yyyy  RETURN TO   DC 6
                                             6 VOLUMES SCRATCHED
```

```
CA, INC    ALL VOLUMES BY CURRENT RETENTION METHOD TYPE = ELAPSED DAYS (5)   TLMS044    PAGE    1
CA TLMS NN.n yymmTLrrr                                                       dd/mm/yy    hh.mm.ss

                                    FILE  VOLUME  VOL    CURRENT  NEXT I----- CREATE -----I I------- LAST -------I
I------------- DATASET NAME --------------I SEQ. SERIAL  CNT   LOC CCSS  LOC    DATE      TIME     MOVED      USED
------------------------------------------- ---- ------  ---   -- ----  --  ---------- --------  ---------- ----------

                    **************************** DAYS =      3 *************************************

PROD1.EOV.DSN                        1  TRN013   1    L1  VTS   KP  mm/dd/yyyy 12.32.51 mm/dd/yyyy  mm/dd/yyyy
PROD1.EOV.DSN                        1  TST003   1    L1  VTX   KP  mm/dd/yyyy 10.52.24 mm/dd/yyyy  mm/dd/yyyy
                    **************************** DAYS =     30 *************************************

SAVE.KKTDSN                          1  TRN006   1    AR  A104  KP  mm/dd/yyyy 07.29.56 mm/dd/yyyy  mm/dd/yyyy
```

More information:

All Volumes by Current Retention Method (TLMS044)

TLMS044 is an optional report, available when you execute CATTRS to run the tape retention system. It reports how volumes are currently being retained by their controlling data sets, where they are currently located, and what their disposition will be when their current retention criteria are met. (The word "current" refers to the status resulting from the TRS run that produced the report.) Additionally, it provides a list of all manually controlled volumes for auditing purposes.

You must specify whether you want to list all active volumes, or just those data sets whose status has changed. Optional parameters let you limit the report to data sets defined by specific retention types.

TLMS044 lists the controlling data sets for each volume (or set) in sequence by data set name, and within creation date/time, location, retention modifier (see chart below) and retention type.

If the retention type is:	Data sets are listed in order according to:
Keep date control (type 2 or B) or catalog/date control (type 3 or C)	CA TLMS keep date
Cycle control (type 4)	Number of cycles
Elapsed days control (type 5)	Number of days to elapse
Days since last used control (type 8)	Number of days since last used

This report may be used to forecast tape retention status by executing CATTRS in forecast mode, providing the FORECAST control statement in TLMSTRS. TLMS044 must be the first control statement in the SYSIN of CATTRS.

This command has the following format:

```
TLMS044  ,[ALL|CHG]  [,n...]
```

ALL

List the entire library of active volumes. If omitted, CHG must be specified.

CHG

List only data sets whose status has just changed during this TRS run. If omitted, ALL must be specified.

n

Specifies the number of one or more retention types, except type 6 and 9. For example, specify 2 for type 2 date control. This will limit the report to data sets that have been defined with that retention type.

Example 1

TLMS044,ALL

Lists all active controlling data sets for all retention types.

Example 2

TLMS044,ALL,2,3,7

Lists all active controlling data sets for retention types 2, 3, and 7.

Example 3

TLMS044,CHG

Lists only those active controlling data sets whose status has changed with the current TRS process (that is, they have moved) for all retention types.

Example 4

TLMS044,CHG,1,3,4

Lists only those active controlling data sets whose status has changed with the current TRS process (that is, they have moved) for retention types 1, 3, and 4.

Report Example

```
CA, INC           ALL VOLUMES BY CURRENT RETENTION METHOD TYPE = ELAPSED DAYS (5)   TLMS044    PAGE    1
CA TLMS   NN.n yymmTLrrr                                                       mm/dd/yyyy  hh.mm.ss


                                FILE  VOLUME  VOL    CURRENT    NEXT I----- CREATE -----I I------- LAST -------I
I------------- DATASET NAME --------------I SEQ. SERIAL  CNT   LOC  CCSS  LOC    DATE     TIME     MOVED      USED
-------------------------------------------- ---- ------  ---    --  ----  --  ---------- -------- ---------- ----------

                    *************************** DAYS =        3 ************************************

PROD1.EOV.DSN                               1 TRN013   1    L1  VTS   KP  mm/dd/yyyy 12.32.51 mm/dd/yyyy  mm/dd/yyyy
PROD1.EOV.DSN                               1 TST003   1    L1  VTX   KP  mm/dd/yyyy 10.52.24 mm/dd/yyyy  mm/dd/yyyy
                    *************************** DAYS =       30 ************************************

SAVE.KKTDSN                                 1 TRN006   1    AR  A104  KP  mm/dd/yyyy 07.29.56 mm/dd/yyyy  mm/dd/yyyy
```

```
CA, INC           ALL VOLUMES BY CURRENT RETENTION METHOD TYPE = MANUAL (7)          TLMS044    PAGE    2
CA TLMS   NN.n yymmTLrrr                                                       mm/dd/yyyy  hh.mm.ss


                                FILE  VOLUME  VOL    CURRENT    NEXT I----- CREATE -----I I------- LAST -------I
I------------- DATASET NAME --------------I SEQ. SERIAL  CNT   LOC  CCSS  LOC    DATE     TIME     MOVED      USED
-------------------------------------------- ---- ------  ---    --  ----  --  ---------- -------- ---------- ----------

CATAPE.HOLDS.EXPORTED.VIRTUAL.TAPES.VTRN010  1 TRN010   1    KP  KA00  **  mm/dd/yyyy 08.10.42 mm/dd/yyyy  mm/dd/yyyy
HSM.BACKUP.DFDSS                             1 TDI067   4    AR  A103  **  mm/dd/yyyy 07.13.25 mm/dd/yyyy  mm/dd/yyyy
PROD2.EOV.DSN                                1 TST001   2    DC  VTX   **  mm/dd/yyyy 10.52.24 mm/dd/yyyy  mm/dd/yyyy
PROD2.EOV.DSN                                1 TST002   1    DC  VTS   **  mm/dd/yyyy 10.52.24 mm/dd/yyyy  mm/dd/yyyy
```

More information:

Producing Customized Reports Using CA Common Services for z/OS EARL Service

CA Common Services for z/OS EARL Service, the CA Easy Access Report Language, provides you with the capability to design and produce customized reports. Easy access to VMF volume and multi-data set record information provides reporting flexibility and allows you to tailor reports to your desired format.

This section describes the types of access methods available for retrieving information from the VMF and identifies required z/OS EARL Service components. The discussion of date manipulation functions for date fields retrieved from the VMF includes coding examples of date function calls. CA EARL uses data record formats common to both CA 1 and CA TLMS, so that access from either system is identical. The TAPEDB z/OS EARL Service record layout identifies those fields that are unique to CA 1 and those that are unique to CA TLMS. Several CA EARL coding examples are supplied, and include the output generated. Each record contains information for a tape data set and the volume it resides on. Data sets which reside on multiple volumes are represented by multiple records, as are volumes with multiple data sets. One record is returned for each unique volser and file sequence. Volumes which have no data sets return null values in the data set portion of the record.

Note: To produce a simple report that does not take advantage of the CA Common Services for z/OS EARL Service advanced features, see User Defined Report (TLERPT18).

Accessing Information in the VMF

CA Common Services for z/OS EARL Service provides five methods for accessing VMF and ALOG record information. The desired access or *run type* (TYPRUN) is specified using a SET statement. The coding example on Executing z/OS EARL Service illustrates the use of the SET statement. Each of the access types is listed below.

CHAINED

TYPRUN = 'CHAINED' access of the VMF returns records in BASE VOL and file sequence order. The BASE VOLs (or first volumes of a chain) are returned beginning with file sequence one followed by any additional files and/or volumes which are chained to it. Then the next BASE VOL and its chain are returned.

FILE

TYPRUN = 'FILE' access of a flat file. Data can be in the common format or any that TLMS2COM can convert, like VMF base records, transaction records or log records.

The order is not known for REPORT and FILE. Record length can vary (minimum by record type) with extension data passed after the record data, 768 bytes (record and extension) will be passed to the CA Common Services for z/OS EARL Service code. CA Common Services for z/OS EARL Service code expects 768 bytes, 512 byte DB record plus 256 byte extension padded with blanks.

When the source is transaction log, the SMF information is placed in the last 14 bytes (754-768) to allow extension data to follow the DB record.

REPORT

TYPRUN = 'REPORT' access of a flat file (sequential file) with the tape data in the common format with other data which varies by the report appended to it.

SEQUENTIAL

TYPRUN = 'SEQUENTIAL' access of the VMF returns records in sequential order by volser and file sequence within volser. Volumes which have no files return the volume information with null values for the data set information. For volumes with multiple files, one record is returned for each file sequence in the volume. This is the default for TYPRUN.

VOLUME

TYPRUN = 'VOLUME' access of the VMF returns records in sequential order by volser. One record is returned for each volume. It contains the volume information and the first data set for that volume, if one is present.

For all methods, a record is returned for each volume regardless of its service/scratch status. It is up to your CA Common Services for z/OS EARL Service program to select or consolidate these records.

More information:

CA EARL Report CTETEVLT

Member CTETEVLT of the CA 1 or CA TLMS EARL data set hlq.CTAPEARL is provided for users who also run the CA Tape Encryption product. Use CTETEVLT to identify if tapes being sent off-site are protected with encryption.

CA Tape Encryption creates a BES Key Index for each new symmetric key instance. The BES Key Index is saved in the CA 1, CA TLMS, or IBM DFSMSrmm tape catalog record for each encrypted file. EARL field BES_KEY, in the common record, reports on the BES Key Index. If the BES_KEY field is not zero, the file is encrypted. This lets you quickly identify an encrypted tape by comparing the BES_KEY field to zero.

Report CTETEVLT checks the BES_KEY for each file in the tape catalog that is selected for movement off-site "today". A BES_KEY of zero, causes the report to end with an RC=8 to alert you that not all tapes are protected.

Report CTETEVLT uses CTSEPM pattern masking capability to either include or exclude data sets matching specific name patterns. The pattern matching techniques that are used in the CTETEVLT EARL report provide a good example for exploiting this feature in user written EARL reports.

CA Common Services for z/OS EARL Service Component Descriptions

The successful reporting of VMF information by z/OS EARL Service requires the following four components:

EARLDEFS Copy Member

A standardized z/OS EARL Service copy member, EARLDEFS, defines the fields in the TAPEDB record and others which are frequently used. This member is stored in the CAI.CTAPECPB library. A COPY statement is required to copy these field definitions into your z/OS EARL Service program.

TLMSEARL Assembler User Module

The TLMSEARL assembler user module is called by z/OS EARL Service each time your z/OS EARL Service program issues a GET (explicit or implied).

TLMSEARL interprets runtime parameters and internal switches and flags, and determines how to access the VMF. TLMSEARL issues the appropriate read macro(s), formats an output record, and returns the output record to z/OS EARL Service.

CTSPDATE Print Exit

This is a CA supplied print exit. It is given control by z/OS EARL Service for each line of print after it has been formatted by z/OS EARL Service. CTSPDATE scans each printed line for dates and automatically converts them to the PREFERRED format.

Any date defined to z/OS EARL Service as PIC 'ZZ99/999 ' will be converted. All dates in the common database record are defined this way, so that they will be converted.

Important! If a date is the last field on a line, z/OS EARL Service may right align the field so that the trailing blanks are lost. CTSPDATE does not recognize this date and does not convert it. A position parameter must be used to assure z/OS EARL Service does not remove the trailing blanks.

CTSEDATE Date Subroutine

The manipulation of CA TLMS internal dates is possible using the CTSEDATE date subroutine. This subroutine can be called from your z/OS EARL Service program. CTSEDATE uses the CTSDATE module to provide the following functions:

RETURN_DATE	SUB_YEARS
ADD_DAYS	ADD_WORK
ADD_YEARS	FROM_EXTERNAL
NUM_DAYS	SET_FORMAT
TO_EXTERNAL	TO_EXPLODED
SUB_DAYS	

The date constants and variable fields are contained in the EARLDEFS copy member.

CTSEDATE passes the return code issued by CTSDATE to z/OS EARL Service for verification. z/OS EARL Service places the return code in a field equal to the subroutine's name, CTSEDATE. In nonzero return code situations, CTSEDATE always appends an error message to the CTSEDATE function code. This message contains the CTSDATE return code and reason code, and text which explains the failure. The text is identical to the text defined for the "CTSDATE Anchor" control block described in the *Configuration Guide*.

Return codes issued by the TLMDATE macro are described in the *Configuration Guide*. (The only exception is return code 32, which indicates that z/OS EARL Service issued a nonexistent function call.)

More information:

Date Processing

The CTSEDATE date subroutine can be called from your z/OS EARL Service program to provide date manipulation functions for date fields retrieved from the CA TLMS VMF. The following fields are stored in the CA TLMS z/OS EARL Service record and may be used in date manipulations:

Common Area:

Field	Description
CDATE	Date that volume was created
DATECLN	Date that tape was last cleaned
EXPDT	The expiration date for the volume
LDATE	Date that volume was last used
MOVEDATE	Date that tape was moved to the current location
PURDATE	Date that tape was first purchased

CA TLMS Specific Area:

Field	Description
DATE_CERTIFY	Date that volume was certified
DATE_SCRATCHED	Date that volume was scratched
DSN_KEEP_DATE	Date that can be used as one of the criteria for scratching or moving a volume
VOLUME_KEEP_DATE	Highest keep date created on the volume
VOLUME_EXPDT	Highest EXPDT created on the volume

The following paragraphs discuss current date functions and calling sequences, and provide z/OS EARL Service coding examples.

CTSEDATE Date Function Calls

The following examples illustrate the CTSEDATE date function calls. Each date function is defined as 80 bytes, which lets a message be appended to the date function if the CTSDATE macro issues a nonzero return code.

Important! You must define seven packed decimal digits (P 7.0) for a four-byte packed decimal field.

'RETURN_DATE'

The 'RETURN_DATE' function returns the current date and time. The date is a four-byte packed Julian date and the time is four bytes.

```
DEF CUR_DAY       (P 7.0) = NONE 'TODAYS' 'DATE'
DEF CUR_TIME      (P 7.0) = NONE 'CURRENT' 'TIME'
DEF FUNCTION      (X 80) = NONE

SET FUNCTION = 'RETURN_DATE'
CALL CTSEDATE USING FUNCTION
                    CUR_DAY
                    CUR_TIME
```

'ADD_DAYS'

The 'ADD_DAYS' function adds a number of days to a given date, giving a resultant date. 'FROM_DATE' is four bytes, packed, CA TLMS internal date. 'DAYS' is four bytes packed. 'RESULT_DATE' is four bytes, packed, CA TLMS internal date.

```
DEF FROM_DATE     (P 7.0) = NONE 'FROM' 'DATE'
DEF DAYS          (P 7.0) = NONE 'DAYS' 'ADDED'
DEF RESULT_DATE   (P 7.0) = NONE 'RESULT' 'DATE'
DEF FUNCTION      (X 80) = NONE

SET FUNCTION  = 'ADD_DAYS'
SET FROM_DATE = EXPDT
SET DAYS      = 7

CALL CTSEDATE USING FUNCTION
                    FROM_DATE
                    DAYS
                    RESULT_DATE
```

'TO_EXTERNAL'

The 'TO_EXTERNAL' function converts a CA TLMS internal date to a 10-byte character external date, according to the date format supplied.

With Version 5.5, most of the requirements for 'TO_EXTERNAL' were replaced by the PRINTEXIT CTSPDATE which automatically finds and converts dates in the print line. All dates with a PIC 'ZZ99/999 ' which is the default for database are converted. Adding this PIC to your data eliminates the need for this call.

```
DEF DATE_FMT     (X 10) = 'MMMDD YYYY'
DEF FUNCTION     (X 80) = NONE
DEF PRINT_DATE   (X 10) = NONE 'EXPDT' 'DATE'

SET FUNCTION = 'TO_EXTERNAL'
CALL CTSEDATE USING FUNCTION
                    PRINT_DATE
                    EXPDT
                    DATE_FMT
```

'SET_FORMAT'

When the CA TLMS interface to z/OS EARL Service is first invoked, the date format is initialized to that indicated in member TLMSIPO during CA TLMS installation. Subsequent CTSEDATE date function calls may modify that format. The 'SET_FORMAT' function is used to specify the external date format for the printed z/OS EARL Service report if different from the last indicated.

The 'SET_FORMAT' function can also be used to specify the output date format for internal dates that you choose to print on z/OS EARL Service reports.

```
DEF FUNCTION     (X 80) = NONE
DEF DATE_FMT     (X 10) = NONE
SET FUNCTION = 'SET_FORMAT'
SET DATE_FMT = 'MMMDD YYYY'
CALL CTSEDATE USING FUNCTION
                    DATE_FMT
```

'FROM_EXTERNAL'

The 'FROM_EXTERNAL' function converts an external date in your z/OS EARL Service program, that is, SET MYDATE = '1996/07/23', to a CA TLMS compatible internal date. This date could then be used for comparisons, arithmetic and other operations with other CA TLMS internal date fields.

Note: To use the 'FROM_EXTERNAL' function, you must first issue the 'SET_FORMAT' function to indicate the format of your external date. Either Julian or the preferred date may be used. The default is Julian.

```
DEF MY_INT_DATE    (P 7.0) = NONE
DEF MY_EXT_DATE    (X 10) = NONE
DEF DATE_FMT       (X 10) = NONE

SET DATE_FMT = 'YYYY/MM/DD'
SET FUNCTION = 'SET_FORMAT'

CALL CTSEDATE USING FUNCTION
                    DATE_FMT

SET FUNCTION = 'FROM _EXTERNAL'
CALL CTSEDATE USING FUNCTION
                    MY_INT_DATE
                    MY_EXT_DATE
```

'ADD_YEARS'

The 'ADD_YEARS' function is used to add a number of years to a date, producing a resultant date. All fields are four bytes packed. Dates are CA TLMS internal dates.

```
DEF FROM_DATE    (P 7.0) = NONE 'FROM' 'DATE'
DEF YEARS        (P 7.0) = NONE 'YEARS' 'ADDED'
DEF RESULT_DATE  (P 7.0) = NONE 'RESULT' 'DATE'
DEF FUNCTION     (X 80) = NONE

SET FROM_DATE = EXPDT
SET YEARS     = 3
SET FUNCTION  = 'ADD_YEARS'

CALL CTSEDATE USING FUNCTION
                    FROM_DATE
                    YEARS
                    RESULT_DATE
```

'ADD_WORK'

The 'ADD_WORK' function is used to add a number of work days to a date, giving the resultant date.

```
DEF FROM_DATE      (P 7.0) = NONE 'FROM' 'DATE'
DEF DAYS           (P 7.0) = NONE 'DAYS' 'ADDED'
DEF RESULT_DATE    (P 7.0) = NONE 'RESULT' 'DATE'
DEF FUNCTION       (X 80) = NONE

SET FUNCTION  = 'ADD_WORK'
SET FROM_DATE = EXPDT
SET DAYS      = 7

CALL CTSEDATE USING FUNCTION
                    FROM_DATE
                    DAYS
                    RESULT_DATE
```

'NUM_DAYS'

The 'NUM_DAYS' function calculates the number of days between two dates. The function subtracts the "FROM_DATE" from the "TO_DATE" and places the difference into 'DAYS'. All date fields are 4-bytes packed.

```
DEF FROM_DATE      (P 7.0) = NONE 'FROM' 'DATE'
DEF TO_DATE        (P 7.0) = NONE 'TO' 'DATE'
DEF DAYS           (P 7.0) = NONE 'DAYS' 'BETWEEN'
DEF FUNCTION       (X 80) = NONE

SET FROM_DATE = CDATE
SET FUNCTION  = 'NUM_DAYS'

CALL CTSEDATE USING FUNCTION
                    FROM_DATE
                    TO_DATE
                    DAYS
```

'SUB_DAYS'

The 'SUB_DAYS' function is used to subtract a number of days from a date, giving a resultant date.

```
DEF FROM_DATE     (P 7.0) = NONE
DEF DAYS          (P 7.0) = NONE
DEF RESULT        (P 7.0) = NONE
DEF FUNCTION       (X 80) = NONE

SET FROM_DATE = EXPDT
SET DAYS      = 7
SET FUNCTION  = 'SUB_DAYS'

CALL CTSEDATE USING FUNCTION
                    FROM_DATE
                    DAYS
                    RESULT
```

'SUB_YEARS'

The 'SUB_YEARS' function is used to subtract a number of years from a date, giving a resultant date.

```
DEF FROM_DATE     (P 7.0) = NONE 'FROM' 'DATE'
DEF YEARS         (P 7.0) = NONE 'YEARS' 'SUBTRACTED'
DEF RESULT_DATE   (P 7.0) = NONE 'RESULT' 'DATE'
DEF FUNCTION       (X 80) = NONE

SET FROM_DATE = EXPDT
SET YEARS     = 3
SET FUNCTION  = 'SUB_YEARS'

CALL CTSEDATE USING FUNCTION
                    FROM_DATE
                    YEARS
                    RESULT_DATE
```

CATEARL Procedure JCL

Locate sample z/OS EARL Service execution in member CATEARL in the CA TLMS CAI.CTAPPROC.

```
//****************************************************************
//*              ****  PROCNAME=CATEARL  ****                   *
//****************************************************************
//**           PROCEDURE TO EXECUTE TLMS/EARL REPORTS           *
//****************************************************************
//CATEARL  PROC SOUT='*',
//             EARLLIB='CAI.CTAPEARL',
//             EARLMAC ='CAI.CAIEPCB'.
//             LOAD='CAI.CTAPLINK',
//             SORTLIB='SYS1.SORTLIB',
//             TAPEDB='CAI.TLMS.VMF',
//             SPCERL='(CYL,(5,5))',
//             WORK='SYSDA'
//*
//CATECOGO EXEC PGM=EARL,REGION=2M
//*
//STEPLIB  DD  DSN=&LOAD.,DISP=SHR
//*
//EARLLIB  DD  DSN=&EARLLIB.,DISP=SHR
//         DD  DSN=&EARLMAC.,DISP=SHR
//*
//TAPEDB   DD  DSN=&TAPEDB.,DISP=SHR
//*
//SYSEARL  DD  SYSOUT=&SOUT.
//*
//SYSPRINT DD  SYSOUT=&SOUT.
//*
//EARLOBJ  DD  UNIT=&WORK.,SPACE=(TRK,(1,1))
//*
//SORTLIB  DD  DSN=&SORTLIB.,DISP=SHR
//*
//SORTIN   DD  UNIT=&WORK.,SPACE=&SPCERL.
//*
//SORTOUT  DD  UNIT=&WORK.,SPACE=&SPCERL.
//*
//SYSOUT   DD  SYSOUT=&SOUT.
//*
//SYSUDUMP DD  SYSOUT=&SOUT.
//*
//SYSIN    DD  DUMMY
//****************************************************************
```

Executing CA Common Services for z/OS EARL Service

The following coding sequence example illustrates the two requirements for using z/OS EARL Service:

1. Use a COPY statement to copy the EARLDEFS member.

2. Set the type of run desired using the SET statement (SEQUENTIAL is the default).

In this example, z/OS EARL Service will list all data sets that expire after the current date.

```
!  DEFINE WORK FIELDS
DEF DATE_FMT         (X 10) = 'MMMDD YYYY'
DEF FUNCTION         (X 80) = NONE
DEF PRINT_EXPDT      (X 10) = NONE 'EXPIRATION' 'DATE'
DEF PRINT_CURR_DATE  (X 10) = NONE 'TODAYS' 'DATE'

!  COPY CA TLMS CAEARL RECORD DEFINITIONS
COPY EARLDEFS

!  SET TYPRUN TO RETRIEVE VMF VOLUME AND MDS RECORDS
SET TYPRUN = 'SEQUENTIAL'

!  ISSUE GET FOR VMF RECORD
GET VMF

!  USE CTSEDATE TO FORMAT EXPDT AND RUNDATE FOR PRINTING
SET FUNCTION = 'TO_EXTERNAL'
CALL  CTSEDATE  USING FUNCTION
               PRINT_EXPDT
               EXPDT
               DATE_FMT

CALL  CTSEDATE  USING FUNCTION
               PRINT_CURR_DATE
               RUNDATE
               DATE_FMT

!  QUIT WHEN WE REACH END-OF-FILE ON THE VMF
GOTO EOJ VMF = 'E'

!  SELECT DATA SETS EXPIRING AFTER CURRENT DATE
REPORT 'DATA SETS EXPIRING BEYOND CURRENT DATE'
 SELECT EXPDT > RUNDATE
 CONTROL EXPDT DSN
 PRINT VOLSER DSN RUNDATE EXPDT
               PRINT_CURR_DATE PRINT_EXPDT
 END
```

EARLDEFS Record Field Definitions

The following defines the records passed to z/OS EARL Service. The TYPE notation indicates whether a field is a character (X), binary (B) or packed decimal (P).

Important! You must issue a COPY statement (COPY EARLDEFS) to bring these definitions into your z/OS EARL Service program from the CAI.CTAPECPB library.

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!                    COPYRIGHT (C) 1984, 2010 BY CA, INC.         !!
!!                        ALL RIGHTS RESERVED                      !!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!OPTION PRINTER=132                      ! MANUAL FMT  DATES IN REPORT !
 OPTION PRTEXIT=CTSPDATE                 ! AUTO FORMAT DATES IN REPORT !

 TAPEDB: FILE TLMSEARL RECORD=768

 DEF TYPRUN = TLMSEARL 5-14 X

 COPY CTEARLCM
 - - - - - - - - - - - - - COPY CODE - - - - - - - - -- - - - - -
 DEF TAPE_DB_RECORD     001-512 X 'TAPE DB' 'RECORD'
```

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!  TAPE RECORD - COMMON AREA                           !
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 DEF FORMAT_INDICATOR   001-001 B 'FORMAT' 'INDICATOR'
 DEF RECORD_TYPE        002-002 X 'RECORD' 'TYPE'
 DEF PRODUCT_CODE       003-004 X 'PRODUCT' 'CODE'
 DEF PRODUCT_RELEASE    005-006 X 'PRODUCT' 'RELEASE'
 DEF VOLSER             007-012 X 'VOLSER'
 DEF VOLSEQ             013-014 B 'VOL' 'SEQ'          PIC 'ZZZZZ'
 DEF BASEVOL            015-020 X 'BASE' 'VOLSER'
 DEF FILESEQ            021-022 B 'FILE' 'SEQ'         PIC 'ZZZZZ'
 DEF FILECNT            023-024 B 'FILE' 'CNT'         PIC 'ZZZZZ'
 DEF EXPDT              025-028 P 'EXPIRATION' 'DATE'  PIC 'ZZ99/999  '
 DEF DSN                029-072 X 'DATA SET NAME'
 DEF RECFM              073-076 X 'REC' 'FMT'
 DEF LRECL              077-080 B 'REC' 'LEN'
 DEF BLKSIZE            081-084 B 'BLOCK' 'SIZE'
 DEF BLKCNT             085-088 B 'BLOCK' 'COUNT'
 DEF CDATE              089-092 P 'CREATE' 'DATE'      PIC 'ZZ99/999  '
 DEF CTIME              093-096 P 'CREATE' 'TIME'  PIC BWZ 'Z99:99:99'
 DEF CJOB               097-104 X 'CREATE' 'JOBNAME'
 DEF CSTEP              105-112 X 'CREATE' 'STEP'
 DEF CDDNAME            113-120 X 'CREATE' 'DDNAME'
 DEF CUNIT              121-124 X 'CREATE' 'UNIT'
 DEF CLOSE_IND          125-125 X 'CLS' 'IND'
 DEF LDATE              126-129 P 'LAST' 'DATE'        PIC 'ZZ99/999  '
 DEF LTIME              130-133 P 'LAST' 'TIME'     PIC BWZ 'Z99:99:99'
 DEF LJOB               134-141 X 'LAST' 'JOB'
 DEF LUNIT              142-145 X 'LAST' 'UNIT'
 DEF COPYCAT_IND        146-146 X 'COPYCAT' 'IND'
 DEF DEN                147-150 X 'DEN'
DEF LABEL_TYPE          151-153 X 'LBL' 'TYP'
DEF SCRATCH_IND         154-154 X 'SCR' 'IND'
DEF TRTCH               155-158 X 'TRTCH'
DEF USECLN              159-160 B 'USE' 'CLN'          PIC 'ZZZZZ'
DEF CLNCNT              161-162 B 'CLN' 'CNT'          PIC 'ZZZZZ'
DEF DATECLN             163-166 P 'DATE' 'CLEANED'     PIC 'ZZ99/999  '
DEF BTHDATE             167-170 P 'BIRTH' 'DATE'       PIC 'ZZ99/999  '
DEF PURDATE             167-170 P 'PURCHASE' 'DATE'    PIC 'ZZ99/999  '
DEF USECNT              171-172 B 'USE' 'CNT'          PIC 'ZZZZZ'
DEF COUNT               171-172 B 'USE' 'CNT'          PIC 'ZZZZZ'
DEF OUTDATE             173-176 P 'DATE' 'MOVED'       PIC 'ZZ99/999  '
DEF MOVEDATE            173-176 P 'DATE' 'MOVED'       PIC 'ZZ99/999  '
DEF OUTCODE             177-180 X 'LOC' 'ID'
DEF OUTLOC              177-180 X 'LOC' 'ID'
```

```
DEF COMMON_RSRVA        181-186 X
DEF TEMP_READ_CLEAN     187-188 B 'TREAD' 'CLEAN'      PIC 'ZZZZZ'
DEF TEMP_WRITE_CLEAN    189-190 B 'TWRITE' 'CLEAN'     PIC 'ZZZZZ'
DEF PERM_READ_CLEAN     191-192 B 'PREAD' 'CLEAN'      PIC 'ZZZZZ'
DEF PERM_WRITE_CLEAN    193-194 B 'PWRITE' 'CLEAN'     PIC 'ZZZZZ'
DEF TEMP_READ_INIT      195-196 B 'TREAD' 'INIT'       PIC 'ZZZZZ'
DEF TEMP_WRITE_INIT     197-198 B 'TWRITE' 'INIT'      PIC 'ZZZZZ'
DEF PERM_READ_INIT      199-200 B 'PREAD' 'INIT'       PIC 'ZZZZZ'
DEF PERM_WRITE_INIT     201-202 B 'PWRITE' 'INIT'      PIC 'ZZZZZ'
DEF VENDOR              203-210 X 'VENDOR'
DEF SERVICE_IND         211-214 X 'SRV' 'IND'
DEF CPUID               215-218 X 'CPU' 'ID'
DEF EDMID               219-226 X 'EDM' 'ID'
DEF OWNER               219-226 X 'VOLUME' 'OWNER'
DEF ACCT                227-286 X 'USER' 'DATA'
DEF USER_DATA           227-286 X 'USER' 'DATA'
DEF VOLUME_COUNT        287-288 B 'VOLUME' 'COUNT'     PIC 'ZZZZZ'
DEF CREATE_PROGRAM      289-296 X 'CREATE' 'PROGRAM'
DEF LAST_USE_PROGRAM    297-304 X ' LAST ' 'PROGRAM'
DEF ROBOT_TYPE          305-312 X 'ROBOT' 'TYPE'
DEF ROBOT_NUMBER        313-315 X 'ROBOT' 'NUM'
DEF ACTUAL_VOLSER       316-321 X 'ACTUAL' 'VOLSER'
DEF ACTUAL_VOL_IND      322-322 X 'ACV' 'IND'
DEF SMS_CLASS           323-330 X 'SMS' 'CLASS'
DEF COMMON_RSRV0        331-331 X
DEF VOL_DEGAUS          332-332 X 'VOL' 'DEG'
DEF FILE_IS_CAT         333-333 X 'OS ' 'CAT'
DEF VLT_SPEC_REQ        334-334 X 'VLT' 'REQ'
DEF NON_RES_IND         335-335 X 'NON' 'RES'
DEF SLOT                336-342 X 'SLOT'
DEF COMMON_RSRV         343-356 X
```

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!  TAPE RECORD - TLMS SPECIFIC AREA                  !
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 DEF TLMS_RESERVED      357-438 X
 DEF ACTIVE_FILES       439-440 B 'ACTIVE' 'FILES'      PIC 'ZZZZZ'
 DEF TAPE_LENGTH        441-442 B 'TAPE' 'LENGTH'       PIC 'ZZZZZ'
 DEF TAPE_TYPE          443-444 X 'TAPE' 'TYPE'
 DEF USES_CERTIFY       445-446 B 'USES' 'CERTIFIED'    PIC 'ZZZZZ'
 DEF TIMES_CERTIFY      447-448 B 'TIMES' 'CERTIFIED'   PIC 'ZZZZZ'
 DEF DATE_CERTIFY       449-452 P 'DATE' 'CERTIFIED'    PIC 'ZZ99/999  '
 DEF CDS_FILE_SEQ       453-454 B 'CDS FILE' 'SEQUENCE' PIC 'ZZZZZ'
 DEF DATE_SCRATCHED     455-458 P 'DATE' 'SCRATCHED'    PIC 'ZZ99/999  '
 DEF RTN_DATA           459-490 X 'RETENTION' 'DATA'
 DEF DSN_KEEP_DATE      491-494 P 'DSN KEEP' 'DATE'     PIC 'ZZ99/999  '
 DEF UNUSED1            495-502 X
 DEF VOLUME_KEEP_DATE   503-506 P 'VOL KEEP' 'DATE'     PIC 'ZZ99/999  '
 DEF VOLUME_EXPDT       507-510 P 'VOL EXPDT'           PIC 'ZZ99/999  '
 DEF SCRATCH_SOURCE     511-511 X 'SCRATCH' 'SOURCE'
 DEF SPARE_FLAG         512-512 X 'SPARE' 'FLAG'
```

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
! TAPE RECORD - CA-1 SPECIFIC AREA                    !
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 DEF CA1_RSRV          357-380 X
 DEF FLAG1_SCR         381-381 X 'SCR' 'FLG'
 DEF FLAG2_TEM         382-382 X 'TEM' 'IND'
 DEF PREVVOL           383-388 X 'PREV' 'VOLUME'
 DEF NEXTVOL           389-394 X 'NEXT' 'VOLUME'
 DEF F1STVSN           395-400 X 'FIRST' 'VOLUME'
 DEF FIRST_DSNB        401-404 B 'FIRST' 'DSNB'
 DEF LSTDSNB           405-408 B 'LAST' 'DSNB'
 DEF CURDSNB           409-412 B 'CURR' 'DSNB'
 DEF PREV              413-416 B 'PREV' 'DSNB'
 DEF NEXT              417-420 B 'NEXT' 'DSNB'
 DEF DSN17             421-437 X 'HDR1' 'DATA SET NAME'
 DEF UNUSED2           438-440 X
 DEF FLAG1_RDS         441-441 X 'RDS' 'IND'
 DEF FLAG1_DEL         442-442 X 'DEL' 'IND'
 DEF FLAG1_CLN         443-443 X 'CLN' 'IND'
 DEF FLAG1_UPD         444-444 X 'UPD' 'IND'
 DEF FLAG1_INT         445-445 X 'INT' 'IND'
 DEF FLAG2_ETM         446-446 X 'ETM' 'IND'
 DEF FLAG2_EDD         447-447 X 'EDD' 'IND'
 DEF FLAG2_ECC         448-448 X 'ECC' 'IND'
 DEF FLAG2_E99         449-449 X 'E99' 'IND'
 DEF FLAG4_SMS         450-450 X 'SMS' 'IND'
 DEF FLAG1_TMS         451-451 X 'TMS' 'IND'
 DEF FLAG2_REC         452-452 X 'REC' 'IND'
 DEF FLAG2_OUT         453-453 X 'OUT' 'IND'
 DEF FLAG2_CAT         454-454 X 'CAT' 'IND'
 DEF FLAG3_DYN         455-455 X 'DYN' 'IND'
 DEF FLAG3_EDM         456-456 X 'EDM' 'IND'
 DEF FLAG3_BAD         457-457 X 'BAD' 'IND'
 DEF PROGRAM_ID        458-465 X 'PROGRAM' 'NAME'
 DEF AUDATE            466-469 P 'AUDIT' 'DATE'        PIC 'ZZ99/999  '
 DEF AUTIME            470-473 P 'AUDIT' 'TIME'    PIC BWZ 'Z99:99:99'
 DEF USERID            474-481 X 'USERID'
 DEF AUCODE            482-482 B 'AUDIT' 'CODE'
 DEF CA1_RSRV2         483-485 X
 DEF ACTIND            486-486 X 'ACT' 'IND'
 DEF EXCEPTION_CODES   487-489 X 'EXCEPTION' 'CODES'
 DEF VOLFLG1           490-490 B 'F1'               PIC H
 DEF VOLFLG2           491-491 B 'F2'               PIC H
 DEF VOLFLG3           492-492 B 'F3'               PIC H
 DEF VOLFLG4           493-493 B 'F4'               PIC H
 DEF VOLFLG5           494-494 B 'F5'               PIC H
 DEF VOLFLG6           495-495 B 'F6'               PIC H
```

```
DEF CA1_RSRV3          496-496 X
DEF DSNBFLG1           497-497 B 'F1'              PIC H
DEF DSNBFLG2           498-498 B 'F2'              PIC H
DEF CA1_RSRV4          499-500 X
DEF EXTERNAL_VAULT     501-501 X 'EXTERNAL' 'VAULT'
DEF DATASET_ERASE      502-502 X 'DATASET' 'ERASE'
DEF DEFAULT_EXPDT      503-503 X 'DEFAULT' 'EXPDT'
DEF MULTI_FILES        504-504 X 'MULTI' 'FILES'
DEF CA1_RSRV5          505-512 X
- - - - - - - - - - - - - - COPY ENDS - - - - - - - -- - - - - - -
DEF DB_EXT             513-768 X
DEF TAPE_AREA_RECORD   001-768 X


COPY CTEARLCN
- - - - - - - - - - - - - - COPY CODE - - - - - - - -- - - - - - -
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!  TAPE DATABASE I/O (TYPRUN)                          !
!     FUNCTIONS    DATA SETS       IN ORDER BY         !
!     VOLUME     - FIRST ON VOL    VOLSER              !
!     SEQUENTIAL - ALL             VOLSER, FILESEQ     !
!     CHAINED    - ALL             BASE VOLUME, FILESEQ!
!     REPORT     - REPORT FILE     USAGE               !
!     VAULT      - VAULT FILE      USAGE               !
!     AUDIT      - AUDIT FILE      USAGE               !
!     RETENTION  - RETENTION FILE  USAGE               !
!     FILE       - CONVERTIBLE DATA USAGE              !
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
DEF R_VOLUME           (X 10) = 'VOLUME    '
DEF R_SEQUENTIAL       (X 10) = 'SEQUENTIAL'
DEF R_CHAINED          (X 10) = 'CHAINED   '
DEF R_REPORT           (X 10) = 'REPORT    '
DEF R_VAULT            (X 10) = 'VAULT     '
DEF R_AUDIT            (X 10) = 'AUDIT     '
DEF R_RETENTION        (X 10) = 'RETENTION '
DEF R_FILE             (X 10) = 'FILE      '
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!  DATE FUNCTIONS                                      !
!  FUNCTION = RETURN_DATE                              !
!           ADD_DAYS                                   !
!           ADD_YEARS                                  !
!           ADD_WORK                                   !
!           NUM_DAYS                                   !
!           TO_EXPLODED                                !
!           TO_EXTERNAL                                !
!           FROM_EXTERNAL                              !
!           SET_FORMAT                                 !
!           SUB_DAYS                                   !
!           SUB_YEARS                                  !
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

```
DEF DATE_FMT           (X 10) = 'DEFAULT   '
DEF FUNCTION           (X 80) = NONE
DEF DAYS              (P 7.0) = 0
DEF YEARS             (P 7.0) = 0
DEF RUNDATE           (P 7.0) = 0
DEF RUNTIME           (P 7.0) = 0
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!  DATE TYPES (TEST VALUES)                        !
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
DEF T_ZEROS           (B 5.0) = 0
DEF T_JDATE           (B 5.0) = 4
DEF T_OLD_JULIAN      (B 5.0) = 8
DEF T_FOREIGN         (B 5.0) = 12
DEF T_LDATE           (B 5.0) = 16
DEF T_CATLG           (B 5.0) = 20
DEF T_CYCLE           (B 5.0) = 24
DEF T_PERM            (B 5.0) = 28
DEF T_CATLG_DAYS      (B 5.0) = 32
DEF T_USER            (B 5.0) = 36
DEF T_STATS           (B 5.0) = 40
DEF T_MSG             (B 5.0) = 44
DEF T_AGE             (B 5.0) = 48
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!  EDITED FORM OF DATE VARIABLES                   !
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
DEF P_EXPDT           (X 10) = NONE 'EXPIRATION' 'DATE'
DEF P_CDATE           (X 10) = NONE 'CREATE' 'DATE'
DEF P_CTIME          (P 6.0) = NONE 'CREATE' 'TIME' PIC '99:99:99'
DEF P_LDATE           (X 10) = NONE 'LAST USE' 'DATE'
DEF P_LTIME          (P 6.0) = NONE 'LAST USE' 'TIME' PIC '99:99:99'
DEF P_DATECLN         (X 10) = NONE 'DATE' 'CLEANED'
DEF P_PURDATE         (X 10) = NONE 'PURCHASE' 'DATE'
DEF P_BTHDATE              = P_PURDATE 1-10 X 'PURCHASE' 'DATE'
DEF P_MOVEDATE        (X 10) = NONE 'DATE' 'MOVED'
DEF P_OUTDATE              = P_MOVEDATE 1-10 X 'DATE' 'MOVED'
DEF P_RUNDATE         (X 10) = NONE 'RUN' 'DATE'
DEF P_RUNTIME        (P 6.0) = NONE 'RUN' 'TIME'   PIC '99:99:99'
DEF P_DATE_CERTIFY    (X 10) = NONE 'DATE' 'CERTIFIED'
DEF P_DATE_SCRATCHED  (X 10) = NONE 'DATE' 'SCRATCHED'
DEF P_DSN_KEEP_DATE   (X 10) = NONE 'DSN KEEP' 'DATE'
DEF P_VOLUME_KEEP_DATE (X 10) = NONE 'VOL KEEP' 'DATE'
DEF P_VOLUME_EXPDT    (X 10) = NONE 'VOL EXPDT'
DEF P_AUDATE          (X 10) = NONE 'AUDIT' 'DATE'
DEF P_AUTIME         (P 6.0) = NONE 'AUDIT' 'TIME'  PIC '99:99:99'
```

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!  DATA BLOCK FOR TO_EXPLODED DATE FUNCTION            !
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 DEF P_EXP_DATA          (X 64) = NONE
 DEF P_EXP_TYPDAT              = P_EXP_DATA   01-04 B 'TYPE OF' 'DATE'
 DEF P_EXP_TYPNAM              = P_EXP_DATA   05-14 X 'TYPE OF' 'DATE'
 DEF P_EXP_TYPALT              = P_EXP_DATA   15-20 X 'ALT' 'KEYWORD'
 DEF P_EXP_DAYNAM              = P_EXP_DATA   21-30 X 'DAY OF' 'WEEK'
 DEF P_EXP_DAYABV              = P_EXP_DATA   31-33 X 'DAY OF' 'WEEK'
 DEF P_EXP_DOW                 = P_EXP_DATA   34-34 X 'DAY OF' 'WEEK'
 DEF P_EXP_DAYTYP              = P_EXP_DATA   35-35 X 'DAY' 'TYPE'
 DEF P_EXP_LYR                 = P_EXP_DATA   36-36 X 'LEAP' 'YEAR'
 DEF P_EXP_PAKDDD              = P_EXP_DATA   37-40 P 'JULIAN' 'DATE'
 DEF P_EXP_MONNAM              = P_EXP_DATA   41-50 X 'MONTH'
 DEF P_EXP_MONABV              = P_EXP_DATA   51-53 X 'MONTH'
 DEF P_EXP_ALLDAT              = P_EXP_DATA   54-64 X 'ALL' 'DATE'
 DEF P_EXP_MM                  = P_EXP_ALLDAT 01-02 X 'MONTH'
 DEF P_EXP_DD                  = P_EXP_ALLDAT 03-04 X 'DAY'
 DEF P_EXP_YYYY                = P_EXP_ALLDAT 05-08 X 'YEAR'
 DEF P_EXP_DDD                 = P_EXP_ALLDAT 09-11 X 'JULIAN' 'DAY'
 - - - - - - - - - - - - - COPY ENDS - - - - - - - -- - - - - -


 COPY TLEYCOMP
 - - - - - - - - - - - - - COPY CODE - - - - - - - -- - - - - -
 !
 !  REPLACE AND CENTER YOUR COMPANY NAME WITHIN THE SINGLE QUOTES BELOW.
 !  THIS VALUE WILL BE USED ON THE REPORT TITLE FOR TLMS EARL REPORTS.
 !
 DEF COMPANY_NAME    (X 30) =
     'C O M P A N Y   N A M E     '
 - - - - - - - - - - - - - COPY ENDS - - - - - - - -- - - - - -
```

CA Common Services for z/OS EARL Service Coding Examples

Example 1

The following example produces a Scratched Volume (TLMS003) report in volume sequence order.

```
 COPY TLEARL03
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!                          TLMS REPORT 03                          !
!                      SCRATCHED VOLUMES(TLMS003)                  !
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 COPY EARLDEFS
 DEF SCR        (X 3) = NONE 'SCR'

 SET TYPRUN = R_VOLUME

GETTAG:
 GET TAPEDB
 IF TAPEDB = 'E'
    GOTO EOJ
 ENDIF

 IF SCRATCH_IND = 'N'
    GOTO GETTAG
 ENDIF

 SET FUNCTION = 'TO_EXTERNAL'
 SET P_CTIME  = CTIME
 CALL CTSEDATE USING FUNCTION P_CDATE CDATE DATE_FMT
 CALL CTSEDATE USING FUNCTION P_LDATE LDATE DATE_FMT
 CALL CTSEDATE
      USING FUNCTION P_DATE_SCRATCHED DATE_SCRATCHED DATE_FMT

 GOTO EOJ TAPEDB = 'E'

 REPORT 'SCRATCHED VOLUMES(TLMS003)'
    SELECT ALL
    PRINT VOLSER DSN FILESEQ P_CDATE P_CTIME CJOB
       P_LDATE LJOB  P_DATE_SCRATCHED
```

```
 mm/dd/yy                              SCRATCH VOLUMES(TLM003)                          PAGE    1


 ---------------------------------------------------------------------------------------------------
 VOLSER  DATA SET NAME                FILE  CREATE        CREATE   CREATE   LAST USE    LAST     DATE
                                      SEQ   DATE          TIME     JOBNAME  DATE        JOB      SCRATCHED
 ---------------------------------------------------------------------------------------------------
 000001                               0                   00:00:00                               mm/dd/yyyy
 000083  MY.DISP.TEST                 1     mm/dd/yyyy    hh:mm:ss  JOB005   mm/dd/yyyy  JOB005   mm/dd/yyyy
 000084  MY.DISP.MULTI                1     mm/dd/yyyy    hh:mm:ss  JOB006   mm/dd/yyyy  JOB006   mm/dd/yyyy
 000085  MY.DISP.MULTI                1     mm/dd/yyyy    hh:mm:ss  JOB006   mm/dd/yyyy  JOB006   mm/dd/yyyy
 000086  MY.DISP.MULTI                1     mm/dd/yyyy    hh:mm:ss  JOB006   mm/dd/yyyy  JOB006   mm/dd/yyyy
 000087  MY.DISP.JOBS                 1     mm/dd/yyyy    hh:mm:ss  JOB001   mm/dd/yyyy  JOB003   mm/dd/yyyy

 END OF REPORT
```

Example 2

The following example produces a report on Active Data Sets by data set name.

```
 COPY TLEARL04
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!                      TLMS REPORT 04                            !
!    ACTIVE DATASETS BY DATA SET NAME                            !
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 COPY EARLDEFS
 DEF SDSN        = DSN 1-30 X  'DATA SET NAME'

 SET TYPRUN = R_CHAINED

GETTAG:
 GET TAPEDB
 IF TAPEDB = 'E'
    GOTO EOJ
 ENDIF

 IF SCRATCH_IND = 'N'
    GOTO GETTAG
 ENDIF

 IF DSN = '       '
    GOTO GETTAG
 ENDIF

 SET FUNCTION = 'TO_EXTERNAL'
 SET P_CTIME  = CTIME
 CALL CTSEDATE USING FUNCTION P_CDATE CDATE DATE_FMT
 CALL CTSEDATE USING FUNCTION P_LDATE LDATE DATE_FMT

 REPORT 'ACTIVE DATA SETS BY DATA SET NAME(TLMS004)'
    SELECT ALL
    CONTROL SDSN
    PRINT SDSN VOLSER FILESEQ  P_CDATE P_CTIME CJOB
          P_LDATE LJOB  RECFM LRECL BLKSIZE LABEL_TYPE DEN
```

```
mm/dd/yy                                    ACTIVE DATA SETS BY DATA SET NAME(TLMS004)                              PAGE    1
-------------------------------------------------------------------------------------------------------------------------
DATA SET NAME                 VOLSER  FILE  CREATE       CREATE  CREATE    LAST USE    LAST      REC  REC  BLOCK  LBL  DEN
                                      SEQ   DATE           TIME  JOBNAME   DATE        JOB       FMT  LEN  SIZE   TYP
-------------------------------------------------------------------------------------------------------------------------
CDS.PROD.FILE3                000082   3    mm/dd/yyyy  10:54:35  TJOB0CDS                       FB?   80   800        CART
CDS.PROD.FILE3                000075   3    mm/dd/yyyy  09:40:05  TJOB0CDS                       FB?   80   800        CART
CDS.PROD.FILE3                000074   3    mm/dd/yyyy  09:21:09  TJOB0CDS                       FB?   80   800        CART
CDS.PROD.FILE3                000068   3    mm/dd/yyyy  08:33:57  TJOB0MSG                       FB?   80   800        CART
CDS.TEST.FILE2                000068   2    mm/dd/yyyy  08:33:56  TJOB0MSG                       FB?   80   800        CART
CDS.TEST.FILE2                000074   2    mm/dd/yyyy  09:21:08  TJOB0CDS                       FB?   80   800        CART
CDS.TEST.FILE2                000075   2    mm/dd/yyyy  09:40:05  TJOB0CDS                       FB?   80   800        CART
CDS.TEST.FILE2                000082   2    mm/dd/yyyy  10:54:33  TJOB0CDS                       FB?   80   800        CART
DEF.AAA.FILE1                 000069   1    mm/dd/yyyy  09:05:41  TJOB0DEF  mm/dd/yyyy  TJOB0DEF  FB?   80   800        CART
DEF.BBB.FILE1                 000070   1    mm/dd/yyyy  09:05:43  TJOB0DEF  mm/dd/yyyy  TJOB0DEF  FB?   80   800        CART
DEF.CCC.FILE1                 000071   1    mm/dd/yyyy  09:05:43  TJOB0DEF  mm/dd/yyyy  TJOB0DEF  FB?   80   800        CART
DEF.DDD.FILE1                 000072   1    mm/dd/yyyy  09:05:44  TJOB0DEF  mm/dd/yyyy  TJOB0DEF  FB?   80   800        CART
EDM.SCRATCH.FILE1             000066   1    mm/dd/yyyy  07:59:38  CRAJOEDM  mm/dd/yyyy  CRAJOEDM  FB?   80   800        CART
EDM.SCRATCH.FILE1             000080   1    mm/dd/yyyy  09:49:49  TJOB0EDM  mm/dd/yyyy  TJOB0EDM  FB?   80   800        CART
EDM.SCRATCH.FILE4             000081   1    mm/dd/yyyy  09:49:52  TJOB0EDM  mm/dd/yyyy  TJOB0EDM  FB?   80   800        CART
EDM.SCRATCH.FILE4             000078   1    mm/dd/yyyy  09:48:25  TJOB0EDM  mm/dd/yyyy  TJOB0EDM  FB?   80   800        CART
EDMS.SCRATCH.FILE1            000076   1    mm/dd/yyyy  09:44:12  TJOB0EDM  mm/dd/yyyy  TJOB0EDM  FB?   80   800        CART
EDMS.SCRATCH.FILE2            000076   2    mm/dd/yyyy  09:44:13  TJOB0EDM                       FB?   80   800        CART
EDMS.SCRATCH.FILE3            000076   3    mm/dd/yyyy  09:44:14  TJOB0EDM                       FB?   80   800        CART
EDMS.SCRATCH.FILE4            000077   4    mm/dd/yyyy  09:44:15  TJOB0EDM  mm/dd/yyyy  TJOB0EDM  FB?   80   800        CART
EDMS.SCRATCH.FILE4            000076   4    mm/dd/yyyy  09:44:14  TJOB0EDM                       FB?   80   800        CART
JBC.BREAK.CHAIN               000025   1    mm/dd/yyyy  12:47:19  TJOB0BRK  mm/dd/yyyy  TJOB0BRK  FB?   80   800   NSL  200
JBC.MANUAL.FILE               000100   1                00:00:00  BOBS                            ?    0     0    SL   IDRC
MSG.AAA.FILE1                 000068   1    mm/dd/yyyy  08:33:55  TJOB0MSG  mm/dd/yyyy  TJOB0MSG  FB?   80   800        CART
MY.DISP.YYYY                  000088   1    mm/dd/yyyy  11:07:42  JOB004    mm/dd/yyyy  JOB004    FB?   50   500        CART
MY.TAPE.FILE                  000073   1    mm/dd/yyyy  10:18:56  JOB003    mm/dd/yyyy  JOB003    FB?   50   500        CART
REG.FILE1                     000074   1    mm/dd/yyyy  09:21:07  TJOB0CDS  mm/dd/yyyy  TJOB0CDS  FB?   80   800        CART
REG.FILE1                     000075   1    mm/dd/yyyy  09:40:04  TJOB0CDS  mm/dd/yyyy  TJOB0CDS  FB?   80   800        CART
REGULAR.FILE1                 000082   1    mm/dd/yyyy  10:54:33  TJOB0CDS  mm/dd/yyyy  TJOB0CDS  FB?   80   800        CART
TLMSII.DUMMY.DSN              000074   2    mm/dd/yyyy  00:00:00  TIIDUMMY                        ?    0     0         CART
TLMSII.DUMMY.DSN              000061   8    mm/dd/yyyy  00:00:00  TIIDUMMY                        ?    0     0    AL   CART
TLMSII.DUMMY.DSN              000061   7    mm/dd/yyyy  00:00:00  TIIDUMMY                        ?    0     0    AL   CART
TLMSII.DUMMY.DSN              000061   6    mm/dd/yyyy  00:00:00  TIIDUMMY                        ?    0     0    AL   CART
TLMSII.DUMMY.DSN              000061   5    mm/dd/yyyy  00:00:00  TIIDUMMY                        ?    0     0    AL   CART
TLMSII.DUMMY.DSN              000061   4    mm/dd/yyyy  00:00:00  TIIDUMMY                        ?    0     0    AL   CART
TLMSII.DUMMY.DSN              000061   3    mm/dd/yyyy  00:00:00  TIIDUMMY                        ?    0     0    AL   CART
TLMSII.DUMMY.DSN              000061   2    mm/dd/yyyy  00:00:00  TIIDUMMY                        ?    0     0    AL   CART
TLMSII.DUMMY.DSN              000061   1                00:00:00  TIIDUMMY                        ?    0     0    AL   CART
TLMSII-CRASH-PROTECTED-EDM.SCR 000067  0    mm/dd/yyyy  07:59:39  CRAJOEDM                        ?    0     0         DEN9
VOL00.FILE1                   000053   1    mm/dd/yyyy  14:47:53  TJOB100   mm/dd/yyyy  TJOB100   FB?   80   800        CART
VOL00.FILE1                   000052   1    mm/dd/yyyy  14:47:52  TJOB100   mm/dd/yyyy  TJOB100   FB?   80   800   SL   1600
VOL00.FILE10                  000065  10    mm/dd/yyyy  07:54:20  TJOB102   mm/dd/yyyy  TJOB102   FB?   80   800        CART
VOL00.FILE2                   000053   2    mm/dd/yyyy  15:32:06  TJOB100                         FB?   80   800        CART
VOL00.FILE2                   000054   2    mm/dd/yyyy  15:32:07  TJOB100   mm/dd/yyyy  TJOB100   FB?   80   800        CART
VOL00.FILE3                   000056   3    mm/dd/yyyy  15:32:10  TJOB100   mm/dd/yyyy  TJOB100   FB?   80   800        CART
VOL00.FILE3                   000054   3    mm/dd/yyyy  15:32:09  TJOB100                         FB?   80   800        CART
VOL00.FILE4                   000056   4    mm/dd/yyyy  15:32:13  TJOB100                         FB?   80   800        CART
VOL00.FILE4                   000057   4    mm/dd/yyyy  15:32:14  TJOB100   mm/dd/yyyy  TJOB100   FB?   80   800        CART
VOL00.FILE5                   000058   5    mm/dd/yyyy  15:32:21  TJOB100   mm/dd/yyyy  TJOB100   FB?   80   800        CART
VOL00.FILE5                   000057   5    mm/dd/yyyy  15:32:18  TJOB100                         FB?   80   800        CART
VOL00.FILE6                   000058   6    mm/dd/yyyy  15:32:24  TJOB100                         FB?   80   800        CART
VOL00.FILE6                   000059   6    mm/dd/yyyy  15:32:27  TJOB100   mm/dd/yyyy  TJOB100   FB?   80   800        CART
VOL00.FILE7                   000060   7    mm/dd/yyyy  15:32:31  TJOB100   mm/dd/yyyy  TJOB100   FB?   80   800        CART
VOL00.FILE7                   000059   7    mm/dd/yyyy  15:32:30  TJOB100                         FB?   80   800        CART
```

Example 3

The following example produces a VMF report with volume access.

```
 COPY TLEARL06
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!                 DEMO REPORT VMF ACCESS BY VOLUME              !
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 COPY EARLDEFS

 SET TYPRUN = R_VOLUME

GETTAG:
 GET TAPEDB
 IF TAPEDB = 'E'
    GOTO EOJ
 ENDIF

 SET FUNCTION = 'TO_EXTERNAL'
 SET P_CTIME  = CTIME
 CALL CTSEDATE USING FUNCTION P_CDATE CDATE DATE_FMT

 GOTO EOJ TAPEDB = 'E'

 REPORT 'DEMO REPORT VMF ACCESS BY VOLUME'
    SELECT ALL
    PRINT VOLSER BASEVOL VOLSEQ VOLUME_COUNT
          FILESEQ FILECNT DSN P_CDATE P_CTIME CJOB
```

```
 mm/dd/yy                                  DEMO REPORT VMF ACCESS BY VOLUME                            PAGE    1
------------------------------------------------------------------------------------------------------------
 VOLSER BASE      VOL    VOLUME    FILE    FILE   DATA SET NAME                       CREATE     CREATE  CREATE
        VOLSER    SEQ    COUNT     SEQ     CNT                                        DATE       TIME    JOBNAME
------------------------------------------------------------------------------------------------------------
 000001 000001     0       0        0       0                                                   00:00:00
 000002 000001     2       2        1       1    VOL01.FILE1                         mm/dd/yyyy  14:34:15 TJOB001
 000003 000003     1       3        1       1    VOL03.FILE1                         mm/dd/yyyy  14:37:18 TJOB002
 000004 000003     2       3        1       1    VOL03.FILE1                         mm/dd/yyyy  14:37:20 TJOB002
 000005 000003     3       3        1       1    VOL03.FILE1                         mm/dd/yyyy  14:37:26 TJOB002
 000006 000006     1       1        1       1    VOL06.FILE1                         mm/dd/yyyy  14:39:43 TJOB003
 000007 000006     2       2        1       1    VOL06.FILE1                         mm/dd/yyyy  14:39:44 TJOB003
 000008 000008     1       4        1       1    VOL08.FILE1                         mm/dd/yyyy  14:44:24 TJOB004
 000009 000008     2       4        1       1    VOL08.FILE1                         mm/dd/yyyy  14:44:24 TJOB004
 000010 000008     3       4        1       1    VOL08.FILE1                         mm/dd/yyyy  14:44:25 TJOB004
 000011 000008     4       4        1       1    VOL08.FILE1                         mm/dd/yyyy  14:44:26 TJOB004
 000012 000012     0       0        0       0                                                   00:00:00
 000013 000013     0       0        0       0                                                   00:00:00
 000014 000014     0       0        0       0                                                   00:00:00
 000015 000015     0       0        0       0                                                   00:00:00
 000016 000016     0       0        0       0                                                   00:00:00
 000017 000017     0       0        0       0                                                   00:00:00
 000018 000018     0       0        0       0                                                   00:00:00
 000019 000019     0       0        0       0                                                   00:00:00
 000020 000020     0       0        0       0                                                   00:00:00
 000021 000021     0       0        0       0                                                   00:00:00
 000022 000022     0       0        0       0                                                   00:00:00
 000023 000023     0       0        0       0                                                   00:00:00
 000024 000024     0       0        0       0                                                   00:00:00
 000025 000025     1       1        1       1    JBC.BREAK.CHAIN                     mm/dd/yyyy  12:47:19 TJOB0BRK
 000026 000026     0       0        0       0                                                   00:00:00
 000027 000027     0       0        0       0                                                   00:00:00
 000028 000028     1       1        1       1                                                   00:00:00
 000029 000029     1       2        1       1    VOL29.FILE1                         mm/dd/yyyy  15:34:15 TJOB021
 000030 000029     2       2        1       1    VOL29.FILE1                         mm/dd/yyyy  15:34:16 TJOB021
 000031 000031     1       3        1       4    VOL31.FILE1                         mm/dd/yyyy  15:39:03 TJOB022
 000032 000031     2       3        4       4    VOL31.FILE4                         mm/dd/yyyy  15:39:06 TJOB022
 000033 000031     3       3        4       5    VOL31.FILE4                         mm/dd/yyyy  15:39:07 TJOB022
 000034 000034     1      18        1       1    VOL34.FILE1                         mm/dd/yyyy  15:51:44 TJOB023
 000035 000034     2      18        1       2    VOL34.FILE1                         mm/dd/yyyy  15:51:45 TJOB023
 000036 000034     3      18        2       3    VOL35.FILE2                         mm/dd/yyyy  15:51:47 TJOB023
 000037 000034     4      18        3       4    VOL36.FILE3                         mm/dd/yyyy  15:51:49 TJOB023
 000038 000034     5      18        4       5    VOL37.FILE4                         mm/dd/yyyy  15:51:53 TJOB023
 000039 000034     6      18        5       6    VOL38.FILE5                         mm/dd/yyyy  15:51:56 TJOB023
 000040 000034     7      18        6       7    VOL39.FILE6                         mm/dd/yyyy  15:51:58 TJOB023
 000041 000034     8      18        7       8    VOL40.FILE7                         mm/dd/yyyy  15:52:01 TJOB023
 000042 000034     9      18        8       9    VOL41.FILE8                         mm/dd/yyyy  15:52:05 TJOB023
 000043 000034    10      18        9      10    VOL42.FILE9                         mm/dd/yyyy  15:52:08 TJOB023
 000044 000034    11      18       10      11    VOL43.FILE10                        mm/dd/yyyy  15:52:13 TJOB023
 000045 000034    12      18       11      12    VOL44.FILE11                        mm/dd/yyyy  15:52:16 TJOB023
 000046 000034    13      18       12      13    VOL45.FILE12                        mm/dd/yyyy  15:52:19 TJOB023
 000047 000034    14      18       13      14    VOL46.FILE13                        mm/dd/yyyy  15:52:22 TJOB023
 000048 000034    15      18       14      15    VOL47.FILE14                        mm/dd/yyyy  15:52:27 TJOB023
 000049 000034    16      18       15      16    VOL48.FILE15                        mm/dd/yyyy  12:11:34 TJOB024
 000050 000034    17      18       16      17    VOL49.FILE16                        mm/dd/yyyy  12:55:09 TJOB025
 000051 000034    18      18       17      17    VOL51.FILE17                        mm/dd/yyyy  14:15:13 TJOB025
 000052 000052     1       1        1       1    VOL00.FILE1                         mm/dd/yyyy  14:47:52 TJOB100
 000053 000052     2      11        1       2    VOL00.FILE1                         mm/dd/yyyy  14:47:53 TJOB100
 000054 000052     3      11        2       3    VOL00.FILE2                         mm/dd/yyyy  15:32:07 TJOB100
```

Example 4

The following example produces a VMF report with chained access:

```
 COPY TLEARL08
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!                    VMF REPORT WITH CHAINED ACCESS              !
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 COPY EARLDEFS

 DEF  P_VOL     (X 6) = NONE 'BASE' 'VOLUME'
 DEF  O_VOL     (X 6) = NONE

 SET TYPRUN = R_CHAINED

GETTAG:
 GET TAPEDB
 IF TAPEDB = 'E'
    GOTO EOJ
 ENDIF

 IF O_VOL  = BASEVOL THEN
    SET P_VOL = '      '
 ELSE
    SET P_VOL = BASEVOL
    SET O_VOL = BASEVOL
 ENDIF

 SET FUNCTION = 'TO_EXTERNAL'
 SET P_CTIME  = CTIME
 CALL CTSEDATE USING FUNCTION P_CDATE CDATE DATE_FMT

 GOTO EOJ TAPEDB = 'E'

 REPORT 'DEMO REPORT VMF ACCESS BY CHAINED'
    SELECT ALL
    PRINT VOLSER P_VOL   VOLSEQ VOLUME_COUNT
          FILESEQ FILECNT   DSN P_CDATE P_CTIME CJOB
```

```
mm/dd/yy                              DEMO REPORT VMF ACCESS BY CHAINED                              PAGE    1
---------------------------------------------------------------------------------------------------------
VOLSER BASE      VOL    VOLUME   FILE   FILE   DATA SET NAME                      CREATE     CREATE   CREATE
       VOLUME    SEQ    COUNT    SEQ    CNT                                       DATE       TIME     JOBNAME
---------------------------------------------------------------------------------------------------------
000001 000001     0      0       0      0                                                    00:00:00
000003 000003     1      3       1      1     VOL03.FILE1                         mm/dd/yyyy  14:37:18  TJOB002
000004            2      3       1      1     VOL03.FILE1                         mm/dd/yyyy  14:37:20  TJOB002
000005            3      3       1      1     VOL03.FILE1                         mm/dd/yyyy  14:37:26  TJOB002
000006 000006     1      1       1      1     VOL06.FILE1                         mm/dd/yyyy  14:39:43  TJOB003
000007            2      2       1      1     VOL06.FILE1                         mm/dd/yyyy  14:39:44  TJOB003
000008 000008     1      4       1      1     VOL08.FILE1                         mm/dd/yyyy  14:44:24  TJOB004
000009            2      4       1      1     VOL08.FILE1                         mm/dd/yyyy  14:44:24  TJOB004
000010            3      4       1      1     VOL08.FILE1                         mm/dd/yyyy  14:44:25  TJOB004
000011            4      4       1      1     VOL08.FILE1                         mm/dd/yyyy  14:44:26  TJOB004
000012 000012     0      0       0      0                                                    00:00:00
000013 000013     0      0       0      0                                                    00:00:00
000014 000014     0      0       0      0                                                    00:00:00
000015 000015     0      0       0      0                                                    00:00:00
000016 000016     0      0       0      0                                                    00:00:00
000017 000017     0      0       0      0                                                    00:00:00
000018 000018     0      0       0      0                                                    00:00:00
000019 000019     0      0       0      0                                                    00:00:00
000020 000020     0      0       0      0                                                    00:00:00
000021 000021     0      0       0      0                                                    00:00:00
000022 000022     0      0       0      0                                                    00:00:00
000023 000023     0      0       0      0                                                    00:00:00
000024 000024     0      0       0      0                                                    00:00:00
000025 000025     1      1       1      1     JBC.BREAK.CHAIN                     mm/dd/yyyy  12:47:19  TJOB0BRK
000026 000026     0      0       0      0                                                    00:00:00
000027 000027     0      0       0      0                                                    00:00:00
000028 000028     1      1       1      1                                                    00:00:00
000029 000029     1      2       1      1     VOL29.FILE1                         mm/dd/yyyy  15:34:15  TJOB021
000030            2      2       1      1     VOL29.FILE1                         mm/dd/yyyy  15:34:16  TJOB021
000031 000031     1      3       1      4     VOL31.FILE1                         mm/dd/yyyy  15:39:03  TJOB022
000031            1      3       2      4     VOL31.FILE2                         mm/dd/yyyy  15:39:04  TJOB022
000031            1      3       3      4     VOL31.FILE3                         mm/dd/yyyy  15:39:04  TJOB022
000031            1      3       4      4     VOL31.FILE4                         mm/dd/yyyy  15:39:05  TJOB022
000032            2      3       4      4     VOL31.FILE4                         mm/dd/yyyy  15:39:06  TJOB022
000033            3      3       4      5     VOL31.FILE4                         mm/dd/yyyy  15:39:07  TJOB022
000033            3      3       5      5     VOL33.FILE1                         mm/dd/yyyy  15:39:08  TJOB022
000034 000034     1     18       1      1     VOL34.FILE1                         mm/dd/yyyy  15:51:44  TJOB023
000035            2     18       1      2     VOL34.FILE1                         mm/dd/yyyy  15:51:45  TJOB023
000035            2     18       2      2     VOL35.FILE2                         mm/dd/yyyy  15:51:46  TJOB023
000036            3     18       2      3     VOL35.FILE2                         mm/dd/yyyy  15:51:47  TJOB023
000036            3     18       3      3     VOL36.FILE3                         mm/dd/yyyy  15:51:48  TJOB023
000037            4     18       3      4     VOL36.FILE3                         mm/dd/yyyy  15:51:49  TJOB023
000037            4     18       4      4     VOL37.FILE4                         mm/dd/yyyy  15:51:52  TJOB023
000038            5     18       4      5     VOL37.FILE4                         mm/dd/yyyy  15:51:53  TJOB023
000038            5     18       5      5     VOL38.FILE5                         mm/dd/yyyy  15:51:55  TJOB023
000039            6     18       5      6     VOL38.FILE5                         mm/dd/yyyy  15:51:56  TJOB023
000039            6     18       6      6     VOL39.FILE6                         mm/dd/yyyy  15:51:57  TJOB023
000040            7     18       6      7     VOL39.FILE6                         mm/dd/yyyy  15:51:58  TJOB023
000040            7     18       7      7     VOL40.FILE7                         mm/dd/yyyy  15:52:00  TJOB023
000041            8     18       7      8     VOL40.FILE7                         mm/dd/yyyy  15:52:01  TJOB023
000041            8     18       8      8     VOL41.FILE8                         mm/dd/yyyy  15:52:03  TJOB023
000042            9     18       8      9     VOL41.FILE8                         mm/dd/yyyy  15:52:05  TJOB023
000042            9     18       9      9     VOL42.FILE9                         mm/dd/yyyy  15:52:07  TJOB023
000043           10     18       9     10     VOL42.FILE9                         mm/dd/yyyy  15:52:08  TJOB023
```

CTSEPM Advanced Pattern Masking Subroutine

The CTSEPM subroutine provides advanced pattern masking support. You can call it from your CA EARL program. CTSEPM uses the CTSPM module to provide the following functions:

- MATCH

- COMPARE

- VALIDATE

- CONVERT

- CONVERTX

CTSPM issues a return code that CTSEPM passes to CA EARL for verification. CA Earl places the return code in a field equal to the subroutine name, CTSEPM. In nonzero return code situations, CTSEPM can return an optional error message.

CTSEPM Function Calls

The following examples illustrate the CTSEPM function calls. All calls use an implicit object class of MVSFILE, so the parameters are DSNs or DSN patterns. The parameters vary by function, but the length of the parameters is as follows:

- Optional error message parameter is 24 characters.

- FUNCTION parameter is eight characters.

- Data set parameter is 44 characters.

- Pattern mask parameter is 88 characters.

MATCH Function

Use the MATCH function to determine if a DSN matches a pattern mask. A return code of zero means that it matches. A return code of four means that the DSN does not match the pattern. Higher return codes indicate an error. A 24 character error message accompanies a nonzero return.

```
DEF PM_FUNC            (X 8) =  ' ' 'FUNCTION'
DEF PM_PAT1            (X 88) =  ' ' 'PATTERN MASK1'
DEF PM_MSG             (X 24) =  ' ' 'ERROR MESSAGE'
DEF PM_DSN             (X 44) =  ' ' 'DATA SET NAME'

SET PM_FUNC = 'MATCH'
SET PM_PAT1 = 'SYS#.DDA####.-'
SET PM_DSN = DSN
CALL CTSEPM USING PM_FUNC
                  PM_PAT1
                  PM_DSN
                  PM_MSG
```

COMPARE Function

COMPARE

Use the COMPARE function to compare two pattern masks and determine which is more specific. You can use this function to arrange a group of pattern masks in an order that allows your program to find the best-fit pattern mask. Higher return codes indicate an error. A 24 character error message accompanies nonzero return codes. A message that matches the PM_MORE, PM_LESS, or PM_SAME values accompanies a zero return code.

```
DEF PM_FUNC          (X 8) =  ' ' 'FUNCTION'
DEF PM_PAT1          (X 88) = ' ' 'PATTERN MASK1
DEF PM_PAT2          (X 88) = ' ' 'PATTERN MASK2'
DEF PM_MSG           (X 24) = ' ' 'ERROR MESSAGE'
DEF PM_MORE          (X 24) = 'MORE SPECIFIC           '
DEF PM_LESS          (X 24) = 'LESS SPECIFIC           '
DEF PM_SAME          (X 24) = 'SAME SPECIFIC           '
SET PM_FUNC = 'COMPARE'
SET PM_PAT1 = 'SYS#.DDA####.-'
SET PM_PAT2 = 'SYS#.-'
CALL CTSEPM USING PM_FUNC
                  PM_PAT1
                  PM_PAT2
                  PM_MSG
IF PM_MSG = PM_LESS
   SET FLG = 'Y'
ENDIF
```

VALIDATE Function

Use the VALIDATE function to determine if a pattern mask is valid. Higher return codes indicate an error. A 24-bit character error message accompanies nonzero return codes.

```
DEF PM_FUNC          (X 8) =  ' ' 'FUNCTION'
DEF PM_PAT1          (X 88) = ' ' 'PATTERN MASK1'
DEF PM_MSG           (X 24) = ' ' 'ERROR MESSAGE'

SET PM_FUNC = 'VALIDATE'
SET PM_PAT1 = 'SYS#.DDA####.-'

CALL CTSEPM USING PM_FUNC
                  PM_PAT1
                  PM_MSG
```

CONVERT Function

Use the CONVERT function to convert a pattern mask into its internal format. You can also use the CONVERT function to improve the performance of later MATCH function calls. Internal format pattern masks can be directly compared to determine which is more specific. CONVERT can replace a COMPARE function call.

A return code of zero indicates that the function successfully converted the pattern. The 44-character internal format replaces the original pattern mask when the return code is zero. A 24-character error message accompanies nonzero return codes.

```
DEF PM_FUNC           (X 8) =  ' ' 'FUNCTION'
DEF PM_PAT1           (X 88) = ' ' 'PATTERN MASK1'
DEF PM_MSG            (X 24) = ' ' 'ERROR MESSAGE'

SET PM_FUNC = 'CONVERT'
SET PM_PAT1 = 'SYS#.DDA####.-'
CALL CTSEPM USING PM_FUNC
                  PM_PAT1
                  PM_MSG
```

CONVERTX Function

Use the CONVERTX function to convert a pattern mask from its internal format to its external format for display purposes. If the return code is zero, then an 88-character external pattern mask replaces the original 44-character internal format. A 24-character error message accompanies a nonzero return code.

```
DEF PM_FUNC           (X 8) =  ' ' 'FUNCTION'
DEF PM_PAT1           (X 88) = ' ' 'PATTERN MASK1'
DEF PM_MSG            (X 24) = ' ' 'ERROR MESSAGE'
DEF INTERNAL_PAT      (X 44) = ' ' 'INTERNAL PATTERN'

SET PM_FUNC = 'CONVERTX'
SET PM_PAT1 = INTERNAL_PATTERN
CALL CTSEPM USING PM_FUNC
                  PM_PAT1
                  PM_MSG
```

Chapter 7: Common Tape System

The purpose of the Common Tape System (CTS) is to provide a set of interfaces to all CA Tape Management products. CTS consists of a started task, utilities, and interface programs. CTS is started from SYS1.PROCLIB(CTS). During startup it reads commands from the CTSSYSIN DD which is CAI.CTAPOPTN(CTSSTART) by default. This section contains a discussion of those commands.

Note: This chapter includes CTS subtasks that are used by general users of CA TLMS. CTS supports additional subtasks that are configured and maintained by the systems programming staff. These subtasks are documented in the *Configuration Guide*.

Initialization

The following example shows the commands used to start the CTS task:

```
/* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * */
/*            SET OPTIONS                                        */
/* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * */
   SET NOWTOR        /* REQUEST HOT (OUTSTANDING) WTOR           */
   SET NOSNAP        /* REQUEST DYNOSTIC SNAP DUMPS              */
   SET   LOG         /* REQUEST COMMAND AND MESSAGE LOGGING      */
/* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * */
/*     DEFINE TASK NORMALLY USED                                */
/* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * */
  SET TASK(TLMS) PGM(TLMSMAIN) RETRY(0) PARM()  /* TLMS         */
  SET TASK(INQR) PGM(TLMSINQR) RETRY(0) PARM()  /* INQR/UPDATE  */
/* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * */
/*         AUTOMATICALLY START THESE TASK                       */
/* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * */
  START TLMS        /* TAPE MANAGEMENT                           */
/*START INQR        /* INQUIRY / UPDATE TASK                     */
  START LAB         /* EXTERNAL LABEL PRINT TASK                 */
```

Command	Description
SET LOG	Indicates that CTS retains a message log.
SET NOSNAP	Indicates that the option for recording snap dumps is turned off.
SET NOWTOR	Indicates that the optional outstanding CA$F000R WTOR is not issued. Commands are entered through the console MODIFY command instead.
START TLMS	Indicates that the Tape Management system is to be attached.

Command	Description
START LAB	Indicates that the Tape management Online Label Interface (LAB) is to be attached.

CTS Commands

The CTS address space is created by starting the CTS task. The CTS task is a multitasking supervisor, which provides support for CTS Services. It provides the means for starting, stopping, and controlling CTS subtasks. The CTS task also provides display and diagnostic facilities.

■ The CTS task processes commands from console modify, CAI.CTAPOPTN member CTSSTART, EXEC PARM=, CTS internal message facility, and reply to an outstanding WTOR.

■ Commands from any source are free-form in MACRO type and/or TSO type syntax.

■ The syntax is a command-word followed by parameters separated by either blanks or commas.

■ TSO style comments (/*..........*/) may appear anywhere in the command line or alone on the command line.

■ Parameters can be keyword, positional or value, and they can be specified in any order.

■ Keyword parameters can be of either the KWD= or KWD( ) style.

■ Values are constants like SETUP, and can be specified as the alternate NOSETUP.

■ Numbers specified for positional and keyword parameters can be from 1- to 15-digits with any number of leading zeros.

■ Parameters which contain blanks, commas or special characters must be enclosed in '.......' or (.......).

Command Descriptions

The following commands are processed by CTSCMD which may send commands to subtasks for further processing. CTS subtasks are required to handle CANCEL, STOP, and STATUS commands which are sent to them.

Command	Description
CANCEL	Request a CTS subtask to ABEND with a User-111 and dump.

Command	Description
DISPLAY or D	Request a display of CTS options, defined tasks, or active tasks.
FORCE	Detach a CTS subtask causing its forceable termination.
MSG or M	Send text to a CTS subtask.
SET	Set one or more CTS options or a CTS subtask definition.
SPINOFF	Release SYSOUT for printing.
START or S	Start a CTS subtask for the task ID. If the task ID is defined to CTS, the task ID is the only parameter required. If it is not defined to CTS, the PGM parameter must be used to identify the program to attach. The other parameters may be used to specify or override defined values.
STATUS	Request subtask to display status information.
STOP or P	Request a subtask to complete normally.

The parameter and description for each command are as follows:

CANCEL Command

Parameter	Description
tid or ALL	Task ID. Can be one to four characters that are unique to the CTS address space. If ALL is specified, a CANCEL command is sent to every CTS subtask. Only those tasks which have had a START command issued may be canceled.

DISPLAY Command

Parameter	Description
ACTIVE or A	Display all currently active subtasks.
OPTS or O	Display CTS options.
TASKS or T	Display all tasks defined to CTS.

FORCE Command

Parameter	Description
Tid	*(Required.)* Task ID. Must be one to four characters that are unique to the CTS address space. Only those tasks which had a START command may be forced.

MSG Command

Parameter	Description
text	Text to be sent to the subtask. If this text contains blanks, commas, or special characters, it must be enclosed in '......' or (.....).
tid or ALL	Task ID. Can be one to four characters that must be unique to the CTS address space. If ALL is specified, the text command is sent to every CTS subtask.

SET Command for Options

Parameter	Description
LOG or NOLOG	Option for recording message log. If the option is LOG, a log of messages is retained. This can be printed by using the SPINOFF LOG command.
SNAP or NOSNAP	Option for recording diagnostic snap dumps. If the option is SNAP, the dumps are recorded. This can be printed by using the SPINOFF SNAP command.
WTOR or NOWTOR	Option for outstanding WTOR. If option is WTOR, then CTS keeps a WTOR issued to receive operator commands.

SET Command to Define Subtasks

Parameter	Description
PARM(...)	Data to be sent to the subtask by an internal message. The default is no data.

Parameter	Description
PGM(........)	*(Required.)* Program name. This is the name of the program to be attached.
RETRY(...)	The number of times a subtask is to be restarted after completing with a nonzero completion code. The default is 0.
tid	*(Required.)* Task ID. Can be one to four characters that must be unique to the CTS address space.

SPINOFF Command

Parameter	Description
tid	Task ID. Must be one to four characters that are unique to the CTS address space. Sends a SPINOFF command to a subtask.

START Command

Parameter	Description
PARM(nnn)	Data to be sent to the subtask by an internal message. The default is no data.
PGM(nnnnnnnn)	Program name. Required if task is not defined to CTS. This is the name of the program to be attached.
RETRY(nnn)	The number of times a subtask is to be restarted after completing with a nonzero completion code. The default is 0.
Tid	*(Required.)* Task ID. Must be one to four characters that are unique to the CTS address space.

STATUS Command

Parameter	Description
tid or ALL	Task ID. Can be one to four characters that must be unique to the CTS address space. If ALL is specified, a STATUS command is sent to every CTS subtask. Each task which can report status, displays and/or logs its status. The format and content of the status varies by task. Status from the CMD task is the same as issuing a "Display OPT" and "Display Active".

STOP Command

Parameter	Description
tid or ALL	Task ID. Can be one to four characters that must be unique to the CTS address space. If ALL is specified, a STOP command is sent to every CTS subtask. Only those tasks which have had a START command issued can be stopped.

Command Samples

```
CANCEL TLMS
```

The TLMS subtask abends with a User-111 and a dump. If the DUMP subtask is active, the abend dump is spun off to SYSOUT.

```
START TLMS RETRY(4)
```

The TLMS subtask is attached and is restarted the next four times it ends with a nonzero return code. If TLMS ends with a zero return code, it is not restarted.

```
MSG TLMS TRACE
```

The text TRACE is sent to the TLMS subtask. TRACE tells TLMS to snap all transactions to the SNAP log on entry and exit to TLMS.

```
MSG INQR 'UPV VOL001 SCRATCH=YES'
```

The text is sent to the INQR subtask which processes it just as though it was entered in response to INQRs WTOR. In this case, VOL001 is scratched.

```
SET TLMS DEBUG(1)
```

The DEBUG switch in TLMSs CTSB is set to 1. The meaning of the DEBUG setting varies with the task.

```
SET TLMS DEBUG( )
```

The DEBUG switch in TLMSs CTSB is set to reset to blank.

```
STOP ALL
```

STOP is sent to all subtasks in the CTS address space. Each subtask terminates with a zero return code. The one exception is CMD. CMD never terminates while another subtask is active, because it would be needed to process the STOP or CANCEL for the other task. If CMD receives a command to terminate when another task is active, it waits 20 seconds, then tries again. If another task is still active, it issues a message and remains active.

Online Label Interface

External gummed labels are generated through the Online Label Interface (LAB) subtask of CTS. Gummed labels produced by CA TLMS use the Online Label Interface (LAB) to generate labels.

The Online Label Interface is made up of three components:

- The input processor (CTSLBLIN) which is used to obtain each input record and pass the information to the appropriate CA Common Services for z/OS EARL Service program.

- CA Common Services for z/OS EARL Service, which is used to process the input records, format the label image and call the output processor. Member TLMSLBLS in CAI.CTAPEARL is the CA Common Services for z/OS EARL Service example provided to generate the default gummed labels for CA TLMS. This member can be copied and modified to customize labels for your site.

- The output processor (CTSLBLOT) which is used to write a formatted label image to one or more output locations.

Processing Steps

The CTS procedure provided with this version uses member TLMSLBLS in CAI.CTAPEARL to create labels. If modification of this is required to customize labels for your site, you can modify this code or make a copy for modification. Verify that the LBL parameter in the CTS procedure points to the name of the member that you wish to use.

LAB Description

When LAB is started, it initiates the label processor and waits for either the label processor to complete or a command from the operator to be entered.

The label processor completes under any of the following conditions:

■ The label input processor received a CLOSE request

■ An error was detected in the CA Common Services for z/OS EARL Service component

■ An end-of-file condition was forced in the CA Common Services for z/OS EARL Service component

■ A fatal error occurred in either the input or output label processor

■ A STOP or CANCEL command was passed to the LAB subtask

The CLOSE request shuts down the entire label process in a normal fashion. CA Common Services CAICCI used in the input processor is terminated. The CA Common Services for z/OS EARL Service component receives the CLOSE request which in turn is passed to the output label processor, requesting it to close all opened files and terminate any use of CA Common Services CAICCI.

The following command to the LAB subtask is used to send the CLOSE request to the label processor.

```
F CTS,STOP LAB
```

or

```
F CTS,MSG LAB,STOP
```

Additionally, if the CA Common Services for z/OS EARL Service component detects an error, it forces an END-OF-FILE condition which in turn requests the label processor to shutdown. The same is true for any fatal errors that may occur.

Startup Procedure

The CTS startup procedure contains all JCL required to initiate the LAB subtask including the label processor and the CA Common Services for z/OS EARL Service component.

LAB can be started manually or automatically when CTS is started. CA Common Services CAIENF must have started and CAICCI communications must be up and operational before LAB is started.

Automatic Startup

To automatically start the LAB subtask when CTS is started, add the following command to the member CTSSTART in the CAI.CTAPOPTN procedure:

START LAB

Once the member CTSSTART is updated to contain the command listed above, CTS automatically starts the LAB subtask when CTS is started.

Manual Startup

Once the CTS task has been started, you can communicate with CTS by using a MODIFY command or by WTOR.

The following is an example of how to manually start the LAB subtask under CTS by using the MODIFY command:

F CTS,START LAB

LAB Commands

Commands are sent to LAB using the CTS Message command (MSG).

Commands issued to the LAB subtask have the following format:

MSG LAB ,*command*

command

Specifies the LAB command and must contain one of the following values:

CANCEL

Cancel LAB including label processing with a User-111 abend

SPINOFF [xxxxxxxx]

Send a SPINOFF request through CA Common Services CAICCI to the label processor.

STATUS

Request a current label processing status

STOP

Terminate label processing in a normal fashion

VOLUME xxxxxx

Send a VOLUME request through the CA Common Services CAICCI to the label processor.

The STOP command issues a CLOSE request to the label processor which terminates the process in a normal fashion. Once termination is complete, the LAB subtask ends.

The STATUS command issues a request that provides two messages indicating the time and date the label processor started along with accumulated totals of VOLUME, DATA, LABEL and SPINOFF CAICCI requests that have been received. Additionally, an error count associated with VOLUME requests is provided.

The VOLUME command directs a request for a specific volume serial number to be processed. This command requires a parameter containing the volume serial number associated with the request. For this reason, the command and parameter entered must be separated by a blank and enclosed within single quotes or parentheses, for example, 'VOLUME 980010'.

The SPINOFF command can be entered with or without a parameter.

If the SPINOFF command is entered without a parameter, the label processor closes, reallocates, and reopens ALL printer files that were originally dynamically allocated as a SYSOUT file, thus freeing the current SYSOUT to be printed.

If the SPINOFF command is entered with a parameter, the parameter must be PRINTER1, PRINTER2 or PRINTER3 indicating the specific printer to which the request applies. Additionally, only the printer specified is closed, reallocated and reopened, freeing the current SYSOUT to be printed. In this case, the command and parameter entered must be separated by a blank and enclosed within single quotes or parentheses, for example, 'SPINOFF PRINTER1'.

Sample Labels

The following pages describe the sample labels that are delivered for your use. These samples illustrate a few of the ways you can generate labels using the input and output processors through CA Common Services for z/OS EARL Service along with the Online Label Interface.

Included in the sample is a section that automatically produces setup labels for printer alignment. The sample prints 10 setup labels using either the CART or REEL format. This section can be bypassed altogether with a minor change to the sample. Additionally, the section defaults to using the CART format and the default printer assignment. If this or other modifications to the section are required, you may want to modify the sample prior to using it.

Since these samples probably do not conform to your shop standards, you should copy these for your own use and make the necessary modifications to your own version.

Label Formats for REELS and CARTS

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! 00000010
!  SAMPLE OUTPUT LABELS FOR REELS AND CARTRIDGES                 ! 00000020
!                                                                ! 00000030
!  THE FOLLOWING FORMATS ARE BEING PRODUCED IN THIS SAMPLE:      ! 00000040
!                                                                ! 00000050
!  REELS:                                                        ! 00000060
!      ....+....1....+....2....+....3....+....4....+             ! 00000070
!                                                                ! 00000130
!  1  DSN.......................................                 ! 00000140
!  2  JOBNAME. STEPNAME HH:MM:SS YYDDD UUUU DEN.                 ! 00000150
!  3  CPU. LRECL BLKSI. RFM. BLKCNT.... ERG FSN...    R5.5       ! 00000160
!  4  VOLSER # VLSQ/VCNT T X       JOBACT.....                   ! 00000170
!                                                                ! 00000180
!  CARTS:                                                        ! 00000190
!      ....+....1....+....2....+....                             ! 00000200
!                                                                ! 00000290
!  1  DSN.....................                                   ! 00000300
!  2   DSN2.............. JOBNAME.           R5.5                ! 00000310
!  3   VOLSER STEPNAME HH:MM:SS                                  ! 00000320
!  4   YYDDD UUUU DEN. X                                         ! 00000330
!  5   LRECL BLKSI. RFM. VSEQ/VCNT                               ! 00000340
!  6   BLKCNT.... FSN... # T ERG.                                ! 00000350
!  7   JOBACCT.....   CPU.                                       ! 00000360
!                                                                ! 00000370
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! 00000380
```

The above formats were extracted from the delivered sample for CART and REEL labels.

In the sample format, the field names occupy the location where the field values are placed. The CART format is used for cartridge densities and all others default to the REEL format.

Additionally, the REEL format occupies 4 rows, each containing 44 columns while the CART format occupies 7 rows with each containing 29 columns. In the delivered sample, one output label is generated for both formats with ROWS=10 and COLUMNS=80. This provides 3 blank rows between each label for REEL labels and 2 blank rows between each label for CART labels.

Sample REEL Setup Label Output

The following is a sample output of setup labels generated using the REEL label format.

```
        XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
        XXXXXXXX XXXXXXXX 99:99:99  99999 XXXX XXXX
        XXXX 99999 999999 XXXX 9999999999     99999
        XXXXXX X 9999 999 X XXXX     XXXXXXXXXXXX
```

```
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXX XXXXXXXX 99:99:99  99999 XXXX XXXX
XXXX 99999 999999 XXXX 9999999999     99999
XXXXXX X 9999 999 X XXXX     XXXXXXXXXXXX
```

Sample REEL Label Output

The following is a sample output of labels generated that contained a REEL density.

```
PAY.CHECK.AUDIT.COPY
PAY108   STP01    14:50:02  00006 4082  200
XE90 00080 032000 FB   0000005500 000 00002
ODD003   0001 001 S         1-22-333-444
```

```
PAY.CHECK.BACKUP
PAY108   STP01    14:50:03  00006 0E82  200
XE90 00080 032000 FB   0000005500 000 00003
ODD003   0001 001 S         1-22-333-444
```

Sample CART Setup Label Output

The following is a sample output of setup labels generated using the CART label format.

```
XXXXXXXXXXXXXXXXXXXXXXXXXX
 XXXXXXXXXXXXXXXXXX XXXXXXX
 XXXXX XXXXXXX  99:99:99
 99999 XXXX XXXX XXXX
 99999 999999 XXXX 9999 0999
 9999999999 99999  X X 0999
 XXXXXXXXXXX    XXXX
```

```
XXXXXXXXXXXXXXXXXXXXXXXXXX
 XXXXXXXXXXXXXXXXXX XXXXXXX
 XXXXX XXXXXXX  99:99:99
 99999 XXXX XXXX XXXX
 99999 999999 XXXX 9999 0999
 9999999999 99999  X X 0999
 XXXXXXXXXXX    XXXX
```

Sample CART Label Output

The following is a sample output of labels generated that contained a CART density.

```
PAY.CHECK.FICHE.TAPE
                    PAY108
 FICHE1 STP01     14:50:02
 00006 4E82 CART
 00080 032000 FB   0001 0000
 0000005500 00001    N 0000
 1-22-333-444     XE90
```

```
PAY.CHECK.FICHE.TAPE
                    PAY108
 FICHE2 STP01     14:50:02
 00006 4E82 CART
 00080 032000 FB   0002 0002
 0000005500 00001    N 0000
 1-22-333-444     XE90
```

CA TLMS (TLMS)

This is the Online Recorder task which ran under OMS in prior versions. This task processes all TLMS transactions and makes any required updates to the VMF.

Startup Procedure

TLMS can be started manually or automatically when CTS is started. The recommended method is to have CTS automatically start the TLMS subtask. Before starting the TLMS subtask, be sure that TLC6INIT has been run.

Automatic Startup

To automatically start the TLMS subtask when CTS is started, add the following command to the member CTSSTART in the CAI.CTAPOPTN procedure.

START TLMS

Once the member CTSSTART is updated to contain the command listed above, CTS automatically starts the TLMS subtask when CTS is started.

Manual Startup

Once the CTS task has been started, you can communicate with CTS by using a MODIFY command or by WTOR.

The following is an example of how to manually start the TLMS subtask under CTS by using the MODIFY command:

`F CTS,START TLMS`

TLMS Commands

Commands are sent to TLMS using the CTS Message command (MSG). The following format should be used on all commands issued to the TLMS subtask:

`MSG TLMS,xxxxxxxxxx`

Where xxxxxxxxxx is the TLMS command and must contain one of the following values:

Command	Description
CANCEL	To request TLMS to cancel itself with a User-111 abend.
STATUS	To request TLMS to provide the current status.
STOP	To request TLMS to close all files and terminate normally.
TRACE|NOTRACE	TLMS produces a snap of each transaction before and after it is processed by TLMS.
	Note: This replaces the TRACK function of OMS. The CTS option SNAP must be specified. The TRACE data may be printed by the command SPINOFF SNAP to CTS.

Inquiry Update Task (INQR)

The INQR task allows online inquiry and update through a hot or outstanding WTOR. Output goes to the console specified by the ROUTINQ option and is also recorded to the CTS log.

Startup Procedure

INQR can be started manually or automatically when CTS is started. The recommended method is to have CTS automatically start the INQR subtask.

Automatic Startup

To automatically start the INQR subtask when CTS is started, add the following command to the member CTSSTART in the CAI.CTAPOPTN procedure.

```
START INQR
```

Once the member CTSSTART is updated to contain the command listed above, CTS automatically starts the INQR subtask when CTS is started.

Manual Startup

Once the CTS task has been started, you can communicate with CTS by using a MODIFY command or by WTOR.

The following is an example of how to manually start the INQR subtask under CTS by using the MODIFY command:

```
F CTS,START INQR
```

INQR Commands

Commands are sent to INQR using the CTS Message command (MSG).

Commands issued to the INQR subtask have the following format:

```
MSG INQR,command
```

command

Specifies the INQR command and must contain one of the following values:

CANCEL

Requests INQR to cancel itself with a User-111 abend.

STATUS

Requests INQR to provide the current status.

STOP

Requests INQR to close all files and terminate normally.

Tape Map (TMAP)

The Tape Map (TMAP) task provides a convenient way to list the contents of an ANSI Label (AL) or Standard Label (SL) tape. It dynamically allocates one or more tapes drives, and mounts the requested volumes to produce a report of the files on each AL or SL tape. The tape drive is released after the requested tapes are processed. TMAP remains active and available for more tape map requests until it is terminated by the STOP command.

Startup Procedure

TMAP can be started manually or automatically when CTS is started. Starting the TMAP subtask manually is recommended.

Automatic Startup

To automatically start the TMAP subtask each time CTS is started, add the following commands to the CTSSTART member in CAI.CTAPOPTN.

```
SET TASK(TMAP) PGM(CTSTMAP)
START TMAP
```

Manual Startup

Once the CTS task has been started, you can communicate with CTS by using a MODIFY command or by WTOR.

The following is an example of how to manually start the TMAP subtask under CTS by using the MODIFY command:

```
F CTS,SET TASK(TMAP) PGM(CTSTMAP)
F CTS,START TMAP
```

218 TLMS_User_ENU

TMAP Commands

Commands are sent to TMAP using the CTS Message command (MSG).

Commands issued to the TMAP subtask have the following format:

STOP TMAP

CANCEL TMAP

MSG TMAP, 'MAP *volser*... UNIT=*uuuu*'

volser

Specifies the volume serial number of a tape to be mapped.

Range: 1 to 8

uuuu

Specifies the generic unit for the tape drive required.

Default: TAPE

Command	Description
STOP	To request TMAP to close all files and terminate normally.
CANCEL	To request TMAP to cancel itself with a User-111 Abend.
MAP	To map the tape and report on the files it contains.

Command Sample

F CTS,MSG TMAP,'MAP 101001,102033,534006,UNIT=3590'

When the above command is entered, the TMAP subtask of the CTS address space will allocate a 3590 tape unit and mount the 3 volumes requested. After producing a tape map for each volume, the tape unit will be de-allocated. This example assumes that the TMAP subtask has already been started, either automatically or manually.

Output Sample

```
mm-dd-yyyy  15:50:09              TAPEMAP : TAPE CONTENTS IDENTIFICATION UTILITY                PAGE   1
                      TAPE VOLUME : 001507                     OWNER DATA :
FILE        FILE            REC  REC  BLOCK  VOL  BASE    EXPIRE     CREATE    CREATE   CREATE PSWD      BLOCK
SEQ     IDENTIFIER      GEN/VER FMT  SIZE  SIZE  SEQ VOLUME  DATE       DATE    JOB      STEP   TYPE  DEN COUNT
----  --------------  ---- ------ --- ----- ----- --- ------ ---------- ---------- -------- -------- ----- ----- ------
   1 VAWI01.TEST.TAPE1 0000/00 FR  2346 23460   1 001507           03-10-2005 EVAWI01P STEP1   NONE CART    2
CA$F068I TAPE MAP CsaveETE : VOLUME CONTAINS   1 FILES ***
```

Appendix A: VMF Keywords

The UPD and UPV commands let you manually change values in the Volume Master File. The table lists the values you can change and gives the keyword you must specify to change the value. Characters can be either alphabetic or numeric, unless otherwise noted.

■ To delete a value, code the keyword followed by a blank or comma, for example CTIME=, or CDATE= . You cannot delete DEN or LABEL.

■ If the value contains an embedded blank or comma, it must be enclosed in single quotes.

More information

Data Set Information

To change this value:	Specify this keyword:	In this format:
Abend indicator	ABEND= |1	Where: blank is completed and 1 is abended
Block count	BLKCNT=n	1-9 numeric characters
Block size	BLKSIZE=n	1-6 numeric characters
CPU ID	CPU=cccc	4 characters
Creation date	CDATE=yyyyddd or the preferred date format	8-10 characters
Creation drive	CUNIT=cccc	3-4 characters
Creation jobname	CJOB=c	1-8 characters
Creation stepname	CSTEP=c	1-8 characters
Creation time	CTIME=hhmmss	6 numeric characters
Creation ddname	CDDN=c	1-8 characters
Creation program name	CPGM=c	1-8 characters
Data set name	DSN=c	1-44 characters
File sequence number	FILESEQ=n	1-5 numeric characters

To change this value:	Specify this keyword:	In this format:
IBM expiration date (LABEL= EXPDT)	EXPDT= can be specified as a Julian date yyyy/ddd or a date in the preferred date format or a CA TLMS KEYWORD value (for example, EXPDT=CATALOG).	8-10 characters
Job accounting code	USER=c	1-59 characters
Keep date	KEEPDT=yyyyddd or the preferred date format	external date
Last used date	LDATE=yyyyddd or the preferred date format	8-10 characters
Last used drive	LUNIT=ccc	3 characters
Last used jobname	LJOB=c	1-8 characters
Logical record length	LRECL=n	1-5 numeric characters
SMS Management Class	MGMTCLAS=cccccccc	1-8 characters
Tape Stacking	STACKING=s	1 character Where: **S** is stacking to volume **F** is full STACK VOLUME **U blank** is in use not a stacking volume
Record format	RECFM=F|FB|V|VB|VBS|U|FBS	Where: **F** is fixed **FB** is fixed blocked **V** is variable **VB** is variable blocked **VBS** is variable blocked spanned **U** is undefined **FBS** is fixed blocked spanned

Volume Information

General Information

To change this value:	Specify this keyword:	In this format
Density code	DEN=200|556|800|1600| 6250|CART|IDRC| 36TK|3590 3592|WRM1|WRM2	
Label type code	LABEL=SL|NL|ANS| USR|NSL|LTM| BLP|AUL	Where: **SL** is standard label **NL** is nonlabeled **ANS** is ANSI label **USR** is user-defined label **NSL** is nonstandard label **LTM** is leading tape mark (VSE tapes) **BLP** is bypass-label processing **AUL** is ANSI user label processing
Track recording technique code	TRTCH=C|E|T|X P=COMPACTED N=NON-COMPACTED	Where: **C** is character **E** is even **T** is track **P** is compaction **X** is extended **N** is noncompaction
Volume owner	OWNER=c (1-8 characters)	

Volume Retention Information

To change this value:	Specify this keyword:	In this format:
Box/cabinet ID	BOXCCSS=cccc	4 characters
IBM expiration date	EXPDT= nnnnn|yyyyddd|mm/dd/yyyy	8-10 character date in preferred date format

To change this value:	Specify this keyword:	In this format:
Keep date (highest on volume)	KEEPDT= nnnnn|yyyyddd|mm/dd/yyyy	8-10 character date in preferred date format
Location ID	LOC=cc	2 characters
Dates moved	MOVEDT= nnnnn|yyyyddd|mm/dd/yyyy	8-10 character date in preferred date format
Dates scratched	SCRDT= nnnnn|yyyyddd|mm/dd/yyyy	5-10 character date in preferred date format
Retention Schedule	SCHED(tllcccc,...)	There is up to six sets of retention rules.

Volume Maintenance Information

To change this value:	Specify this keyword:	In this format:
Certification count	CER-CNT=n	1-4 numeric characters
Certification use count	CER-USE=n	1-4 numeric characters
Certification date	CERTDT= nnnnn|yyyyddd|mm/dd/yyyy	8-10 character date in preferred date format
Clean count	CLN-CNT=n	1-4 numeric characters
Clean use count	CLN-USE=n	1-4 numeric characters
Clean date	CLEANDT= nnnnn|yyyyddd|mm/dd/yyyy	8-10 character date in preferred date format
Temporary errors - write errors this pass	ERG=n	1-4 numeric characters
Temporary errors - total read errors	READERR=n	1-4 numeric characters
Temporary errors - total write errors	MAX-ERG=n	1-4 numeric characters

Physical Volume History Information

Note: The OUTSERV parameter replaces the LOST, DAMAGED, and DESTROYED parameters in Version 5.4. These parameters default to the first three characters of the OUTSRV value. The OUTDATE parameter replaces the DESTROYED date field.

To change this value:	Specify this keyword:	In this format:
Out of service - code	OUTSRV=cccc	4 character
Out of service - date	OUTDATE= nnnnn|yyyyddd|mm/dd/yyyy	8-10 character date in preferred date format
Length	LENGTH=n	1-4 numeric characters
Manufacturer's ID	MFG=c	1-8 characters
Purchase date	PURCHDT= nnnnn|yyyyddd|mm/dd/yyyy	8-10 character date in preferred date format
Tape type	TAPETYP=c	1-2 characters
Auto Tape Library	ATL(cccccccc,nnn)	1-8 characters and 1-3 numeric characters

Volume Status Information

To change this value:	Specify this keyword:	In this format:
Controlling data set	CDS=n	1-4 numeric characters
Service indicator	SERVICE=IN|OUT	Where: **IN** is in-service **OUT** is out-of-service
Scratch indicator	SCRATCH=YES|NO	Where: **YES** is scratch **NO** is non-scratch

Chaining Record Information

To change this value:	Specify this keyword:	In this format:
Chain data set	CHD=dsn	1-44 characters
Chain volume	CHV=cccccc	6 characters

Appendix B: Expiration Date JCL Keywords

CA TLMS provides the following expiration and retention for tape data sets methods:

- Specific criteria or unique Julian date keywords specified in the JCL LABEL parameter

- Retention Master File control statements

The following table describes the specifications that can be used in the JCL LABEL parameter for retention types that use expiration date keywords.

The keyword, external, internal, JCL and retention values are summarized below. For more information, see the chapters, "Understanding Tape Retention (see page 29)" and "Reports (see page 125)".

Keyword	External	Internal	JCL	Retention
AGE	AGE/ddd	9992ddd	992dd	5
CATLG	CATLG	9990000	99000 or 90000	1
CATLG/ddd	CATLG/ddd	9990ddd(*)	991dd	3
CYCLE	CYCLE/cc	9999ccc	990cc	4
FOREIGN	FOREIGN	9998000	98000	
JDATE	yyyy/ddd	ccyyddd	yyyy/ddd	9
LDATE	LDATE/ddd	9998ddd	98ddd	8
MSG	MSG/mmm	9991mmm	970mm	
OJDATE	yyddd	ccyyddd	yyddd	
PERM	PERM	9999999	99365 or 99366	7
STATS	STATS/sss	9989sss	none	7
USER	USER/uuu	9988uuu	88uuu	7
ZEROS	ZEROS	0000000	none	

(*) Catalog Control is uniquely translated as century 99, year 90, day 000.

External Keywords

The following exteranal expiration date keywords are available:

AGE/*ddd*

Retain data set for *ddd* days after it was created.

JCL: 9992*dd*

CATLG

Retain while data set is cataloged to the operating system.

JCL: 99000

CATLG/*ddd*

Retain *ddd* days, then retain while data set is cataloged to the operating system.

JCL: 991*dd*

CYCLE/*ccc*

Retain *ccc* cycles.

Range: 001 to 364

JCL: 990cc

FOREIGN

Tape is not a CA TLMS controlled tape, even if its volser is in the VMF. Transaction is created but the VMF is not updated.

JCL: 98000

JDATE

Julian date format.

Range: 1960/001 to 2155/366

JCL: yyyy/ddd

LDATE/*ddd*

Retain ddd days after date on which tape was last used.

JCL: 98ddd

MSG

Dismount tape message.

JCL: 970mm

OJDATE

Old Julian date format.

Range: 60001 to 59365

(60001 = 1960/001)

(59365 = 1959/365)

JCL: yyddd

PERM PERMANENT

Retain data set permanently.

JCL: 99365,99366

STATS/*sss*

Status of held tape where sss is the reason code indicating why the tape is being held. This keyword has no JCL equivalent. It is set by programs or is entered through the keyword format STAT/sss to apply permanent retention other than 99365 to an unknown situation, such as a broken chain.

USER/*uuu*

This keyword allows you to create your own keywords for processing.

CA TLMS treats this as PERMANENT.

JCL: 88uuu

ZEROS

A date with an internal value of zeros is always displayed as blanks. However, the date can be entered as any number of 0s, blanks, nulls, or the word ZEROS.

Appendix C: Report Field Definitions

This appendix provides descriptions for the CA TLMS report fields. CA TLMS reports are in the Reports chapter of this guide.

Field	Description
AB	Abend status of the data set:
	1 Abended
	blank Not abended
	B Volume and data set chaining error
	D Data set chaining error
	V Volume chaining error
ADD DATE	Date the location was added to the Retention Master File.
ATL-TYPES	Automated Tape Library Types:
	Display **VMF Code**
	IBM x'01'
	STORTEK x'02'
	SUTMYN x'03'
	BOSCH x'04'
	GRAU ' x'05'
	COMPAREX x'06''
	HDS x'07'
AUTHORIZATION	Individual or group responsible for the entry.
BLOCK COUNT	Total number of blocks of information on the volume.
BLOCK SIZE	Physical block size.
BOX	Box number (bbbb) within the location where the volume is stored.
CABINET	Cabinet code and available slots within this cabinet.
CCSS	Cabinet number (cc) within the location and slot number (ss) within the cabinet.

Field	Description
CERTIFICATION	COUNT Total number of times the tape volume has been certified.
CERTIFICATION DATE	Date the tape volume was last certified.
CERTIFICATION USES	Number of times the tape volume has been used since it was last certified.
CLEAN COUNT	Total number of times the tape volume has been cleaned.
CLEAN DATE	Date the tape volume was last cleaned.
CLEAN USES	Number of times the tape volume has been used since it was last cleaned.
COMMAND	Input format of the update transaction.
COUNT	Total number of applicable CA TLMS activities processed during the reported time span.
CPU	CPU that created the data set. This is the SMFID of the originating CPU.
CRE DRV	Tape drive on which the data set was created.
CREATE DDNAME	DDname with which the data set was created.
CREATE PGM	Program that created the data set.
CREATION DATE	Date the data set was created.
CREATION DRV	Tape drive on which the data set was created.
CREATION JOB-NAME	Job that created the data set.
CREATION STEPNAME	Step that created the data set.
CREATION TIME	Time the created data set was closed.
CURRENT CCSS	Cabinet number (cc) within the location and slot number (ss) within the cabinet.
CURRENT LOC	Location of the tape volume. Location ID values come from the location records that have been added to the Retention Master File using the location commands.
DATA SET NAME or QUALIFIER	Complete name of data set if retention definition was for one data set; partial data set name if definition was for a group of data sets.

Field	Description
DATE LAST MOVED	Move date, the date data set was moved to its current location.
DEN	Density of the tape.
DEST-DATE	Can give the date the tape volume was destroyed. A value will appear here only if it was manually added to the VMF using the DSTRYDT keyword on the UPV command. Your data center determines the code values that can be used with the DESTROY keyword.
DMG	Can indicate that the tape volume has been damaged. A value will appear here only if it was manually added to the VMF using the DAMAGE keyword on the UPV command. Your data center determines the code values that can be used with the DAMAGE keyword.
DSTRYDT	Can indicate that the tape volume was destroyed. A value will appear here only if it was manually added to the VMF using the DESTROY keyword on the UPV command. Your data center determines the code values that can be used with the DESTROY keyword.
ERASE GAPS (ERG)	Number of erase gaps encountered when the tape volume was last processed.
ERGS LAST PASS	Number of erase gaps encountered when the tape was last created.
ERROR MESSAGE	Nature of the error encountered in the tape retention system processing.
FILE NO	Relative file sequence number of each data set.
FROM on TLERPT19	Beginning of the time span specified (DATE and TIME).
FROM on TLMS042	Location ID and cabinet/slot numbers or the box number where the tape is presently stored. Tapes are not stored in cabinets or boxes at the data center; therefore, this column will specify N/A if the FROM location on this report is the data center. N/A also identifies undefined storage.
IBM EXP	IBM expiration date from the job control statement.

Field	Description
ID	The location of the tape volume. Location ID values come from the location records that have been added to the Retention Master File using the location commands.
IN DRV	Tape drive on which the tape was last read.
JOBNAME QUALIFIER	The name of the job that created the data set, if a job name was specified on the retention command.
KEEP DATE	CA TLMS keep date.
LAB	Type of label on the tape volume: **A** ANSI **B** BLP **N** Nonlabeled **S** Standard **U** User **X** NSL
LAST INPUT DATE	Date the tape volume was last read.
LAST INPUT DRV	Job that last read the tape volume.
LAST INPUT JOB NAME	Tape drive on which the tape was last read.
LOC	Location of the tape volume. Location ID values come from the location records that have been added to the Retention Master File using the location commands.
LOCATION DESCRIPTION	Description of the location. Descriptions come from the location records that have been added to the Retention Master File using the location commands.
LOST	Can indicate that the tape volume was lost. A value will appear here only if it was manually added to the VMF using the LOST keyword on the UPV command. Your data center determines the code values that can be used with the LOST keyword.
LRECL	Logical record length.
MAX ERGS	Maximum number of erase gaps encountered while processing the tape volume.
MESSAGE NUMBER	Number that you have assigned to the corresponding auxiliary message text.

Field	Description
MESSAGE TEXT	Auxiliary message text that CA TLMS displays when the corresponding message number is specified.
MOVE DATE	Date the tape volume was moved to its current off-site location.
NEXT LOC	Next place where tape will be moved according to its retention definition. Two asterisks in this column indicate that the tape will be scratched and returned to the data center.
NUM	Quantity associated with the type of retention (T).
PURCHASE DATE	Date the tape was purchased.
Q-IND	Level of data set qualification: **F** Fully qualified **P** Partially qualified **Q** Partially qualified including the dot
READ ERROR	Total number of temporary read errors encountered while processing the tape volume.
RECFM	Record format: **F** Fixed **FB** Fixed blocked **FBS** Fixed blocked spanned **U** Undefined **V** Variable **VB** Variable blocked **VBS** Variable blocked spanned
REMARKS	Comments that apply to the controlling data set.
SCR	Scratch volume status of the tape volume: **NO** Nonscratch **YES** Scratch
SCR DATE	Date the tape volume was scratched.
SCRATCH DATE	Date the tape volume was scratched.
SCRATCH STATUS	Scratch status of the tape volume: SCRATCH or NON-SCRATCH.
SRV	Service status of the tape volume: **IN** In-service **OUT** Out-of-service

Field	Description
STORAGE MEDIUM	Type of storage used: **B** Boxes **C** Cabinet/slot **U** Undefined
T	Type of retention criteria for the data set at a specific location.
TAPE LENGTH	Length of the tape in feet.
TAPE TYPE	Can indicate the types of tape used at your data center. A value will appear here only if it was defined when the VMF was initialized or manually added to the VMF using the TAPETYPE keyword on the UPV command.
TIME	Time the update was logged to the backup transaction file.
TO on TLERPT19	End of the time span specified (DATE and TIME).
TO on TLMS042	Location ID and cabinet/slot number or box number where the tape is to be moved. This column will specify N/A if the type of storage is undefined storage.
TOTAL TAPES	Total number of tapes used by a specific manufacturer.
TOTAL USES	Total number of times the tape volume has been used.
TRT	Recording technique for 7-track tapes: **C** Character **E** Even **T** Track **X** Even-track
TYPE	Type of activity that took place during a given period of time.
USE COUNT	Number of times the tape volume has been used since it was last cleaned.
USER	User data field. By default, it will contain the job accounting code (up to 59 characters) recorded from the job statement that created the data set.
VER	Generation or version that you wish to release.

Field	Description
VOLSER	Unique six-character volume serial number of each physical tape volume.
VOLUME CNT	Total number of volumes in a chain of volumes
VOLUME SEQ	Volume sequence number.
VOLUME SERIAL	Unique six-character volume serial number of each physical tape volume.

Appendix D: TAPEDB Definitions

DBRECORD Field	Description
ACCT	User Field. Defaults to Job Accounting and Programmer. (Same field as USER_DATA.)
ACTIVE_FILES	Number of active files on tape.
ACTUAL_VOL_IND	Indicates volser in tape label not the same as in TAPEDB. See exported virtual volumes.
ACTUAL_VOLSER	Volser in tape label when TAPEDB differs. See exported virtual volumes.
AGENT	Indicates if this tape is dedicated for use by distributed systems; that is, UNIX or Windows. 'Y' = Tape is dedicated to distributed system use 'N' = Normal tape not used by distributed systems
BASEVOL	First volume of multivolume chain.
BLKCNT	Number of blocks in file for this volume.
BLKSIZE	Maximum size of blocks for data set.
BTHDATE	Date tape bought or assigned to CA TLMS. (Same field as PURDATE.)
CDATE	Date the data set was created.
CDDNAME	DDNAME of file when data set created.
CDS_FILE_SEQ	File sequence number of control data set.
CJOB	Name of job which created data set.
CLNCNT	Number of times tape was cleaned.
CLOSE_IND	Indicates if the data set is closed. **'F' =**Close end-of-file **'E' =**Close end-of-volume
COMPRESSION	Percent of achieved for this data set.
COPYCAT_IND	Indicates if tape created by CA TLMS Copycat. **'C' =** Tape created by CA TLMS Copycat
COUNT	Times used since tape was certified.
CPUID	CPU ID when data set created.
CREATE_PROGRAM	Program that created the data set.

DBRECORD Field	Description
CSTEP	Job step that created the data set.
CTIME	Time the data set was created.
CUNIT	UCB ID when data set created.
DATE_CERTIFY	Date when tape last certified.
DATE_SCRATCHED	Date when tape scratched.
DATECLN	Date when tape last cleaned.
DEN	Recording density of tape.
DSN	Name of data set.
DSN_KEEP_DATE	Last date the tape is to be prevented from being scratched, if the tape is retained by keep date.
EDMID	ID of external data manager which controls this tape. (Same as OWNER.)
EXPDT	JCL expiration date value.
FILE_PERCENTAGE	Percent of the tape used for this data set.
FILE_IS_CAT	Indicates if file cataloged is not used by CA TLMS.
FILECNT	Highest file sequence on this tape.
FILESEQ	File sequence number of data set.
FORMAT_INDICATOR	Indicates physical format of tape DB record. For use by CA I/O modules, client EARL programs should use field names only. Physical size and location of fields may vary with versions.
LABEL_TYPE	Tape label type. (SL, NL, AL, ETC.)
LAST_USE_PROGRAM	Program which last used data set.
LDATE	Date data set was last used.
LJOB	Job name which last used data set. Not used by CA TLMS.
LRECL	Record size for data set.
LTIME	Time data set last used. Not used by CA TLMS.
LUNIT	UCB which last used data set.
MOVEDATE	Date when tape last moved to new location.
NON_RES_IND	Indicates tape not under CA TLMS control. DB record created from transaction.
OUTCODE	Location of tape.

DBRECORD Field	Description
OUTDATE	Date tape was made out-of-service.
OUTLOC	Location of tape.
OWNER	Name of external data manager. Same field as EDMID.
PERM_READ_CLEAN	Permanent read errors since cleaned. (Not used by CA TLMS.)
PERM_READ_INIT	Permanent read errors since initialized. (Not used by CA TLMS.)
PERM_WRITE_CLEAN	Permanent write errors since certified. (Not used by CA TLMS.)
PERM_WRITE_INIT	Permanent write errors since certified.
PRODUCT_CODE	'TL' for CA TLMS 'L0' for CA 1.
PRODUCT_RELEASE	Version of product which created this record.
PURDATE	Date tape was bought or assigned to CA TLMS. (Same field as BRTHDATE.)
RECFM	Record format for data set.
RECORD_TYPE	Record type created from. **'B' =** VMF **'1' =** Close output transaction **'2' =** Close input transaction **'6' =** Open transaction **'3' =** Update transaction
ROBOT_NUMBER	Automated tape library (ATL) number X'01' thru X'FF'.
ROBOT_TYPE	Automated tape library (ATL) type. 'IBM', 'STORTEK', 'MEMOREX', 'BOSCH', 'GRAU', 'COMPAREX', 'HDS', 'VIBM', 'VSTORTEK', 'VSUTMYN', 'VSTERLNG'
RTN_DATA	Retention Data
SCRATCH_IND	Indicates if tape is scratched. **'Y' =**Tape is scratch **'N' =**Tape is not scratch
SCRATCH_SOURCE	ID of source of scratch. **'1' =**Scratched by TRS **'2' =**Scratched by JCL DISP= **'3' =**Scratched Manually **'4' =**Scratched by an EDM

DBRECORD Field	Description
SERVICE_IND	Indicates if tape is in service. (Can be used online) **'IN' =**In-service **'OUT' =**Out-of-service Or user-supplied code for reason tape out-of-service.
SLOT	Cabinet/slot or box where tape is located.
SMS_CLASS	IBM SMS management class name for tape.
SPARE_FLAG	Spare Indicator.
STACKING_FULL	Indicates if this stacking volume has been marked full. **Y** - Tape is full - no additional files will be added by realtime stacking. **N** - Tape is not full - additional files can be stacked.
STACKING_INUSE	Indicates if stacking is currently in use on this or another system sharing the VMF. **Y** - Tape is in use. **N** - Tape is not currently in use.
STACKING_VOLUME	Indicates if this tape contains one or more files created by realtime stacking. **Y** - tape includes stacked file(s). **N** - tape is not a stack volume or if it is a scratch pool defined with SCRATCH=YES, it has not been used yet
TAPE_LENGTH	User supplied length of tape.
TAPE_TYPE	User supplied type of tape.
TEMP_READ_CLEAN	Number of temporary read errors since the tape was cleaned.
TEMP_READ_INIT	Number of temporary read errors since the tape was certified.
TEMP_WRITE_CLEAN	Number of temporary write errors since the tape was cleaned.
TEMP_WRITE_INIT	Number of temporary write errors since the tape was certified.
RES_CERTIFY	Number of times tape was certified.
TRTCH	Tape recording technique.
USECLN	Number of times used since cleaned.
USECNT	Number of times used since certified.

DBRECORD Field	Description
USER_DATA	User field. Defaults to job accounting and programmer. (Same field as ACCT.)
USES_CERTIFY	Number of times used since certified.
VENDOR	Name of tape manufacturer. Brand.
VLT_SPEC_REQ	Not used by CA TLMS.
VOL_DEGAUS	Not used by CA TLMS.
VOL_PERCENTAGE	Total percent of the tape that has been used.
VOLSEQ	Sequence number on tape in a multiple volume set.
VOLSER	Volume serial number in TAPEDB.
VOLUME_COUNT	Number of volumes in multi-volume set.
VOLUME_EXPDT	Maximum EXPDT of any data set on tape.
VOLUME_KEEP_DATE	Maximum keep-date of any data set on tape.
WORM_ID	World-wide-unique cartridge ID.
WORM_COUNT	Number of times cartridge was mounted and a write operation done.

Appendix E: TAPEDB Field Name Cross-Reference

EARL Field Name	Header	VMF Source
FORMAT_INDICATOR	'FORMAT' ' 'INDICATOR'	X'FF'
RECORD_TYPE	'RECORD' 'TYPE'	'B'=VMF '1','2','6','3'=TRAN
PRODUCT_CODE	'PRODUCT' 'CODE'	'TL'
PRODUCT_RELEASE	'PRODUCT' 'RELEASE'	'C6'
VOLSER	'VOLSER'	&VOLSER
VOLSEQ	'VOL''SEQ'	&VOLSEQ
BASEVOL	'BASE' 'VOLSER'	&CHNVOL
FILESEQ	'FILE' 'SEQ'	&FILSEQ
FILECNT	'FILE' 'CNT'	&FILCNT
EXPDT	'EXPIRATION' 'DATE'	&EXPDAT
DSN	'DATA SET NAME'	&DSN
RECFM	'REC' 'FMT'	&RFM
LRECL	'REC' 'LEN'	&RECSIZ
BLKSIZE	'BLOCK' 'SIZE'	&BLKSIZ
BLKCNT	'BLOCK' 'COUNT'	&BLKCNT

EARL Field Name	Header	VMF Source
CDATE	'CREATE' 'DATE'	&CREDAT
CTIME	'CREATE' 'TIME'	&CRETIM
CJOB	'CREATE' 'JOBNAME'	&CREJOB
CSTEP	'CREATE' 'STEP'	&CRESTP
CDDNAME	'CREATE' 'DDNAME'	&CREDDN
CUNIT	'CREATE' 'UNIT'	&CREUNT
CLOSE_IND	'CLS' 'IND'	&VOLCNT AND &ABDFLG
LDATE	'LAST' 'DATE'	&LASDAT
LTIME	'LAST' 'TIME'	&LASTIM
LJOB	'LAST' 'JOB'	&LASJOB
LUNIT	'LAST' 'UNIT'	&LASUNT
COPYCAT_IND	'COPYCAT' 'IND'	&CPYCAT
DEN	'DEN'	&DEN
LABEL_TYPE	'LBL' 'TYP'	&LABTYP
SCRATCH_IND	'SCR' 'IND'	&SRVSCR
TRTCH	'TRTCH'	&TAPMOD
USECLN	'USE' 'CLN'	&USECLN
CLNCNT	'CLN' 'CNT'	&CLNCNT

EARL Field Name	Header	VMF Source
DATECLN	'DATE' 'CLEANED'	&CLNDAT
BTHDATE	'BIRTH' 'DATE'	SAME AS PURDATE
PURDATE	'PURCHASE' 'DATE'	&PURDAT
USECNT	'USE' 'CNT'	&USECRT
COUNT	'USE' 'CNT'	SAME AS USECNT
OUTDATE	'DATE' 'MOVED'	SAME AS MOVEDATE
MOVEDATE	'DATE' 'MOVED'	&MOVDAT
OUTCODE	'LOC' 'ID'	&LOC
OUTLOC	'LOC' 'ID'	&LOC
STACKING_FULL	'STK' 'FUL'	&TAPSTK
STACKING_INUSE	'STK' 'USE'	&TAPSTK
STACKING_VOLUME	'STK' 'VOL'	&TAPSTK
TEMP_READ_CLEAN	'TREAD' 'CLEAN'	&REDERR
TEMP_WRITE_CLEAN	'TWRITE' 'CLEAN'	0
PERM_READ_CLEAN	'PREAD' 'CLEAN'	0
PERM_WRITE_CLEAN	'PWRITE' 'CLEAN'	0

EARL Field Name	Header	VMF Source
TEMP_READ_INIT	'TREAD' 'INIT'	0
TEMP_WRITE_INIT	'TWRITE' 'INIT'	0
PERM_READ_INIT	'PREAD' 'INIT'	0
PERM_WRITE_INIT	'PWRITE' 'INIT'	&ERGCNT
VENDOR	'VENDOR'	&VENDER
SERVICE_IND	'SRV' 'IND'	&SRVSCR and &OUTSRV
CPUID	'CPU' 'ID'	&CPUSMF
EDMID	'EDM' 'ID'	&VOLOWN
OWNER	'VOLUME' 'OWNER'	SAME AS EDMID
ACCT	'USER' 'DATA'	SAME AS USER_DATA
USER_DATA	'USER' 'DATA'	&USRDTA
VOLUME_COUNT	'VOLUME' 'COUNT'	&VOLCNT
CREATE_PROGRAM	'CREATE' 'PROGRAM'	&CREPGM
LAST_USE_PROGRAM	'LAST' 'PROGRAM'	&LASPGM
ROBOT_TYPE	'ROBOT' 'TYPE'	&ATLTYP
ROBOT_NUMBER	'ROBOT' 'NUM'	&ATLNUM
VOL_PERCENTAGE	'VOL' ' USE'	&PCTVOL

EARL Field Name	Header	VMF Source
FILE_PERCENTAGE	'FILE' 'USE'	&PCTFIL
COMPRESSION	'COMP' 'RATE'	&PCTCMP
ACTUAL_VOLSER	'ACTUAL' 'VOLSER'	'&ASCBSE'
ACTUAL_VOL_IND	'ACV' 'IND'	'&ASCBSE'
SMS_CLASS	'SMS' 'CLASS'	&SMSMGT
VOL_DEGAUS	'VOL' 'DEG'	'N'
FILE_IS_CAT	'OS ' 'CAT'	'N'
VLT_SPEC_REQ	'VLT' 'REQ'	'N'
NON_RES_IND	'NON' 'RES'	&NONVMF (TRANS)
SLOT	'SLOT'	&RTNDEV
ACTIVE_FILES	'ACTIVE' 'FILES'	&ACTIVE
TAPE_LENGTH	'TAPE' 'LENGTH'	&TAPLEN
TAPE_TYPE	'TAPE' 'TYPE'	&TAPTYP
USES_CERTIFY	'USES' 'CERTIFIED'	&USECRT
TIMES_CERTIFY	'TIMES' 'CERTIFIED'	&CRTCNT
DATE_CERTIFY	'DATE' 'CERTIFIED'	&CRTDAT
CDS_FILE_SEQ	'CDS FILE' 'SEQUENCE'	&CDSSEQ

EARL Field Name	Header	VMF Source
DATE_SCRATCHED	'DATE' 'SCRATCHED'	&SCRDAT
RTN_DATA	'RETENTION' 'DATA'	&RTNDTA
DSN_KEEP_DATE	'DSN KEEP' 'DATE'	&KEPDAT
VOLUME_KEEP_DATE	'VOL KEEP' 'DATE'	&CDSKEP
VOLUME_EXPDT	'VOL EXPDT'	&CDSEXP
SCRATCH_SOURCE	'SCRATCH' 'SOURCE'	&SCRUID
SPARE_FLAG	'SPARE' 'FLAG'	&FLG006
WORM_ID	'WORM' 'ID'	&WRMWID
WORM_COUNT	'WORM' 'CNT'	&WRMCNT

Note: & is replaced by two-character prefix. See macro TLMVMF.

Appendix F: Conversion Utilities

These utilities convert from other z/OS tape management systems to CA TLMS. Conversions are available for these products:

- CA 1 Tape Management

- IBM's DFSMSrmm

- BMC's Control-M/Tape (previously known as Control/T)

- Allen Systems Group's Zara (previously known as Platinum AutoMedia)

The utilities convert the tape system data into a common tape record format, regardless of the source. It can then be imported directly into CA TLMS.

Operational Overview
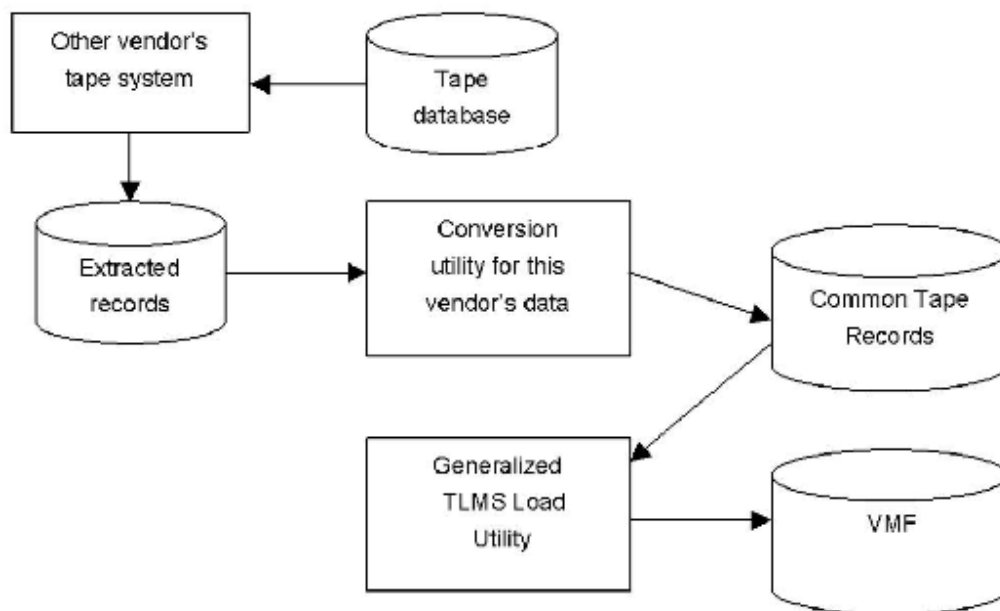
Each of the supported vendors' products has an "extract" function that can create a sequential file of extracted data. For each of the supported vendors' products, CA TLMS offers a utility that will convert that information into "Common Tape Records" or "Earl Format Records." CA TLMS also provides a generalized utility that will read the Common Tape Records and create VMF records from them. The conversion process is the same for each product being converted.

Conversion Considerations

Several "dry runs" of the conversion are strongly recommended prior to allowing CA TLMS to take control of tape processing activity.

The range(s) of volumes currently defined to the VMF must **not** be in the incoming tape management system. Overlapping volser ranges will need to be excluded from the conversion. Note that the conversion of volume serial numbers less than 6 characters is not supported at this time.

Running two tape management systems on the same system will cause conflict due to the Operating System Intercepts (OSI) that are required by the currently installed tape management system. During the conversion process, CA TLMS should be run with no OSIs active. Ensure that CAS9 starts with the "OSI=NO" parameter setting. This will allow updating the VMF without interfering with the other tape management system's OSI settings.

During the conversion process, the ALOG data set will require much more than the ordinary number of records required in a CA TLMS production environment. Every time a VMF record is updated by conversion utility, an image of the updated record is appended with a date and time stamp and written to the ALOG data set. Since there will be multiple updates to the same records, especially during chain construction, it is recommended that you use an ALOG data set at least five times larger than production capacity. Once the conversion is completed, you can reformat the ALOG to a normal size.

Note: No tape activity should occur during the conversion process. CA also recommends that you backup the catalog for the product you are converting from prior to starting the conversion. If you are converting into a VMF that already contains data, the VMF should be backed up as well. In addition, the conversion process may update the z/OS system catalog and any associated user catalogs, therefore, it is recommended that you backup your z/OS system and user catalogs prior to the conversion.

CA 1 Conversion to CA TLMS

Step 1- Perform CA 1 Maintenance on the TMC

Prior to converting from CA 1 to CA TLMS, it is very important to ensure that your existing CA 1 Tape Management Catalog (TMC) is free of chaining errors. This can be done by using the TMSPTRS utility (documented in the *CA 1 Utilities Guide*) and correcting the identified errors.

Any multi-volume or multi-data set errors in the TMC will be reported. Multi-volume errors are less critical, although certain types of errors can cause a job using the data set to ABEND. Multi-data set errors can be more critical, especially those related to the "free chain" of DSNBs that are unused. See the TMSPTRS documentation in the *CA 1 Utilities Guide* for information on the errors and how to correct them. Once the errors are corrected, you can execute the TMSEARL job in the CA1.CTAPJCL library using TMEMVMD as input to obtain an inventory report of all multi-volume data sets and multi-data set volumes.

Step 2- Extract Data from VMF into Common Earl Format

Job TLMJCA11 in the CAI.CTAPJCL library provides all the JCL necessary to convert the CA 1 input file to the common Earl format. This job should be run on the system where CA1 is running (in a least batch active mode.) The output file should then be copied to the receiving CA TLMS system. Ensure that there is no tape activity during the execution of this job.

Step 3- Modify Common Record (Optional)

After the TMC has been extracted into common Earl format, you may optionally modify the data within the common Earl file. Job TLMJCA12 in CAI.CTAPJCL provides the JCL and Earl statements necessary to allow you to drop certain ranges of volumes or select specific accounting codes for conversion and several other options. If you choose to modify the common Earl file you must make changes to the Earl statements provided. The input for this program is the output file created in Step 2. A new common Earl file will be written to the *OUTFILE* DD which will be used as input to the next step.

Step 4- Update the VMF

Job TLMJ2TRN will take the modified *OUTFILE* from Step 3 or the *OUTFILE* from Step 2 and update the VMF. Ensure that there is no tape activity during this timeframe. If the ALOG becomes full during this update step, execute proc CATALOGB to dump the ALOG records. The VMFTRANS DD statement will contain a list of all the transactions that could not be processed.

Step 5- Execute CATVCVS and Correct Reported Chaining Errors

Execute proc CATVCVS to report any multi-volume errors in the VMF. See the "Maintaining the Volume Master File" documentation in the *Configuration Guide* on the errors and how to correct them.

After the VMF conversion and CATVCVS cleanup activities you should run the CA TLMS Tape Retention System (CATTRS) utility TLMSTRS in FORECAST mode to identify any possible scratch activity. This will allow you to take any preventive action to preserve volumes that you do not want to move to scratch status by defining Retention Master File (RMF) rules to retain these volumes. See the *User Guide* for more information on the TLMSTRS utility.

DFSMSrmm Conversion to CA TLMS

Step 1- Perform DFSMSrmm Maintenance

Execute DFSMSrmm utility EDGUTIL with the parameter of MEND to correct any errors within the DFSMSrmm database. Prior to running this utility, all volumes that are on "loan" need to be returned back to the data center within DFSMSrmm and scratched. DFSMSrmm allows the user to *loan* out volumes of a multi-volume set and scratches and reuses the remaining volumes. This feature causes volume chain errors within CA TLMS. By having these "loan" volumes brought back to the data center, these chain errors will not be created.

Step 2- Execute the DFSMSrmm Extract JCL

Execute member CTSJRMM1 in CAI.CTAPJCL to produce the DFSMSrmm extract file. The output file from DD REPTEXT will be used in the next step as input.

Step 3- Execute CTSJRMM2

This step will read in the DFSMSrmm extract file from the previous step and convert it into a common Earl format. The actual JCL can be found in the CAI.CTAPJCL library, member CTSJRMM2. This job will create two files, the DBRECS DD statement will be the actual records that are being converted. If there were any extracted records that could not be converted, they will be put to the CADIAG01 statement. This can then be used to diagnose any problems with the DFSMSrmm extract file.

Step 4- Modify Common Record (Optional)

Once the DFSMSrmm database has been extracted into the common Earl format, you may optionally modify the data within the common Earl file. Job CTSJRMM3 in CAI.CTAPJCL provides the JCL and Earl statements necessary to allow you to drop certain ranges of volumes or select specific accounting codes for conversion and several other options. If you choose to modify the common Earl file you must make changes to the Earl statements provided. The input for this program is the output file created in Step 3. A new common Earl file will be written to the *OUTFILE* DD which will be used as input to the next step.

Step 5- Update the VMF

Job TLMJ2TRN will take the modified *OUTFILE* from either Step 4 or the DBRECS output from Step 3 and update the VMF. Ensure that there is no tape activity during this timeframe. If the ALOG becomes full during this update step, execute proc CATALOGB to dump the ALOG records. The VMFTRANS DD statement will contain a list of all the transactions that could not be processed.

Step 6- Execute CATVCVS and Correct Reported Chaining Errors

Execute proc CATVCVS to report any multi-volume errors in the VMF. See "Maintaining the Volume Master File" documentation in the *Configuration Guide* on the errors and how to correct them.

After the VMF conversion and CATVCVS cleanup activities you should run the CA TLMS Tape Retention System (CATTRS) utility TLMSTRS in FORECAST mode to identify any possible scratch activity. This will allow you to take any preventive action to preserve volumes that you do not want to move to scratch status by defining Retention Master File (RMF) rules to retain these volumes. See the *User Guide* for more information on the TLMSTRS utility.

ZARA Conversion to CA TLMS

Step 1- Perform ZARA Maintenance

Execute the ZARAUTL proc with a SYSIN of VERIFY $$. VERIFY checks the next volume and previous volume pointers on each volume to determine if volume chains are intact. It also checks multiple-file volumes to ensure that the expected files are present. Correct any chaining errors from the VERIFY report.

Note: Only ZARA Release v1r6 and later are supported.

Step 2- Execute the ZARA Extract JCL

Execute CTSJZAR1 in the CAI.CTAPJCL library produce the ZARA extract file. The output file from DD ZARAOUT will be used in the next step as input.

Step 3- Execute JOB CTSJZAR2

This step will sort out the records needed to be converted in the common Earl format. The JCL and control statements to sort the ZARA extract file can be found in the CAI.CTAPJCL library, member CTSZAR2.

Step 4- Execute JOB CTSJZAR3

This step will convert the sorted ZARA records from CTSJZAR2 and create a common EARL record. These records can be modified in Step 5 if needed. The JCL to run this step can also be found in the CAI.CTAPJCL library, member CTSJZAR3.

Step 5- Modify Common Record (Optional)

Once the ZARA database has been extracted into the common Earl format, you may optionally modify the data within the common Earl file. Job CTSJZAR4 in CAI.CTAPJCL provides the JCL and Earl statements necessary to allow you to drop certain ranges of volumes or select specific accounting codes for conversion and several other options. If you choose to modify the common Earl file you must make changes to the Earl statements provided. The input for this program is the output file created in Step 4. A new common Earl file will be written to the *OUTFILE* DD which will be used as input to the next step.

Step 6- Update the VMF

TLMJ2TRN will take modified *OUTFILE* from either Step 4 or Step 5 and update the VMF. Ensure that there is no tape activity during this timeframe. If the ALOG becomes full during this update step, execute proc CATALOGB to dump the ALOG records. The VMFTRANS DD statement will contain a list of all the transactions that could not be processed.

Step 7- Execute CATVCVS and Correct Reported Chaining Errors

Execute proc CATVCVS to report any multi-volume errors in the VMF. See the "Maintaining the Volume Master File" documentation in the *Configuration Guide* on the errors and how to correct them.

After the VMF conversion and CATVCVS cleanup activities you should run the CA TLMS Tape Retention System (CATTRS) utility TLMSTRS in FORECAST mode to identify any possible scratch activity. This will allow you to take any preventive action to preserve volumes that you do not want to move to scratch status by defining Retention Master File (RMF) rules to retain these volumes. See the *User Guide* for more information on the TLMSTRS utility.

Control/T Conversion to CA TLMS

Step 1- Perform Control/T Maintenance

Execute proc CTTDBID and CTTDBII from the Control/T proclib. These jobs will check and correct errors with the Control/T database and index file.

Note: Only CONTROL/M-Tape (Control/T for short) Releases 5.1.4 and 6.*x* are supported. If you are attempting to convert from a release other than 5.1.4 or 6.*x* contact the CA TLMS support group for possible later maintenance to these utilities to support converting from other releases.

Step 2- Extract Control/T Data

Execute the Control/T CTTDBUL utility proc using the following EXEC statement:

```
//CTTDBDUL  EXEC CTTDBDUL,DBFILE=MDBD,DBFILEO=SEQ

//DAOUT  DD dsn=prefix.CONTROLT.EXTRACT,DISP=(,CATLG)
```

Step 3- Execute JOB CTSJCTL1(5.1.4) or CTSJCTL4(6.x)

This step will sort out the volume records along with the data set records and merge them back into a format that will be used in the next step. JCL to run this step can be found in the CAI.CTAPJCL library, member CTSJCTL1 or CTSJCTL4.

Step 4- Execute JOB CTSJCTL2(5.1.4) or CTSJCTL5(6.x)

The output file from Step 3 is converted into the common Earl format. The JCL to run this step can also be found in the CAI.CTAPJCL library, member CTSJCTL2 or CTSJCTL5. The output from this step is in the common Earl format and is modified in the next step.

Step 5- Modify Common Record (Optional)

Once the Control/T database has been extracted into the common Earl format, you may optionally modify the data within the common Earl file. Job CTSJCTL3 in CAI.CTAPJCL provides the JCL and Earl statements necessary to allow you to drop certain ranges of volumes or select specific accounting codes for conversion and several other options. If you choose to modify the common Earl file you must make changes to the Earl statements provided. The input for the program is the output file created in Step 4. A new common Earl file will be written to the *OUTFILE* DD which will be used as input to the next step.

Step 6- Update the VMF

Job TLMJ2TRN will take the modified *OUTFILE* from Step 4 or the *OUTFILE* from Step 5 and update the VMF. Ensure that there is no tape activity during this timeframe. If the ALOG becomes full during this update step, execute proc CATALOGB to dump the ALOG records. The VMFTRANS DD statement will contain a list of all the transactions that could not be processed.

Step 7- Execute CATVCVS and Correct Reported Chaining Errors

Execute proc CATVCVS to report any multi-volume errors in the VMF. See the "Maintaining the Volume Master File" documentation in the *Configuration Guide* on the errors and how to correct them.

After the VMF conversion and CATVCVS cleanup activities you should run the CA TLMS Tape Retention System (CATTRS) utility TLMSTRS in FORECAST mode to identify any possible scratch activity. This will allow you to take any preventive action to preserve volumes that you do not want to move to scratch status by defining Retention Master File (RMF) rules to retain these volumes. See the *User Guide* for more information on the TLMSTRS utility.

Glossary

active

A data set on a nonscratch volume.

ALOG

Alternate log file.

alternate log file

A BDAM file optionally used as a journal to record all Volume Master File transactions for backup purposes.

ATL

Automated Tape Library.

auxiliary messages

Optional feature of CA TLMS which allows you to display routing and disposition information for tapes requiring special handling.

auxiliary records

Records in the VMF that keep track of multivolume data sets and multi-data set volumes.

base volume

The first volume of a data set that spans more than one volume.

box control

Using boxes to move tapes from the data center to a storage location.

cabinet control

Storing tapes in cabinets at an off-site storage location.

CDS

Controlling data set.

certification

A machine process that writes a data test pattern on a magnetic tape and checks it for errors caused by surface flaws or other damage.

chain volume

The first volume in a chain of volumes.

chaining

The relationship between tape volumes that contain a multivolume data set. CA TLMS automatically treats these volumes as a group.

cleaning

A machine process that physically cleans a magnetic tape.

Common Tape System (CTS)

Macros, utility programs, and a z/OS multi-tasking address space which provide a common interface for CA-1 and CA TLMS. Allowing CA and other OEM products to use the same interface to both products.

controlling data set

The data set that determines the retention or movement of a volume or a set of chained volumes. This is the first data set on the volume chain by default.

count field

The part of the retention command where you can specify a number of days. This number will be used with retention methods 2, 3, 4, 5, 8, B, and C.

crash

When a system becomes unusable. Caused either by a hardware malfunction or a software problem.

crash protection

Protects volumes currently in use against reuse if an operating system failure occurs.

criteria

Standards on which decisions about retention and movement are based.

CTS

Common Tape System.

cycle

One version of a data set. Other versions of the data set are created by multiple executions of the same job. The most recently created data set is cycle 1. The rest of the data sets are numbered sequentially in order by descending creation date and time.

data set

A group of logically related records stored together and given a unique name.

data set group

Two or more data sets that start with the same characters.

default

A value or action automatically supplied by the computer system unless you specify some other alternative.

double open

Opening a data set twice for output, and JCL does not specify DISP=MOD.

DSN

Data set name.

ESV

Error Statistics by Volume. A facility of the operating system which provides extended statistical information from CLOSE/EOV to the external gummed label generator and to the CA TLMS volume master file update routines.

exit

A client-supplied program which allows you to customize a product to your specifications. expiration date. The date in the EXPDT field in the JCL that created the data set.

expired

A data set with a keep date less than the current (system) date.

expires

The retention criteria have been satisfied and the tape is available for scratch.

External Data Manager (EDM)

A computer product which has direct control of storage volumes. CA TLMS ensures that only the EDM accesses its tapes. CA TLMS does not record dataset or chaining information for an EDM, nor will it scratch an EDM volume through TRS. The EDM ID is stored in the VMF OWNER field.

external gummed labels

Labels that can be pasted on tapes with information on the volume and the data sets contained on the volume.

file sequence number

Identifies the order in which a data set appears on a tape volume or volumes. FILESEQ=2 means that this data set is the second data set on the volume(s).

foreign volumes

All tape volumes not under the control of CA TLMS.

fully qualified

Identifying a data set by its complete data set name.

high-water mark

The maximum number of resources required for one job step.

initialization commands

Initialize the VMF by defining tape ranges and specifying certain processing options.

input data set name verification

An optional feature that extends data set name validation from the system default of the last 17 characters to the entire 44-character data set name.

in-service

Indicates that the volume is physically usable.

keep date

An internal date, calculated by CA TLMS when a data set is created. It can be used as one of the criteria by which a volume is scratched or moved.

LMP

License Management Program.

location commands

Add records to the RMF describing the data center and each off-site storage location.

mixed operating system environment

More than one of these operating systems: MVS, VSE and VM.

move date

An internal date established by CA TLMS when a volume is moved to a new location. It can be used as one of the criteria by which a volume is retained or moved.

movement

Moving tapes from the data center to a storage location or from one storage location to another.

multi-data set volume

A volume that contains more than one data set.

multivolume data set

A data set that spans two or more tape volumes. All volumes are automatically chained together.

nonscratch

Indicates that the controlling data set is still active and the volume is not ready to be reused for output.

off-site storage location

A place to store tapes that is either physically or logically removed from the data center.

online recorder

The TLMS subtask running under CTS that controls the realtime processing of CA TLMS and provides data set protection, volume protection, and auxiliary message handling.

out-of-service

Indicates that a tape volume is physically unusable.

owner

The ID of the External Data Manager (EDM) which controls a tape volume. See External Data Manager.

partially qualified

Identifying a group of data sets by some of the characters at the beginning of their data set names.

preferred date

The external date format which CTSDATE should use by default. This format is set when CTSDATE is opened or by SET format command. The CA TLMS default is MM/DD/YYYY, but most reports and displays can set their own preferred format.

prefix

Alphabetic characters at the beginning of a VSN.

qualifiers

A group of characters at the beginning of a data set name.

range

Tape volumes with contiguous volume serial numbers.

realtime stacking

Allows users to take advantage of the increased capacity of new tape media types by stacking files that normally fit on a single volume onto a multivolume file when directed to a scratch pool with stacking enabled.

retention

A period of time during which a data set is protected. During this period, the data set cannot be scratched or overwritten.

retention commands

Add records to the RMF defining retention and movement for specific data sets, groups of data sets, or all data sets that are not covered by specific commands.

Retention Master File

A VSAM file which contains all location and retention records and, therefore, controls the retention and movement of all tape data sets under CA TLMS control.

Retention Schedule

A group of fields in the VMF record which contain one to six locations and rules for retaining a volume set.

RMF

Retention Master File.

SCHED

This is a UPV command keyword which may be used to manually update the RTN-SCHED field in the VMF.

scratch

Indicates that a tape volume is available for reuse, either because the retention criteria have been satisfied or because the scratch indicator in the VMF has been manually changed from nonscratch to scratch.

shared DASD

DASD devices that can be accessed by multiple CPUs simultaneously.

skip-tapes commands

Exclude tapes from a range when defining tape ranges in the VMF.

SMS

IBM's Storage Management Subsystem.

tape retention system

The component of CA TLMS that controls the retention and movement of tape data sets, protecting them for a user-specified retention period and then returning the tape volumes to the scratch pool for reuse when the retention period has ended.

TRS

Tape retention system.

user exits

Computer instructions that allow you to modify the software package's code to meet your data center's needs.

user tables

A collection of data which you can use to specify limits on a data set or a defined portion of it. For example, with the user pool table, you can restrict certain data set prefixes to a specific volume serial number range.

VMF

See Volume Master File.

VOLSER

Volume serial number.

Volume Master File (VMF)

A file containing volume and data set information for each volume in the tape library. Auxiliary messages and control information may also be in the VMF.

volume or cartridge

A reel of magnetic tape.

volume serial number

An alphabetic and/or numeric code assigned to each tape volume to identify the volume for use in the system.

VSN

See volume serial number.

WTOR

Write-to-operator with reply. One way of communicating with CTS. The operator issues CTS commands by responding to WTOR messages displayed on the screen.

WTOR messages

Messages displayed on a terminal. The system that displayed the message waits for a response before continuing.

Index