

TAPEMANAGER

TapeManager Operations Guide for **Unisys MCP Systems**

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Chapter 1

Overview

TapeManager from *Dynamic Solutions International (DSI)*, is designed to be an integral component for MCP ClearPath users who use physical or virtual tape systems.

TapeManager works with all tape types supported on Unisys MCP systems. TapeManager can also be used with high-capacity high performance virtual tape library (VTL) systems. TapeManager, being a free-standing manager of cartridge usage, works in conjunction with the MCP.

TapeManager commands are entered through the console in the same manner as other system commands. There is no need to look up job or mix numbers. TapeManager also includes a utility program that follows the standard ClearPath (MARC) presentation with menus and forms, aided by on-line help for all forms and menu items.



Features

- The TapeManager database is updated in real-time as barcode activity occurs.
- Operator console (ODT) command and response (no AX or SM)
- On-line help available at the operator console (ODT)
- Commands may also be input through **MARC**, **DCKEYIN**, batch and **REMOTESPO**.
- Selective cartridge tracking is based on pattern or number.
- Data protection is through **PG** and **SN** verification.
- Reports are provided either in hardcopy and/or through the operator console (ODT).
- Extensive searching capabilities locate cartridges.
- Searches on strings can use "wildcards".
- Tape movement tracking

Overview

- Tape drive usage tracking
- Customization of each site's requirements is provided.
- Logging and reporting of exception activity is standard.
- The command interface provides for quick and easy entry of all functions.
- No patches to MCP or other software.

Requirements

- 58.1 MCP release or later required.
- MT or ET equivalent terminal for utility program.

Active vs. Passive Mode

The TapeManager system can operate in one of two modes; active or passive. Active mode is the default mode of operation. When configured for active mode operation, the TapeManager is assigned to the MCP TAPEMANAGER interface via the SL command and SYSOPS TAPEMANAGER command. This allows the TapeManager to be called directly by the MCP for all tape actions.

Passive mode is used when another program (usually another tape management system) is assigned to the MCP TAPEMANAGER interface. In this situation the TapeManager software acts as an interface to the LibraryManager system for the other tape management software. In passive mode TapeManager monitors the MCP Waiting Entries for tape actions needing service.

The Install program will automatically determine if another program has been Sled as the active TAPEMANAGER and will install in passive mode. The STATUS TAPEMANAGER command can be used to determine the mode that TapeManager is operating in.

LibraryManager

Tape Library Support from *Dynamic Solutions International (DSI)*, is designed to be an integral component for ClearPath MCP users who use automated tape library systems. Tape Library Support provides a standard interface for tape managers and user programs to interrogate and control automated tape libraries. Tape Library Support allows accessing software to be written such that the characteristics of each library type need not be programmed. Tape Library Support works in conjunction with the *DSI* Controller for tape libraries.

For more detailed information about LibraryManager, please refer to the Cartridge Library Installation Guide for Unisys MCP Systems.

DriveManager

The DriveManager module tracks information about tape drive usage. Depending on the drive type the DriveManager is able to track the number of loads, the number of I/Os, the serial number, and the actual model type of the drive.

Chapter 2

TapeManager Usage Considerations

Cartridge Tracking Considerations

Cartridge tracking is the TapeManager activity of collecting information about the various cartridges (whether physical or virtual) seen on the system(s) where TapeManager is operating. TapeManager tracks cartridges by their serial number. It is therefore critical that each cartridge be SNed with a unique serial number. Where cartridge (physical or virtual) libraries are used, TapeManager enforces that the serial number (SN) of the cartridge matches its barcode.

How TapeManager Decides To Track a Cartridge

When a cartridge is seen by TapeManager, it determines if the information about that cartridge should be tracked based on the following process. (Note: a cartridge is “seen” by TapeManager when an activity on the system causes the MCP to generate a log record associated with that cartridge (serial number)).

1. When a cartridge serial number is seen in a log record, TapeManager attempts to look that serial number up in the database. If the record is found, the database is updated as needed.
2. If the tape record is not found, then the value of the UNKNOWN TAPE configuration option is checked. If the UNKNOWN TAPE option is AUTO, then the value of the TRACKING configuration option is checked. Otherwise, the cartridge is ignored.
3. The cartridge is then checked against the current value of the CONFIGURE TRACKING option to determine if it should be added to the database. If the cartridge meets the tracking criteria, it is added to the database and tracked from then on.

Once a cartridge serial number is in the database, it will continue to be tracked even if the TRACKING option is changed. This aspect allows for exceptions (tapes that don’t meet any tracking rule) to be placed in the database with the ADD command. It also means that cartridges that are not to be tracked any longer, need to be removed from the database with the DELETE command.

Commands Affecting Cartridge Tracking

The following configuration options and commands should be reviewed as these settings and commands will affect which cartridges are tracked.

1. CONFIGURE TRACKING
2. CONFIGURE OPERATIONS UNKNOWN TAPE

3. CONFIGURE OPERATIONS MISMATCH LABEL
4. ADD
5. DELETE

Cartridge Selection Process

Cartridge selection is the process where TapeManager decides which data cartridge will be used to satisfy a program's tape request. The following paragraphs describe the process that TapeManager uses to select a data cartridge for use.

Output (scratch) tape selection

When a process requests an output tape the following steps are used to select a particular cartridge for use.

1. If the process has set SERIALNO to a value, the cartridge referenced by that serial number is used. No other selection is done.
2. Tapes that are currently mounted and ready to the system are checked. If a scratch tape with a matching SCRATCHPOOL is mounted, it will be used. If an expired tape is mounted that has a matching scratch pool and Auto Purge is set, it will be purged and used.
3. If one or more tape libraries are active, the tapes within the library(s) are searched for a scratch tape with a matching SCRATCHPOOL.
4. If Auto Purge is set and one or more tape libraries are active, the tapes within the library(s) are searched for an expired tape with a matching SCRATCHPOOL. If a tape is found, it is purged and used.
5. The entire database is searched for a scratch tape with a matching SCRATCHPOOL.

Note:

An MCP tape unit can be unavailable for many reasons (saved, reserved, freed, channel issues, etc.). Checking for every possible condition on drive selection could slow that and other TapeManager processes down. It is recommended that any MCP tape unit that becomes unavailable for any reason be FREEd (DOWNed) from the system. TapeManager will not select any tape unit that has been FREEd.

For every process that is waiting for an output tape, this search is repeated every 2 minutes until a tape is selected for the process, a tape is manually given the task (say by the operator), or the task is discontinued.

Input tape selection

When a process requests an input tape the following steps are used to select a particular cartridge for use.

1. If the process has set SERIALNO to a value (other than the special GETGnn), the cartridge referenced by that serial number is used. No other selection is done.
2. The tape database is searched for a tape that matches the FILENAME (TITLE) of the tape request. If the CYCLE, VERSION, FILESECTION, or usercode have been specified for the input tape, these items must also match. If more than one tape in the database matches these criteria, then if a specific generation was requested (see Migrating From Other Tape Management Systems), the tape of the requested generation is selected, otherwise the most current generation is selected if the Duplicate Volume option is set to Recent.
3. If there are no tapes with matching labels in the database, then the Retention rules are searched for a rule that matches the requested FILENAME. If a rule is found and it has a MATCH parameter that is the same as the length of the requested FILENAME, the database is searched for all tapes in that generational set as defined by the Retention rule. A tape is then selected based on usercode and generation (if any) as above. If the label of the selected tape does not match the requested FILENAME, TapeManager will FA (file equate) the FILENAME of the waiting entry to the label of the selected tape.

As with output tapes, for every process that is waiting for an input tape, this search is repeated every 2 minutes until a tape is selected for the process, a tape is manually given the task (say by the operator), or the task is discontinued.

Commands Affecting the Selection Process

The following configuration options should be reviewed as these settings will affect the selection process.

1. CONFIGURE OPERATIONS DUPLICATE VOLUME
2. CONFIGURE OPERATIONS USERCODE SELECTION
3. CONFIGURE OPERATIONS SCRATCHPOOL REQUIRED
4. CONFIGURE OPERATIONS AUTO PURGE

Multi-host Operation

TapeManager has the ability to coordinate its activities among a number of MCP hosts. All TapeManager hosts that communicate with each other form a TapeManager cluster. Each host in the cluster has a complete copy of the TapeManager software installed. Each host in the cluster is a peer to all other hosts in the cluster (peer-to-peer). There is no master host in a TapeManager cluster. Each host maintains a complete copy of the TapeManager tape database. Therefore, a failure of any given host due to hardware or software will not affect operations at another host in the cluster.

TapeManager Usage Considerations

Multi-host Database Operations

In a multi-host environment, any time a host does a tape database update, that update is broadcast to all other hosts configured in the cluster. Each time the database is updated, that record is given a timestamp to show when the update occurred. Each host remembers the timestamp of the last database update seen from each host. Each tape record in the database is “owned” by a particular host. A tape database record may only be updated by the owning host. A non-owning host may request that the owning host transfer record ownership to it.

Multi-host Recovery

If any host in the cluster stops communicating with the rest of the cluster, the remaining hosts in the cluster continue as before with the exception that they may acquire ownership of the missing host’s records without requiring the missing host’s permission. When a missing host reconnects to the cluster, the hosts exchange the timestamps of the last update seen from each of the hosts. Each host then compares the received timestamp with its database and sends any updates that have occurred since that timestamp to the newly connected host. A host that is being added to the cluster will have a null timestamp for the other hosts and therefore will be sent all records in the database.

Multi-host Configuration

All hosts in a TapeManager cluster must be configured to each of the other hosts in the cluster. For example, if there are 4 hosts in a cluster, each host must configure the other 3 hosts in the cluster using the `CONFIGURE HOST +` command. Each host must be directly visible to all other hosts in the cluster. Individual TapeManager hosts do not pass on information received from other hosts.

Connection between hosts in a cluster may be made by using either the BNA or TCPIP communication protocols. Both types of communication may be used within a cluster, but the protocol used between correspondent end points must be the same. In other words, for any given pair of hosts, the configured communication protocol must be the same.

Difference with `DISABLE/ENABLE HOST` and `CONFIGURE HOST -/+`

Disabling a host breaks the communication link between the local host and the host specified in the `DISABLE` command. All information about the disabled host is retained, including the timestamp of the last database update. When the host is enabled, normal multi-host recovery is done as described above.

Removing a host from a local host’s configuration (`CONFIGURE HOST -`) causes the local host to forget all information about that host. This includes the host’s last update timestamp. Should the host be added into the configuration again (`CONFIGURE HOST +`) it will be as if the host has never been seen before and the entire database will be exchanged. Therefore, if a host needs to be disconnected from the TapeManager cluster,

but will be re-connected later, use the DISABLE/ENABLE HOST commands rather than the CONFIGURE HOST -/+ commands.

Commands Affecting Multi-host Operation

The following configuration options and commands should be reviewed as these settings will affect the multi-host operation.

1. CONFIGURE HOST
2. ENABLE HOST
3. DISABLE HOST

Chapter 3

Installing TapeManager

Installation starts by copying the container file to a ClearPath pack family. All the files must be unwrapped from the container file to the same pack family (be sure RESTRICTED=FALSE). If the files are loaded under a usercode, all files must be under the same usercode.

Once the files have been unwrapped to the pack, the installation can happen a few ways. The easiest way is to install the files from a TapeManager prompt straight from the container file. If the container file copied to the system was called "TM.CON" and it was copied to DSIPACK, then the command at a TapeManager command prompt would be:

TM INSTALL ALL IN "TM.CON" ON DSIPACK

If you would like to install all the software for TapeManager from CANDE, then run the SYSTEM/TAPEMANAGER/INSTALL program. This program will do the various SL and other system commands to setup the TapeManager system. The TapeManager system is now ready to execute. Optionally follow the MARC and COMS installation procedures described below.

The following files are supplied with the TapeManager system:

SYSTEM/TAPEMANAGER/SUPPORT

This file is a library that is the core module of the TapeManager system. It must be available at all times. The library should be active whenever there is the possibility of tape activity. This library must be SLED as TAPEMANAGER with the library attributes of TRUSTED and ONEONLY.

Example: SL TAPEMANAGER = SYSTEM/TAPEMANAGER/SUPPORT: TRUSTED, ONEONLY. The library code file is supplied with the CONTROL, PU, LOCKED, SECADMIN, TASKING, and IDENTITY MP commands applied to it. (The library must be MP+ PU at a minimum.)

SYSTEM/TAPEMANAGER/UTILITY

This program provides a menu and form interface to the TapeManager system. It may be renamed to something more convenient like OBJECT/TMU if desired. A name of OBJECT/TMU will allow the utility to be executed from CANDE with a simple R TMU command. Access to this program should be restricted as in the current version any user of the utility can update the TapeManager database.

SYSTEM/TAPEMANAGER/GUIINTERFACE

This program acts as the interface to the TapeManager Graphical User Interface (GUI). A copy of this program is executed for each user using the GUI. The TapeManager

Installing TapeManager

install program declares 2 named pipes (TMGUI and TMGUI_DUPLEX) which when connected to by the PC based GUI will automatically start a copy of the GUI interface program for that user. The TMGUI and TMGUI_DUPLEX pipes are automatically created by the TapeManager Installation program.

SYSTEM/TAPEMANAGER/INSTALL

This program issues the various system commands to install the TapeManager software. This program is also run when installing an update of the TapeManager software. If the LibraryManager software for automated tape library systems has also been licensed, this program will install those software modules as well.

SYSTEM/DSISUPPORT

This file is a support library used by the TapeManager system and other products available from DSI. This library contains common procedures used by these software's. This library must be SLED as DSISUPPORT with the library attributes of ONEONLY and TRUSTED.

Example: SL DSISUPPORT = SYSTEM/DSISUPPORT: TRUSTED, ONEONLY. The library code file is supplied with the CONTROL, PU, LOCKED, and IDENTITY MP commands applied to it. (The library must be MP+ PU at a minimum.)

BOOK/TAPEMANAGER/ENGLISH

This file contains the help text used by the TapeManager system. This file can be removed if the on-line help features will not be used.

Note: *All the above files are supplied as system files (non-usercoded) with a security of PUBLIC. The security must be changed if access to the system is to be restricted.*

Note: *If the LibraryManager software for automated tape library systems was also licensed, these files will be included in the .CON file. The installation and description of these files is found in the DSI Cartridge Library Installation Guide for Unisys MCP Systems.*

The following files will be created the first time the TapeManager system is activated. These files comprise the TapeManager database:

SYSTEM/TAPEMANAGER/CONTROL
SYSTEM/TAPEMANAGER/DATA
SYSTEM/TAPEMANAGER/DATA/SNINDEX

SYSTEM/TAPEMANAGER/DATA/LABELINDEX
SYSTEM/TAPEMANAGER/DATA/TSINDEX
SYSTEM/TAPEMANAGER/DATA/USINDEX
SYSTEM/TAPEMANAGER/DATA/BCINDEX
SYSTEM/TAPEMANAGER/DATA/IDINDEX
SYSTEM/TAPEMANAGER/DATA/USINDEX
SYSTEM/TAPEMANAGER/DATA/MIXINDEX
SYSTEM/TAPEMANAGER/DATA/CREATEDINDEX
SYSTEM/TAPEMANAGER/DATA2
SYSTEM/TAPEMANAGER/LABELRULES
SYSTEM/TAPEMANAGER/LOG
SYSTEM/TAPEMANAGER/DRIVELOG

***Note:** Some of the files require the KEYEDIOII software to be installed before they may be accessed.*

***Note:** Some of the above files may or may not exist depending on configuration options. Other files may also be created in the course of TapeManager usage.*

TapeManager Share Directory

During installation, the TapeManager Install program will create an NXSERVICES share called TAPEMANAGER (on systems supporting NXSERVICES). This share will point to the DOCUMENTATION and FIRMWARE/LIBRARYCONTROLLER directories which contain PC type files. The DOCUMENTATION directory contains the most current product manuals, release notes, and installation instructions. The FIRMWARE/LIBRARYCONTROLLER directory contains the most current DSI Library Controller firmware (found as INSTALL-DSICTL.BSX). Use the MS Windows Map Network Drive function to access (using your MCP usercode sign in) these files from a PC.

The directories, as seen by the MCP, are installed on the same family and usercode as the other TapeManager files with the following names.

TAPEMANAGER/DOCUMENTATION/=

TAPEMANAGER/ FIRMWARE/LIBRARYCONTROLLER/=

MARC Installation

For the TapeManager command interface to be available through MARC, the following command must be entered at a MARC screen:

DIRECTIVE + TM = <usercode>SYSTEM/DSISUPPORT ON <familyname>:SYSTEM

Example: DIRECTIVE + TM = (USER)SYSTEM/DSISUPPORT ON PACK:SYSTEM

Installing TapeManager

The <usercode> and <familyname> specification must be the usercode and family where the TapeManager software is installed. The :SYSTEM syntax restricts the use of TapeManager commands to those users with SYSTEMUSER privileges. This option may be dropped or changed depending on the sites' security requirements. (See the ClearPath MCP Software Menu-Assisted Resource Control (MARC) Operations Guide.)

***Note:** The MARC Directive interface is not protected against program faults and operator actions as are some MCP interfaces. While TapeManager attempts to protect the interface, it cannot do so in all cases, such as an operator DS of the TapeManager library. These kinds of faults/actions may lead to the DSing or hanging of the MARC processes which could lead to the loss of control of COMS until COMS is restarted.*

COMS Installation

The TapeManager Utility may be installed as a COMS window. The utility should be installed as a single user remote file program. (See the Transaction Server for ClearPath MCP Operations Guide) This is accomplished by creating a COMS WINDOW entity and a COMS PROGRAM entity.

First log onto MARC with a COMSCONTROL usercode and initiate the COMS COMSUTILITY Program by entering ON UTILITY in the MARC Action line.

Select "P" to go to the PROGRAM ACTIVITY screen to create the PROGRAM entity and enter the following values as necessary:

Action:	CREATE
Program Name:	TMUTILITY
Title:	(uc)SYSTEM/TAPEMANAGER/UTILITY ON <pack name>
Usercode:	. (for SECURE command to function correctly must be.)
Remote-File Interface:	Y
Remote Users:	1

Transmit this screen, and the message "TMUTILITY created" should be displayed on the left-side of line 24.

Enter GO W in the Action field and transmit, to go to the WINDOW ACTIVITY screen to create the WINDOW entity, and enter the following values:

Action:	CREATE
Window Name:	TMUTILITY
Window Type:	R

Transmit this screen and the WINDOW ACTIVITY screen will be redisplayed with a new field at the bottom, enter the following:

Remote-File Program: TMUTILITY

Transmit this screen and the message “TMUTILITY created” should be displayed on the left-side of line 24.

At this point your users will be able to enter ON TMUTILITY on a MARC screen.

Graphical User Interface Installation

The TapeManager Graphical User Interface (GUI) is an optional component that can be installed at a user workstation. The GUI is a Microsoft Windows based application. The GUI can be installed by executing the GUI_SETUP.EXE program which can be found in the TAPEMANAGER share described previously.

An MCP host component of the GUI, SYSTEM/TAPEMANAGER/GUIINTERFACE, is installed during the normal TapeManager installation. A copy of the GUIInterface is started for each workstation that executes the GUI.

Upgrading TapeManager Software

The TapeManager software will periodically need to be upgraded as enhancements and corrections become available. (The following instructions are for Active Mode installations only.)

1. Backup all TapeManager programs and data files to tape or another disk family. The **TM DB BACKUP** command may be used for this.
2. Take the TapeManager .CON file (copied from the DSI Support Website or if sent with the DSI license keys) and change the name to something simple. Example: COPY "TAPEMANAGER_10.070.CON" as "TM70.CON".
3. From a TapeManager Utility or TMREMOTESPO session enter:

TM INSTALL ALL IN <simple name given for TapeManager .CON file> .
(See INSTALL Command pg. 1130). A copy of files from the software release .CON file will start, then the SYSTEM/TAPEMANAGER/INSTALL program will run and issue a number of system commands to install the updated TapeManager software. TapeManager will shut down automatically and should restart.

4. All TapeManager Utility and TMREMOTESPO sessions must be ended to complete the install. If MARC access to the TapeManager has been provided, then enter the following from the command line of a MARC session:
DIRECTIVE - TM to delink the old software.
5. The install program will automatically restart the updated TapeManager. To manually activate the updated TapeManager system, issue the following command at the operator's console (ODT) or TMREMOTESPO session:

SEND TM START.

6. If MARC access to the TapeManager is to be provided, then enter the following commands from the command line of a MARC session:
DIRECTIVE + TM = <usercode>SYSTEM/DSISUPPORT ON <pack family>:SYSTEM

The **:SYSTEM** option may be omitted if the TM command is to be used by all users.

7. Finally, verify that the TapeManager is active and communicating by entering a command at the console such as **TM STATUS**. You will see the message UNRECOGNIZED REQUEST (which is normal due to the way the TapeManager gets console messages) followed by a response by the TapeManager to the console.

The TapeManager update has now been completed.

If there has been an update to the TapeManager Graphical User Interface (GUI), each workstation will need to install the update manually.

Chapter 4

Accessing TapeManager

Access to the TapeManager system is provided via multiple interfaces.

ODT Command Interface

TapeManager may be accessed from the system console or Operator Display Terminal (ODT) in the same way as other system facilities such as the PrintS software. Commands to TapeManager may be entered by sending TM followed by a TapeManager command. For example, you would enter: **TM FIND SN 100201**. For these commands entered at the console or ODT, TapeManager will respond directly back to that console just as a normal system response.

TapeManager may also be accessed from a REMOTESPO session. However, there is currently no mechanism in the ClearPath to respond to the REMOTESPO session. For commands received from a REMOTESPO session, TapeManager will respond using the DISPLAY mechanism so that the response will show up in the ODT MSG display.

***Note:** When entering a TapeManager command from an ODT or REMOTESPO session the system will respond with “UNRECOGNIZED REQUEST SCANNING TM”. The TapeManager will respond correctly despite this message. This message can be suppressed for ODT input by using the **TM CONFIG SUPPRESS = TRUE** command.*

The TapeManager release media includes a source file for an example of a REMOTESPO program that also processes TM commands (called TMREMOTESPO). You are welcome to use this source file, but it is not supported by DSI. The TMREMOTESPO program may be setup in MARC as a window by following the steps similar to the ones outlined in COMS Installation in the previous chapter.

***Note:** The MCP limits the number of characters that can be input via the ODT or REMOTESPO to approximately 110 characters for the ODT and 100 characters for a REMOTESPO. The actual number of characters allowed will vary depending on unit or station number.*

AX Command Interface

Commands to TapeManager may also be passed via the AX ODT command. The AX command must be used with the mix number of the TapeManager active entry. For example, you must use <mix# of SYSTEM/TAPEMANAGER/SUPPORT Lib>**AX TM LAST**. When the AX command is used, TapeManager will respond via the display mechanism so that the response will appear in the MSG list.

***Note:** The MCP limits the number of characters that can be input via the AX command to 960 characters.*

Accessing TapeManager

*Finding the mix number for SYSTEM/TAPEMANAGER/SUPPORT can be done using the ODT command **AA NAME=TAPEMANAGER=***

DCKEYIN Interface

Commands may also be received by the TapeManager sent by a program using the DCKEYIN intrinsic. Commands received via DCKEYIN will be responded to with the display mechanism.

***Note:** The MCP limits the number of characters that can be input via DCKEYIN to 104 characters.*

SEND TM Command Interface

The SEND TM <text> ODT command is supported as a means of sending commands to TapeManager. Commands received via SEND TM will be responded to with the display mechanism. You will see the response of “OPERATOR TEXT FORWARDED TO TAPEMANAGER” to the ODT SEND command. Since SEND TM STATUS is a valid MCP command, all status commands to the DSI TapeManager will not be passed through. Please use one of the other provided interfaces (like the previously mentioned AX command).

MARC Command Interface

If MARC is configured as in the previous section, the TM commands may be entered on the action line of any MARC screen. Responses to these commands will be displayed by MARC in the same way as responses to other system commands.

Utility Program Interface

The TapeManager utility program can also be used to access the TapeManager system. The utility uses menus and forms that follow the MARC standard. These menus and forms build commands that are passed to TapeManager. The utility can be useful for complex or rarely used commands.

In the utility, TapeManager commands may also be entered on the action line in the same way as MARC. If the command is too large to fit on the action line, the COMND form is available for long commands.

Responses to commands, whether from a form or the action line, are returned to an OUTPUT form similar to that in MARC. If the response is two lines or less, the response is displayed in the message area (lines 23 and 24) of the form or menu.

Screen Layout

The TapeManager utility consists of a set of forms and menus. The forms and menus have a basic layout as follows:

- The first line of each screen is the title line. It contains the screen name, screen title, current time, and product identifier.

- The second line of each screen is the action line. The action line allows for menu and form traversal and the entry of commands without using forms or menus.
- The third line is the action prompt line. The action prompt line displays the actions that are currently valid for entry in the action line field.
- Lines 4 through 22 contain selections and fields that are specific to the various menus and forms.
- Lines 23 and 24 are the message area. Errors, warnings, and informational messages are displayed here. This area is also used for the display of short help.
- The 25th line is the status line. The utility will place status information in this area, such as the current setting of the find target.

Using Menus

Menus provide a list of possible selections to be performed at this point in the utility. Selections are made up of an identifier and a descriptive string. To choose a selection, type the identifier in the Choice field.

TAPMGR - Tape Library Manager11:04 AMTM

Action: ▶◀

HOme PRev GO PArent COmnd BYe (Press SPCFY for Help)

REPORT Process Tape Manager Reports
OPER Tape Manager Operations
LIB Tape Library Operations
CONFIG Configure Tape Manager
SECURE Restrict Tape Manager Command Set
MAINT Maintain Database Records
VER Display Version Information

Choice: ▶ OPER◀

In the above example, the user has specified the **OPER** selection. The user need only enter as many characters of the selection identifier that will differentiate it from the other selection in the menu. In this example, **O** would be sufficient since there are no other selections that start with the letter **O**.

Using Forms

Forms have the same basic layout as menus except the menu selections and choice field are replaced by data entry fields. The fields will vary from form to form.

REPORT - Report Options
11:42 AM
TM

Action:
Home PRev GO PArEnt COmnd BYe
(Press SPCFY for Help)

List by
SN
Label
Location
Creating User
Creating Program
Creation Date

Print report
(otherwise report is returned to station)

Report Print File Attributes (optional)

Viewing On-line Reports

Some commands and forms generate reports when executed. The OUTPUT form displays the report for viewing.

OUTPUT - TAPEMANAGER Command Output
11:51 AM
TM

Action:
REturn
Home REturn GO COmnd + - BYe
(Press SPCFY for Help)

ALL TAPES (LABEL DAILY=)

SN	LABEL/FILEID	CREATED	REEL	CYC	VER	DEN
100005	DAILYCOPY/FILE000	3/18/93 @ 8:12	1	1:0	6250	
100029	DAILYCOPY/FILE000	3/12/93 @ 8:00	1	1:0	6250	
100051	DAILYCOPY/FILE000	3/16/93 @ 7:58	1	1:0	6250	
100002	DAILYCOPY/FILE000	3/17/93 @ 7:56	1	1:0	6250	
100102	DAILYCOPY/FILE000	3/19/93 @ 7:51	1	1:0	6250	

TM ALL DAILY=

Report Traversal Actions

Syntax



Explanation

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Form/Menu Traversal Actions

HOME

Syntax

— H0me —|

Explanation

The HOME action returns the user to the main menu.

GO

Syntax

— GO —|
 └─ <screen name> ─┘

Explanation

The GO action takes the user to the specified screen. If GO is entered without a screen name, a menu of screen names is presented.

PARENT

Syntax

— PArent —|

Explanation

The PARENT action displays the menu that leads to the screen on which the action was entered.

PREVIOUS

Syntax

— PRev —|

Explanation

The PREVIOUS action returns the user to the last screen displayed. The utility retains the last 16 screens.

RETURN

Syntax

— REturn —|

Explanation

The RETURN action returns the user to the screen that generated the command to enter the current screen.

COMND

Syntax

— COmnd —|

Explanation

The COMND action causes the utility to display the COMND form. The COMND form is used to enter freeform TapeManager commands that are too long for the action line.

BYE

Syntax

— BYe —|

Explanation

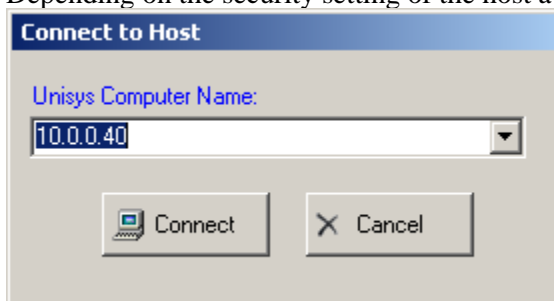
The BYE action causes the utility session to end. The TapeManager system will continue to execute. Do not confuse this with the QUIT command which will terminate the TapeManager system.

Graphical User Interface

An optional Graphical User Interface (GUI) is available for accessing TapeManager functions. The GUI is installed on individual workstations. The GUI allows access to TapeManager functions using menus and forms similar to other Windows based applications. There are also additional features not available via the TapeManager Utility or command interfaces.



The initial form requests the name or IP address of an MCP host where TapeManager is installed. Depending on the security setting of the host a user code and password may be required.



Chapter 5

Using On-line Help

The TapeManager includes a complete on-line help system. The help is available from the operator console (ODT), from MARC, and from the Utility program.

HELP Command

The HELP command causes the TapeManager to display help information on the requested subject. HELP and TEACH are synonyms. A command that consists of only a TM will produce a list of the available commands.

Syntax

```
— HELP —┬── <keyword> ─┬── : — PRINTER ─┬──  
└──  
<keyword>  
├── <simple keyword> ─┬──  
├── <composite keyword> ─┬──  
└── <metatoken keyword> ─┬──
```

Explanation

HELP

The HELP command without a keyword will produce a list of the commands available with the TapeManager system. This is the same as the TM HELP COMMANDS entry.

HELP <keyword>

Causes the utility to enter teach mode and display the information associated with the keyword. A simple keyword is an identifier containing only letters, digits, and the dash (-) character. A composite keyword is a string of characters including spaces delimited by the asterisk (*) character. A metatoken keyword is a string of characters including spaces delimited by the less than (<) and greater than (>) characters.

: PRINTER

Using the PRINTER modifier causes the entire section of the help subject to be sent to the printer. The print attributes defined in the CONFIGURE REPORT command are applied to the help printout. To print a list of the commands enter: TM HELP COMMANDS :PRINTER.

Utility Program Help

The TapeManager utility has complete on-line help to guide the user. Each menu and form have two types of help. Short help provides a quick prompt as to what is expected in a field or what a menu selection does. Long help provides a more in-depth discussion of the field or selection.

Short Help

Short help is accessed by placing the cursor on a menu selection or in a form field and pressing the Specify (SPCFY) key. The short help information will appear on lines 23 and 24 of the form or menu.

PGSN - Select Serial Numbers to Purge12:04 PM TM

Action: ▶

HOme PReV GO PArent COmnd BYe (SPCFY again for more)

Unit #Unit #

PG MT ▶ ◀ - ▶ ◀ (Optional unit range)

▶ ◀ - ▶ ◀

▶ ◀ - ▶ ◀

▶ ◀ - ▶ ◀

▶ ◀ - ▶ ◀

▶ ◀ - ▶ ◀

▶ ◀ - ▶ ◀

▶ ◀ - ▶ ◀

▶ ◀ - ▶ ◀

Lock Tape Unit(s)? ▶ ◀ (Y/N)

New Density ▶ ◀ (optional)

To perform an action, enter one of the selections from the line just beneath the "Action" field. Only the capitalized letters are necessary.

In this example, the cursor was placed in the "Action" field and the SPCFY key was pressed.

Long Help

Long help is accessed by pressing the SPCFY key a second time while displaying the short help for a field or menu selection. Long help provides a complete description of the field or selection. The user can browse freely forward and backward in the description by using the "+" and "-" actions. Long help is also referred to as teach mode.

EXPLANATION OF VALID ACTIONS
4:47 PM
TM

Action: ▶ + ◀

Return PRev KEys TOPics FORwrd BACk + - (Press SPCFY for Help)

Each screen in the utility lists the valid actions for that screen on a "hint" line under the "Action" field. The minimum abbreviation accepted by the system is shown in capital letters. The following are the actions that can be entered in the "Action" field on a screen, and their meanings:

HOMe This action returns you to the Home menu, the menu that is presented to you just after logging on.

Parent
This action displays the menu that is the parent of the current screen. This parent menu is a menu containing a selection that leads to the screen that is currently being used. More important, the parent menu also contains selections for related screens. Thus, if you are at a screen that is "almost right", going to the parent menu may lead to the correct screen.

GO Typing GO followed by a screen name causes the specified screen

Lines 1-18 of 73 lines.

The following actions are available when using long help:

- The RETURN action exits teach mode and redisplay the menu or form from which teach mode was called.
- The PREV action allows the help subsystem to redisplay the previous help subject. The help subsystem remembers the last 12 help subjects for a utility session.
- The KEYS action displays a list of all the keywords used in the help book. Placing the cursor on a keyword and pressing SPCFY or entering the keyword on the action line will display the subject associated with that keyword.
- The TOPICS action displays a list of all the topics in the help book.
- The FORWRD action displays the next topic in the help book from the currently displayed topic.

Using On-line Help

- The BACK action displays the previous topic in the help book from the currently displayed topic.
- The + and - actions allow the user to scroll through the help text. A + or - without parameters scroll the help text forward or backward one page. A + or - followed by a number scrolls the help text the specified number of lines. A 'P' following the number will scroll the help text the number of pages.

Additional Help

Short and long help are also available for the form or menu by placing the cursor on the form or menu title and pressing SPCFY.

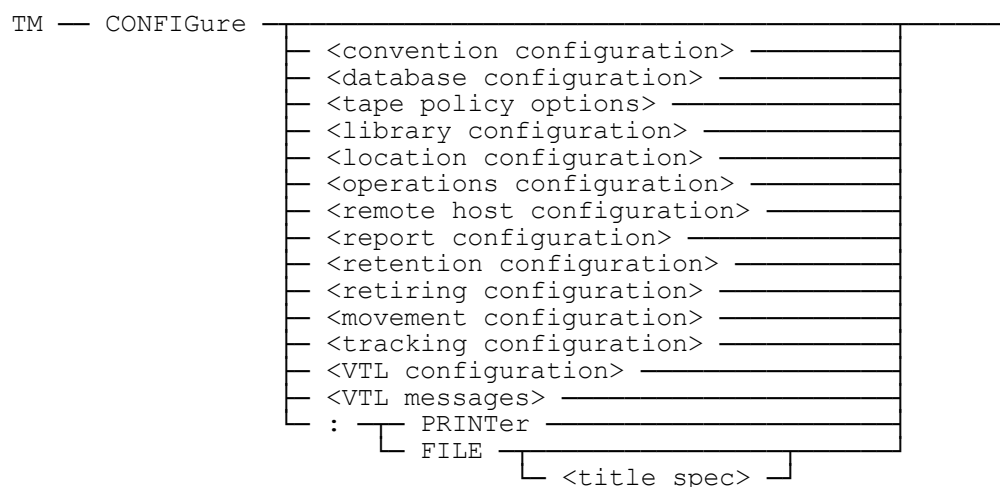
Additional information is also available for most messages displayed by the utility. When a message is displayed in the 23rd and 24th lines of a form or menu (the message area), placing the cursor in the message area and pressing the SPCFY key will display any additional information. This help is always displayed as long help.

Chapter 6

TapeManager Configuration

The CONFIGURE commands allow the TapeManager to be adjusted for individual site needs and preferences. Some operations require that a configuration option be defined before they can be processed.

Syntax



Explanation

CONFIGURE

The CONFIGURE command without any options causes a listing of all configuration options to be displayed.

CONFIG :PRINTER

The CONFIGURE command with the PRINTER option causes a printer listing to be created that contains all of the current TapeManager configuration. The default printer attributes defined with the CONFIGURE REPORT command are applied to this report.

CONFIG :FILE

The CONFIGURE command with the FILE option causes a file to be created that contains the current TapeManager configuration in text format. This file may be used as input to the TapeManager Utility in batch mode (with some modifications) or to be used with the DO command (again with modifications). The name of the file created will be SYSTEM/TAPEMANAGER/CONFIGURATION under the same usercode (if any) and on the same pack family on which TapeManager is currently running. If the file already

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exists, TapeManager will display an error and not overwrite the existing file.

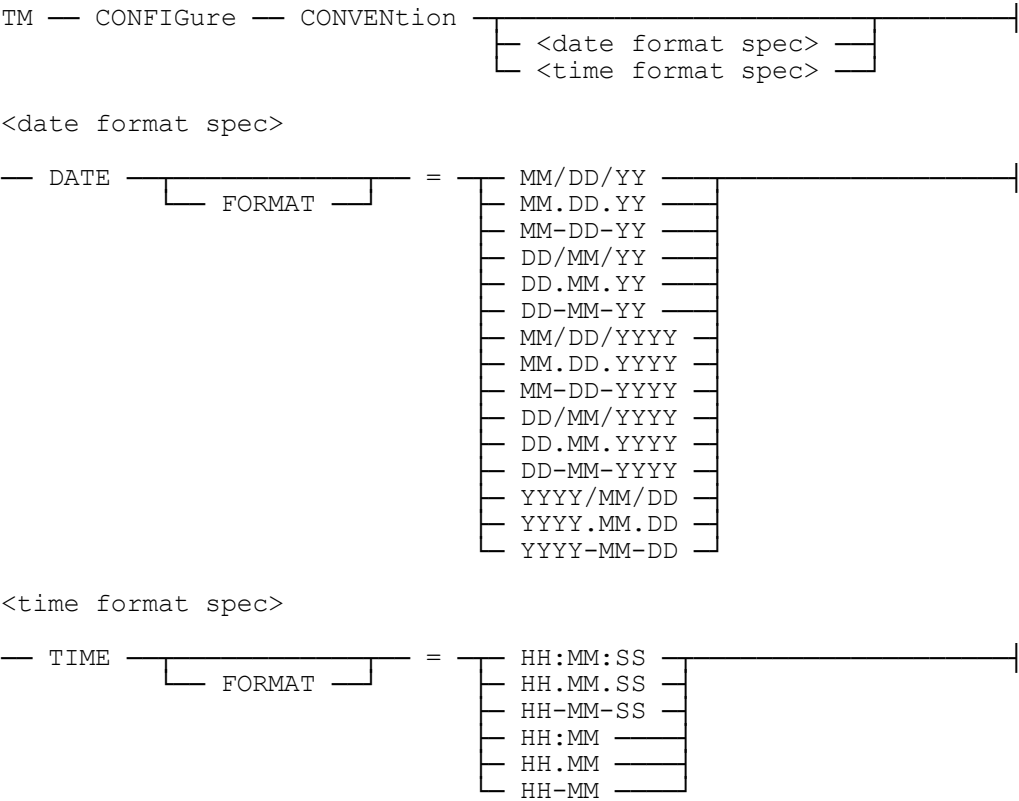
CONFIGURE :FILE SAVED/TAPEMANAGER/CONFIGURATION

This option of the CONFIGURE :FILE command allows the configuration information to be placed in a file with a user specified name. The file must not already exist.

Convention Configuration

The CONFIGURE CONVENTION command specifies the format to be used when specifying or reporting date and time values. Selecting a format will cause TapeManager to use that format for all command input and output presentation.

Syntax



Explanation

CONFIGURE CONVENTION DATE FORMAT = DD.MM.YY

The DATE option specifies the format to be used when processing date values. For command input, this command specifies the format that is expected in any command where a date is required. For output, this command specifies the format that will be used in output displays and printed reports. The FORMAT syntax is provided for readability.

CONFIGURE CONVENTION TIME = HH:MM:SS

The TIME option specifies the format to be used when processing time values. For command input, this command specifies the format that is expected in any command where a time value is required. For output, this command specifies the format that will

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be used in output displays and printed reports. When a time format that includes the seconds part is configured, the seconds values are only displayed where determined to be relevant. On command input, the seconds value may always be optionally specified regardless of the time format option. The FORMAT syntax is provided for readability.

Database Configuration

The CONFIGURE DATABASE command specifies the option settings to be used with the TapeManager database.

Syntax

```

TM — CONFIGure — DATABASE — <database options>
                        DB
<database options>
— FILE — WAIT — = — CLOSE —
                        BACKUP —
                        OF —
— AUDIT — = — <boolean> —
— RECOVER — FROM — LOG — = — <boolean>

```

Explanation

CONFIGURE DATABASE FILE WAIT = CLOSE

The CONFIGURE DATABASE FILE WAIT command specifies the action to be taken when TapeManager detects that a Library Maintenance task is trying to copy the TapeManager database. The TapeManager database uses KEYEDIOII to manage the database, which cannot be copied while open. Library Maintenance will wait until a KEYEDIOII file set is closed or an operator OF before continuing.

The CLOSE option specifies that TapeManager is to close its database so that Library Maintenance can copy it. While the database is closed, all commands or actions that require the database are rejected or suspended. Depending on the MCP level and copy options, Library Maintenance may hold the database files (prevent from re-opening) until the copy command has completed. The default value is false.

CONFIGURE DB FILE WAIT = BACKUP

The BACKUP option specifies that the TapeManager should perform a DATABASE BACKUP TO DISK before allowing the copy to continue as with the CLOSE option.

CONFIGURE DB FILE WAIT = OF

The OF option specifies that TapeManager will issue OF commands to the Library Maintenance task to prevent the copying of the database. This option also ensures that TapeManager is kept available, but a DB BACKUP command should be performed regularly. This is the default if the database configuration option has never been specified.

CONFIGURE DB AUDIT = TRUE

The AUDIT option specifies that the TapeManager should create an audit trail of all accesses to the TapeManager database. The audit trail is similar to those created by DMSII in that it contains both before and after images. The audit trail can be useful for diagnostics or to determine when a change was made. Unlike DMSII, this audit trail cannot be used for recovery purposes. The audit trail can be viewed by using the AUDIT report. The default value is false.

CONFIGURE DB RECOVER FROM LOG = TRUE

The RECOVER FROM LOG option specifies that TapeManager should attempt to find any system Sumlog records that it may have missed while the software was stopped. Only log records that cause database updates are processed. The default value is false.

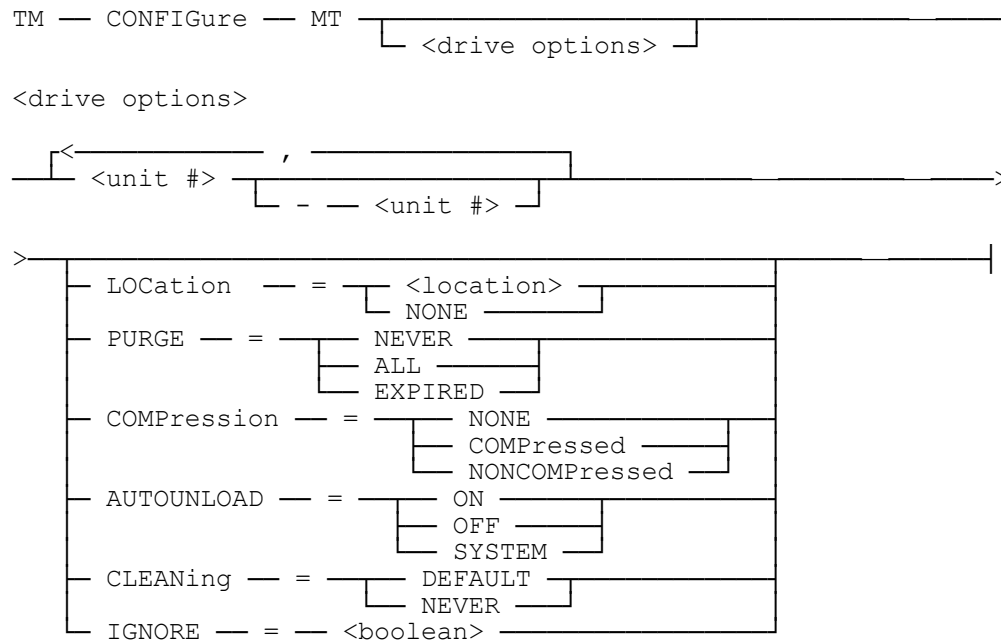
CONFIGURE DB

The CONFIGURE DATABASE command without any options will display the current settings of the DATABASE options.

Drive Configuration

The **CONFIGURE MT** command specifies option to be used with various tape drive units.

Syntax



Explanation

CONFIGURE MT80 LOCATION = SITE

The **LOCATION** option declares the tape unit as being in a TapeManager location. The location must have been previously defined using the **CONFIGURE LOCATION** command. When a tape is mounted in a drive, its configured location is compared with the location of the tape in the database. If the drive location and database location do not match, a **MOVE TO <location>** is issued where <location> is that of the drive. The default location for a drive unit is **NONE**.

CONFIGURE MT80-84 PURGE = EXPIRED

The **PURGE** option determines what purge action is to be taken when a tape is mounted in a drive. The **NEVER** choice causes no purge action on tape mount. The **EXPIRED** choice causes TapeManager to issue a PG on the drive if the tape mounted is found to be expired in the TapeManager database. The **ALL** choice causes a PG to be issued whenever a tape is mounted in the drive. The **ALL** choice will try to purge any tapes that are mounted, no check is made to see if the tape is in the database or that it has a

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retention rule. If the CONFIGURE OPERATIONS VERIFY option is set to True, normal retention checking is done.

Note: This option should not be used if the CONFIGURE OPERATION AUTO PURGE option is set to True. The CONFIGURE OPERATION AUTO PURGE and CONFIGURE MT PURGE functions can interfere with each other.

CONFIGURE MT801-805 COMPRESSION = COMPRESSED

The COMPRESSION option determines the compression requested when a tape purge is requested due to PURGE = EXPIRED or PURGE = ALL. The NONE choice does not request any compression state and the tape is left with the same compression as before the purge. The COMPRESSED choice always forces the tape into compressed mode. The NONCOMPRESSED choice always forces the tape compression off. This option does not affect tapes purged on the specified drives by an operator purge command (PG).

CONFIGURE MT90-93 AUTOUNLOAD = OFF

The AUTOUNLOAD option determines the action, if any, that TapeManager should take in controlling the setting of the MCP AUTOUNLOAD option for a tape unit. The ON choice causes TapeManager to set the MCP AUTOUNLOAD option to ON. The OFF choice causes TapeManager to set the MCP AUTOUNLOAD option to OFF. The SYSTEM choice causes TapeManager to leave the MCP AUTOUNLOAD option as it is set by the MCP MODE command.

If this option is never specified then the TapeManager control of the MCP AUTOUNLOAD option will continue to work as in previous releases. That is, for tape drives within a library the AUTOUNLOAD option will be set to ON. For all other tape drives the AUTOUNLOAD option will not be managed by TapeManager. If this option has never been specified, it will not be displayed in the CONFIGURE MT output.

Note: For tape drives within a tape library setting this option to OFF (or setting this option to SYSTEM and the MCP option to OFF) can cause tapes to be left in drives for excessive amounts of time. It is recommended that the CONFIGURE LIBRARY IDLE TIME option be set at some value such that drives are not left in a loaded state for an excessive amount of time.

CONFIGURE MT801-805 CLEAN = NEVER

The CLEANING option determines the action taken on an MCP cleaning required message or operator cleaning request. The DEFAULT choice allows an operator to request drive cleaning and MCP drive cleaning requests to be processed normally. The

NEVER choice causes operator cleaning requests to return an error message and MCP cleaning requests to be ignored.

CONFIGURE MT64-65 IGNORE = TRUE

The IGNORE option causes the DriveManager module of TapeManager to ignore the specified drive(s). An ignored drive does not have statistics collected for it and does not show up in the MT report. The purpose of this option is to not collect information for pseudo tape units that are used to communicate with front end data communications processors.

Note: Cleaning requests for virtual tape units and tape units in backend libraries always return an error message or will be ignored if from an MCP log record.

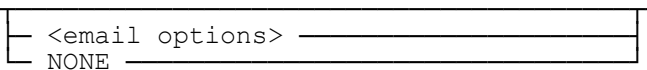
CONFIGURE MT

The CONFIGURE MT command without any options will display the current settings of all known tape units.

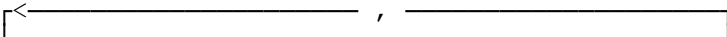

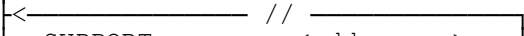



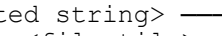
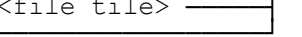




E-Mail Configuration

The CONFIGURE EMAIL command specifies how TapeManager will use e-mail to send notices and perform support functions. To use the EMAIL function, the Unisys MCP E-Mail software (HMP 7.0/SSR 48.1 MCP or higher) must be installed. (Refer to the EMAIL Utility section of the *System Software Utilities Operations Reference Manual*.)

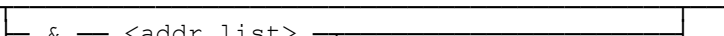
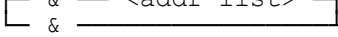
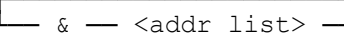


Syntax

```
TM CONFIGure — EMAIL — 
```

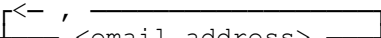

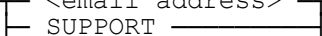
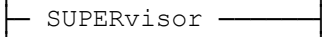
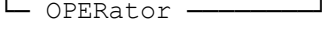

<email options>

```
 ,   
 //   
— SUPPORT —  <addresses>  
— SUPERvisor — NONE   
— OPERator —   
— SIGNATURE —  <quoted string>  
                   IN — <file tile>   
                   NONE 
```

<addresses>

```
— <addr list> —   
                   & — <addr list>   
                   & — <addr list> 
```

<addr list>

```
 ,   
— <email address> —   
— SUPPORT —   
— SUPERvisor —   
— OPERator — 
```

Explanation

CONFIG EMAIL SIGNATURE “Your DSI TapeManager”

Establishes the string as the signature for any messages sent by TapeManager. To use a file for a signature, refer to the EMAIL Utility section of the *System Software Utilities Operations Reference Manual*.

CONFIG EMAIL SUPERVISOR VAN.TU@MYCOMPANY.COM

Establishes the e-mail account for the supervisor. By default, the supervisor account is SUPERVISOR. The supervisor receives all TapeManager e-mail messages caused by alerts or faults.

CONFIG EMAIL SUPPORT SUPPORT@MYCOMPANY.COM && JOHNNY.ATLAS@MYCOMPANY.COM

Establishes the e-mail account to receive blind courtesy copies for all e-mail messages sent to SUPPORT. The initial list of email addresses are the TO email list. Email addresses after the first & are the CC email list. Email addresses after the second & are the BCC email list. The // form of the command is used to separate parts of the command that might be confused as email addresses. By default, the support account is SUPPORT@DYNAMICSOLUTIONS.COM.

CONFIG EMAIL SUPPORT NONE

Prevents all e-mails to SUPPORT.

CONFIG EMAIL NONE

The NONE option clears all EMAIL configuration options.

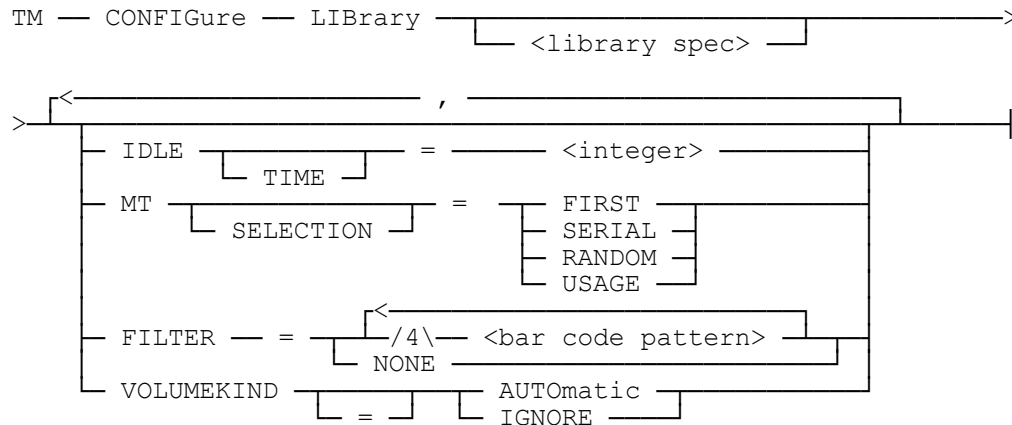
CONFIGURE EMAIL

The CONFIGURE EMAIL command without any options will display the current settings of the EMAIL options.

Library Configuration

The CONFIGURE LIBRARY command specifies the options for controlling an automated tape library.

Syntax



Explanation

CONFIGURE LIBRARY IDLE TIME 300

The IDLE TIME option specifies the amount of time in seconds that a tape may be left in a drive in a cartridge library unused. If the tape has remained in a drive for the specified time without being used, it will be unloaded and returned to a storage slot in the library. The TIME syntax is provided for readability and is optional. A value of zero (0) seconds resets the IDLE TIME to none. If an idle time has not been specified, a tape will remain in a drive until it has been used or is unloaded by an operator action.

Selection of the idle time value is usually based on the type of drive in the library. Idle times should normally be between 120 and 300 seconds. As a general rule, the idle time should not be less than the time it takes to do a full rewind of the tape unit plus 120.

CONFIGURE LIBRARY MT SELECTION = RANDOM

The MT SELECTION option specifies how the library management software selects a tape unit from the available tape units. If this option is set to FIRST, the first available drive in the library is used. Using the FIRST option can cause heavy usage of the first tape units in a library. If the option is set to SERIAL, the tape units will be selected for use in a circular rotation. Tape units that are in use will be skipped. If the option is set to RANDOM, the tape drives are selected randomly from the pool of available tape units. If the option is set to USAGE, the tape units are selected from available units based on the number of loads logged against the tape units. The default is FIRST if MT SELECTION has never been defined.

CONFIGURE LIBRARY FILTER = NT????

The FILTER option allows for tapes with certain bar codes to be dropped from the Inventory report. This option is designed for libraries that are shared between MCP and other operating systems. The option allows for tapes used by other operating systems to not appear on the Inventory report. Other commands are not affected. The bar code pattern must be 6 characters long and consist of alphanumeric characters and the question mark character (?). The bar code pattern is used as a mask to determine if the tape should be dropped from the report. In the above example, any tapes that have a bar code that starts with the characters “NT” will not show on the Inventory report. Using NONE will clear all bar code filters.

CONFIGURE LIBRARY <library spec> VOLUMEKIND = AUTO

Setting the VOLUMEKIND option to AUTO for a specific library causes the TapeManager system, during a search of the specified library, to search along its proper VOLUMEKIND. In other words, when looking for virtual tapes, only search the <library spec> if it is virtual.

Setting VOLUMEKIND to IGNORE will cause TapeManager to ignore the VOLUMEKIND attribute during a search of the <library spec>.

CONFIGURE LIBRARY

The CONFIGURE LIBRARY command without any options will display the current settings of the LIBRARY options for all attached libraries.

Location Configuration

The CONFIGURE LOCATION command specifies locations to be used when tracking cartridge movement from place to place. The location must be configured before using the MOVE command to mark cartridges as being relocated to a new place.

Syntax

```
TM — CONFIGure — LOCation ————— |
                                     | <location options> |
                                     |
<location options>
|
| | <location> | | |
| | | ——— |
| | | | - |
| | | | DEFault |
| | | | <location spec> |
| | | | + |
| | |
|
<location spec>
— <location> ————— |
                  | AS — <quoted string> |
                  |
```

Explanation

CONFIG LOCATION +WAREHOUSEA

The + option is used to add a location to the TapeManager configuration. A location must be configured before it can be used in any other command, such as MOVE, requiring a location identifier. A maximum of 15 locations may be defined.

Important

For multi-host configurations that share movement rules, the number and order of Locations configured must match. This restriction will be relaxed in a future release.

CONFIG LOC -WAREHOUSEB

The - option is used to delete a location from the TapeManager configuration. Cartridges that are assigned to the deleted location will stay associated with that location but the locations attributes will be lost. Cartridges associated with a location to be deleted should be moved to another location before deleting.

To delete a location, there must be no movement rule or tape in the database that refers to the location. Therefore, all movement rules that refer to the location must be changed or deleted and all tapes that refer to that location by rule or location field must be modified to remove the reference to the location.

***Note:** Due to the necessity of checking all tapes in the database, the delete location command may take an extended amount of time to respond.*

CONFIG LOC SITEX AS “Experimental Facility”

A location can have a title of up to 80 characters. The title is used in reports to allow for a better site description than is allowed for with a 17 character location id. The title defaults to the location id when no title is specified. Since the + was not specified, SITEX must already exist, and this is a modification of the attributes of the SITEX location.

***Note:** Lower case text for title will be converted to upper case when input from and ODT or remotespo program.*

CONFIG LOC DEFAULT ONSITE

The DEFAULT option is used to declare a location as the default location for any tapes that are added either implicitly or explicitly.

CONFIG LOC SITEX

The CONFIGURE LOCATION command specifying a location without the + or - option causes a display of that location and its attributes if it exists.

CONFIG LOCATION

The CONFIGURE LOCATION command without any options will list all of the locations that have been configured into TapeManager.

Movement Configuration

The CONFIGURE MOVEMENT command specifies the tape movement rules for the TapeManager system. Movement rules define the sequence of movements between locations that a tape is to make.

Note: *The CONFIGURE MOVEMENT command has been replaced by the CONFIGURE TAPE MOVEMENT command.*

Syntax

```

TM CONFIG MOVEMENT <move options>

<move options>
  <label>
  DEFAULT
    NONE
    AFTER <movement step>
    : APPLY
    : NO

<label>
  <tape name> / <file ID>

<movement step>
  <integer> DAYS <movement generations>
  SAVEfactor

  TO <location id>
  MOVE
  RETURN

<movement generations>
  GENERATIONS

  WITH MATCH = <integer> BY CYCLE REEL
  
```

Explanation

CONFIG MOVEMENT BACKUP= AFTER 0 DAYS MOVE TO OFFSITE, 7 DAYS TO SITE

This rule states that any tape created with a label that starts with the characters BACKUP is to immediately be scheduled for movement to the OFFSITE location. After 7 days, the tape is to be move from the location OFFSITE to the location SITE. The locations OFFSITE and SITE must have been previously defined with the CONFIGURE LOCATION command. A movement rule may have up to 9 steps (movements).

CONFIG MOVE MYDB/QC= AFTER 0 DAYS MOVE TO VAULT, 7 DAYS TO SITE

When the <file ID> form of the label is used in a movement rule, the tape name portion of the label must match before the file ID portion is checked. Wild cards may be used with both the tape name and file ID identifiers.

CONFIG MOVEMENT DEFAULT AFTER 1 DAYS MOVE TO OFFSITE, 3 DAYS MOVE TO SITE

If a DEFAULT rule is declared, that rule is applied to any tapes for which no other movement rule applies.

CONFIG MOVEMENT DB= AFTER 1 DAYS MOVE TO VAULT, 30 DAYS RETURN TO SITE

The RETURN keyword can be used to have a location be automatically assigned by TapeManager when the tape is re-written, making the need to set the tape's location with the TM MOVE command unnecessary. However, if tapes are not re-written by the day after the RETURN step is effective, they will appear as exceptions if the TM MOVE command is not used to update their locations. Although the location of any step can be designated as the return step, typically this would only be the last step. TapeManager will only use the location of the last step that is designated as "return" for the return location.

:NO and :APPLY

The :NO option is used to control the updating of tape database records. By default, any change made to a movement rule will cause all tapes that match the <label id> of the rule to be updated with the new rule information (:APPLY). If the :NO option is specified, this rule will only apply to newly created tapes and current tapes retain the previous rule values.

The :APPLY option is used to apply the current rule definition to all existing tape database records for <label id>. Whether by this option or by default, when database records are updated the update activity occurs in the background and may take several minutes to complete after the TM CONFIGURE MOVEMENT command itself has finished.

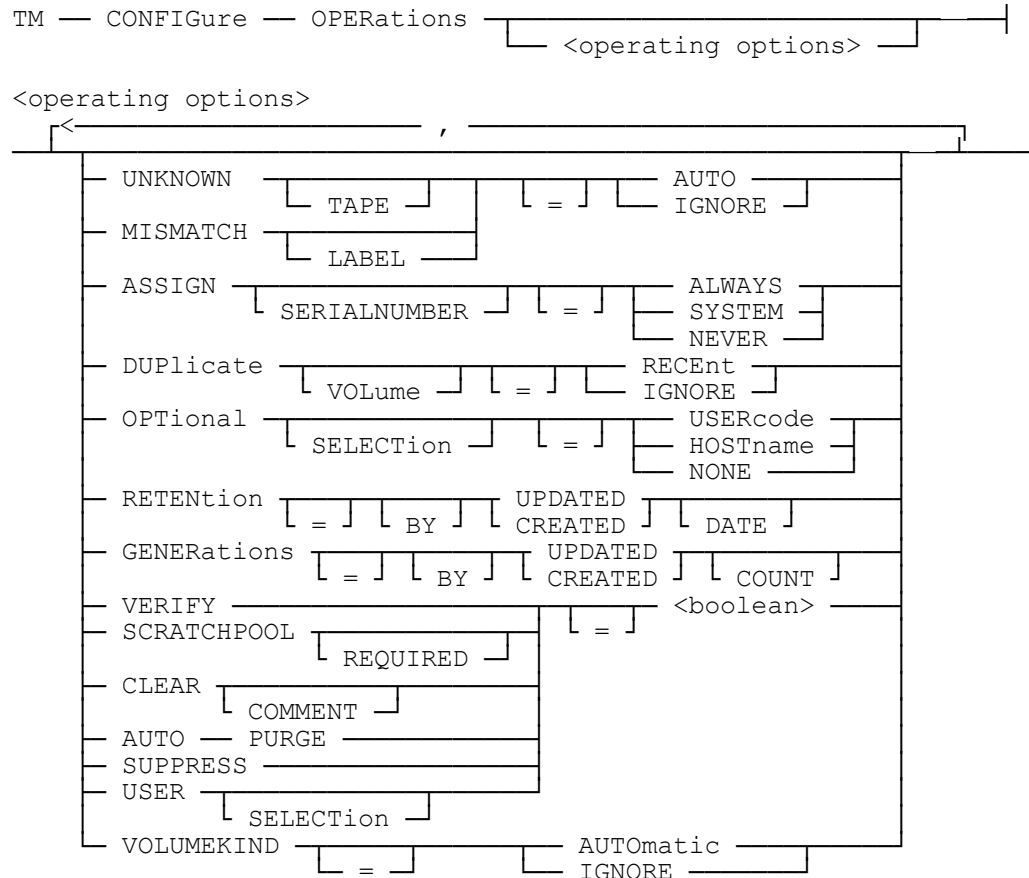
CONFIG MOVEMENT

The CONFIGURE MOVEMENT command without any options will display the current list of movement rules.

Operations Configuration

The CONFIGURE OPERATIONS command specifies operations options for the TapeManager system.

Syntax



Explanation

CONFIGURE OPERATIONS UNKNOWN TAPE = IGNORE

The UNKNOWN option specifies what action to take when a tape is seen that is not in the database but matches the tracking criteria defined in the CONFIG TRACKING command.

AUTO specifies that the tape is automatically entered into the database depending on the setting of the CONFIGURE TRACKING option. AUTO is the default if the UNKNOWN option has never been specified.

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IGNORE will cause the system to disregard any tape not already in the database.

The TAPE syntax is included for readability.

CONFIGURE OPERATIONS MISMATCH = AUTO

The MISMATCH option specifies what action to take when a tape is seen that has a different label from that stored for it in the database. This can occur when a tape is created on a different system from the system that TapeManager is running on.

The AUTO option automatically updates the database with the new information from the tape. AUTO is the default if the MISMATCH option has never been specified.

The IGNORE option will keep the database from being updated.

The LABEL syntax is included for readability.

CONFIGURE OPERATIONS VERIFY = TRUE

Setting the VERIFY option causes the TapeManager system to verify that a tape may be PG'ed or SN'ed by checking the RETENTION rules before it will allow the tape to be scratched. The default for the VERIFY option is FALSE if it has never been specified.

Note: *TapeManager will allow tapes with the LOCKEDFILE attribute set to be purged as long as there are retention attributes, and those attributes determine that the tape is expired.*

Note: *The VERIFY option is only applicable when the TapeManager is run in ACTIVE mode. If the TapeManager is in PASSIVE mode, it is the responsibility of the active tape management system to allow or deny tape purges. When this option is set, TapeManager recommends SYSOPS TAPEOVERWRITE be set to FALSE (if TAPEOVERWRITE is FALSE, then the MCP system will not assign the output file to the tape volume without TapeManagers knowledge) and SYSOPS TAPEEXPIRATION be set to FALSE (if TAPEEXPIRATION is FALSE then the MCP system will not purge/overwrite tapes that are marked expired in the label by the MCP without TapeManagers knowledge).*

CONFIGURE RETENTION BY UPDATED DATE

Setting the RETENTION option to BY UPDATED DATE causes TapeManager to use the last updated date/time of the tape when calculating the retention period. If this option is set to BY CREATED DATE, then the creation date/time of the tape is used when calculating the retention period. A tape's last updated date/time is the same as the creation date/time unless the tape has been appended to since its creation. The default for this option is BY CREATED DATE.

CONFIGURE GENERATIONS BY UPDATED COUNT

Setting the GENERATIONS option to BY UPDATED COUNT causes TapeManager to treat each update (append) of a tape as a new generation of that tape. The number of generations is used in retention calculations. If this option is set to BY CREATED

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COUNT then each tape is considered a single generation even if it has been updated (appended to) since its creation. The default for this option is BY CREATED COUNT.

CONFIGURE OPERATIONS AUTO PURGE = TRUE

Setting the AUTO PURGE option causes the TapeManager system to purge (PG) an expired tape so it may be used by another program. If an expired tape is mounted, it is purged when a request for an output tape is detected. This allows the auto purge function to work with auto-loader tape drives. For automated cartridge libraries, if an expired tape is not already mounted and there are no scratch tapes in the library, an expired tape is mounted and purged. The default for this option is FALSE.

CONFIGURE OPERATIONS DUPLICATE VOLUME = RECENT

Setting the DUPLICATE VOLUME option causes the TapeManager system to automatically mount the most recently created volume for an input request when two or more volumes match the selection criteria (normally the volume label). If this option is set to IGNORE, and two or more volumes match the selection criteria, then the request is left waiting for the operator to resolve. This option has no effect if the LibraryManager software is not present. The default for this option is IGNORE if it has never been set.

CONFIGURE OPERATIONS SCRATCHPOOL = TRUE

Setting the SCRATCHPOOL option causes the TapeManager system to require that scratch tape requests have the SCRATCHPOOL attribute set before TapeManager will interpret and process the request. If this option is FALSE then all scratch tape requests are processed. Scratch tape requests that are not processed will not load a scratch tape from an automated tape library or have an expired tape auto-purged in an autoloader or drive. The default for this option is TRUE. The REQUIRED syntax is provided for readability.

CONFIGURE OPERATIONS OPTIONAL SELECTION = USER

Setting the OPTIONAL SELECTION option causes the TapeManager system to only select input tapes that were created under the same usercode or on the same host as the process requesting the input tape. This option is useful for sites that run the same application multiple times but under different usercodes or on different hosts. The default for this option is NONE. The SELECTION syntax is provided for readability.

***Note:** When OPTIONAL SELECTION is set to USERCODE or HOSTNAME, the value of ASSIGN SERIALNUMBER is ignored for input tapes. TapeManager will temporarily assign a serial number of TBA to the waiting input request, followed by the assignment of the required serial number if it can be determined. In effect, input tape requests while OPTIONAL SELECTION is not NONE will act like ASSIGN SERIALNUMBER is set to ALWAYS.*

CONFIGURE OPERATIONS ASSIGN SERIALNUMBER = ALWAYS

The ASSIGN SERIALNUMBER option determines when the TapeManager system is to issue an FA SERIALNO for tasks waiting for a tape. The ALWAYS value causes TapeManager to set the serial number for the waiting entry whenever it assigns a tape for the waiting task. This value can be used to help operators to determine the tape that should be mounted without requiring an inquiry to the system. The SYSTEM value causes the TapeManager to assign the serial number whenever the MCP SERIALNUMBER option (OP+27) is set. When MCP option 27 is set, requesting programs are not assigned tapes unless there is a matching serial number request or the operator manually assigns it. The NEVER value keeps the TapeManager from assigning serial numbers even when MCP option 27 is set. The SERIALNUMBER syntax is provided for readability. To allow previous syntax to be supported, TRUE is a synonym for ALWAYS and FALSE is a synonym SYSTEM. The default value is SYSTEM.

CONFIGURE OPERATIONS CLEAR COMMENT = TRUE

Setting the CLEAR COMMENT option causes the TapeManager system to erase (fill with blanks) the COMMENT field of the tape's database record whenever the tape is newly written on. If the COMMENT field is used to document a tape's current contents, set this option to TRUE. If the COMMENT field is used to document cartridge attributes, set this option to FALSE. The default for this option is FALSE.

CONFIGURE OPERATIONS SUPPRESS = TRUE

Setting the SUPPRESS option causes the TapeManager system to install a procedure that connects to the MCP ODT output procedure that prevents the UNRECOGNIZED REQUEST SCANNING TM message from being displayed whenever a TM command is entered at the ODT console. This option has no effect on input from remote spos. The default for this option is FALSE.

CONFIGURE OPERATIONS VOLUMEKIND = AUTO

Setting the VOLUMEKIND option to AUTO causes the TapeManager system to treat Library searches along their proper VOLUMEKIND. In other words, when looking at virtual VTLs then only search the virtual VTLs configured, when physical then only search those VTLs that have physical drives (i.e., back end VTLs).

Setting VOLUMEKIND to IGNORE will cause TapeManager to ignore the VOLUMEKIND attribute during any searches.

We recommend that VOLUMEKIND be set to AUTO.

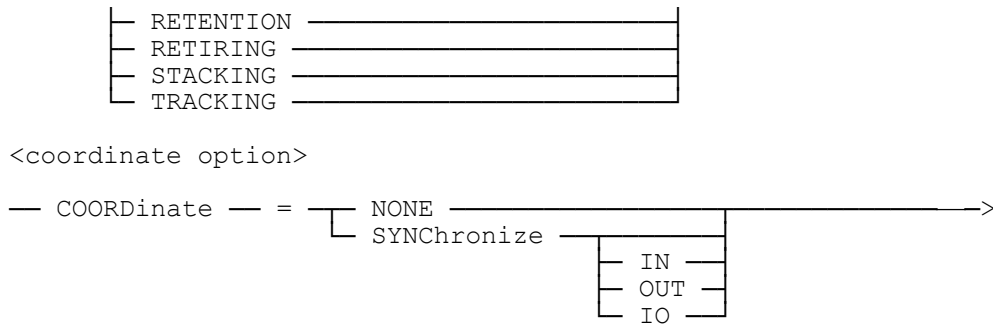
CONFIGURE OPERATIONS

The CONFIGURE OPERATIONS command without any options will display the current settings of the OPERATIONS options.

Syntax

CONVENTION	_____
DATABASE	_____
LIBRARY	_____
LOCATION	_____
MOVEMENT	_____
MT	_____
EMAIL	_____
OPERATIONS	_____
REPORT	_____

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Explanation

CONFIGURE HOST + OTHERSYSTEM CONFIGURE HOST + REMOTEHOST VIA TCPIP 10.0.0.10

The plus (+) option of the CONFIGURE HOST commands adds a remote host to the TapeManager database network. The VIA option specifies which communication protocol should be used when connecting to the remote TapeManager. If a communication protocol is not specified, BNA is assumed. When a host is added a BNA or TCPIP port is offered at the remote host for connection with TapeManager on that remote system. This is a port-to-port established connection to the TO IP address will have to match the FROM IP address on the other host and vice versa. The connection cannot be made until a mirror CONFIGURE HOST + command has been entered at the remote host adding the local host to its configuration. Adding a remote host will cause additional structures and information to be kept in the TapeManager database for use in keeping the copies of the database synchronized. An additional process stack will also be invoked to handle the remote host I/O activity. A maximum of 10 remote hosts may be configured.

Note: The FROM IP address is used to set the MYIPADDRESS file attribute in the port file connection. The value must be a local IP address that is the same address aggregation as the next-hop router through which the destination can be reached (or as the next-hop host if that is the destination). Setting the FROM IP address to the wrong address causes an open failure. If a FROM IP address is not set, and the host has more than one network interface available, then TCP attempts to load balance by selecting the least busy interface. If a FROM IP address is specified, then that address is used regardless of the load.

CONFIGURE HOST - YOURHOST

The minus (-) option of the CONFIGURE HOST command deletes the specified host from the network of remote TapeManager hosts. All information regarding the host is removed from the TapeManager control file requiring that that information be rebuilt if the host is again added later. If a temporary disconnect with the remote host is needed, use the DISABLE HOST command.

CONFIGURE HOST + OTHERHOST RECEIVE ALL

The RECEIVE option of the CONFIGURE HOST command allows the site to determine what configuration and operations options are to be replicated from other hosts. Changes made to receivable items at the specified host will be duplicated at this host. The ALL value will allow all receivable items to be updated from the referenced host. The NONE value does not allow any configuration or operations items to be received from the referenced host. The DEFAULT value will allow the reception of the following items; SET, CONFIGURE CONVENTION, CONFIGURE CLEANING, CONFIGURE MOVEMENT, CONFIGURE MT, CONFIGURE OPERATIONS, CONFIGURE RETENTION, CONFIGURE RETIRING, and CONFIGURE TRACKING.

CONFIGURE HOST DEV RECEIVE + LOG

The RECEIVE + LOG allows multiple TapeManager hosts to have a common log file similar to the common TapeManager database. A common log allows for reports based on the log to be consistent across systems.

CONFIGURE HOST DEV RECEIVE + DRIVELOG

The RECEIVE + DRIVELOG allows multiple TapeManager hosts to have a common drive log file similar to the common TapeManager database. A common drive log allows drive statistics to be consistent across systems.

CONFIGURE HOST DEV COORDINATE = SYNCHRONIZE IO

The COORDINATE option controls the coordination with other hosts when assigning tapes to tasks. The setting of SYNCHRONIZE IN causes TapeManager to verify that the local host is up to date on tape changes with the specified remote host before assigning any tapes for input requests. If the remote host is offline a tape will not be assigned until that host becomes online and synchronized or this setting is changed. The SYNCHRONIZE OUT setting requires the local host to be up to date in order to assign output tapes. The SYNCHRONIZE IO setting requires the local host to be up to date for both input and output tape assignments. The NONE setting allows the assignment of input and output tapes even if the remote host is offline or synchronizing. The default is NONE.

CONFIGURE HOST DEVELOPMENT

The CONFIGURE HOST <name> determines whether the host referred to by <name> has been configured and displays that configuration entry.

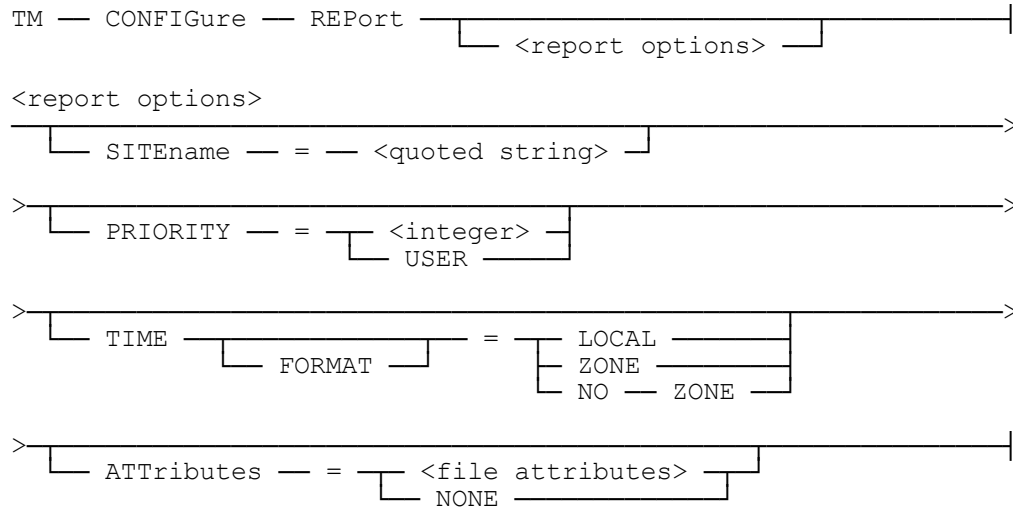
CONFIGURE HOSTS

The CONFIGURE HOSTS command lists all of the HOSTS that have been configured locally for the sending and receiving of TapeManager database updates.

Report Configuration

The CONFIGURE REPORT command sets the default options used for printed reports generated by the TapeManager system.

Syntax



Explanation

CONFIGURE REPORT SITENAME = "Dynamic Solutions Int'l"

The SITENAME parameter allows the setting of a name used in the heading of printed reports. The SITENAME can have a maximum of 80 characters. The SITENAME attribute is cleared by using a null string ("").

Note: Lower case text for SITENAME will be converted to upper case when input from and ODT or remotespo program.

CONFIGURE REPORT PRIORITY = 45

The PRIORITY parameter allows the defining of the print task priority when a REPORT or FIND is processed as a separate task. The value must be between 1 and 99. If the value is USER, then the priority will be the priority of the Utility or TMREMOTESPO program used to execute the command or the priority of the TAPEMANAGER task if from and ODT entry. The default is USER.

CONFIG REP ATT = FORMID = "TAPEMANAGER",PAGESIZE=80

The ATTRIBUTES parameter is a list of ClearPath file attributes applied to the printer file created by the REPORT command. The attributes can be any valid ClearPath print file attribute. A value of NONE will clear all currently defined printer attributes.

If the PAGESIZE attribute is specified, it will determine the number of lines to be printed on a page. The default value for PAGESIZE is 60 for the TapeManager.

The ATTRIBUTES defined in this command may be added to or changed in the REPORT command.

CONFIGURE REPORT TIME FORMAT = LOCAL

The TIME FORMAT parameter is only available if SET TIME ZONE is ON. The TIME FORMAT parameter determines how time stamp information is displayed in reports. The LOCAL option causes times to be shown as converted to the local time zone where the report is being prepared. The ZONE option causes the time information to be compressed so that an abbreviated time zone identifier is added to the output. The NO ZONE option (default) causes times to be shown without adjustment and time zone information.

CONFIGURE REPORT

The CONFIGURE REPORT command without any options will display the current settings of the REPORT options.

Retention Configuration

The CONFIGURE RETENTION command specifies the parameters under which a tape may be scratched (purged). Any or all options may be specified but if an option is not specified it is left in its previous state. Reset an option by specifying a value of zero (0) or FALSE. If more than one option is specified, they are additive. For example, if both the DAYS option and the GENERATIONS option are defined, the tape must be N days old AND have N generations of newer tape in the database.

Note: *The CONFIGURE RETENTION command has been replaced by the CONFIGURE TAPE RETENTION command.*

Syntax

```
TM — CONFIGure — RETENTION ————— |
                                     | <retention options> |
<retention options>
|-----|
| <label> |-----|
|-----| | NONE |-----| | : NO |
|-----| | <retention rules> |
<label>
— <tape name> ————— |
| / — <file ID> |
<retention rules>
|-----| , |-----| |
|---|---|---|---|
| PERmanent |-----|
| SAVEFactor |-----| = — <boolean> |-----|
| DAYS — = — <integer> |-----|
| <generations spec> |-----|
<generations spec>
— GENERations = — <integer> ————— |
> | WITH MATCH = <integer> | | BY | CYCLE |
| | | REEL |
```

Explanation

CONFIGURE RETENTION SYMBOL= PERMANENT

The PERMANENT option specifies that the tape may never be purged until the PERMANENT attribute is reset or the tape is deleted from the TapeManager database.

CONFIG RETEN MYDB/QC= DAYS = 7

When the <file ID> form of the label is used in a retention rule, the tape name portion of the label must match before the file ID portion is checked. Wild cards may be used with both the tape name and file ID identifiers.

CONFIGURE RETENTION MYBACKUP SAVEFACTOR=TRUE

The SAVEFACTOR option specifies the SAVEFACTOR value assigned when the tape was created be used to determine if the tape may be purged.

CONFIGURE RETENTION DAILY= DAYS=90

The DAYS option specifies the number of days that must pass since the creation date before the tape may be purged.

CONFIGURE RETENTION BACKUP= GENERATIONS=3

The GENERATIONS option specifies the number of generations of newer versions of a tape that must exist in the database before the tape may be purged.

CONFIGURE RETEN PACKBACKUP= GENERATIONS=4 WITH MATCH=10

The WITH MATCH specification of the GENERATIONS rule determines the number of leading characters of the label that should be used when determining if a cartridge belongs to a generation set. The rule above specifies that the first 10 characters of the cartridge label will be used when searching for tapes that belong to the same generation set. This specification allows for labels that contain variable information such as the date to be considered part of the same set. For example, using the above rule, the labels PACKBACKUP030397 and PACKBACKUP030497 are considered part of the same set when determining if there are enough newer cartridges to allow the cartridge to be considered expired.

The MATCH option also allows input tapes to be selected so that the program only needs to supply the fixed part of the label name. Using the above example, if a program requests a tape labeled PACKBACKUP, and there is not a tape that is labeled PACKBACKUP, then TapeManager will automatically change the name of the request to match the generation requested (current generation is the default).

CONFIGURE RETEN DBDUMP= GENERATIONS=3 BY CYCLE

The BY CYCLE option of the GENERATIONS rule specifies that the members of a generation set are to be determined by LABEL, CYCLE, VERSION and JOB NUMBER. This option is intended for use by DMSII dumps created by DMUTILITY that uses the CYCLE and VERSION attributes to identity tapes. The JOB NUMBER is also used since it cannot be guaranteed that the tape with CYCLE = 1 and VERSION = 1 will be

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created first. Since JOB NUMBER is used as part of the generation set determination, if a job creates a second set of tapes with the same name (i.e., a second dump of a database), the second set of tapes will be considered part of the same generation set as the first set of tapes.

The BY REEL option of the GENERATIONS rule specifies that the members of a generation set are to be determined by LABEL and reel number (FILESECTION). This is the default if neither BY REEL or BY CYCLE is specified. This option is intended for use by Library Maintenance and most other software that create multi-reel tapes.

CONFIGURE RETENTION DEFAULT SAVEFACTOR

When DEFAULT is used in place of a <label ID>, the site is specifying retention parameters for tapes created that do not match any other retention rules. If a DEFAULT rule is not specified, it has a value of NONE.

CONFIGURE RETENTION *UNKNOWN PERMANENT = TRUE

When *UNKNOWN is used in place of a <label ID>, the site is specifying retention parameters for tapes that do not have a record in the TapeManager database. The *UNKNOWN option is intended to be used with tape libraries that are shared between hosts that do not share the TapeManager database. The feature is meant to prevent operators from purging the tapes of another host that are not known to it. The *UNKNOWN tape option may not have a GENERATIONS rule defined for it. When used with a shared library such that the sharing OS is not an MCP system, only the PERMANENT rule should be used as tapes from other OSes will not have SAVEFACTOR or CREATIONDATE information available in the label. If a *UNKNOWN rule is not specified, it has a value of NONE.

CONFIGURE RETENTION TEST= NONE

The NONE option resets all retention parameters for that <label ID> and removes the rule from the retention rules table.

CONFIGURE RETENTION

If the configure retention command is given without parameters, then a listing of the currently defined retention rules is displayed.

: NO

The NO option restricts TapeManager from updating the retention parameters for tapes that match the <label ID> with the new parameters. By default, the database is searched for any tapes matching the <label ID> specification and those tapes are updated with the new retention rules.

Warning

Do not create retention rules where the <label ID> begins with a wild card (i.e. =BACKUP). Use of retention rules that start with wild cards can severely impact the performance of TapeManager and therefore the entire system. Certain functions such as adding the rule and the SCRATCH report may take so long that the software will appear to be in a loop. Using the GENERATIONS option with this type of rule, makes the problem even worse.

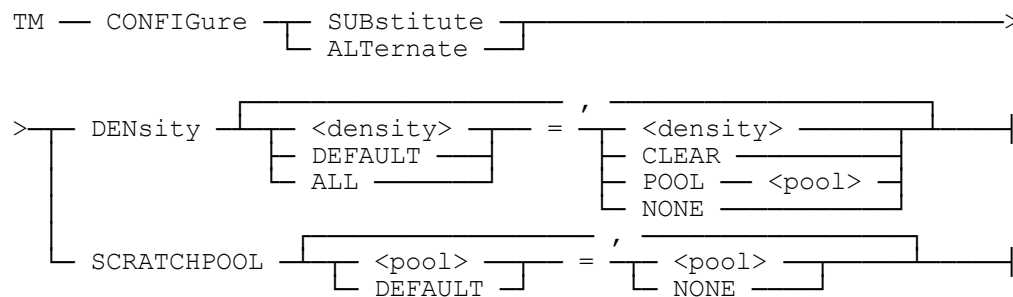
Note: *If the VERIFY option of the CONFIGURE OPERATIONS command is not set, then these rules will not be checked before a tape is purged.*

Note: *TapeManager will allow tapes with the LOCKEDFILE attribute set to be purged as long as there are retention attributes, and those attributes determine that the tape is expired.*

Substitution Configuration

The CONFIGURE SUBSTITUTE command allows density and scratch pool values to be replaced without the need to change programs or WFLs. The CONFIGURE SUBSTITUTE command can be a migration aid when moving to new tape drives and media. A maximum of 9 substitute scratch pools plus a default scratch pool may be defined. Density substitution is applied before any scratch pool substitution with the scratch pool substitution possibly replacing or overriding the density substitution.

Syntax



Explanation

CONFIGURE SUBSTITUTE DENSITY BPI38000 = LTO3

The DENSITY option specifies which tape densities should be replaced by a different density. In this example, all tape requests that ask for a scratch tape with a density of 38000 will be changed to LTO3. The density name can be specified as either the long name or the short name (i.e. FMTLTO3 vs. LTO3).

CONFIGURE SUBSTITUTE DENSITY DEFAULT = LTO

The DENSITY DEFAULT option specifies a density to be applied to a scratch tape request when no density value was requested.

CONFIGURE SUBSTITUTE DENSITY BPI11000 = CLEAR

The DENSITY CLEAR option causes the requested density to be cleared (removed) from the pending scratch tape request.

CONFIGURE SUBSTITUTE DENSITY 38000 = POOL VIRTUAL

The DENSITY POOL option causes the requested density to be cleared and the specified scratch pool to be applied to the pending scratch tape request. If the scratch tape request already has a scratch pool assigned, the scratch pool specified in the substitute rule is ignored.

CONFIGURE SUBSTITUTE DENSITY ALL = LTO3

The DENSITY ALL option causes all known MCP densities to be replaced by the specified density. The default density is not affected by this option. Individual densities may be set to other values after using the ALL option.

CONFIGURE SUBSTITUTE SCRATCHPOOL OLD = NEW

The SCRATCHPOOL option specifies which tape scratch pool should be replaced by a different scratch pool. In this example, all tape requests that ask for a scratch tape from the pool OLD will be changed to request a tape from the pool NEW.

CONFIGURE SUBSTITUTE SCRATCHPOOL DEFAULT = VIRTUAL

The SCRATCHPOOL DEFAULT option specifies a scratch pool to be applied to a scratch tape request when a scratch pool value was not requested by the caller.

Syntax



Explanation

SECURE ADD, DELETE, MODIFY + USER (OPERATIONS)

The USER option of the SECURE command restricts access to these commands to the specified user(s). Use the + attribute to add user(s) to the list of users that can use the specified command(s). Use the - attribute to delete the user(s) from the list.

SECURE ADD, DELETE, MODIFY + GROUP OPSGROUP

The GROUP option of the SECURE command restricts access to these commands to the specified group code(s). Use the + attribute to add group code(s) to the list of users that can use the specified command(s). Use the - attribute to delete the group code(s) from the list.

SECURE MODIFY + USER (MGR/MYACCESS)

If the access code option of the user specification is defined, then the command cannot be executed unless both the user code and the access code match for the calling user or program.

SECURE CONFIGURE, SECURE + STATION NXHA5/CANDE/1

The STATION option of the SECURE command restricts access to these commands to the specified station(s). Use the + attribute to add stations to the list of stations that can use the specified command(s). Use the - attribute to delete the station(s) from the list.

SECURE TM + UNIT 1,2,3

The UNIT option of the SECURE command restricts access to these commands to the specified operator console(s) (also known as ODTs, SPOs, and SCs). The <unit number> must be the unit number of a valid ODT. Use the + attribute to add ODTs to the list of ODTs that can use the specified command(s). Use the - attribute to delete the ODT(s) from the list.

SECURE REPORT PUBLIC

The PUBLIC option of the SECURE command removes all security restrictions from the specified command(s).

SECURE MODIFY SECURE

The SECURE option of the SECURE command restricts a command from being used by any user, station, or unit unless that user, station, or unit is privileged.

SECURE PRIVILEGED + USER (OPERATOR2)

The PRIVILEGED option of the SECURE command confers or removes a privileged status on a user, station, or unit. Privileged users, stations, and units are not affected by any restrictions that may have been placed on TapeManager commands.

SECURE DEFAULT PUBLIC

The DEFAULT option of the SECURE command with the PUBLIC attribute, removes all security restrictions from the TapeManager system.

SECURE DEFAULT SECURE

The DEFAULT option of the SECURE command with the SECURE option restricts all TapeManager commands from being used by any user, station, or unit unless overridden by a command specific SECURE command or that user, station, or unit is privileged. This command will not be accepted unless a privileged user, station, or unit has been defined or a security definition for the SECURE command has been defined.

SECURE

The SECURE command without any options displays a listing of the current security settings.

: FILE TAPEMANAGER/SECURITY

When security restrictions are placed on TapeManager commands with the SECURE command, the security information is stored in the TapeManager control file. This information is stored in such a way as to detect any attempt to change this information except through the SECURE command. Should this information become corrupt, TapeManager will refuse to initialize until provided with a valid security file. The FILE option of the SECURE command provides a means of creating a backup of the TapeManager security information.

The FILE option, when used with a security update creates a backup copy of all the current security information. This file should then be removed to a known, secure location. Whenever a SECURE command is issued for a system that has no current security restrictions and the :FILE option is not present, TapeManager will issue an RSVP to alert the user that a backup copy needs to be created. **It is strongly recommended that a backup copy of the security information be created and retained in a known, secure location.**

If for any reason it is required that a backed-up version of the security restrictions be used in place of the current security values, an override option is available. Using the SECURE command with just the FILE option will replace the current security information with that in the designated security backup file. The file must have been created by TapeManager. Any other file will be rejected.

Tape Library Operations

***Note:** The SECURE command is not automatically secured. The SECURE command should be one of the first commands secured if TapeManager security is to be used.*

Caution

Use of the SECURE command implies that normal MCP file security is also used to ensure the safety of the TapeManager database. The SECURE command only controls access to TapeManager commands. It does not control access to the TapeManager database. Access to the TapeManager database should be controlled via file access security mechanisms.

Implementation Hints

When deciding to implement security restrictions for TapeManager, a review of the impact of the various TapeManager commands is necessary.

Commands that control configuration values

The CONFIGURE and SECURE commands control the operational characteristics of the TapeManager system. These commands should be restricted to those designated as tape library administrators.

Commands that modify the TapeManager database

The ADD, DELETE, MODIFY, and REPLACE commands can modify one or more tape database records. These commands should be restricted to those designated as tape library administrators.

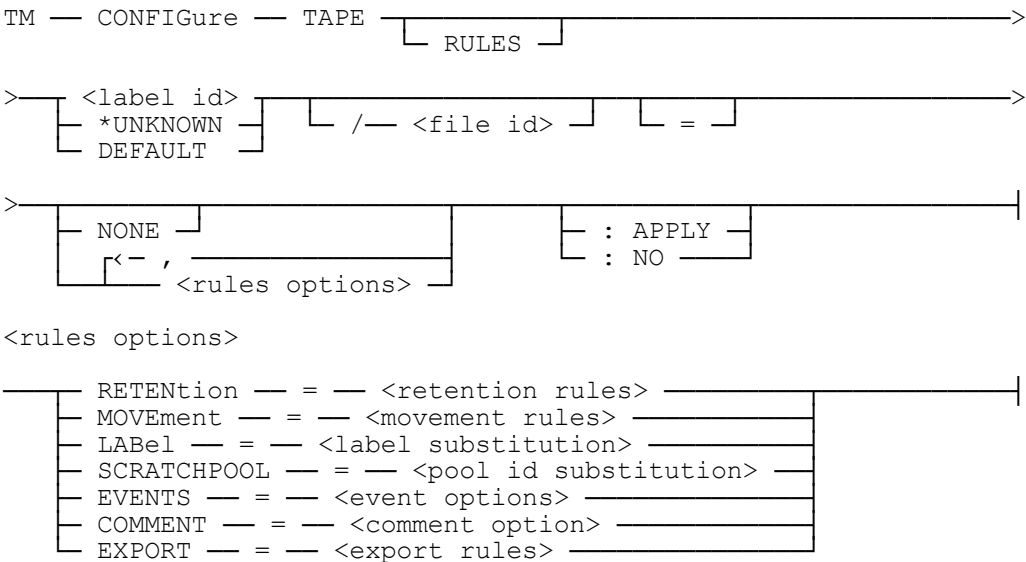
Other commands

Other commands that should be considered for restriction are; PURGE, TL, DATABASE, and SET. These commands could cause operational problems and inaccurate databases if misused.

Tape Configuration

The CONFIGURE TAPE command defines the policies to be applied to tape cartridges. The policies cover retention, movement, and attribute assignments. Most policies are applied at tape creation time based on the label of the tape.

Syntax



Explanation

CONFIGURE TAPE ABC=

The configure tape <label id> specifies the label (tape name) of the tape(s) to which the tape policies (rules) should be applied. The <label id> may contain the wild cards “=” for a string of characters and “?” for a single character. If the configure tape command is given with a <label id> and without parameters, then a listing of the defined policies for that <label id> is displayed.

CONFIG TAPE MYDB/QC=

When the <file ID> form of the label is used in a tape rule, the tape name portion of the label must match before the file ID portion is checked. Wild cards may be used with both the tape name and file ID identifiers.

CONFIGURE TAPE DEFAULT

When DEFAULT is used in place of a <label ID>, the site is specifying policy parameters for tapes created that do not match any other rules defined by the <label id>. If a DEFAULT rule is not specified, it has a value of NONE.

CONFIGURE TAPE *UNKNOWN RETENTION = PERMANENT = TRUE

When *UNKNOWN is used in place of a <label ID>, the site is specifying policy parameters for tapes that do not have a record in the TapeManager database. The *UNKNOWN option is intended to be used with tape libraries that are shared between hosts that do not share the TapeManager database. The feature is meant to prevent operators from purging the tapes of another host that are not known to it. The *UNKNOWN tape option may not have a RETENTION policy with a GENERATIONS rule defined for it. When used with a shared library such that the sharing OS is not an MCP system, only the PERMANENT option of the RETENTION rule should be used as tapes from other OSES will not have SAVEFACTOR or CREATIONDATE information available in the label. If a *UNKNOWN rule is not specified, it has a value of NONE.

CONFIGURE TAPE TEST= NONE

The NONE option resets all policy parameters for that <label ID> and removes the rule from the rules table.

CONFIGURE TAPE

If the configure tape command is given without a <label id> and parameters, then a listing of all currently defined policies is displayed.

: APPLY

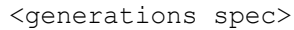
The APPLY option causes TapeManager to search the database for any tapes matching the <label ID> specification and those tapes are updated with the new rules. This is the default action if a colon (:) option is not specified.

: NO

The NO option restricts TapeManager from updating the policy parameters for tapes that match the <label ID> with the new parameters. By default, the database is searched for any tapes matching the <label ID> specification and those tapes are updated with the new rules.

Retention rules specify the parameters under which a tape may be scratched (purged). Any or all options may be specified but options not specified will have their default or not set values. Reset an option by specifying a value of zero (0) or FALSE. If more than one option is specified, they are additive. For example, if both the DAYS option and the GENERATIONS option are defined, the tape must be N days old AND have N generations of newer tape in the database.

```
<retention rules>
```



CONFIGURE TAPE SYMBOL= RETENTION =PERMANENT

CONFIGURE TAPE MYBACKUP RETENTION SAVEFACTOR=TRUE

CONFIGURE TAPE DAILY= RETENTION DAYS=90

75

CONFIGURE TAPE BACKUP= RETENTION GENERATIONS=3

The GENERATIONS option specifies the number of generations of newer versions of a tape that must exist in the database before the tape may be purged.

CONFIG TAPE PACKBACKUP= RETEN GENERATIONS=4 WITH MATCH=10

The WITH MATCH specification of the GENERATIONS rule determines the number of leading characters of the label that should be used when determining if a cartridge belongs to a generation set. The rule above specifies that the first 10 characters of the cartridge label will be used when searching for tapes that belong to the same generation set. This specification allows for labels that contain variable information such as the date to be considered part of the same set. For example, using the above rule, the labels PACKBACKUP030397 and PACKBACKUP030497 are considered part of the same set when determining if there are enough newer cartridges to allow the cartridge to be considered expired.

The MATCH option also allows input tapes to be selected so that the program only needs to supply the fixed part of the label name. Using the above example, if a program requests a tape labeled PACKBACKUP, and there is not a tape that is labeled PACKBACKUP, then TapeManager will automatically change the name of the request to match the generation requested (current generation is the default).

CONFIGURE TAPE DBDUMP= RETEN GENERATIONS=3 BY CYCLE

The BY CYCLE option of the GENERATIONS rule specifies that the members of a generation set are to be determined by LABEL, CYCLE, VERSION and JOB NUMBER. This option is intended for use by DMSII dumps created by DMUTILITY that uses the CYCLE and VERSION attributes to identity tapes. The JOB NUMBER is also used since it cannot be guaranteed that the tape with CYCLE = 1 and VERSION = 1 will be created first. Since JOB NUMBER is used as part of the generation set determination, if a job creates a second set of tapes with the same name (i.e. a second dump of a database), the second set of tapes will be considered part of the same generation set as the first set of tapes.

The BY REEL option of the GENERATIONS rule specifies that the members of a generation set are to be determined by LABEL and reel number (FILESECTION). This is the default if neither BY REEL or BY CYCLE is specified. This option is intended for use by Library Maintenance and most other software that create multi-reel tapes.

CONFIG TAPE ABCDB/QCAUDIT= RETEN PARENT = ABCDBDUMP

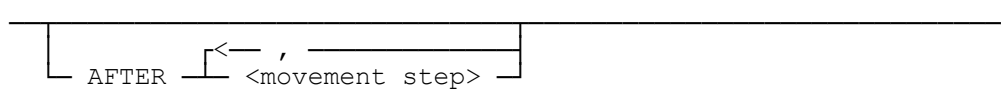
The PARENT option specifies a parent tape that must be expired before the “child” tape may be purged.

Movement Rules

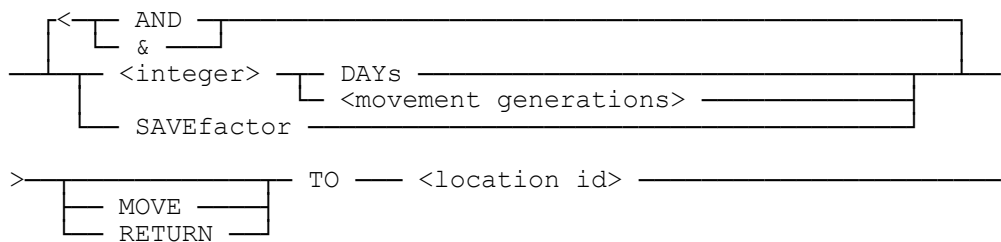
Movement rules specify tape movement policies for the TapeManager system. Movement rules define the sequence of movements between locations that a tape is to make.

Syntax

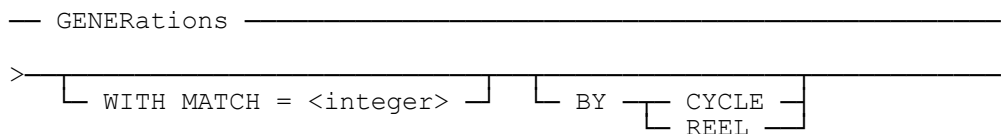
<movement rules>



<movement step>



<movement generations>



Explanation

CONFIG TAPE BACKUP= MOVEMENT AFTER 0 DAYS MOVE TO OFFSITE, 7 DAYS TO SITE

This rule states that any tape created with a label that starts with the characters BACKUP is to immediately be scheduled for movement to the OFFSITE location. After 7 days, the tape is to be move from the location OFFSITE to the location SITE. The locations OFFSITE and SITE must have been previously defined with the CONFIGURE LOCATION command. A movement rule may have up to 9 steps (movements).

The DAYS value is always the number of days after the creation date of the tape not the number of days after the previous movement step.

CONFIG MOVEMENT DB= AFTER 1 DAYS MOVE TO VAULT, 30 DAYS RETURN TO SITE

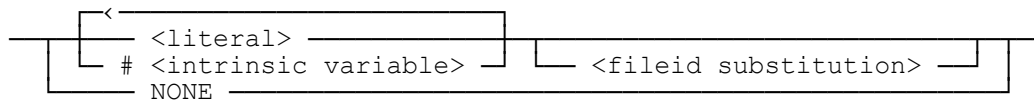
The RETURN keyword can be used to have a location be automatically assigned by TapeManager when the tape is re-written, making the need to set the tape's location with the TM MOVE command unnecessary. However, if tapes are not re-written by the day after the RETURN step is effective, they will appear as exceptions if the TM MOVE command is not used to update their locations. Although the location of any step can be designated as the return step, typically this would only be the last step. TapeManager will only use the location of the last step that is designated as "return" for the return location.

Label Substitution

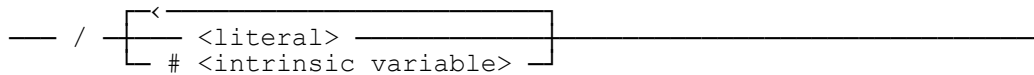
Label substitution allows a tape's label (name) to be changed before the tape is requested (opened). For example, the date or time could be added to the label name specified by the program writing the tape.

Syntax

<label substitution>



<fileid substitution>



Explanation

CONFIGURE TAPE YEAREND LABEL = #LABELID#YYYY

The LABEL substitution option uses literals and intrinsic variables to change the label (name) of a tape being created. The intrinsic variables available are defined in Chapter 13 TapeManager Macros. If the resulting label (or file id) exceeds the MCP maximum (currently 17 characters) the label is truncated. In the above example the tape label has the current 4-digit year value appended to the label name.

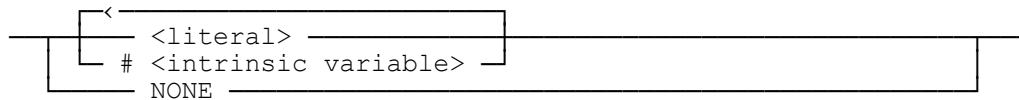
The <file id substitution> option should only be used with tapes written by user programs. If this option is used with MCP written tapes (Library Maintenance) or DMSII tapes (CopyAudit or DMUtility) the results may be errors or the request ignored.

Scratchpool Substitution

Scratchpool substitution allows an output tape's scratch pool attribute to be assigned based on the tape name (label).

Syntax

<Pool id substitution>



Explanation

CONFIGURE TAPE MYTAPE SCRATCHPOOL = MYPOL

The SCRATCHPOOL substitution option uses literals and intrinsic variables to assign the scratch pool of a tape being created. The intrinsic variables available are defined in Chapter 13 TapeManager Macros. If the resulting pool id exceeds the MCP maximum (currently 17 characters) the label is truncated.

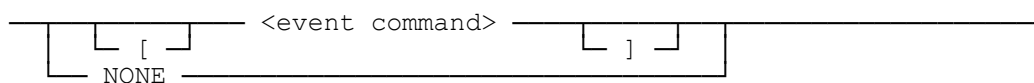
Note: *If CONFIGURE SUBSTITUTION SCRATCHPOOL policies are also defined the CONFIGURE TAPE policies are applied before the CONFIGURE SUBSTITUTION policies are applied.*

Events Options

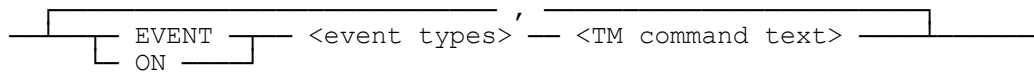
The events options allow for actions to be taken for predefined events for a tape based on the tape name (label).

Syntax

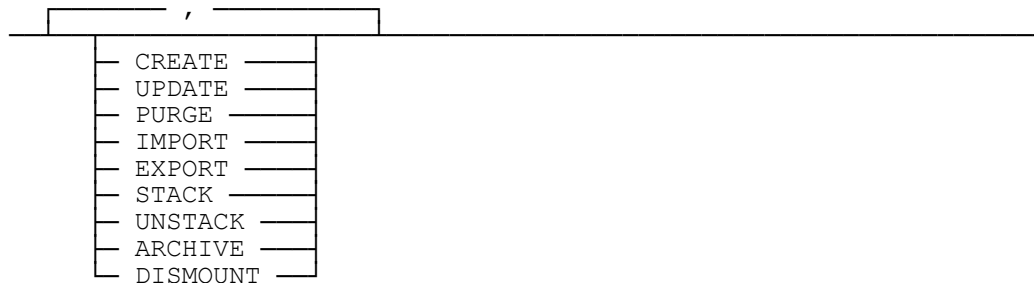
<events options>



<event command>



<event types>



Explanation

CONFIGURE TAPE XTAPE EVENTS = ON STACK PURGE SN #SERIALNO

The EVENTS option of the tape policy configuration allows for TapeManager commands to be executed when configured events happen to tapes covered by the rule name. The command text can be any valid TapeManager command(s). The maximum length of the command text is 255 characters. The commands do not need to be prefixed by “TM”. TapeManager will check the command text for proper syntax before accepting the policy configuration.

The CREATE event is triggered when the tape is dismounted after the tape has been created. The UPDATE event is triggered after the tape has been dismounted after the tape has been written to including the first (creation) time. The PURGE event is triggered when the tape has a scratch label written to it. The IMPORT event is triggered when the tape is imported into a tape library. The EXPORT event is triggered when the tape is exported from a tape library. The STACK event is triggered when the tape is stacked (either MCP or VTL) on another tape. The UNSTACK event is triggered when the tape is created as a result of an unstack (either MCP or VTL) operation. The

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ARCHIVE event is triggered when the virtual tape is written to a physical tape on the back end of a VTL. The DISMOUNT event is triggered whenever the tape is unloaded from a tape drive.

CONFIGURE TAPE EVTAPE EVENTS = [EVENT CREATE, UPDATE EMAIL SUPERVISOR “TAPE SN “ #SERIALNO “ HAS BEEN “ #EVENTNAME; EXPORT #SERIALNO]

If the command text contains commas, colons, semi-colons or other text that could confuse the input scanner the event text should be bracketed by “[“ and “]”.

Note: The intrinsic variables #EVENTNAME, #EVENTTIME, #EVENTDATE have been added for use within command strings triggered by events.

CONFIGURE TAPE ETAPE = EVENTS = EMAC

If the list of events and associated command text exceeds the 255-character limit or the same event triggers and commands are to be used for multiple tape policies then the event text may be placed in a macro. The following example shows a possible implementation of the EMAC macro.

```
TM DEFINE EVMAC =  
BEGIN  
EVENT DISMOUNT STACK SN #SERIALNO;  
EVENT STACK EXPORT SN #SERIALNO;  
EVENT EXPORT EMAIL SUPER #SERIALNO stacked and exported, #LABELID;  
END EVMAC;
```

CONFIGURE TAPE MYTAPE EVENTS = NONE

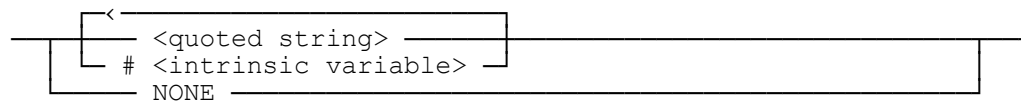
A value of NONE for the EVENTS option clears all event settings for this tape policy.

Comment Option

Comment option allows a comment to be added to the TapeManager database for a tape based on the tape name (label).

Syntax

<comment option>



Explanation

CONFIGURE TAPE TESTTAPE COMMENT = "Test tape created at "#TOD

The comment option uses literals and intrinsic variables to assign a comment to the tape record in the TapeManager database. The intrinsic variables available are defined in Chapter 13 TapeManager Macros. If the resulting comment exceeds the TapeManager maximum (currently 59 characters) the comment is truncated.

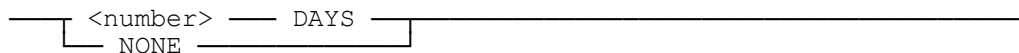
Note: *CONFIGURE OPERATIONS CLEAR COMMENT* command controls clearing of the comment database item when the tape is purged.

Export Rules

The export rules define an export policy of a tape based on the tape name (label). The export policy is useful for physical tape libraries to automate movement of tape offsite. For VTL users the export policy can be used to automate back-end VTL processes such as archive (copy to physical tape) or replication (copy to another VTL).

Syntax

<export rules>



Explanation

CONFIGURE TAPE DAILYDUMP EXPORT = 1 DAY

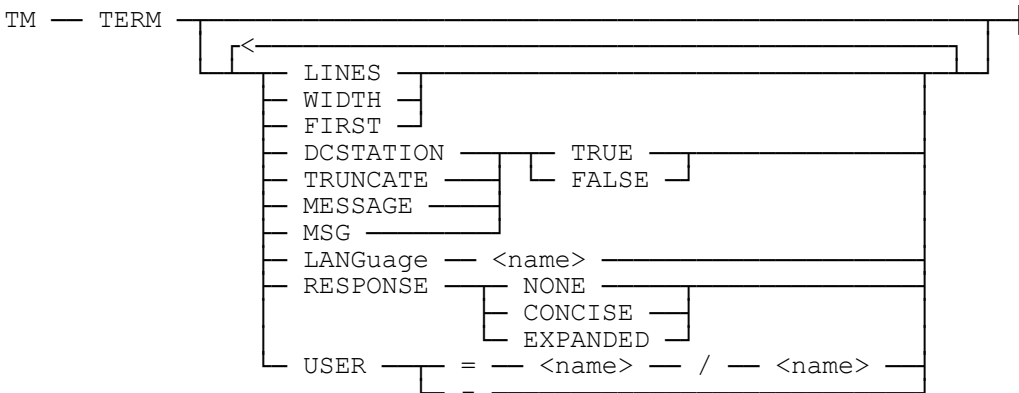
The export rules specify when a tape should be placed in the export queue for removal from a physical or virtual library. The DAYS value defines the time that the tape should be placed in the export queue. A value of 1 DAY will cause the tape to be placed in the export queue 24 hours after the tape has been ejected from the tape unit. A value of 0 DAYS will place the tape in the export queue immediately after the tape is ejected from the tape unit.

Note: *Once a tape has been placed in the export queue it may be managed with the EXPORT command.*

TERM Command

The TERM command allows the operator to control the display of responses from TapeManager at the ODT. This command allows the responses from TapeManager to match output from the system. TapeManager will attempt to monitor changes made to the ODT TERM command and adjust automatically.

Syntax



Explanation

TERM

Displays the current values of the TERM options.

TERM LINES 24

Sets the number of lines the terminal being used as an ODT can display. The default is 24 lines.

TERM WIDTH 80

Sets the number of characters on line the terminal being used as an ODT can display. The default is 80 characters per line.

TERM FIRST 4

Sets the number of lines to skip before displaying an output message. This allows commands typed at the top of the screen to be preserved. The default is to skip the first 2 lines.

TERM DCSTATION TRUE

Controls whether the terminal being used as an ODT is set to run as a MARC datacomm station. If this option is TRUE, output will be displayed as if to a normal datacomm station. If this option is FALSE, output will be formatted for an ODT set up with the visible ETX option set and DC1 set to erase to the end of the line. The default value is TRUE.

TERM LANGUAGE ENGLISH TRUNCATE TRUE MSG TRUE USER -

The LANGUAGE, TRUNCATE, MESSAGE, RESPONSE, and USER options of the TERM command are provided for compatibility with the ODT TERM command. These options are ignored by TapeManager.

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The NUMERIC option restricts TapeManager to only tracking tapes that have a completely numeric serial number. If a range is not specified for the NUMERIC option, 000000 to 999999 will be used.

CONFIGURE TRACKING MATCH AA?NNN

The MATCH option allows a site to set a serial number pattern that a tape must have before it is tracked. The serial number pattern is made up of six characters where an A is any letter, an N is any digit, and a ? is any character. EX: TM CONFIGURE TRACKING MATCH = AA?NNN will cause TapeManager to track tapes that start with two alpha characters followed by any character and ending in three digits for a serial number.

CONFIGURE TRACKING RANGE + SN ABC001 - ABC999

The RANGE option restricts TapeManager to only tracking tapes that match the specified range(s). Up to 4 ranges may be specified. The serial number ranges may also contain alpha values as long as the starting and ending serial number have matching alpha values. Overlapping ranges will not be merged. A range may only be deleted (-) by specifying the same serial number range as specified when the range was added (+). The last remaining range specification may never be deleted. Changing the TRACKING configuration to something other than RANGE will delete all range specifications.

CONFIGURE TRACKING LIBRARY

The LIBRARY option allows a site to have TapeManager only track information for tapes in an automated tape library. The LibraryManager software must be configured with the system to use this option. This option is provided for “passive” mode operation where another tape management system is providing the active tape tracking. The ONLY syntax is provided for readability.

***Note:** The tracking options only have effect if the TapeManager system has been configured with AUTOMATIC operation. This configuration option only applies to tapes new to the TapeManager system. Once a tape is entered into the database, it will continue to be tracked until deleted from the database. (Tapes can be included in the TapeManager database with the ADD command.) This feature allows a site to track specific tapes that do not follow the normal tracking rule.*

CONFIGURE TRACKING

The CONFIGURE TRACKING command without any options will display the current settings of the TRACKING options.

CONFIGURE TRACKING CLEAN RANGE + SN CLN001 – CLN099 USES=20

The CLEAN RANGE option defines the range of serial numbers that will automatically be recognized as cleaning cartridges. The USES count defines the number of times the cleaning cartridge may be used before it should be discarded. Up to 4 cleaning cartridges serial number ranges may be defined. Each range may have a different usage count. The following table defines maximum uses for various cleaning cartridges. By default, TapeManager assumes cleaning cartridges have serial numbers CLN000 to CLN999 each with 20 uses.

Cleaning cartridge media type	Maximum # of uses
4mm (DDS-1/2/3/4) (DAT)	50
8mm (not AIT or Mammoth)	24 (17 for 8500/8500c)
AIT (1/2/3)	36
DLT (4000/7000/8000)	20
SDLT	20
LTO	Up to 50
3480/3490 (18/36 track)	500
9840	100

The above values are maximums and may be less for your drive and/or cleaning cartridge. Check with the drive and cartridge manufacturer for the recommended values.

A tape that is marked as a cleaning cartridge will be shown as such on the various reports. It will appear on the RETIRING report once it has been used the specified number of times. For site with automated tape libraries and LibraryManager, the cartridge will be automatically loaded into a drive in the library that reports to the MCP that it needs cleaning. Cleaning cartridges in tape libraries that exceed the specified number of uses are automatically ejected from the library. Use the CLEAN MTxxx WITH <serial number> command to track the number of uses of manually used cleaning cartridges.

Note: *Some automated tape libraries have the capability to uses and track cleaning cartridges on their own. Generally, these libraries have dedicated slots for these cleaning cartridges. TapeManager generally will not be able to see, use, or track the usage of these cartridges. Also, TapeManager will not be able to track the usage of cleaning cartridges when used by another non-MCP host on a multi-host library.*

CONFIGURE TRACKING CLEAN RANGE - SN CLN001 – CLN099

The – option of the CLEAN RANGE configuration command removes the specified serial number range from those automatically detected as cleaning cartridges. It does not remove records from the database. Cleaning cartridges already in the database in the specified serial number range will continue to be tracked and reported. Use the database DELETE command to remove those tapes from the database if desired.

VTL Configuration

The CONFIGURE VTL command specifies the options for managing a virtual tape library (VTL).

Syntax

```
TM — CONFIGure — VTL —————>
                        |<library spec>|
```

```
> |<—————,—————|
  |<VTL logging options>—————|
  |DISK — <VTL disk monitor options>—————|
  |PERFORMance — <VTL performance options>—————|
  |VOLUMEKIND — <VTL volumekind options>—————|
  |RENAME — = — <boolean>—————|
  |WRITE LOCK — = — <boolean>—————|
```

<VTL logging options>

```
> |<—————,—————|
  |SIZE — = — <integer>—————|
  |TIME — = — <integer>—————|
  |COPIES — = — <integer>—————|
  |NONE—————|
```

<VTL disk monitor options>

```
> |<—————,—————|
  |MONITOR |<MINimum — = — <integer>—————|
  |         |PERCENT — = — <integer>—————|
  |         |TIME — = — <integer>—————|
  |         |NONE—————|
```

<VTL performance options>

```
> |MONITOR |<TIME — = — <integer>—————|
  |         |NONE—————|
```

<VTL volumekind options>

```
> | = |<AUTOMATIC—————|
  |   |IGNORE—————|
```

Explanation

CONFIGURE VTL <library spec> LOG SIZE=2000, TIME=720, COPIES=20

The VTL <library spec> LOG option specifies the logging options used by the VTL Agent. SIZE is the amount of disk space in Megabytes a single log is allowed to occupy. Once a log file reaches this size it is closed and a new log file is created. SIZE may have a value of 1 to 65535 with the default value being 7.

TIME is the amount of time in seconds that a VTL Agent log file will collect information before it is closed and a new log file created. TIME may have a value of 1 to 65535 with a default value of 1440 (1 day).

COPIES is the number of VTL Agent log files to retain on the VTL. Once this number is reached older log files are removed. COPIES may have a value from 2 to 50 with a default value of 10.

Setting LOG to NONE will clear local host logging configuration. This host will not request logging but the VTL Agent will use its local values or those from another host.

CONFIGURE VTL <library spec> DISK MINIMUM=200, PERCENT=95, TIME=30

The VTL <library spec> DISK option specifies the disk space monitoring options used by the VTL Agent. MINIMUM is the amount of disk space in Megabytes that will trigger an alert message to the host(s). Once available disk space for virtual cartridges falls below this value an alert message is sent to the host(s). MINIMUM may have a value of 1 to 65535 with the default value being 100.

PERCENT is the percentage value above which in use disk space will trigger an alert message to the host(s). Once in use disk space for virtual cartridges exceeds this percentage an alert message is sent to the host(s). PERCENT may have a value of 1 to 99 with a default value of 90.

TIME is the frequency in minutes that the VTL Agent should check the VTL cartridge disk space. This check can be CPU intensive, so it is recommended that the interval time not be short. TIME may have a value from 1 to 65535 with a default value of 60.

Setting DISK to NONE will clear local host disk monitoring configuration. This host will not request disk monitoring, but the VTL Agent will use its local values or those from another host.

CONFIGURE VTL <library spec> PERFORMANCE TIME=30

The VTL <library spec> PERFORMANCE option specifies the performance space monitoring options used by the VTL Agent. TIME is the frequency in minutes that the

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VTL Agent should report performance information to the host(s). This check can be CPU intensive, so it is recommended that the interval time not be short. TIME may have a value from 1 to 65535 with a default value of NONE.

Setting PERFORMANCE to NONE will clear local host performance monitoring configuration. This host will not request performance monitoring, but the VTL Agent will use those from another host. If no host has requested performance reports, then none are generated.

CONFIGURE VTL <library spec> VOLUMEKIND = AUTOMATIC

Setting the VTL <library spec> VOLUMEKIND option to AUTO for a specific VTL/library causes the TapeManager system, during a search of the specified library, to search along its proper VOLUMEKIND. In other words, when looking for virtual tapes, only search the <library spec> if it is virtual.

Setting the VTL <library spec> VOLUMEKIND to IGNORE will cause TapeManager to ignore the VOLUMEKIND attribute during a search of the <library spec>.

CONFIGURE VTL <library spec> RENAME = TRUE

The VTL <library spec> RENAME option causes the VTL to update its tape name with the label from the TapeManager database for the <library spec> specified. This update occurs whenever the tape is mounted or dismounted and when the LABEL is modified by command. For example, TM PURGE MT xx

CONFIGURE VTL <library spec> WRITE LOCKOUT = TRUE

The VTL <library spec> WRITE LOCKOUT option causes the VTL to update its write protection attribute (Enable Write Protection) based upon the EXPIRED condition of the TapeManager database for the <library spec> specified. This update occurs whenever the tape is mounted or dismounted and when the EXPIRED or retention attributes are modified by command.

WARNING: There should only be one entity in charge of the Write Protection of a tape in the VTL. If you configure this option to be FALSE, it will change the Enable Write Protection box for the Tape Properties of the tape in the VTL Console based on the TapeManager database (not on the VTL Console), which means that tape can be overwritten.

☐ **Enable Write Protection**

CONFIGURE VTL

The CONFIGURE VTL command without any options will display the current settings of the VTL options for all VTLs.

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the message type is changed to Critical or Error, then a waiting entry would appear when either of these messages occurred.

NOTE: Any message type that is marked as Critical or Error will cause a waiting ODT entry that will need to be OK'd. Any message type that is marked as Warning will cause the message to be logged in the MCP sumlog. Any message type that is marked as Information will get logged in the TapeManager log.

Making a change to the Messages VTL configuration will also update the SYSTEM/VTLSUPPORT/MESSAGES database file that is used to keep track of these messages.

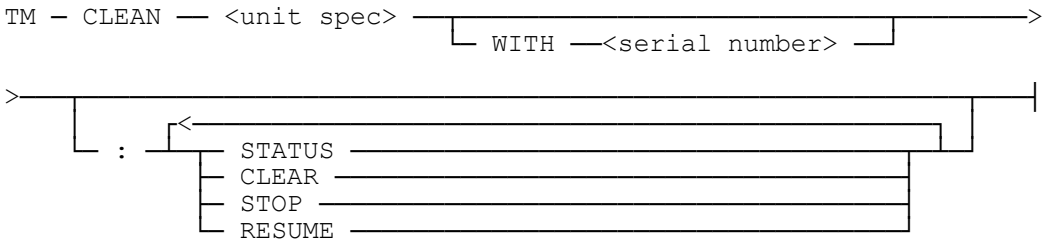
Chapter 7

TapeManager Operations

CLEAN Command

The CLEAN command is used for drive related cleaning functions. The CLEAN command cleans a tape unit in an automated tape library or marks a non-automated tape unit as having been cleaned.

Syntax



Explanation

CLEAN MT342

This command causes the specified tape unit to be scheduled for cleaning. The Tape unit must be in an automated tape library. If the drive is in use, it will be reserved such that another task cannot select the drive until cleaning has been completed. Once the drive is not in use, a cleaning tape in the library is selected and mounted in the drive. Once the drive cleaning process is completed the cleaning tape is returned to a slot. If the cleaning tape has reached its maximum number of uses it will be ejected from the library. This command is not required for tape units that report the need for cleaning to the MCP. An MCP generated cleaning request will cause this command to be processed automatically. Cleaning tapes are defined using the CONFIGURE TRACKING CLEANING command.

CLEAN MT80 WITH CLN005

The CLEAN MT command with the WITH part marks the tape unit as being cleaned and the updates the cleaning cartridge usage count. The serial number supplied must be that of a cleaning cartridge as defined with the CONFIGURE TRACKING CLEANING command. This command does not perform any actual cleaning action. It simply registers the use of the cleaning cartridge for counting and reporting purposes. It is meant for non-automated tape drives so that cleaning cartridge usage can be tracked.

CLEAN :STATUS

The STATUS option of the CLEAN command displays information regarding current drive cleaning activity. The display will show whether the cleaning process is active or inactive and how many drives are queued for cleaning. If the cleaning process is active, the display will also show what action the cleaning process is currently performing.

CLEAN :CLEAR

The CLEAR option of the CLEAN command removes all entries from the queue of drives to be cleaned. The clear is done before any drives specified in the command are added to the queue for cleaning. The command has no effect on drives that are in the process of being cleaned.

CLEAN :STOP

The STOP option of the CLEAN command stops the processing of drive cleaning requests by cleaning process. The cleaning process stack is sent to end-of-job. Drives in the cleaning queue are retained but no additional drives may be added. If a drive is being cleaned, it will be completed before the stop is executed.

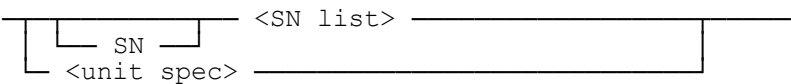
CLEAN :RESUME

The RESUME option of the CLEAN command restarts the cleaning process. Once the resume has successfully completed, any queued drives are processed, and additional drives may be added to the drive cleaning queue.

REPLACE Command

The REPLACE command is used when an old tape or tape unit is retired and replaced with a new tape or tape unit.

Syntax

TM — REPLace 

Explanation

REPLACE SN 100001

This command marks tape 100001 as having been replaced with a new reel or cartridge. The serial number is retained but the new date field is updated and the usage and error counts since new are cleared. A tape must be marked as being purged (scratch) before the system will allow it to be replaced. The SN syntax is provided for consistency and readability.

REPLACE MT80

This command marks tape unit MT80 as having been replaced with a new unit. The drive statistics are cleared and the in-service date is set to the current date. For tape drives and MCPs that support the reporting of the tape unit serial number, an automatic replace is done whenever a different tape drive serial number is seen for that unit.

COPY Command

The COPY command is used to make an image copy of a tape.

Syntax

```

TM — COPY — { <VTL archive spec> | <VTL import spec> | <VTL remote copy spec> }

<VTL archive spec>
— SN — <name> — TO — BACKEND — { SN — <bar code> |
    ( ( VTLKEY — = — <string> |
      ( PASSWORD — = — <string> |
        EJECT ) ) )
>

<VTL import spec>
— SN — <name> — FROM — BACKEND — SN — <bar code> —
>
    ( ( KEY — = — <string> |
      ( PASSWORD — = — <string> ) ) )
>

<VTL remote copy spec>
— SN — <name> — TO — VTL — <name> — { AS — <string> |
>
    ( ( USER — = — <string> |
      ( PASSWORD — = — <string> ) ) )
>

```

Explanation

COPY SN V00001 TO BACKEND SN T00004

The COPY to BACKEND command starts a VTL archive process that duplicates the virtual tape onto a physical tape in a backend library attached to the VTL. The source virtual tape must be in the virtual vault of the VTL. If a bar code of the destination physical tape is not specified, then an expired tape in the physical library will be selected if available. If the physical tape is to be encrypted, then the VTLKEY and PASSWORD options should define the preconfigured VTL encryption key and key password. If a default VTL encryption key and password were defined with the CONFIGURE ENCRYPTION command those strings will be used if not specified in this command. The EJECT option causes the physical tape to be ejected from the physical library when

the copy process has finished. This command requires a VTL with the DSI VTL Agent installed and a physical library attached to the back end of the VTL.

COPY SN V00001 FROM BACKEND SN T00004

The COPY from BACKEND command starts a VTL import process that duplicates the physical tape in a backend library attached to the VTL onto a virtual tape. The destination virtual tape must not already exist as it will be created. If the physical tape is encrypted, then the VTLKEY and PASSWORD options should define the preconfigured VTL encryption key and key password used to encrypt that tape. If a default VTL encryption key and password were defined with the CONFIGURE ENCRYPTION command those strings will be used if not specified in this command. This command requires a VTL with the DSI VTL Agent installed and a physical library attached to the back end of the VTL.

COPY SN V00001 TO VTL DRVTL

The COPY to VTL command starts a VTL remote copy process that duplicates the virtual tape at a remote VTL. The USER and PASSWORD options should define the user id and password for accessing the remote VTL. This command requires a VTL with the DSI VTL Agent installed and a remote VTL accessed via a TCP/IP connection.

DATABASE CLOSE Command

The DATABASE CLOSE command temporarily closes the TapeManager database. DB is an abbreviation for DATABASE. This command allows the database to be closed for backup purposes without shutting the TapeManager system down. While the TapeManager system is active, tape activity will be queued when the database is closed. This ensures no tape activity will be missed. The user count of TapeManager must be zero before the action is allowed.

Syntax

```
TM  ┌── DATABASE ──┐ CLOSE ───────────────────┐  
    │ DB            │
```

Explanation

DB CLOSE

Temporarily closes the TapeManager database so that it may be backed up. While the database is closed, commands that require database access will receive an error message. The utility program will not execute.

Note: *TapeManager will attempt to automatically close and reopen its database if it detects a COPY of its database when the TM CONFIG DB setting is CLOSE. (Only if the user count is zero.)*

DATABASE OPEN Command

The DATABASE OPEN command reopens the TapeManager database after it has been closed with the DATABASE CLOSE command. DB is an abbreviation for DATABASE. This command allows reopening of the database after it has been closed for backup purposes.

Syntax

```
TM  [DATABASE] OPEN _____  
    [DB]      _____
```

Explanation

DB OPEN

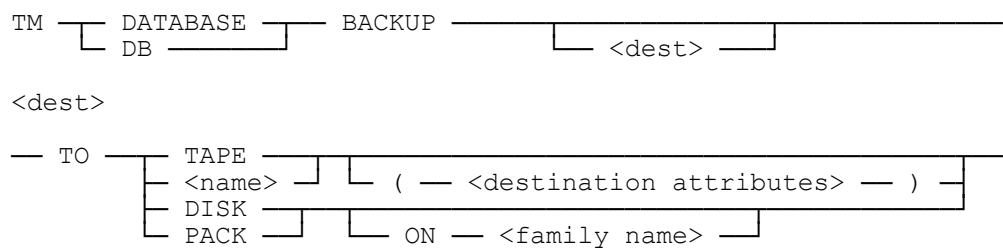
Reopens the TapeManager database closed by a previous DB CLOSE command.

While the database is closed, commands that require database access will receive an error message. The utility program will not execute.

DATABASE BACKUP Command

The DATABASE BACKUP command temporarily closes the TapeManager database and copies the database to tape or disk. Once the database is copied, it is reopened. The DB BACKUP process attempts to copy all parts of the TapeManager system; database, configuration, control, and object files. If the LibraryManager software is in use, the LibraryManager files are backed up to the same tape or disk directory. A BACKUP file set will then contain a complete file set if recovery is needed. DB is an abbreviation for DATABASE and Tape Library files.

Syntax



Explanation

DB BACKUP

DB BACKUP TO TAPE

Copies the TapeManager database to a library maintenance tape named TAPEMANAGERBACKUP. If the TapeManager object files have not been renamed and reside on the same family as the database, they will be backed up also.

DB BACKUP TO MYTMTAPE

Copies the TapeManager backup set to a tape labeled MYTMTAPE. This option allows a site to name the backup tape something other than the default of TAPEMANAGERBACKUP.

DB BACKUP TO TAPE(SCRATCHPOOL=LIBRARY)

When the TO TAPE or TO <name> specification is used, optional destination volume attributes may be supplied. These attributes include (but are not limited to) SCRATCHPOOL, DENSITY, and SAVEFACTOR. The list of available attributes and their syntax is described in the MCP/AS Work Flow Language (WFL) Programming Reference Manual in the COPY or ADD Statement section under <destination volume attribute list>.

Note: *Not all destination volume attributes may be allowed. The BACKUP command generates a COPY & VERIFY statement in the WFL job it creates. Some destination volume attributes may not be available with the VERIFY option.*

DB BACKUP TO DISK

Copies the TapeManager database as BACKUP/= to the pack family where the TapeManager database resides. The DB RESTORE command can be used to recover a database backed using the DB BACKUP command.

DB BACKUP TO PACK ON BACKUPPACK

This command copies the TapeManager database as BACKUP/= to the pack family named BACKUPPACK.

Note: *While the database is closed for the backup, commands that require database access will receive an error message.*

DATABASE REORGANIZE Command

The DATABASE REORGANIZE command temporarily closes the TapeManager database and reorganizes the database files. Once the reorganization has completed the database is reopened. DB is an abbreviation for DATABASE.

Syntax

```
TM [ DATABASE | DB ] REORGanize [ <multi-host spec> ]  
  
<multi-host spec>  
[ ALL | HOSTS ] [ <hostname> ] : [ TEST ]  
[ HOSTname ] = [ <hostname> ]
```

Explanation

DB REORG

This command starts a reorganize process of the TapeManager database. During the reorganization, the database is checked for validity, any deleted record space is returned to the system, and the index tables are rebuilt for efficiency. The pack family must have enough space to temporarily hold two copies of the database. While the database is closed for the reorganization, commands that require database access will receive an error message.

Note: *It is highly recommended that you backup the database (with the DB BACKUP command) before issuing this command.*

The database reorganization will create a file that contains a list of the changes and corrections made during the reorganization. The REPORT/LIST REORGANIZATION command is used to view this data. Only one reorganization results file is maintained. Executing the reorganization command will delete a previous results file.

DB REORG ALL HOSTS

The multi-host option of the reorganize command starts the reorganize process at the local host and at the specified remote hosts if those remote hosts are online. The specified hosts send database records to the lead host for comparison to make sure the records on all hosts are the same. If a discrepancy is found with a hosts record when compared to other hosts the lead TapeManager host will determine which record is the most recent and update the other hosts.

The :TEST option allows a multi-host reorganize to be executed as normal except that no database updates are done. Reports and displays are generated as normal, but the database will be left in its original condition on all hosts.

DATABASE RESTORE Command

The DATABASE RESTORE command restores the TapeManager database from a backup copy of the database files. Once the restore has completed the database is reopened. DB is an abbreviation for DATABASE.

Syntax

```
TM DATABASE DB RESTORE <directory>
```

Explanation

DB RESTORE

Restores the TapeManager database from the BACKUP/= directory created with the DB BACKUP TO DISK command. The current database is overwritten and any data not in the backup database is lost.

DB RESTORE BACKUP/= ON BACKUPPACK

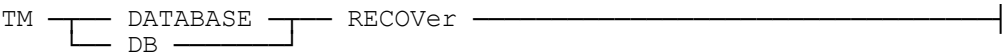
Restores the TapeManager database from the BACKUP/= directory on the family BACKUPPACK.

***Note:** While the database is closed for the recovery, commands that require database access will receive an error message.*

DATABASE RECOVER Command

The DATABASE RECOVER command causes TapeManager to recover records from the MCP Sumlog and apply them to the TapeManager database. DB is an abbreviation for DATABASE.

Syntax



Explanation

DB RECOVER

TapeManager calls the Sumlog and requests records from the time of the last TapeManager database update. This command is a manual version of the CONFIGURE DB RECOVER FROM LOG = TRUE. Use this command if the RECOVER FROM LOG is not set and information from the system Sumlog is required after a TapeManager restart. This command must be entered before any database updates have occurred to be of any use.

DATABASE Command

The DATABASE command displays the current status of the TapeManager database. The database record count and license information is also displayed. DB is an abbreviation for DATABASE.

Syntax

TM ☐ DATABASE ☐
DB ☐

Explanation

DATABASE

Displays the open or closed state of the TapeManager database. The number of records in the database is displayed. TapeManager license information is also displayed.

DELETE Command

The DELETE command removes a tape unit (or tape units) from the TapeManager drive log.

Syntax

TM — DELeTe — <unit spec list> _____|

<unit spec list>

|< _____ , _____|
|<unit spec> | — — <unit spec> | _____|

Explanation

DELETE MT999

The referenced tape unit is deleted from the TapeManager drive log. All information for that drive is cleared.

DELETE MT 1200-1209

The specified list of tape units (1200-1209) is deleted from the TapeManager drive log. All information for those drives is cleared.

Note: Tape units are added to the drive log automatically. The deleted drive will be re-added to the drive log if it is acquired onto the system again.

DISABLE Command

The DISABLE HOST command closes the connection to a remote TapeManager host. While a host is disabled, no tape activity information is passed between these hosts. The local TapeManager will not attempt to access the remote TapeManager host until it has been allowed to do so with the ENABLE command. When a host is re-enabled a synchronization process is started to make sure any tape database changes made to either host while disabled are passed to each host. The disabled state of a host is saved over TapeManager restarts.

Syntax

```
TM - DISABLE [HOSTs <hostname> | ALL HOSTs | STACKING]
```

Explanation

DISABLE HOST TESTHOST

Closes the connection between the named remote host and the local host used to transfer tape database activity and other information as defined in the CONFIGURE HOST command.

DISABLE ALL HOSTS

Closes the connection between all remote hosts and the local host used to transfer tape database activity and other information as defined in the CONFIGURE HOST command.

Note: The *DISABLE HOSTS* command does not affect any connection with the remote host used for remote library access. The *DISABLE LIBRARY* command should be used to disconnect access to/from a remote tape library.

DISABLE STACKING

The disable stacking function attempts to delink the TapeManager system from the Unisys TapeStack system (SYSTEM/TAPESTACKSUPPORT). The disable will not be allowed if there are stacking functions currently running. Delinking from the TapeStack software allows the TapeStack software to be updated without the need of bringing TapeManager down.

ENABLE Command

The ENABLE command attempts to re-establish the connection to a remote host that was closed with the DISABLE HOST command. When a host is re-enabled a database synchronization process is started to make sure any tape database changes made to either host while the connection was disabled are passed to each host.

Syntax

```

TM - ENABLE { HOSTs - <hostname> | ALL - HOSTs | STACKING } <resync option>

<resync option>
  - RESYNC { TO <date> | @ <time> | ALL }

```

Explanation

ENABLE HOST DEVELOPMENT

Attempts to reestablish the connection to the named host. The reconnection will only succeed if the named host has been configured for connection to the local host, that connection is enabled, and the network service between the hosts is active. Enabled is the default state when a host is added with the CONFIGURE HOST command.

ENABLE ALL HOSTS

Attempts to reestablish the connection to all remote hosts.

ENABLE HOST TESTSYSTEM RESYNC TO YESTERDAY

An ENABLE HOST command with the RESYNC option causes the database resynchronization process that is activated to be at the specified date and time rather than from the point when the connection was last broken. If a time is not specified, midnight (00:00) is assumed. The date and time must be prior to the point when the connection between the local and remote host was broken.

ENABLE HOST PROD RESYNC ALL

The ALL option of the HOST ENABLE RESYNC command causes the remote host to send all records from its database to be resent.

Note: The ENABLE HOSTS command does not affect any connection with the remote host used for remote library access. The ENABLE LIBRARY command should be used to reconnect access to/from a remote tape library.

ENABLE STACKING

The enable stacking function attempts to link TapeManager to the Unisys TapeStack system (SL TAPESTACKSUPPORT).

INSTALL Command

The install command allows initiation of a software upgrade directly from TapeManager. The install command will start a copy of all software from the source into a temporary directory of INSTALL/= within the current TapeManager installation directory. The SYSTEM/TAPEMANAGER/INSTALL program will run and select the best code for the current machine and install that set of files. For active mode installations, the install program will shut down TapeManager and restart it after the new code has been installed. Any TapeManager Utility or TMREMOTESPO sessions will be temporarily delinked from TapeManager.

Syntax

```

TM - INSTALL [ ALL ] [ FROM - <name> [ IN - <filename> [ ON - <directory> [ AT <hostname> ] ] ] ]

```

Explanation

TM INSTALL

Will install the entire new release from CD media. The release CD must be mounted on a system CDROM drive.

INSTALL ALL IN "TM.CON"

Will install the entire new release from the wrapped container file, "TM.CON".

INSTALL ALL FROM TAPEMANAGER (CD)

Same as TM INSTALL.

INSTALL FROM TMBACKUP(TAPE)

Will install the entire new release from the tape named TMBACKUP.

INSTALL ON *TMFILES ON PACK

Will install the entire new release from the directory TMFILES on disk family, PACK.

INSTALL ALL ON TAPEMANAGER/= AT PROD

Use of the AT hostname option in the ON string will cause TapeManager to copy the install files from the specified location on another host. The two hosts must be communicating via a BNA connection.

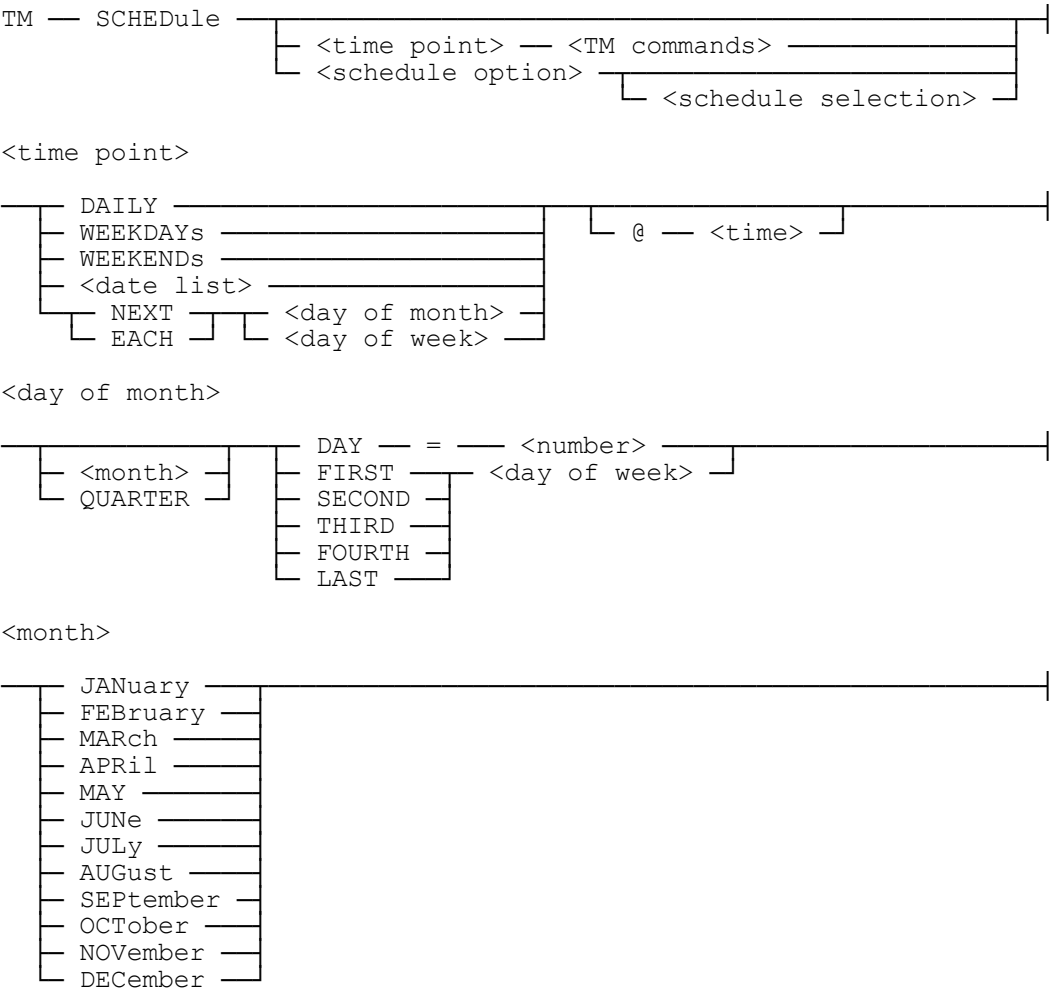
The MOVE command changes the location designation of a set of one or more cartridges.

Syntax

SCHEDULE Command

The SCHEDULE command allows one or more TapeManager commands to be executed on a specific instance or schedule. Each schedule request that has a <time point> is placed into a file under SYSTEM/TAPEMANAGER/SCHEDULE and given a number. Included in the file are the credentials (user code, station name or SC number) of the initiator. When the schedule request runs, the file is marked with the timestamp of that run. On TapeManager restart, the schedule entry is made after that timestamp. If the stream is interrupted by a TapeManager shutdown, it will restart from the beginning when TM comes back up. Output from the command execution is placed at the end of the file. The file is in plain text and can be read or printed in any manor the user desires. Security is PUBLIC IN.

Syntax



Tape Library Operations

<day of week>

MONday	
TUESday	
WEDnesday	
THURsday	
FRIday	
SATurday	
SUNday	

<schedule option>

STATUS	
COMplete	
DISABLE	
ENABLE	
DELETE	

<schedule selection>

<number list>	
<string>	
ALL	

Explanation

SCHEDULE DAILY @ 1:00 DB BACKUP TO DISK
SCHED EACH TUE LOG “starting report”; REPORT ALL

The SCHEDULE command creates a schedule request item to be processed one or more times in the future. The time point allows for TapeManager commands to be scheduled for execution at the specified date and time. If a time component is not supplied, then midnight is assumed. Any number of TapeManager commands can be defined. Each TapeManager command must be separated by a semi-colon (;).

SCHEDULE
SCHEDULE STATUS 5219, 5222
SCHEDULE STATUS “MODIFY”

The SCHEDULE STATUS command reports the status of active and scheduled requests. Completed requests are not listed. The returned list can be filtered by supplying a list of request numbers or a search string. If the search string is used, then only requests that contain that string will be listed. The search string will match with any test in the time point, TapeManager commands, or results text for completed items. The search is not case sensitive. The SCHEDULE command without any options is the same as SCHEDULE STATUS ALL.

SCHEDULE COMPLETE **SCHED C 38**

The SCHEDULE COMPLETE command will list all requests that have completed in this day. Information for older completed requests can be found in the TapeManager logs.

SCHEDULE DISABLE

The SCHEDULE DISABLE command will prevent selected requests from starting. Requests that are currently executing are not affected.

SCHEDULE ENABLE

The SCHEDULE ENABLE command will allow previously disabled requests to start on schedule.

SCHEDULE DELETE

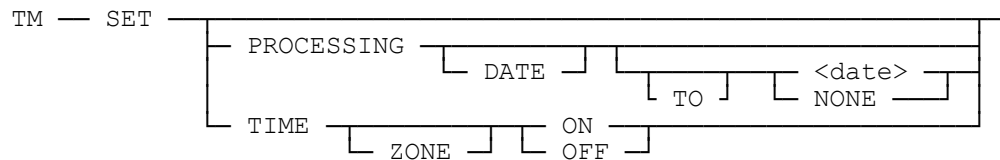
The SCHEDULE DELETE command will remove the selected requests from the schedule. If an active request is in the delete list then the active request is terminated.

Note: See the *REPORT/LIST SCHEDULE* command for reports on schedule requests.

SET Command

The SET command permits the specification of locally determined values. All such settings can be viewed by entering SET alone.

Syntax



Explanation

SET PROCESSING DATE TO TODAY SET PROCESSING DATE 11/11/96

The PROCESSINGDATE attribute is set to the specified date value. The <date> variable must conform to the format defined in the Convention configuration item. The PROCESSINGDATE attribute is retained by the system for application to each newly labeled tape. Activity and exception reports will be influenced by PROCESSINGDATE, in that activity which is logged while PROCESSINGDATE is set will appear only in reports that include that date (the PROCESSINGDATE), regardless of the actual date.

The effect of setting PROCESSINGDATE to a future time may cause expected information to be missing from some reports. PROCESSINGDATE affects PURGE lists by selecting tapes based on the maximum of PROCESSINGDATE and the calendar date.

SET PROCESSING NONE

The PROCESSINGDATE attribute is reset. Events logged will use the system calendar date.

SET PROCESSING DATE

If no value is given, then the current setting of PROCESSINGDATE is displayed.

Note: Once a PROCESSINGDATE has been specified it will be used until reset or changed. It is the responsibility of the user to see that the PROCESSINGDATE is changed as required. There is no automatic changing or resetting of this value.

SET TIME ZONE ON

Setting the TIME ZONE attribute to ON activates the TapeManager multi-host time zone features. These features allow for the reporting of time values in various reports with

time zone information. With the TIME ZONE feature active (ON) the CONFIGURE REPORT TIME command can be used to control how times are reported. When this feature is OFF the time zone is not reported and the times are always shown as set by the creating or modifying host.

Note: *Since setting the TIME ZONE option makes changes to the TapeManager database it is recommended that the TapeManager database be backed up before setting this option the first time.*

TL (Transfer Log) Command

The TL command changes the name of the current TapeManager log file by adding the current date and time to the title and creates a new empty log file. This command can be executed whenever the site feels the log file is too big or the activity or exception reports take too long. The log is automatically transferred at the end of the month or when it has acquired 40000 records.

Syntax

TM - TL _____|

Explanation

TL

Closes the current log file and adds the current date and time to the files title. A new empty log file is then created.

LOAD Command

The LOAD command is used to read in a file of macros for use as TapeManager commands.

Syntax

```
TM — LOAD — MACROS —┐
                        └ IN — <file title> ┘
```

Explanation

LOAD MACROS

Reads the macros from a file named SYSTEM/TAPEMANAGER/MACROS. The file is expected to be found on the same family and under the same usercode as the other TapeManager files. Any macros that had been previously loaded are unloaded before the new load is processed.

LOAD MACROS IN TEST/MACROS

Reads macros from the file TEST/MACROS. If the family and/or a usercode are not specified, the default is the family and/or usercode where the other TapeManager are found. Any macros that had been previously loaded are unloaded before the new load is processed.

UNLOAD Command

The UNLOAD command is used to remove macros for use as TapeManager commands.

Syntax

TM — UNLOAD — MACROS —————|

Explanation

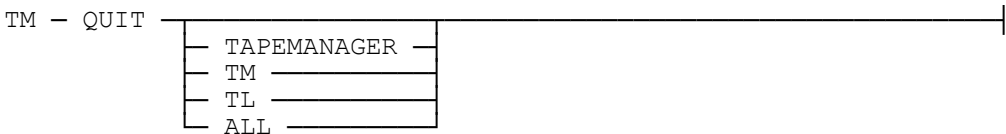
UNLOAD MACROS

All macros that have been created either by the LOAD command or through a operator entered DEFINE command are removed from the TapeManager system.

QUIT Command

The QUIT command shuts down the TapeManager system.

Syntax



Explanation

QUIT

Shuts down the TapeManager system. No new commands will be allowed after the QUIT has been issued.

QUIT TAPEMANAGER

Shuts down the TapeManager system. The TAPEMANAGER syntax is used to verify the product that is to be shut down. TM is a synonym for TAPEMANAGER.

Note: When TapeManager is operating in ACTIVE mode, the SEND TM QUIT operator command may also be used.

QUIT TL

The TL option of the QUIT command causes the LibraryManager library management software (SYSTEM/TAPELIBRARY/SUPPORT) to shut down without requiring the TapeManager software to shut down. The library management software can be restarted by using the ENABLE LIBRARY command.

Note: Because the MCP interprets the SEND TM commands before TapeManager does, you cannot use this command (QUIT TL) through the SEND interface. The MCP will not parse the TL therefore it will QUIT TapeManager instead of LibraryManager.

QUIT ALL

The ALL option of the QUIT command causes all modules of the TapeManager system to shut down. It functions the same as QUIT TAPEMANAGER.

DO Command

The DO command processes a disk file of TapeManager commands.

Syntax

TM - DO

<filename>
STARTUP

Explanation

DO MY/REPORTS ON MYFAMILY

Commands in the file MY/REPORTS are executed sequentially with responses returned to the originating station (or to the system display if the originator cannot be determined). Any number of commands can be contained in one file, separated by semicolons. If an error occurs, processing stops with that command. The file can be any textual type (e.g. SEQDATA) and a command may occupy multiple lines of the file but only the first 72 columns of each line are analyzed. If the file's family is not specified, the family from which TapeManager is executing is assumed.

DO STARTUP

The STARTUP option looks for the TapeManager startup file which must be contained in the same directory and family as the TapeManager installation. If the file, SYSTEM/TAPEMANAGER/STARTUP/<hostname> is found, that file is executed. Otherwise, TapeManager looks for the file, SYSTEM/TAPEMANAGER/STARTUP. The TM DO STARTUP command is automatically executed each time TapeManager starts with responses going to the system messages.

EMAIL Command

The EMAIL command sends email messages via the Unisys MCP Email Support library. To use the EMAIL function, the Unisys MCP E-Mail software (HMP 7.0/SSR 48.1 MCP or higher) must be installed. (Refer to the EMAIL Utility section of the *System Software Utilities Operations Reference Manual*.)

Syntax

```

TM EMAIL — <to part> ┌──────────────────────────────────┐
                      │ <attachments> │ <message> │
└──────────────────────────────────┘

<to part>
— <addresses> ┌──────────────────────────────────┐
               │ // │
└──────────────────────────────────┘

<addresses>
— <addr list> ┌──────────────────────────────────┐
               │ & — <addr list> │ & — <addr list> │
               │ & ────────────┘
└──────────────────────────────────┘

<addr list>
┌──────────┐
│ <— , ────┐
│ <email address> ───────────────────────────────────┘
│ ┌────────┐
│ │ SUPPORT ─────────────────────────────────────────┘
│ │ SUPERvisor ─────────────────────────────────────────┘
│ │ OPERator ─────────────────────────────────────────┘
└──────────┘

<attachments>
┌──────────┐
│ <— , ────┐
│ FILE — <file title> ───────────────────────────────────┘
│ ┌────────┐
│ │ TRACE — <integer> ─────────────────────────────────┘
│ │ TM — <commands> ───────────────────────────────────┘
└──────────┘

<commands>
┌──────────┐
│ <— ; ────┐
│ <command> ───────────────────────────────────┘
│ ; — END ─────────────────────────────────────────┘

<message>
┌──────────┐
│ <— ────┐
│ <text> ─────────────────────────────────────────┘
│ ┌────────┐
│ │ <quoted string> ─────────────────────────────────┘
└──────────┘

```

Explanation

TM EMAIL SUPER Job 9422 faulted @21:52

Sends the text message to the SUPERVISOR account. The SUPERVISOR account must have been previously configured with the CONFIGURE EMAIL SUPERVISOR

command. The Subject of the message is created from the first 50 characters of the message or the portion until the first period (.) whichever comes first. Extra spaces in the message text will be compressed unless the text is contained within quotes. The // option is available to be consistent with the Unisys email software.

TM EMAIL SUPPORT FILE TEST/FILE ON WORK, “File as requested”

The FILE option of the EMAIL command causes the specified file to be placed in the email as an attachment. The email is sent to the SUPPORT account as defined by the CONFIGURE EMAIL SUPPORT command. A maximum of 10 total traces and files may be included in an email.

TM EMAIL SUPPORT TRACE 1204, “Trace as requested”

The TRACE option of the EMAIL command causes the TapeManager trace with the specified trace number is placed in the email as an attachment. The email is sent to the SUPPORT account as defined by the CONFIGURE EMAIL SUPPORT command. A maximum of 10 total traces and files may be included in an email.

TM EMAIL OPERATOR TM STATUS; END, “Check the status”

The TM option of the EMAIL command causes the output of the specified TapeManager command(s) to be placed in the email as an attachment.

TM EMAIL SUPPORT TRACE TM LAST; END, “LAST command has a bug”

The TRACE option followed by the TM option is a special case of the email TRACE option. This sequence will activate the TapeManager DEBUG tracing feature, execute the specified command(s), and deactivate the tracing feature. The output from the command(s) and the resulting trace files are placed in the email following the message portion of the email.

WAIT Command

The WAIT command causes the process executing the command to pause until the wait condition has cleared. The WAIT command is designed to allow batch execution of TapeManager commands to pause until asynchronous tasks have completed. The following TapeManager commands cause asynchronous processes to be processed; CLEAN MT, DATABASE (BACKUP, REORGANIZE, RESTORE), PURGE, IMPORT, EXPORT, REPORT, FIND :PRINTER and all TapeStack commands.

Syntax

```
TM - WAIT - ( 

|           |
|-----------|
| <integer> |
| OK        |
| <task id> |
| DBOPEN    |
| DBCLOSE   |

 ) _____
```

Explanation

WAIT(5)

The WAIT command with the integer parameter causes the process executing the command to pause for the integer number of seconds. If the integer is greater than 164925 then a value of 164925 will be used.

WAIT(OK)

The WAIT command with the OK parameter causes the process executing the command to pause until the operator allows the process to continue by entering a <mix #>OK.

WAIT(STACKTASK)

The WAIT command with the task id parameter causes the process executing the command to pause until the task associated with the task id has completed. If the task id has never been associated with a command, the associated command does not execute asynchronously, or the associated task has already completed then the wait command completes immediately.

WAIT(DBOPEN)

The WAIT command with the DBOPEN parameter causes the process executing the command to pause until the TapeManager database is in an open and ready condition. If the database is already open, the wait command completes immediately.

WAIT(DBCLOSE)

The WAIT command with the DBCLOSE parameter causes the process executing the command to pause until the TapeManager database is in a closed condition. If the database is already closed, the wait command completes immediately.

Special Considerations:

1. *The TM WAIT(<task name>) command return an error if the task that is being waited on has been DSed. The impact is that a TM Utility batch run could abort on this WAIT. To override this functionality, see the RESUME/IGNORE Dollar option card in Chapter 14.*
2. *When the WAIT command is used with a task id associated with a PURGE process, the WAIT command will not complete until all purge workers have finished. PURGE commands entered after the current command has started but before the current command has finished will cause the paused task to wait until all tapes are purged including the newly entered tapes.*
3. *When the WAIT command is used with a task id associated with a EXPORT process, the WAIT command will not complete until the export worker has finished. EXPORT commands entered after the current command has started but before the current command has finished will cause the paused task to wait until all tapes are exported including the newly entered tapes.*
4. *The WAIT(DBOPEN) command must be used if the requirement is to pause until a REORGANIZE, BACKUP, or RESTORE has completed. The WAIT(<task id>) form of the command will complete immediately if used with a DATABASE command.*
5. *The TapeManager will not allow the WAIT command to be executed on the TapeManager or LOGPROCESSOR stacks as this could cause a slowdown or temporary hang of the TapeManager system. In practical terms, this means that a WAIT command entered at the operator's console (ODT/SPO) will cause a warning and the WAIT will complete immediately.*

See Chapter 14, Batch Mode Execution later in this manual for additional information on assigning a task id to a command.

Chapter 8

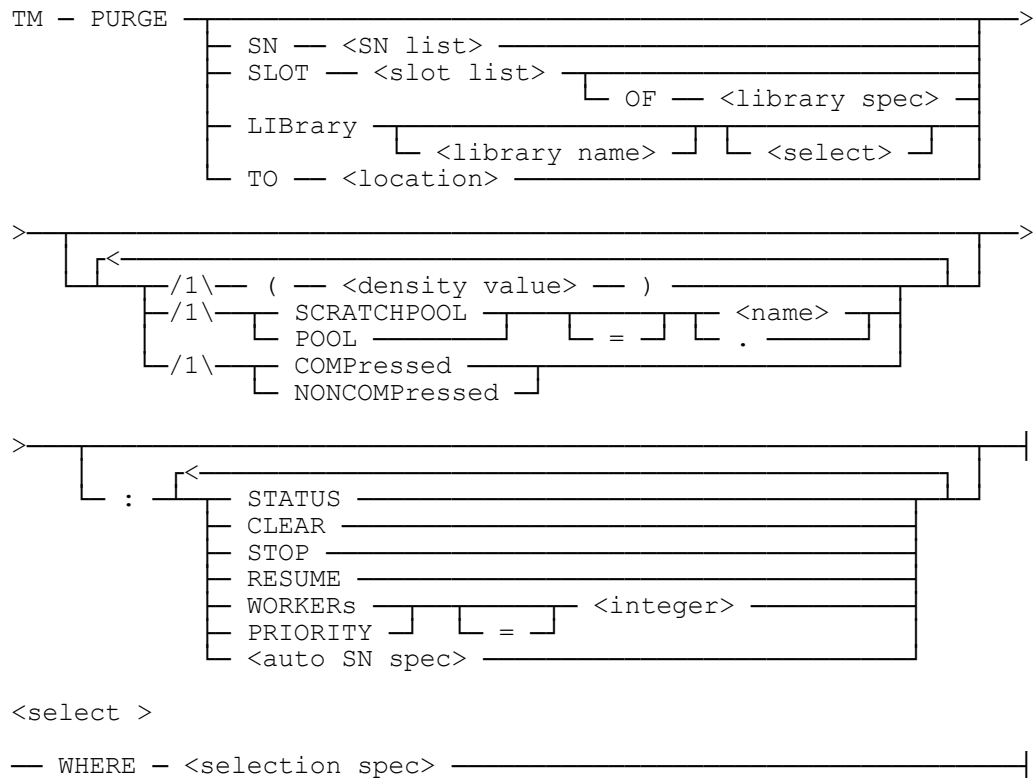
Tape Library Operations

The tape library operations commands allow the TapeManager to control an automated tape library. These commands are only available when TapeManager is configured with the LibraryManager software, and an automated tape library is connected to the system.

PURGE Command

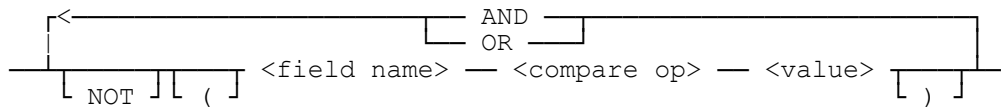
The PURGE command allows one or more tapes to be mounted, purged, and replaced back into an automated tape library with a single command. Tapes may be purged by requesting a list of serial numbers, a list of slots, or the entire library. The purge process is handled by a different mix entry running at a lower priority so that it does not interfere with other tape library operations.

Syntax

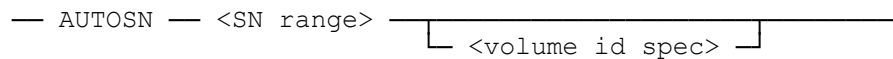


Tape Library Operations

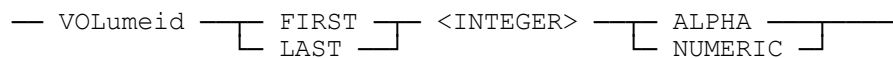
<selection spec>



<auto SN spec>



<volume id spec>



Explanation

PURGE SN 123456, 1001-1003

The PURGE command with the SN option will purge the tapes from the automated tape library as specified by their serial numbers (barcode labels). This example would purge tapes with the serial numbers of 123456, 001001, 001002, and 001003. If a specified serial number is not in a tape library, an error message is displayed, and the purging process continues with the other serial numbers specified. The tapes are SN'ed using the barcode label attached to the tape. If the tape does not have a barcode label, an error is displayed, and the tape must be purged manually. If a tape is assigned to a scratchpool, the scratchpool assignment is retained.

PURGE SLOT 2, 5-7 OF ALPINE (11000)

The PURGE command with the SLOT option purges tapes from a tape library by the slots that the tapes reside in. In this example, the tapes in slots 2, 5, 6, and 7 would be purged. The tapes will be purged with a density of 11000 BPI. If a slot is empty, or the tape does not have a barcode label, an error message is displayed, and the process continues with the other slots.

Note: *If only one automated tape library is configured with the LibraryManager, then the <library spec> is not required. However, if more than one tape library is configured, the <library spec> must be supplied.*

PURGE LIBRARY ALPINE SCRATCHPOOL = DMSPOOL

The PURGE command with the library option purges all the tapes in an automated tape library. This command is equivalent to a PURGE SLOT 1-<last slot number> command. In this example all the tapes will be purged with their SCRATCHPOOL attribute set to DMSPOOL.

***Note:** If only one automated tape library is configured with the LibraryManager, then the <library name> is not required. However, if more than one tape library is configured, the <library name> must be supplied.*

PURGE LIBRARY WHERE EXPIRED

The PURGE library command with the WHERE option purges the tapes in an automated tape library that meet the selection specification. In this example all the tapes in the tape library that are expired according to the retention rules will be purged.

PURGE TO HOME

The PURGE command with the TO <location> option purges all the tapes in an automated tape library that are marked as being scheduled for movement to the specified location. This function is useful for purging tapes that are coming back from an off-site location to be reused. This command must be executed before the MOVE command that registers the cartridges as having been moved to this location.

PURGE :STATUS

The STATUS option of the PURGE command displays information regarding current purge activity. The display will show if purging is currently ACTIVE or INACTIVE and how many tapes are currently waiting to be purged. If purging is active, the number of workers allowed is displayed. For each running purge worker, a message is displayed showing its current activity.

PURGE :CLEAR

The CLEAR option of the PURGE command removes all purge entries from the queue of tapes waiting to be purged. The clear is done before any tapes specified in the command are added to the purge queue. This command has no effect on tapes that are in the process of being purged (i.e., already being processed by a purge worker).

PURGE :STOP

The STOP option of the PURGE command stops the selection of tapes from the purge queue. The purge WORKER tasks will end when they have completed working on the current tape. This command has no effect on tapes that are in the process of being purged (i.e., already being processed by a purge worker).

PURGE :RESUME

The RESUME option of the PURGE command restarts a purging process that may have been stopped without needing to add any tapes to the purge queue. Any time a tape is added to the purge queue via the PURGE command, it will be resumed if it has been stopped.

PURGE :WORKERS = 4

The WORKERS option of the PURGE command controls the number of tasks that will be used to purge tapes. Each worker will select a tape from the purge queue and mount it in an available tape unit for purging. The workers value may be changed while purging is active and the number of active purging tasks will be adjusted accordingly. The WORKERS value is retained until changed by the operator. The default is 1 worker. The maximum number of workers is 10.

PURGE LIBRARY ALPINE :AUTOSN M00001-M00999 PURGE LIBRARY ALPINE :AUTOSN 1000-1500 VOL FIRST 1 ALPHA

The AUTOSN option of the purge command is for use with media libraries that do not support barcode readers. The serial number range supplied is used to SN the media sequentially from the start of the range to the last slot specified. In the first example above, the media would be SNed M00001, M00002, M00003, M00004 to M00999 or the limit of the slots in the library. The AUTOSN option may only be used with the SLOT and LIBRARY functions of the PURGE command. The serial number range must contain at least as many values as the slots specified.

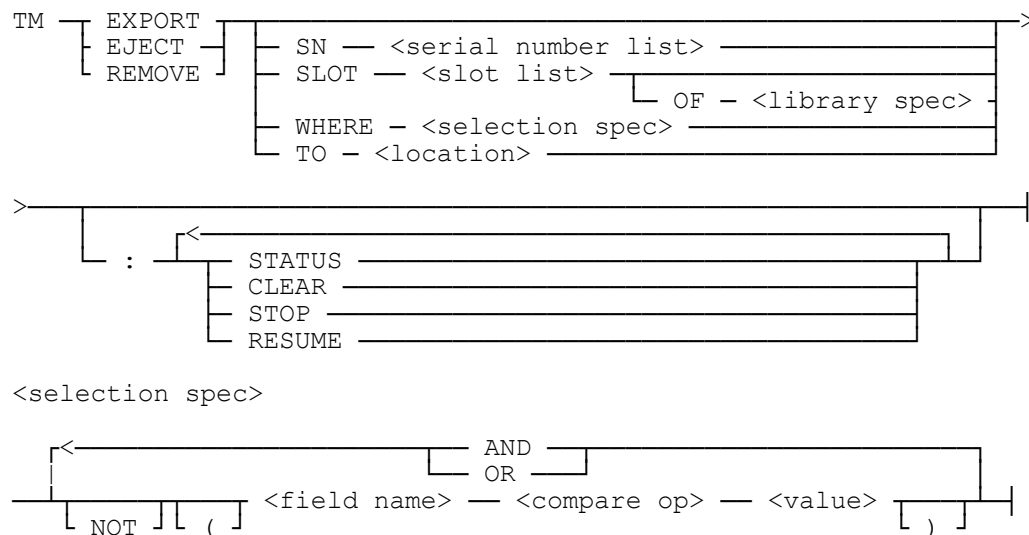
The VOLUMEID specifier is for use with media that can have more than one volume on a single piece of media. Examples would be MO media which has 2 sides (2 volumes) or a tape that supports multiple partitions. The VOLUMEID is one or more characters used to identify a particular volume within a multi-volume piece of media. The characters may be placed at the beginning (FIRST) or end (LAST) of the generated serial number. The VOLUMEID characters may be either alphabetic (ALPHA) or numbers (NUMERIC). If alphabetic volume identifiers are requested, the volume identifier are A, B, C, etc. ALPHA volume identifiers are limited to a single character. NUMERIC volume identifiers start at 1, increment by 1, and may be up to 3 characters long. The sequence number range specified by the AUTOSN parameter is only incremented when the cartridge changes. When using ALPHA identifiers, the number of volumes per cartridge is limited to 26. NUMERIC identifiers are limited by the number of characters specified (9, 99, or 999).

When VOLUMEID is specified with the AUTOSN option, the sequence number range must be specified such that there is room within the serial number for the VOLUMEID. For example, if a one character ALPHA character is requested, the sequence number range cannot exceed 5 characters as the MCP serial number is 6 characters maximum. . In the second example above, the media would be SNed A01000, B01000, A01001, B01001, ... when used with an MO library (2 sided media).

EXPORT Command

The EXPORT command allows one or more tapes to be moved from an automated tape library storage slot to the export door with a single command. Tapes may be removed by requesting a list of serial numbers or a list of slots. The export process is handled by a different mix entry running at a lower priority so that it does not interfere with other tape library operations. The EXPORT process cannot be started if an IMPORT process is already running. Export requests seen while importing is active, are queued and processed once the import process has completed. EJECT and REMOVE are synonyms for EXPORT.

Syntax



Explanation

EXPORT SN 123456, 1001-1003

The EXPORT command with the SN option will send the tapes as specified by their serial numbers (barcode labels) to the export door from the automated tape library storage slot(s). This example would remove tapes with the serial numbers of 123456, 001001, 001002, and 001003. If a specified serial number is not in a tape library, an error message is displayed, and the removal process continues with the other serial numbers specified.

EXPORT SLOT 2, 5-7 OF ALPINE

The EXPORT command with the SLOT option removes tapes from a tape library by the slots that the tapes reside in. In this example, the tapes in slots 2, 5, 6, and 7 would be removed.

Tape Library Operations

***Note:** If only one automated tape library is configured with the LibraryManager, then the <library spec> is not required. However, if more than one tape library is configured, the <library spec> must be supplied.*

EXPORT WHERE CREATEDDATE = TODAY

The EXPORT command with the WHERE option removes tapes from tape libraries that match the selection criteria. Only tapes in currently online libraries are selected.

EXPORT TO VAULT

The EXPORT command with the TO <location> option removes tapes from a tape library by that are scheduled to be moved to the specified location. The location and movement rules must have been previously configured.

EXPORT :STATUS

The STATUS option of the EXPORT command displays information regarding current removal activity. The display will show if tape removal is currently ACTIVE or INACTIVE and how many tapes are currently waiting to be removed.

EXPORT :CLEAR

The CLEAR option of the EXPORT command removes all removal entries from the queue of tapes waiting to be removed. The clear is done before any tapes specified in the command are added to the remove queue. This command has no effect on tapes that are in the process of being removed (i.e. already being processed by a remove worker).

EXPORT :STOP

The STOP option of the EXPORT command stops the selection of tapes from the remove queue. The remove WORKER task will end when it has completed working on the current tape. This command has no effect on the tape that is in the process of being removed (i.e. already being processed by the remove worker).

EXPORT :RESUME

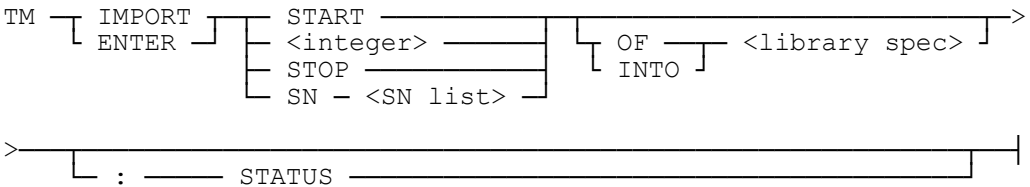
The RESUME option of the EXPORT command restarts a removal process that may have been stopped without needing to add any tapes to the remove queue. Any time a tape is added to the remove queue via the EXPORT command, it will be resumed if it has been stopped.

***Note:** The EXPORT command is only supported on cartridge libraries with the correct import/export door hardware installed.*

IMPORT Command

The IMPORT command allows one or more tapes to be moved from the import door of an automated cartridge library to storage slots with a single command. The import process is handled by a different mix entry so that it does not interfere with other tape library operations. The IMPORT process cannot be started if a REMOVE process is already running. ENTER is a synonym for IMPORT.

Syntax



Explanation

IMPORT START

The IMPORT command with the START option initiates cartridge loading of a library through its import door. The operator places cartridges into the door and activates the door continuously until there are no more cartridges to insert. Once all cartridges are imported an IMPORT STOP command should be issued.

IMPORT 10

The IMPORT command with the <integer> option allows the operator to import a specific number of cartridges without the need to enter a STOP after those cartridges are imported.

IMPORT STOP

The STOP option of the IMPORT command cancels the import operation. The STOP option will cancel imports started either through the START option or the <integer> option. Importing will also stop once there are no more slots available in the library.

IMPORT SN A00001, A00010, A00099

The SN option of the IMPORT command is used to import virtual cartridges from a VTL virtual vault to a virtual library. For each tape listed the tape is moved from the vault to the virtual library. This command requires a VTL with the DSI VTL Agent installed.

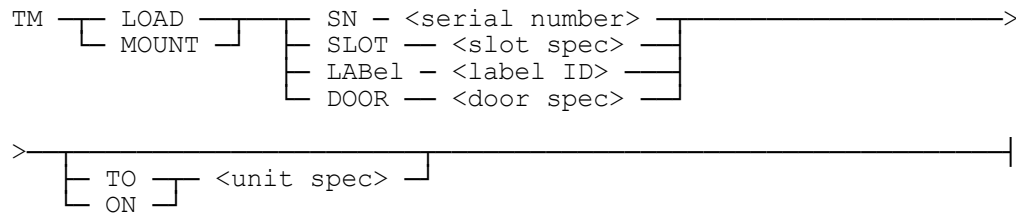
IMPORT :STATUS

The STATUS option of the IMPORT command displays information regarding current import activity. The display will show if cartridge importing is currently ACTIVE or INACTIVE and how many cartridges have been imported for the current import session. The STATUS option will not show any activity for imports from a VTL virtual vault.

Note: *If only one automated tape library is configured with the LibraryManager, then the <library spec> is not required. However, if more than one tape library is configured, the <library spec> must be supplied.*

Note: *The IMPORT command or some import options are only supported on cartridge libraries with the correct import/export door hardware installed.*

Syntax



LOAD SN 123456

LOAD SLOT 12 TO MT122

MOUNT LABEL BACKUP032294 ON MT120

LOAD DOOR

Note: Some tape library systems require that an empty slot be available in order to move a tape from an input/output door to a tape unit or other location.

UNLOAD Command

The UNLOAD command moves a tape from a tape unit in a tape library to a slot or input/output door in that tape library. Only use this command if there is a tape library connected to the system and accessed by the TapeManager. DISMOUNT is a synonym for UNLOAD.

Syntax

```
TM  UNLoad  <unit spec>
    DISMount

>  TO  SLOT  <slot spec>
    DOOR  <door spec>
```

Explanation

UNLOAD MT120

Issues a rewind (RW) command for the tape unit. Once the tape ejects from the tape unit, the tape is placed in the slot that it originated from.

DISMOUNT MT122 TO SLOT 12

Issues a rewind (RW) command for the tape unit. Once the tape ejects from the tape unit, the tape is placed in slot 12 if that slot is currently empty.

UNLOAD MT120 TO DOOR

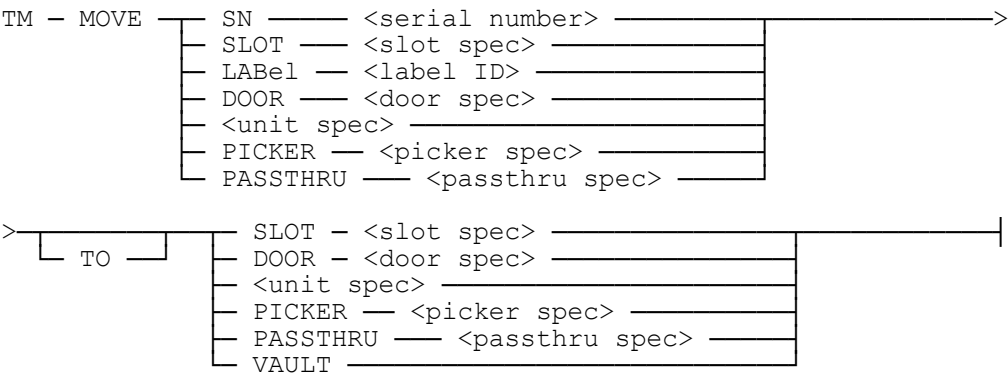
Issues a rewind (RW) command for the tape unit. Once the tape ejects from the tape unit, the tape is placed in the input/output door of the tape library. If the tape library has more than one input/output door then the particular door must be specified. If there is more than one tape library attached to the system, then the particular library name must be given in the door specification.

Note: Some tape library systems require that an empty slot be available in order to move a tape from an input/output door to a tape unit or other location.

MOVE Command

The MOVE command moves a tape from one location to another within a tape library. This command can only be used if there is a tape library connected to the system and accessed by the TapeManager.

Syntax



Explanation

MOVE SN 234567 TO DOOR

Moves the tape specified by the serial number from the slot that it resides into the input/output door. The slot is available for use by another tape. If the tape library has more than one input/output door, then specify the particular door. If there is more than one tape library attached to the system, then the particular library name must be given in the door specification.

MOVE DOOR TO SLOT 11

Moves the tape in the specified door slot from the input/output door to the specified slot and assigns the slot to that tape. If the tape library has more than one input/output door, then specify the particular door. If there is more than one tape library attached to the system, then the particular library name must be given in the door specification.

MOVE SLOT 5 OF MYLIBRARY TO PICKER MOVE DOOR TO PASSTHRU

A cartridge may be moved to or from most addressable elements within the library. Moving a cartridge to or from the picker (also known as the gripper or robot) or the passthru is meant for testing and emergency recovery actions and should not be used for normal operations. Not all libraries have all element types such as a passthru.

Tape Library Operations

MOVE SN T00005 TO VAULT

Moves the specified tape to the VTL vault. This command is only available with libraries marked as a VTL. This command is functionally the same as MOVE ... TO DOOR.

DISABLE Command

The DISABLE command takes an automated tape library system out of service. A close is issued to the controller for the library and the library is marked off-line. If the library is the last device open on the controller, the connection to the controller is also closed. The TapeManager and LibraryManager software will not attempt to access the library until it has been brought back on-line with the ENABLE command.

Syntax

```
TM - DISABLE - LIBrary _____  
                        | <library spec> |
```

Explanation

DISABLE LIBRARY

Takes the tape library out of service. All tape library actions will receive an off-line error response. If the library is a remote library, the connection to the host that owns the tape library is disabled.

Note: *If only one automated tape library is configured with the LibraryManager, then the <library spec> is not required. However, if more than one tape library is configured, the <library spec> must be supplied.*

Note: *The Enabled/Disabled state of a library is preserved over restarts of the TapeManager software.*

ENABLE Command

The ENABLE command brings an automated tape library system into service that had been taken out of service by a DISABLE command. An open is issued to the controller for the library and the library is marked on-line if successful.

Syntax

```
TM - ENABLE - LIBrary <library spec>
>
> USING <alternate name>
>      DEFAULT
```

Explanation

ENABLE LIBRARY

Brings the tape library into service from a disabled state. The tape inventory and status information are reinitialized. If the library is a remote library, the connection to the host that owns the tape library is enabled.

Note: *If only one automated tape library is configured with the LibraryManager, then the <library spec> is not required. However, if more than one tape library is configured, the <library spec> must be supplied.*

USING <alternate name>

The USING syntax allows different configurations to be defined in the configuration file. For instance, if the host is connected to the library via a remote connection, there may be a need to declare the host to be directly connected to the library in a fail over condition. Both definitions can be declared in the SYSTEM/TAPELIBRARY/CONFIGURATION file. See the [Cartridge Library Installation Guide for Unisys MCP Systems](#) for an explanation of creating alternate configurations.

USING DEFAULT

The USING DEFAULT syntax will revert the library configuration to the default configuration as declared in the SYSTEM/TAPELIBRARY/CONFIGURATION file.

Note: *As of the 8.068 release of TapeManager, the Enabled/Disabled state of a library is preserved over restarts of the TapeManager software.*

INITIALIZE Command

The INITIALIZE LIBRARY command is used to initialize (take inventory) a cartridge library when it is not done automatically by the library after a bulk load or unload through the main door. This command should only be used with libraries that require it (currently DISC MO libraries).

Syntax

```
TM — INITialize — LIBrary —————┐
                                     └─ <library spec> ─┘
```

Explanation

INITIALIZE

The INITIALIZE library command will cause a cartridge library to perform a cartridge scan process. This process determines if a library slot contains a cartridge and what the cartridge's bar code is, if the library is equipped with a bar code scanner. Most cartridge libraries perform this operation automatically after power up or after the main bulk load doors have been opened. This command is intended for those libraries that do not perform this function automatically. This command should only be used when needed (after a bulk load or unload) as the initialization process can take a significant amount of time depending on the size and type of library.

Note: *If only one automated tape library is configured with the LibraryManager, then the <library spec> is not required. However, if more than one tape library is configured, the <library spec> must be supplied.*

Chapter 9

TapeManager Reports

The output of some reports generated from the following commands has been enhanced to identify certain types of tapes. For reports or queries with these special characters following the Serial Number (SN), the following legend can be used:

s = This is a stacked tape (either Unisys TapeStack or DSI VTL stacked)

v = This is a tape image on a stacked tape

e = This is an encrypted tape image on a stacked tape

p = This is a physical tape (to distinguish from a virtual tape on a VTL)

Examples

SN	LABEL/FILEID	CREATED	REEL	CYC	VER	DEN
S00003s	TSU/STACKEDTAPE	10/29/2016 @ 16:05	1	1:0	LTO3	
S00004	GIZA1/FILE000	10/29/2016 @ 15:23	1	1:0	LTO3	
S00005v	GIZA2/FILE000	10/29/2016 @ 15:23	1	1:0	LTO3	
S00006	GIZA3/FILE000	7/08/2016 @ 10:39	1	1:0	LTO3	
S00007e	GIZA4/FILE000	7/08/2016 @ 10:39	1	1:0	LTO3	
S00008p	GIZA5/FILE000	7/08/2016 @ 10:39	1	1:0	LTO3	

OLDEST Command

The OLDEST command displays the tape with the oldest creation date that matches the label selection string.

Syntax

TM — OLDEST — <label ID> _____|

Explanation

OLD DAILYBACKUP

Searches for all tapes with the label DAILYBACKUP and displays the tape with the oldest creation timestamp. This command is useful for quickly finding the oldest tape in a revolving set of backups.

OLD DAILY=

Searches for all tapes whose labels start with the string DAILY and displays the tape with the oldest creation timestamp.

NEWEST Command

The NEWEST command displays the tape with the latest creation date that matches the label selection string.

Syntax

```
TM — NEWest — <label ID> _____|
```

Explanation

NEW DAILYBACKUP

Searches for all tapes with the label DAILYBACKUP and displays the tape with the most recent timestamp. This command is useful for quickly finding the latest tape in a revolving set of backups.

NEW DAILY=

Searches for all tapes whose labels start with the string DAILY and displays the tape with the most recent creation timestamp.

ALL Command

The ALL command displays all tapes whose labels match the label selection string.

Syntax

```
TM - ALL [ SCRATCH | <label ID> ] [ BY LABEL | DATE ]
```

Explanation

ALL SCRATCH

The SCRATCH option lists all the tapes that are currently marked as being scratched in the database. Do not confuse this listing with the SCRATCH REPORT which will list tapes that have expired and are to be scratched.

ALL MYDB=

Displays all tapes whose label names start with MYDB. The label selection string can be a complete name or may contain wild cards. The wild cards follow the rules of the MARC PDIR command. (Examples: =, DBDUMP=, =TEST=, MYTAPE??. =DUMP, TEST?TAPE).

ALL MYDB BY DATE

Displays all tapes with the label MYDB in order of their creation date and time from newest to oldest. The BY DATE option is useful when reloading a database and tapes are needed in time sequence order. If the BY DATE option is omitted, the tapes are listed by label name in alphabetical order.

Note: *The capabilities of the ALL command have been merged with the LIST/REPORT ALL command. Use the REPORT ALL command if a hard copy of this output is required.*

LAST Command

The LAST command displays the last 20 tapes created on the system.

Syntax

TM — LAST —————|

Explanation

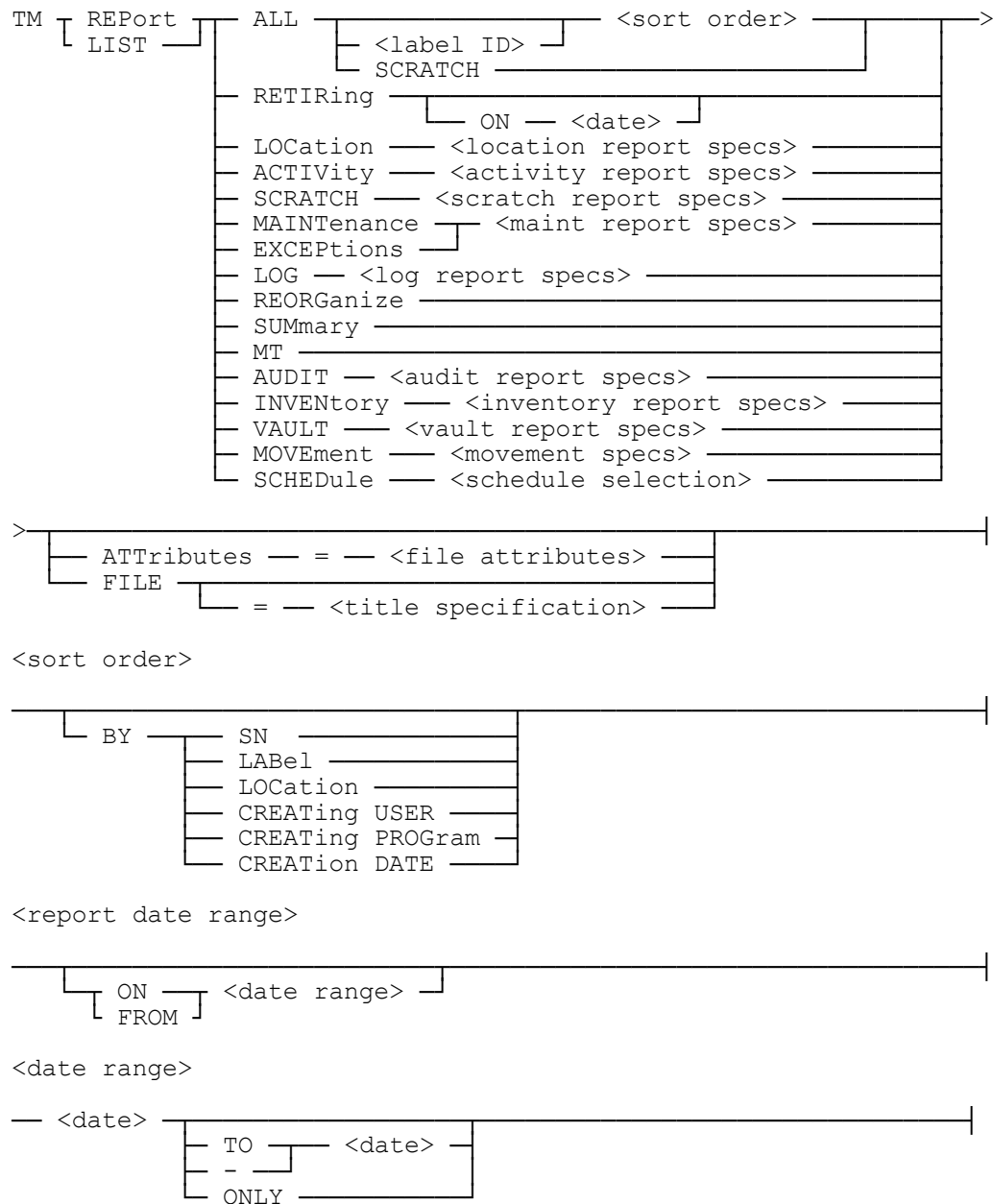
LAST

Displays the last 20 tapes created on the system. They are displayed in order of newest to oldest.

REPORT and LIST Commands

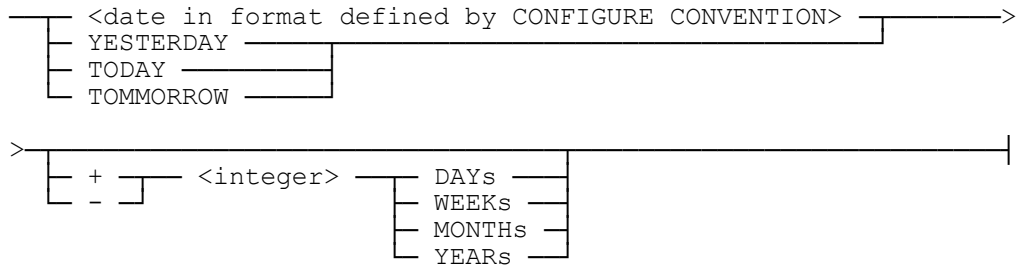
The REPORT command prepares one of the TapeManager systems printed reports. The LIST command is functionally the same as the REPORT command except that the report is returned to the requesting ODT or station. The format of LIST reports is slightly different due to the width difference of a terminal versus a printer.

Syntax

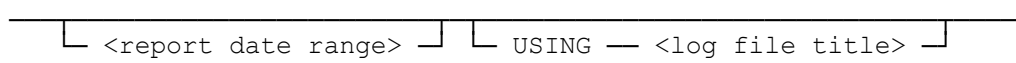


TapeManager Reports

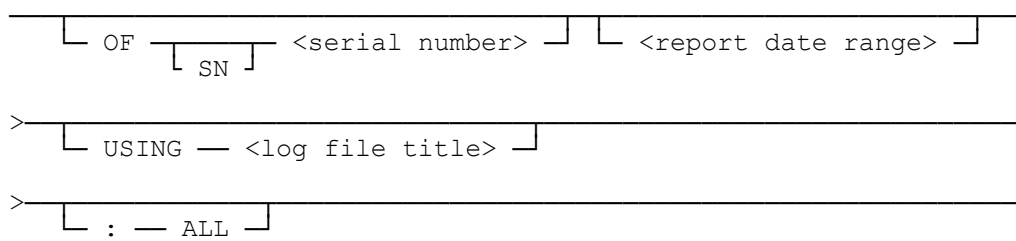
<date>



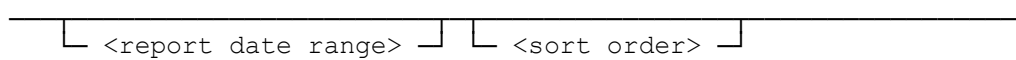
<maint report specs>



<activity report specs>



<scratch report specs>



<log report specs>



```

> [ ON [ <date/time range> ] ]
  [ FROM ]
  [ YESTERDAY ]
  [ TODAY ] [ @ [ <time range> ] ]

> [ USING [ <log file title> ] ]

<inventory report specs>

[ IN [ <lib spec> ] ] [ BY [ SLOT ] ]
[ OF [ ] ] [ SN ]
[ <unit spec> ] [ LABEL ]

> [ SLOTS [ <slot spec> ] - - - <slot spec> ]

<vault report specs>

[ IN [ <lib spec> ] ]
[ OF [ ] ]

<location report specs>

[ <location id> ] [ BY [ SN ] ]
[ ] [ LABEL ]
[ ] [ DATE ]

<audit report specs>

[ OF [ SN [ <serial number> ] ] ] [ <report date range> ]
[ ] [ MIX [ <integer> ] ]
[ ] [ LABEL [ <label ID> ] ]

> [ USING [ <audit file title> ] ]

<movement specs>

- TO - <location>

> [ WHERE - <selection spec> - ]
  [ EXCEPTIONS ]

<schedule selection>

[ Completed ] [ <number list> ]
[ ] [ <string> ]
[ ] [ ALL ]

```

Explanation

REPORT ALL

Creates a printed report of all the tapes in the TapeManager database.

LIST ALL

Displays a report of all the tapes in the TapeManager database at the originating station or ODT.

ATTRIBUTES = FORMID = "TAPEMANAGER", PAGESIZE = 80

The ATTRIBUTES option may only be used with the REPORT command. This option provides file attributes to be applied to the printer file of the report. These attributes are applied after the attributes are defined with the CONFIGURE REPORT command and so may override those default attributes.

FILE = "MYREPORT.TXT" ON MYPACK

The FILE option may only be used with the REPORT command. This option causes all report output to be placed in a disk file. The specified file must not already exist. If a file title is not specified, the file will be created with a default title of the form SYSTEM/TAPEMANAGER/REPORT/<date>/<time> with the user code and family that TapeManager is running with. Open system file titles are supported as defined by the LTITLE file attribute if the LONGFILENAMES system option is set.

ALL Tapes Report

The ALL report lists all tapes in the tape database. Tapes that have been added with the ADD command but not yet seen are not listed. The report lists a tape's serial number, label and file ID, creation date and time, reel number, cycle and version, and density. The printed report will also list the name of the program that created the tape.

Explanation

ALL

Creates a report of all the tapes in the TapeManager database in the order in which they appear in the database.

ALL BY SN

Creates a report of all the tapes in the TapeManager database in serial number order.

ALL BY LABEL

Creates a report of all the tapes in the TapeManager database in alphabetical order by label name. Scratch tapes will be listed by their previous label name.

ALL BY LOCATION

Creates a report of all the tapes in the TapeManager database in sorted by location. Each location will begin on a separate page.

ALL BY CREATING USER

Creates a report of all the tapes in the TapeManager database in sorted by the usercode of the creating program.

ALL BY CREATING PROGRAM

Creates a report of all the tapes in the TapeManager database in sorted by the name of the program that created the tape.

ALL BY CREATION DATE

Creates a report of all the tapes in the TapeManager database in sorted by the date the tape was created. The report is listed newest to oldest.

TapeManager Reports

ALL ABCBACKUP=

Creates a report of all the tapes in the TapeManager database that have a label starting with the characters ABCBACKUP.

ALL =

Creates a report of all the tapes in the TapeManager database that have a label. Note that this is different from just the ALL report which will include scratch tapes in the report.

ALL SCRATCH

Creates a report of all the tapes in the TapeManager database that are currently scratched. This is not the same as REPORT SCRATCH which reports expired tapes that can be scratched.

Tapes to be RETIRED Report

The RETIRING report lists tapes that are to be retired based on the retiring configuration parameters specified in the TM CONFIGURE RETIRING command or form. Retiring parameters must be defined before this report can be run. If the date option is used, the specified date is used to determine if the tape should be retired based on the date that the tape was new, otherwise the current date is used. Cleaning tapes are also reported if the cleaning cartridge's usage count meets or exceeds the number of uses as defined with the CONFIGURE TRACKING CLEANING command.

Explanation

RETIRING

Creates a report of all the tapes that should be retired as of today.

RETIRING ON 9/12/2023

Creates a report of all the tapes that should be retired as of 9/12/2023.

Tapes to be SCRATCHED Report

The SCRATCH report lists tapes that may be scratched based on the retention configuration parameters specified in the TM CONFIGURE RETENTION command or form. Retention parameters must be defined before this report can be run. This report will only list tapes that have had retention parameters defined for them and may be purged. A tape with a retention value of NONE will never be listed. If the date option is used, the specified date is used to determine if the tape may be scratched.

Explanation

SCRATCH

Creates a report of all the tapes that can be scratched as of today.

SCRATCH ON 9/12/93

Creates a report of all the tapes that can be scratched as of 9/12/93. Tapes that have retention GENERATIONS defined, will not show up on a report of future scratches unless there are enough current generations since it is not possible to determine when future generations will be created.

SCRATCH ON YESTERDAY ONLY

Creates a report of all the tapes that became expired on the day before the report was run. Only those tapes that became expired due to the date, days since creation, or enough newer generations were created on the day before are listed. Tapes that expired previous to the day before are not listed.

SCRATCH ON TODAY ONLY BY LABEL

Creates a report of all the tapes that can be scratched on the current date. The report is ordered by the tape label rather than by the serial number, which is the default.

Tape LOCATION Report

The LOCATION report lists tapes that have been marked as having been moved to various locations. The locations must have been first defined using the TM CONFIGURE LOCATION command. Tapes may then be moved to these defined locations via the TM MOVE command. Tapes that have never been “MOVED” are marked as belonging to the default location UNKNOWN.

Explanation

LOCATION

Creates a report of all the tapes in the database listing them by location. Since a sort order was not specified, the tapes will be sorted by serial number within the locations.

LOC BY LABEL

Creates a report of all the tapes in the database listing them by location. The tapes will be sorted by their label name within the locations.

LOCATION BY DATE

Creates a report of all the tapes in the database listing them by location. The tapes will be sorted by their creation date within the locations.

LOCATION OFFSITE

Creates a report of all the tapes that are marked as being at the location OFFSITE. Since a sort order was not specified, the tapes will be sorted by serial number within the location.

Tape Activity Report

The ACTIVITY report lists all tapes that have been used on the current or specified date range. All tapes are listed, including those not tracked by the TapeManager system. If a tape was used more than once, only its last activity is listed. This report is useful for verifying that tapes used during the day are replaced in the library. The activity report may also be used to report all activity for a particular serial number.

Explanation

ACTIVITY

Creates a report of all the tapes used today.

ACTIVITY ON 10/2/93

Creates a report of all the tapes used on 10/2/93.

ACTIVITY FROM 10/2/93 TO 10/4/93

Creates a report of all the tapes used on the days 10/2/93 through 10/4/94.

ACTIVITY OF SN A00125

Creates a report of all the activity for a single serial number. Unlike the regular activity report, which only shows the last activity for a serial number, this report shows all activity in the specified date range including purges, imports, exports, and record modification.

ACTIVITY FROM YESTERDAY TO TODAY: ALL

The default Activity report only shows the last action that was done to that tape. Use the ALL option to show all activity for all tapes in the specified date range.

ACTIVITY OF SN A00125 USING TAPEMANAGER/LOG/OTHER/HOST

The USING feature of the Activity report allows the generation of an Activity report using a TapeManager log file other than those in the current log chain. This feature can be useful for generating reports from old archived logs or logs from a different TapeManager host.

Tape Exceptions Report

The EXCEPTIONS report is similar to the activity report but list only tapes with exception conditions. Exception conditions include tapes that had media errors, tapes used but not tracked, and tapes whose labels do not match those in the database. Review this report daily to see if any operations actions are required.

Explanation

EXCEPTIONS

Creates a report of all the tape exceptions that were identified today.

EXCEPTIONS ON 5/7/93

Creates a report of all the tape exceptions that were identified on 5/7/93.

EXCEPTIONS ON 5/7/93 - 5/10/93

Creates a report of all the tape exceptions identified on the days 5/7/93 through 5/10/93.

EXCEPTIONS ON 5/7/93 USING TAPEMANAGER/LOG/OTHER/HOST

The USING feature of the Exception report allows the generation of an Exception report using a TapeManager log file other than those in the current log chain. This feature can be useful for generating reports from old archived logs or logs from a different TapeManager host.

Maintenance Report

The MAINTENANCE report is a report of exceptions and error conditions seen by the TapeManager software. If the LibraryManager software is configured on the system, exception and error conditions for libraries are also included. The report lists log entries that are placed in the TapeManager log whenever a program error or hardware exception condition is observed. The operator may also create a log entry through the use of the LOG command. The report does not include the same entries as described in the EXCEPTION report above. This report is an additional diagnostic tool to help resolve hardware or software problems.

Explanation

MAINTENANCE

Creates a report of all the TapeManager log entries that were created today.

MAINTENANCE ON 5/7/93

Creates a report of all the TapeManager log entries that were created on 5/7/93.

MAINTENANCE ON 5/7/93 - 5/10/93

Creates a report of all the TapeManager log entries for the days 5/7/93 through 5/10/93.

MAINTENANCE ON 5/7/93 USING TAPEMANAGER/LOG/OTHER/HOST

The USING feature of the Maintenance report allows the generation of a Maintenance report using a TapeManager log file other than those in the current log chain. This feature can be useful for generating reports from old archived logs or logs from a different TapeManager host.

***Note:** The MAINTENANCE report is being replaced by the LOG report which has additional features and capabilities.*

Log Report

The LOG report is a report of exceptions and error conditions seen by the TapeManager software. If the LibraryManager software is configured on the system, exception and error conditions for libraries are also included. The report lists log entries that are placed in the TapeManager log whenever a program error or hardware exception condition is observed. The operator may also create a log entry through the use of the LOG command. The report does not include the same entries as described in the EXCEPTION report above. This report is an additional diagnostic tool to help resolve hardware or software problems.

Explanation

LOG ALL

Creates a report of all the TapeManager maintenance log entries that were created today. ALL is the default if no selection condition is specified. This report is essentially the same as that produced by the REPORT MAINT command.

LOG CONFIGURE ON 2/1/2000

Creates a report of all the TapeManager configuration changes that were made on 2/1/2000.

LOG MODIFY TODAY @ 10:00 – 13:00

Creates a report of all the TapeManager database modification commands (ADD, DELETE, MODIFY) that were processed between 10:00 AM and 1:00 PM on the current day.

LOG TAPEMANAGER FROM 1/1/2000 @ 10:00 TO 2/2/2000 @ 15:00

Creates a report of all the log entries made by the TapeManager software processes between January 1, 2000 at 10:00 AM and February 2, 2000 at 3:00 PM. If the time portion of the start date is not specified, midnight of the previous date is assumed. If the time portion of the ending date is not specified, midnight of the ending date is assumed.

LOG MAJOR = 6

Creates a report of all the TapeManager configuration changes that were made today. When a Minor type or types are not specified, all Minor types are reported. See the table below for a list of the major and minor log types.

LOG MODIFY ON 5/7/93 USING TAPEMANAGER/LOG/OTHER/HOST

The USING feature of the Log report allows the generation of a Log report using a TapeManager log file other than those in the current log chain. This feature can be useful for generating reports from old archived logs or logs from a different TapeManager host.

TapeManager Reports

TapeManager Log Major and Minor Types

Major Type	Minor Type	Description
1		TapeManager messages
	0	General TapeManager entries
	1	TapeManager fault entries
	2	Purge allowed entries
	3	Purge denied entries
2		LibraryManager messages
	1	LibraryManager events and errors
	2	Import or Export process start or stop
3		Operator commands including items from SCHEDULE
4		DSICONTROLLER Support messages (currently not used)
5		Library Controller messages
6		TapeManager configuration changes
	1	Configure OPERATIONS command
	2	Configure DATABASE command
	3	Configure REPORT command
	4	Configure TRACKING command
	5	Configure HOSTS command
	6	Configure RETENTION command
	7	Configure RETIRING command
	8	Configure CLEANING command
	9	Configure CONVENTION command
	10	Configure LIBRARY command
	11	Configure LOCATION command
	14	Configure EMAIL command
	15	Configure MT command
	16	Configure STACKING command
7		TapeManager database changes
	1	TapeManager database ADD command
	2	TapeManager database DELETE command
	3	TapeManager database MODIFY command
8		CSCLIB Inventory Notifications
	1	CSCLIB Eject Notification
	2	CSCLIB Enter Notification
	3	CSCLIB Error/Exception Notification
	4	CSCLIB Mount request
	5	CSCLIB Eject request
9		CSC-A interface entries
	1	CSC-A eject notification
	2	CSC-A import notification
	3	CSC-A error/exception notification
	4	CSC-A inventory build complete notification

	5	CSC-A mount statistics report
10		MT DriveManager entries
	1	MT Drive Added
	2	MT Drive Deleted
	3	MT Drive Replaced
11		Remote logging entries
	1	Remote identity added
	2	Remote identity deleted
12		TapeStack entries
	0	Messages about TapeStack processes
	1	VTV stack messages
	2	VTV unstack messages
	3	VTV append messages
	4	Stacked tape merge/duplicate messages
	5	VTV invalidate messages
	6	Tape size messages
13		VTL entries (only if DSI VTL Agent installed on VTL)
	0	Messages from VTL
	1	VTL disk space notices
	2	VTL library inventory change notices
	3	VTL virtual vault change notices

Reorganize Report

The REORGANIZE report is a listing of all the changes and corrections made when TapeManager database reorganization was last run. A file is created whenever the reorganization process is executed. This report lists the entries in that file.

Explanation

REORGANIZE

Creates a report of all the changes and corrections made when the last TapeManager database reorganization was run.

Summary Report

The SUMMARY report produces a summary of the information contained in the TapeManager database. The report summarizes cartridge usage and database record usage. It will also report a cartridge summary for each scratch pool found in the database. If the LibraryManager is active, a cartridge and scratch pool summary for each active library is presented.

Explanation

SUMMARY

Creates a report that summarizes the information contained in the TapeManager database.

MT Report

The MT report produces a report from the information contained in the Drive Log of the TapeManager database. The report will show the model, serial number, in service date, total tape loads, and total IOs for each drive. Not all drives support the accumulating of all these statistics, therefore some fields may be blank for some drive types. Also, a drive may need to be FREEd and ACQUIRED to be correctly registered with the DriveManager.

Explanation

MT

Creates a report that summarizes the drive information contained in the TapeManager database.

Audit Report

The AUDIT report is a report of accesses made to the TapeManager database. Only the main tape data structure is audited. The control, log, and other files are not audited. The audit file has before and after images of records that have been updated. The audit file also contains information on database opens, closes, backups and reorganizations.

Explanation

AUDIT

Creates a report of all the TapeManager database audit entries that were created today.

AUDIT OF SN 123456

Creates a report of all the TapeManager database audit entries that were created today and accessed records for the specified serial number. If audit report specifies a specific serial number, mix number, or label name, the report filters out all records that do not match the requested item.

AUDIT ON 5/7/93

Creates a report of all the TapeManager database audit entries that were created on 5/7/93.

AUDIT ON 5/7/93 - 5/10/93

Creates a report of all the TapeManager database audit entries for the days 5/7/93 through 5/10/93.

AUDIT ON 5/7/93 USING SYSTEM/TAPEMANAGER/DBAUDIT12

The USING feature of the Audit report allows the generation of an Audit report using a TapeManager audit file other than those in the current audit chain. This feature can be useful for generating reports from old archived audits or audits from a different TapeManager host.

Tape Inventory Report

The INVENTORY report lists the cartridges that are in a particular tape library. This report is similar in content and format to the ALL report. For the LIST command, any cartridges that are in use (in a drive unit) have a # in column 1 of the report.

This report may only be requested if an automated cartridge library is connected to the system and interfaced with the TapeManager system.

Explanation

INVENTORY

Creates a report by slot number of all the cartridge slots in the automated library. This option may only be used when there is only one tape library connected to the system. Otherwise, a specific library must be specified.

INVEN OF MYLIBRARY

Creates a report by slot number of all the cartridge slots in the automated library named MYLIBRARY.

INVENTORY MT120

Creates a report by slot number of all the cartridge slots in the automated library that contains the drive unit MT120.

INVENTORY BY SLOT

Creates a report by slot number of all the cartridge slots in the automated library. This is the default option.

INVENTORY BY SN

Creates a report by serial number of all the full cartridge slots in the automated library.

INVENTORY BY LABEL

Creates a report by label of all the full cartridge slots in the automated library. Tapes with the same label will be sorted by creation date and time, while scratch tapes will be sorted by SCRATCHPOOL name and then by serial number.

INVEN SLOTS 100-140

Creates a report by containing information only about the slots 100 through 140.

VTL Vault Report

The VAULT report lists the cartridges that are in the VTL virtual vault associated with a logical tape library in that VTL. This report is similar in content and format to the INVENTORY report except that slot numbers do not exist.

This report is only available for logical tape libraries configured in a DSI Virtual Tape Library (VTL) that also has the DSI VTL Agent installed.

Explanation

VAULT

Creates a report by serial number of all the cartridges in the VTL virtual library associated with the logical library. This option may only be used when there is only one tape library connected to the system. Otherwise, a specific library must be specified.

VAULT OF MYLIBRARY

Creates a report by serial number of the cartridges in the VTL virtual vault associated with the logical library named MYLIBRARY.

Cartridge Movement Report

The cartridge movement report is a listing of the tapes in the TapeManager database that are scheduled to be moved from their current location to another location. Locations and movement rules must have been previously defined to use this report.

Explanation

MOVE TO VAULT

Creates a report of all the tapes that, based on the movement configuration rules, are destined to the location VAULT.

MOVEMENT TO VAULT WHERE CREATED > YESTERDAY

Creates a report of all the tapes that are destined to the location VAULT but limits the tapes reported to those that were created today.

MOVE TO VAULT EXCEPTIONS

Creates a report of all the tapes that are exceptions that are destined to the location VAULT. Tapes appearing in the exception list for a movement rule need intervention. If a TM MOVE is entered for an exception case that places the tape into the correct location, the exception will automatically clear.

Schedule Report

The schedule report is a listing of current or completed schedule items.

Explanation

SCHEDULE ALL
SCHEDULE 7, 22
SCHEDULE “COPY”

Creates a report of current schedule items. The report list can be filtered by supplying a schedule selection of a search string or schedule item numbers. The search string will select any schedule item that has matching text in the time point, TapeManager commands, or results text for completed items. The search is not case sensitive. If no schedule selection is supplied, ALL is assumed.

SCHEDULE COMPLETED
SCHEDULE COMPLETED “COPY”

Creates a report of completed schedule items. As with the current schedule items the completed schedule items may be filtered by supplying a search string or schedule item numbers.

Ad Hoc Reports

The ad hoc reporting capability allows a custom report to be created when one of the standard reports does not meet a sites requirement. Ad hoc reports allow for the selection of the reported database fields, the specifying of database record selection criteria, and the specifying of the sort order of the output. Ad hoc report output can also be stored on disk and formatted for different uses.

Syntax

```

TM [ REPort ] <item spec> [ WHERE — <selection spec> ]
  [ LIST ]
>
  [ SORT [ BY [ ON ] ] <field name> [ ASCENDING [ DESCENDING ] ] ]
>
  [ : — <report/output options> ]
>
  [ ATtributes — = — <file attributes> ]
  [ FILE [ = — <title specification> ] ]

<item spec>
  [ <field name> , [ ( — <column spec> — ) ] ]
  [ <quoted literal> ]

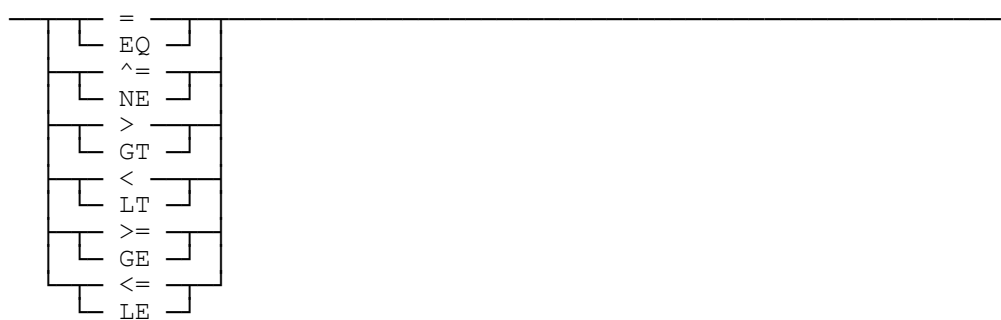
<column spec>
  [ /1\— HEADING — = — <quoted literal> ]
  [ /1\— WIDTH — = — <integer> ]
  [ /1\— TOTAL ]
  [ /1\— AVERAGE ]

<selection spec>
  [ [ NOT ] [ ( ] <field name> [ AND [ OR ] ] <compare op> — <value> [ ) ] ]

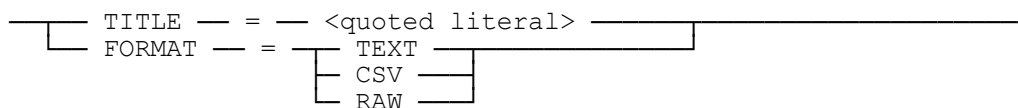
```

TapeManager Reports

<compare op>



<report/output options>



Explanation

TM LIST SERIALNO,” “, LABEL
TM REPORT SERIALNO,” “, LABEL

Creates a report that shows a tapes serial number and label. Since a tape selection (WHERE) was not specified, all tapes are reported. The use of LIST or REPORT determines the width of the report and its output destination. Using LIST specifies that the report will be 80 characters in width and the output is to be returned to the originating station. (Note: if the LIST command is received from a source to which the output can not be sent, such as an AX, the report will be shown via the MCP display (MSG) mechanism.) Using the REPORT option specifies a report that is 132 characters wide and the output is directed to the system printer.

TM REPORT SERIALNO (HEADING=”SERIAL #”),” “, LABEL(WIDTH=40)

The <column spec> options are used to control attributes of the report columns. The HEADING option sets the title at the top of the report column. If the HEADING option is not specified, the filed name will be used. The WIDTH option is used to control how many characters are used to display the data of the field. If WIDTH is not specified, then the column width will be the greater of the default column width for the data item and the column heading string. If the specified width is less than the column heading and/or the data to be show, the heading and/or data will be truncated. The TOTAL option will create a sum at the bottom of the specified column(s). The AVERAGE (AVG) option will create an average value in while numbers (no decimal places) at the bottom of the specified column(s). the TOTAL and AVERAGE options may only be used with database fields of type integer.

TM REPORT SERIALNO,” “, LABEL WHERE EXPIRED = TRUE

The WHERE option allows for selected records to be reported. In this example, only those tapes that have expired based on the retention rules will be listed in the report.

TM REPORT SERIALNO,” “, LABEL SORT BY SERIALNO

The SORT option allows the output listing to be organized in a user specified order. If the SORT option is not specified, the output will be in serial number order whether or not the SERIALNO field has been selected for reporting. The ASCENDING and DESCENDING sort modifiers determine if the sort item is to be ordered lower to higher or higher to lower. The default is ASCENDING.

TM REPORT SERIALNO,” “, LABEL :TITLE=”MY CUSTOM REPORT”

The TITLE report option allows the ad hoc report to be given a custom title. If the TITLE report option is not specified, the default is TAPEMANAGER ADHOC REPORT.

TM REPORT SERIALNO,” “, LABEL :FORMAT = CSV

The FORMAT report option specifies what kind of output will be generated by the report. The FORMAT option is only available with the REPORT command. The TEXT format specifies that the output is to be in normal textual strings. If FORMAT is not specified, TEXT is the default.

The CSV format specifies that the output is to be in Comma Separated Values (CSV). CSV is a file format understood by many PC based spreadsheet and word processor programs. If the CSV format is specified, the FILE option is assumed. If the FILE option does not specify a file name, then ends in a quote (i.e. “XFERFILE.CSV”) then the last node of the file name will have .CSV appended to it and quoted.

The RAW format specified that the output is to be in raw database records. These records are a copy of the TapeManager database record. The FIELD_VALUE procedure (see Appendix D) should be used to interpret the information in these records. If the RAW format is specified, the FILE option is assumed.

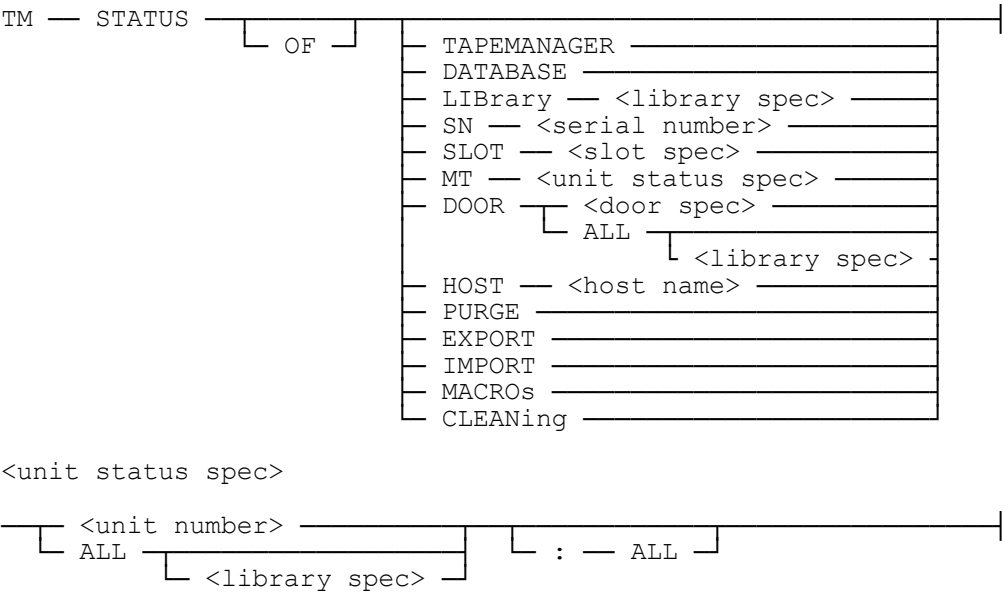
TM REPORT SERIALNO,” “, LABEL FILE = MY/REPORT

The FILE option may only be used with the REPORT command. This option causes all report output to be placed in a disk file. The specified file must not already exist. If a file title is not specified, the file will be created with a default title of the form SYSTEM/TAPEMANAGER/REPORT/<date>/<time> with the user code and family that TapeManager is running with. Open system file titles are supported as defined by the LTITLE file attribute if the LONGFILENAMES system option is set.

STATUS Command

The STATUS command displays information about the current state of various components of the TapeManager and LibraryManager systems.

Syntax



Explanation

STATUS or STATUS TAPEMANAGER

Displays the current status of the TapeManager system. The display shows if the TapeManager system is operational (or not) and what mode TapeManager is running in (active or passive). Also displayed is the open/closed state of the TapeManager database. If LibraryManager is configured with the system, its status is displayed with a count of the number of libraries being controlled. The TapeManager’s version is also displayed. The TapeManager will then display a list of the tasks associated with the TapeManager so they can be easily found in a heavy mix environment.

STATUS DB

Displays the current status of the TapeManager database. The open or closed state of the database is displayed. The number of records in the database is displayed. TapeManager license information is also displayed.

STATUS LIBRARY

Displays the current status of an automated tape library connected through LibraryManager. Also displayed is the configuration of the tape library. If more than

one tape library is configured on the system, a tape library name must be specified. If the library is a VTL with the DSI VTL Agent additional VTL information is shown.

STATUS SN 1234

Displays the current status of a tape cartridge including its label. If the tape is in an automated tape library, the name of the owning library and its slot assignment are displayed. If the tape is being used by a tape library tape unit, the using tape unit's number is also displayed, along with information about the using task. If the cartridge has been selected, or is in use, information concerning the selection and the requesting/using program are displayed. If the SN refers to a virtual cartridge in a VTL with the DSI VTL Agent additional VTL cartridge information is shown.

STATUS SLOT 8

This status option will display whether a slot in an automated tape library is full or empty and if the slot is usable. If the slot is full, the barcode of the tape assigned to the slot is displayed. If the tape assigned to this slot is in use, then the unit number of the tape unit that has the tape is displayed. If the SLOT refers to a virtual cartridge in a VTL with the DSI VTL Agent additional VTL cartridge information is shown.

STATUS MT180

This status option will display the current status of a tape unit. The first line of the display will return the MCP status of the tape unit. The next lines will display the drive configuration information as defined with the CONFIGURE MT command. If the tape unit is in an automated tape library, the next display line will show library status of the tape unit. If the tape unit has a tape in it then the tapes barcode and slot assignment are displayed. The ALL option can be used to display the status for all the drives within a library.

STATUS MT180 : ALL

The ALL option of the STATUS MT command will cause additional information collected by the DriveManager to be displayed. The information displayed may include the drive model, firmware level, serial number, load count, total IO count, in service date, cartridge load history, and cleaning history.

Note: Not all drives report all information (i.e., serial number). Some drive information will not be listed if it is not available for that drive.

STATUS DOOR

This status option will display status information for an automated tape library import/export door. If a tape is in the door, the tape's barcode is displayed if it is known. If the tape library contains more than one import/export door, a door name must be

specified. The ALL option can be used to display the status for all the doors/door slots within a library.

STATUS HOST

This status option will display status information about remote TapeManager hosts. If a host name is not specified, then the status of all remote hosts is displayed.

STATUS PURGE

This status option displays the same information as the PURGE :STATUS command.

STATUS EXPORT

This status option displays the same information as the EXPORT :STATUS command.

STATUS IMPORT

This status option displays the same information as the IMPORT :STATUS command.

STATUS CLEANING

This status option displays the same information as the CLEANING :STATUS command.

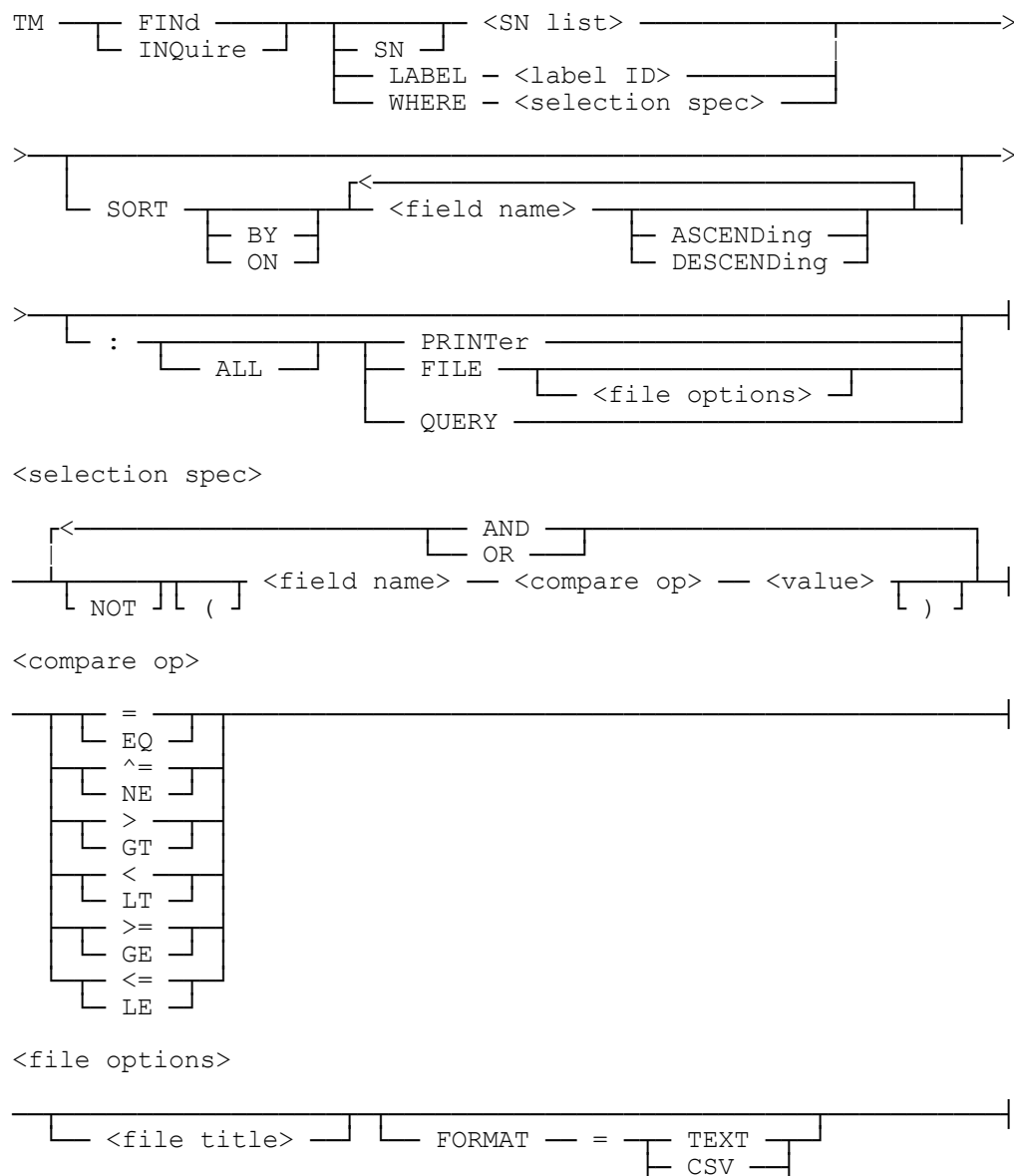
STATUS MACROS

This status option displays the names of the currently defined macros.

FIND Command

The FIND command displays information about one or more tapes. If the specification results in only a single tape being selected, then a page of information on that tape is displayed. If more than one tape is selected, the normal single line per tape display is used. Wild cards may be used in the <label ID> specification. The WHERE clause allows tape to be selected based on attributes stored in the tape record such as CYCLE and VERSION. The default is to send the output back to the terminal or ODT making the request, but the output may be optionally sent to a printer or disk file. INQUIRE is a synonym for FIND.

Syntax



└ RAW ─┐

Explanation

FIND SN 100101

Selects the tape with serial number 100101 and displays a report of attributes stored for the tape.

FIND SN 100101 :ALL

Selects the tape with serial number 100101 and displays a report of all attributes stored for the tape. If the selection specification results in more than one tape being reported, the single line per tape format is used and the ALL option is ignored.

INQUIRE LABEL =Z=

Selects any tapes that have a Z in their label. If only one tape is selected, a full page on that tape is displayed. If more than one tape is selected, a single line per tape is displayed.

FIND WHERE CYCLE=2 AND VERSION=2

Selects and displays the current information for any tapes that have **both** the CYCLE and the VERSION fields set to 2.

FIND WHERE CREATED = 1/19/2000 AND CREATED < 1/19/2000 @ 8:39:30

Selects any tapes that were created on January 19, 2000 and before 8:39:30 AM. The format of the <date> and <time> values must conform with the Convention Configuration except a 4-digit year may be specified even though only a 2-digit year was defined in the Convention Configuration.

FIND WHERE (CREATINGUSER=ACCOUNTING OR CREATINGUSER=SHIPPING) AND NOT (EXPIRED=TRUE OR CREATED<7/1/2001)

Parenthesis “(“ ”)” may be used to group selection expressions together. The NOT Boolean modifier causes the Boolean inverse of the following selection expression to be evaluated.

FIND LABEL DBBACKUP= SORT ON CREATED DESCENDING

The SORT option of the find command allows the output of the FIND to be ordered based on one or fields within the tape record. The fields selected for ordering do not have to be items that are displayed. Each field selected for sorting may specify an ASCENDING or DESCENDING order. Ascending sort order is assumed if not specified. A FIND

command with the SORT option will always use the single line per tape output even if only 1 tape is selected.

FIND WHERE PROCESSINGDATE = 6/30/97 :FILE EXPORT/063097

Selects all the tapes created with the specified processing date and places those records in a disk file. If a file name is not specified, the name of the file will depend on the FORMAT of the output file. For files with FORMAT = RAW (default), the default file title is SYSTEM/TAPEMANAGER/EXTRACT in the same user code and family as the TapeManager files. The file must not already exist. For disk files with a FORMAT of TEXT or CSV, the file will be created with a default title of the form SYSTEM/TAPEMANAGER/REPORT/<date>/<time> with the user code and family that TapeManager is running with. Open system file titles are supported as defined by the LTITLE file attribute if the LONGFILENAMES system option is set.

FIND WHERE CREATEDDATE = YESTERDAY :FILE FORMAT = TEXT

Selects all the tapes created with the specified creation date and places those records in a disk file. The format of the disk file depends on the FORMAT option. The RAW format specifies that the output is to be in raw database records. These records are a copy of the TapeManager database record. The FIELD_VALUE procedure (see Appendix D) should be used to interpret the information in these records. If FORMAT is not specified RAW is the default.

The TEXT format specifies that the output is to be placed in a disk file in a format similar to that if the output had been printed.

The CSV format specifies that the output is to be in Comma Separated Values (CSV). CSV is a file format understood by many PC based spreadsheet and word processor programs. The output to the CSV file is fixed and contains the fields that are seen in the printed report available from the FIND command.

FIND LABEL BACKUP= :PRINTER

Selects and prints the current information for any tapes whose label name starts with BACKUP. The printer options defined with the TM CONFIG REPORT command are applied to the output.

FIND WHERE LABEL = #LABELID AND FILEID LE #FILEID SORT BY FILEID DESCENDING CREATED DESCENDING: QUERY

The QUERY option causes the records selected by the FIND command to be retained in an internal queue rather than be displayed, printed, or sent to a file. The purpose of the QUERY option is to allow the results of a FIND to be used within a macro definition. See the QUERY description in the TapeManager Macros section.

VERSION Command

The VERSION command displays the version information of the TapeManager software. If the LibraryManager system is configured with TapeManager additional information is displayed.

Syntax

```
TM — VERsion _____|
```

Explanation

VERSION

Displays the version of the TapeManager software that is running. If LibraryManager is also running, then the version information for TapeLibrary Support and DSIController Support are also displayed. For each library attached, the microcode version of the DSIController and the microcode version of the tape library is displayed.

Chapter 10

Tape Movement

Overview

The TapeManager tape movement system is the mechanism by which the individual pieces of tape media can be tracked from place to place. Based on a set of definitions and rules, a tape's location can be determined at any time. The following sections describe the setup and usage of the tape movement system.

Configure Tape Movement

Prior to using the tape movement systems, the tape movement definitions and rules must be defined for the TapeManager.

The various locations that tape media will be stored and used must be defined before any other activity. The `CONFIGURE LOCATION` command is used to define these locations. A TapeManager location can be any logical location that media may be stored or used. Therefore, a physical location may have one or more `CONFIGURE LOCATION` definitions. For example, the site that contains the main processing center may contain the “home” location and a vault location. See Location Configuration in the TapeManager Configuration section for complete information on defining locations.

Once the media locations have been defined, rules can now be defined that determine when tape media is to be moved from one location to another. The `CONFIGURE MOVEMENT` command specifies the parameters by which a tape is to undergo a sequence of movements between locations. Any number of movement rule definitions may be given, but only one such rule can apply to a given tape label. As with retention rules, movement rules are applied to individual tapes on a “best fit” basis. When a `DEFAULT` movement rule is defined, it will be applied to all tapes for which no other defined movement rule can be matched. See Movement Configuration in the TapeManager Configuration section for complete information on defining movement rules.

Generally, TapeManager must rely on operator input (the `MOVE` command) to know when a tape has been moved. Defining the location of the various tape units attached to the system can do some automation of the tape movement. Use the `CONFIGURE MT` command to define the physical location of the tape units. Media that is mounted on tape units with a defined location will be checked against the media's location as stored in the database. Where the tape unit location and the media's database location do not match, the tape will be logically moved to the tape unit's location. See Drive Configuration in the TapeManager Configuration section for complete information on configuring tape drive units.

Tape Movement Operations

Using the tape movement system consists of selecting the tapes that are to be physically moved, moving the selected tapes, and then informing TapeManager what tape movements have taken place.

To determine which tapes are to be moved, a movement report is produced. The REPORT MOVEMENT (or LIST) command is used to create a report that lists the tapes to be moved to a particular location. The report should be run for each possible location. See Cartridge Movement Report in the TapeManager Reports section for more information.

Once the tapes listed in the movement report are collected for transfer, the MOVE command is used to notify TapeManager that the tape media has been physically moved to another location. The report should be run for each possible location. See the MOVE Command in the TapeManager Operations section for more information.

Tape Movement Operations with Tape Libraries

When used with an automated tape library, the tape movement system has additional features available.

The EXPORT command can be used with the tape movement system to eject tapes from the tape library that are scheduled for relocation. See the EXPORT Command in the Tape Library Operations section for more information.

The PURGE command can be used to purge tapes that have been returned to a tape library after they have completed their movement cycle. See the PURGE Command in the Tape Library Operations section for more information.

Database Items

The following database items can be used to report and manage the movement of tape media. See Appendix B – Tape Database Fields for more information.

LOCATION

The current logical location of the tape media as specified by the most recent MOVE command.

QUEUEDTIME

The time from which the steps of the movement rules are calculated.

MOVEDESTINATION

This item is the location name of the tape's queued destination or its current location if no movement step is pending. If no movement rule applies to a tape, this item is empty.

MOVEEXCEPTION

This item returns true if the tape's location does not match the location defined by its movement rule.

MOVERULES

This item is the textual definition of the tape's defined movement rules.

Chapter 11

Tape Stacking & Encrypting

Overview

The TapeManager supports the stacking of multiple logical tape volumes on a single physical tape by either the Unisys MCP TapeStack Utility or the VTL stacking capabilities. The concept of tape stacking is to allow a single tape to contain many copies of previously created tapes. Newer tape technologies allow many Gigabytes and even Terabytes of data to be stored on a single tape cartridge. Many older tape cartridges held much smaller amounts. Also some applications and processes only use a small amount of these higher capacity tape cartridges. In order to get higher utilization of newer tape technology as well as reduce cartridge count and storage space, the concept of tape stacking was introduced.

When a tape is stacked, an exact copy of the source tape is added to the stacked tape. A copy of an original tape on a stacked tape is known as Virtual Tape Volume (VTV). The original tape is referred to as the Real Tape Volume (RTV). As VTVs are stacked, TapeManager will track each VTV in the same way it tracks RTVs. Most reports and queries will not show VTVs, only RTVs.

The stacking systems can also be used to encrypt tapes. The encryption process is similar to that of creating a stacked tape. An original tape is created and then encrypted while being stacked onto another cartridge. The encryption of the data is done by an encryption co-processor, an MCPvm system, or a VTL.

The Unisys TapeStack software may be accessed via TapeManager or the TapeStack Utility (TSU). For security reasons it is recommended that TapeManager be used for most TapeStack operations and that TSU be removed or secured. Whichever method is used TapeManager will track any VTVs created.

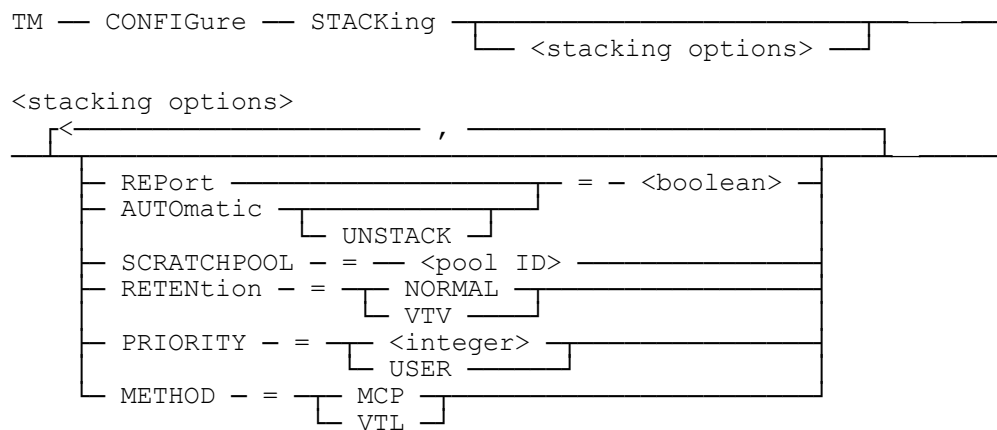
Refer to the Unisys **System Software Utilities Operations Reference Manual** (Section 19, MCP TapeStack Utility) for additional information on the Unisys TapeStack software.

The VTL stacking features requires a DSI VTL with the stacking license and the DSI VTL Agent installed on the VTL.

Configure Tape Stacking

The CONFIGURE STACKING command specifies defaults and operational options for the Unisys TapeStack tape stacking system for commands processed via TapeManager.

Syntax



Explanation

CONFIGURE STACKING REPORT = TRUE

The REPORT option specifies the default value for the report function when TapeManager processes a TapeStack operation. If the report option is set, a printed report is generated for the TapeStack operation. The default defined with the configuration command can be overridden when the command is entered.

CONFIGURE STACKING AUTO UNSTACK = TRUE

The AUTO UNSTACK option specifies whether TapeManager should start a TapeStack Unstack operation should a tape request be seen that can only be satisfied by unstacking a VTV from a stacked tape.

CONFIGURE STACKING SCRATCHPOOL = GIZA

The SCRATCHPOOL option specifies the default scratch pool to be assigned for new output tapes requested by TapeStack operations. The scratch pool defined with this command will apply to TapeStack output tape requests whether started by TapeManager or via the TapeStack utilities.

CONFIGURE STACKING RETENTION = VTV

The RETENTION option specifies the method used to determine if a stacked tape has expired. If the option is set to NORMAL, then TapeManager will use the tape's retention values to determine if it has expired. If the option is set to VTV then the records for all

the VTVs on that stacked tape are checked to see that each VTV has expired or has been invalidated. If any VTVs are not expired (and not invalid) then the stacked tape is not expired. The default is NORMAL.

***NOTE:** Setting this option to VTV may cause a delay in the purge process for some stacked tapes. For this reason, it is recommended that VTVs do not have retention rules that specify GENERATIONS.*

CONFIGURE STACKING PRIORITY = 50

The PRIORITY option specifies the default value of the priority of TapeStack tasks processed by TapeManager. The default value is 50. The value of the option may be overridden at the command level by using the PRIORITY = <integer> command option.

CONFIGURE STACKING METHOD = VTL

The METHOD option specifies the default system used to create stacked tapes. A value of MCP causes TapeManager to use the Unisys TapeStack system to create stacked tapes. A value of VTL causes TapeManager to use the VTL tape stacking process. The default defined with the configuration command can be overridden when the command is entered.

CONFIGURE STACKING

The CONFIGURE STACKING command without any options will report the current values of the stacking options.

Configure Tape Encryption

The CONFIGURE ENCRYPTION command specifies defaults and operational options for the Unisys TapeStack tape encryption system for commands processed via TapeManager.

Syntax

```
TM — CONFIGure — ENCRYPTION — <encryption options>

<encryption options>

  KEY — = — RANDOM
<string>
  METHOD — = — 
    AUTO
    AES256
    3DES
  
  VTLKEY — = — <string>
  PASSWORD — = — <string>

```

Explanation

CONFIGURE ENCRYPTION KEY = RANDOM

CONFIGURE ENCRYPTION KEY = “abcdfghijk1234567890”

The KEY option specifies the pass phrase value for the encryption function when TapeManager processes a TapeStack encryption operation. If the KEY option has a value of RANDOM, then a random pass phrase of 20 characters is generated for each volume (VTV) that is encrypted. If the KEY option is given a string, then that string will be used as the master pass phrase for all volumes (VTVs) encrypted. The string can be at most 20 characters in length. The key value defined can be overridden in commands requesting encryption by the KEY option.

CONFIGURE ENCRYPTION METHOD = AUTO

The METHOD option specifies the type of encryption to be used when encrypting a VTV. The AUTO setting will provide the highest level of encryption supported by the encryption co-processor. The AES256 setting will request that the AES256 encryption method be used. The 3DES will request that the 3DES encryption method be used. TDES is a synonym for 3DES. Not all encryption methods are supported by all encryption co-processors. The default setting is AUTO.

CONFIGURE ENCRYPTION VTLKEY = “MyVTLkey”

The VTLKEY option specifies the encryption key to be used by the VTL when an export to tape or VTL stack operation is requested. The key must have been predefined at the VTL. The VTLKEY option must be used with the PASSWORD option. The key value defined can be overridden in commands requesting encryption by the VTLKEY option.

CONFIGURE ENCRYPTION PASSWORD = “VTLPassword”

The PASSWORD option specifies the password for the VTL encryption key to be used when an export to tape or VTL stack operation is requested. The password must have been predefined at the VTL. The PASSWORD option must be used with the VTLKEY option. The key value defined can be overridden in commands requesting encryption by the PASSWORD option.

CONFIGURE ENCRYPTION

The CONFIGURE ENCRYPTION command without any options will report the current values of the encryption options. See the following section, **Special Security for Encrypted Tape Key Values**, for information on who can view the key values if set.

Using the tape stacking and encrypting commands causes the Unisys TapeStack software to be called to perform the requested operation. The calls on the TapeStack software are done by an asynchronous task that is processed by the TapeManager software. These asynchronous tasks may be managed by the system operator (DS, Priority, etc.) without affecting the TapeManager system. If the call to the TapeStack software returns an error or a warning the task will DS itself once all other operations are completed. A DSed TapeStack process may be detected in batch runs via the WAIT command.

The **STACK** command calls the TapeStack stack process. The TapeStack stack process will copy one or more real tapes (RTVs) as virtual tapes (VTVs) onto a stacked tape.

```

TM — STACK ————┐
                   └── & ENCRYPT ───┐
                                     ├── SN ───┐
                                     ├── LABEL — <label ID> ───┐
                                     └── WHERE — <selection spec> ───┐
                                     └────────────────────────────────┘
>───────────────────────────────────────────────────────────────────────────────────>
└── TO ───┐
          ├── SN — <serial number> ───┐
          └── LABEL — <label ID> ───┐
          └──────────────────────────┘
>───────────────────────────────────────────────────────────────────────────────────┘
<stacking options>
>───────────────────────────────────────────────────────────────────────────────────┘
└── : ───┐
         ├── <──────────────────,──────────────────> ───┐
         ├── REPORT ───────────────────────────────────┐
         ├── NOREPORT ─────────────────────────────────┐
         ├── SCRATCHPOOL — <pool ID> ─────────────────┐
         ├── KEY — <string> ───────────────────────────┐
         ├── PRIORITY - = ─── <integer> ───────────┐
         │                                     └── USER ───┐
         ├── MCP ───────────────────────────────────────┐
         ├── VTL ───────────────────────────────────────┐
         ├── VTLKEY — <string> ───────────────────────┐
         └── PASSWORD — <string> ─────────────────────┐
         └──────────────────────────────────────────────┘

```

TM STACK SN RTV001, RTV002, RTV003

TM STACK LABEL GIZA=

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TM STACK WHERE CREATEDDATE = TODAY

The WHERE version of the stack command causes TapeManager to search its database for all RTVs that match the requested selection parameters and create a list of serial numbers to be passed to the TapeStack stack process.

TM STACK LABEL GIZA= TO GIZASTACK

The TO option allows the serial number or the label of the output tape to be specified. If the label is not specified, the label of the stacked tape is STACKED.

TM STACK & ENCRYPT SN RTV099

The ENCRYPT option requests that the volume be encrypted as it is copied to the destination tape. This command is the same as the ENCRYPT & STACK command.

:REPORT

:NOREPORT

The REPORT and NOREPORT options set and reset, respectively, the report request for the TapeStack function being called. If neither the REPORT nor NOREPORT option is specified, the default as set with the CONFIGURE STACKING REPORT command is used.

:SCRATCHPOOL STACKPOOL

The SCRATCHPOOL option sets the scratch pool to be used for tape output requests for the TapeStack function being called. If the SCRATCHPOOL option is not specified, the default as set with the CONFIGURE STACKING SCRATCHPOOL command is used.

:KEY “any phrase or string”

The KEY option sets the pass phrase to be used when encrypting a tape. If the KEY option is not specified, the default as set with the CONFIGURE ENCRYPTION KEY command is used. A pass phrase key can be limited to 20 characters in length. A warning message is generated if a KEY is specified, and encryption has not been requested.

:PRIORITY = 50

The PRIORITY option sets the priority to be used for the TapeStack function being called. If the PRIORITY option is not specified, the default as set with the CONFIGURE STACKING PRIORITY command is used. If an integer is specified, the value must be between 1 and 99. The value USER specifies that the caller's priority should be passed to the TapeStack process.

:MCP

:VTL

The MCP and VTL options determine which tape stacking system is called for the requested function. If MCP is specified, then the Unisys TapeStack system is called. If VTL is specified, then the VTL stacking system is called. If neither the MCP nor VTL option is specified, the default as set with the CONFIGURE STACKING METHOD command is used.

:VTLKEY “MyVTLkeyname”

The VTLKEY option sets the VTL encryption key to be used when encrypting a tape using the VTL. If the VTLKEY option is not specified, the default as set with the CONFIGURE ENCRYPTION VTLKEY command is used. The key and password must have been previously defined at the VTL.

:PASSWORD “MyVTLpassword”

The PASSWORD option sets the VTL password for the encryption key to be used when encrypting a tape using the VTL. If the PASSWORD option is not specified, the default as set with the CONFIGURE ENCRYPTION PASSWORD command is used. The key and password must have been previously defined at the VTL.

Tape Append Command

The APPEND command calls the TapeStack append process. The TapeStack append process will add one or more real tapes (RTVs) as virtual tapes (VTVs) onto a previously created stacked tape.

Syntax

```

TM — APPEND — [ & ENCRYPT ] — [ SN — <SN list> ] — [ LABEL — <label ID> ] — [ WHERE — <selection spec> ] — >

> — TO — [ SN — <serial number> ] — [ LABEL — <label ID> ] — >

> — <stacking options> — >

<stacking options>

> — [ : — [ REPORT — , — ] — [ NOREPORT — ] — [ KEY — <string> — ] — [ PRIORITY — = — [ <integer> — ] — [ USER — ] — ] — [ MCP — ] — [ VTL — ] — [ VTLKEY — <string> — ] — [ PASSWORD — <string> — ] — ] — >

```

Explanation

TM APPEND SN RTV004 TO SN STK001

The tape volumes specified by the serial numbers are appended to the specified stacked tape.

TM APPEND LABEL NEWGIZA= TO LABEL OLDSTACK

The label version of the stack command causes TapeManager to search its database for all RTVs that match the requested label string and create a list of serial numbers to be passed to the TapeStack append process. When using the output to a label name, if more than one tape has that label name, the most recent tape of that name is used.

TM APPEND WHERE CREATEDDATE = TODAY TO SN STK001

The WHERE version of the stack command causes TapeManager to search its database for all RTVs that match the requested selection parameters and create a list of serial numbers to be passed to the TapeStack append process.

Tape Stacking

TM APPEND & ENCRYPT SN RTV099

The ENCRYPT option requests that the volume be encrypted as it is appended to the destination tape. This command is the same as the ENCRYPT & APPEND command.

Tape Stacking

will be the same as the source tape, otherwise the label of the stacked tape is TSU/STACKEDTAPE.

***Note:** This command is not valid when the stacking method is VTL.*

The **DUPLICATE** command calls the TapeStack duplicate process. The TapeStack duplicate process will copy all virtual tapes (VTVs) from the specified stacked tape onto a new stacked tape. Duplicate is the same as a Merge (Consolidate) that only specifies a single input tape.

The UNSTACK command calls the TapeStack unstack process. The TapeStack unstack

Syntax

TM UNSTACK VOLID 3 ON STK002

The virtual tape volume specified by the volume number is unstacked to an available scratch tape.

TM UNSTACK LABEL DBDUMP ON LABEL DUMPSTACK

The virtual tape volume specified by the label name is unstacked to an available scratch tape.

TM UNSTACK & DECRYPT VTV RTV002 ON STK002 :KEY “ax2ywdferg145”

The virtual tape volumes specified by the serial numbers are unstacked and decrypted to available scratch tapes. The DECRYPT option is only required if TapeManager was not supplied the pass phrase for the VTV when it was created. TapeManager will automatically call for decryption on any unstack operation where the tape has been marked as encrypted and TapeManager has the pass phrase stored. The KEY phrase is required to decrypt a volume where the pass phrase is not stored by TapeManager. The KEY phrase will be used for all volumes in the volume selection list and will override any stored pass phrase. This command is the same as the DECRYPT & UNSTACK command.

Tape Volume Delete Command

The DELETE command calls the TapeStack invalidate process. The TapeStack invalidate process will mark all the specified virtual tapes (VTVs) on the stacked tape as invalid.

Syntax

```
TM — DELEte — VTV — <SN list> —————>
                  |
                  | VOLID — <VOLID list> ————|
                  | VOLUME —————|
                  |
> — ON — SN — <serial number> —————>
          |
          | LABEL — <label ID> ————|
          |
> — <stacking options> —————|
<stacking options>
>
|
| : — <—————, —————|
|   | REPORT —————|
|   | NOREPORT —————|
|   | PRIORITY — = — <integer> ————|
|   | USER —————|
```

Explanation

TM DELETE VTV RTV002, RTV004 ON STK002

The virtual tape volumes specified by the serial numbers are marked as invalid on the specified stacked tape.

TM DELETE VOLID 1, 3-5 ON LABEL DUMPSTACK

The virtual tape volumes specified by the volume numbers are marked as invalid on the specified stacked tape.

Note: If a VTV has retention properties, the retention properties must show the VTV as expired, or the Delete (Invalidate) will not be allowed. This VTV expiration check is only done for delete/invalidate processes started by TapeManager. Invalidate processes done by the TSU utility cannot be checked.

Note: This command is not valid when the stacking method is VTL.

Stacked Tape Directory Command

The DIRECTORY command calls either the TapeStack or VTL directory process. The directory process locates the directory of a stacked tape and reports all VTVs to TapeManager.

Syntax

```

TM — DIRectroy ————┐
                       │└─ SN ─┐
                       │          │└─ LABEL ─┐
                       │          │          │└─ <label ID> ─┐
                       │          │          │          │      │
                       │          │          │          │      └─ <stacking options> ─┐
                       │          │          │          │          │                  │
                       │          │          │          │          └─ <stacking options> ─┐
                       │          │          │          │          │                  │
                       │          │          │          │          └─ > ─┐
                       │          │          │          │          │      │
                       │          │          │          │          └─ : ─┐
                       │          │          │          │          │      │
                       │          │          │          │          └─ REPORT ─┐
                       │          │          │          │          │          │└─ , ─┐
                       │          │          │          │          │          │      │
                       │          │          │          │          │          └─ NOREPORT ─┐
                       │          │          │          │          │          │          │└─
                       │          │          │          │          │          └─ PRIORITY ─┐
                       │          │          │          │          │          │          │└─ = ─┐
                       │          │          │          │          │          │          │      │
                       │          │          │          │          │          │          └─ <integer> ─┐
                       │          │          │          │          │          │          │          │└─ USER ─┐
                       │          │          │          │          │          │          │          │      │
                       │          │          │          │          │          │          └─ MCP ─┐
                       │          │          │          │          │          │          │      │
                       │          │          │          │          │          └─ VTL ─┐
                       │          │          │          │          │          │      │
                       │          │          │          │          └─

```

Explanation

TM DIR SN STK002

The stacked tape specified by the serial number has its directory read and the directory information is passed to TapeManager.

TM DIR LABEL DUMPSTACK

The stacked tape specified by the label name has its directory read and the directory information is passed to TapeManager.

Stacked Tape Recreate Directory Command

The RECREATEDIR command calls the TapeStack recreate directory process. The TapeStack recreate directory process scans a stacked tape for VTVs creating a new directory and reporting all VTVs to TapeManager.

Syntax

```
TM  RECREATEDir  <serial number>
    REDIR        SN
                LABEL  <label ID>

>  <stacking options>

<stacking options>

>  :  <REPORT , >
      NOREPORT
      PRIORITY = <integer>
                USER
```

Explanation

TM RECREATEDIR SN STK002

The stacked tape specified by the serial number has its directory recreated and the directory information is passed to TapeManager.

TM REDIR LABEL DUMPSTACK

The stacked tape specified by the label name has its directory recreated and the directory information is passed to TapeManager.

Note: This command is not valid when the stacking method is VTL.

Tape Size Command

The SIZE command calls the TapeStack tape sizing (merge) process. The TapeStack sizing process will read the specified tape(s) and report the size in MB of the specified tape(s).

Syntax

```

TM — SIZE ———— <SN list> —————>
              |
              |— SN ————
              |— LABEL — <label ID> ————
              |— WHERE — <selection spec> ————
              |
>— <stacking options> —————|
<stacking options>
>
  |
  |— : ———— <— , ————
  |   |
  |   |— REPORT —————
  |   |— NOREPORT —————
  |   |— PRIORITY — = — <integer> ————
  |   |                       |
  |   |                       |— USER ————

```

Explanation

TM SIZE SN STK001 STK002 STK003

The tape volumes specified by the serial numbers are read to determine the number of bytes used on those tapes.

TM SIZE LABEL DUMPSTACK=

The stacked tape volumes specified by the label are read to determine the number of bytes used on those tapes.

TM SIZE WHERE CREATEDDATE < 1/1/2004

The stacked tape volumes specified by the selection specification are read to determine the number of bytes used on those tapes.

Note: This command is not valid when the stacking method is VTL.

Tape ENCRYPT Command

The ENCRYPT command calls the TapeStack encryption process. The TapeStack encryption process will copy and encrypt one or more real tapes (RTVs) as virtual tapes (VTVs) onto a stacked tape.

Syntax

```
TM — ENCRYPT — [ & STACK ] — [ SN — <SN list> ] — [ LABEL — <label ID> ] — [ WHERE — <selection spec> ] —>
> — [ TO — [ SN — <serial number> ] — [ LABEL — <label ID> ] ] —>
> — <stacking options> —|
<stacking options>
> — [ : — [ REPORT — [ NOREPORT — [ SCRATCHPOOL — <pool ID> ] — [ KEY — <string> ] — [ PRIORITY — = — [ <integer> ] — [ USER — ] ] ] ] ] ] —|
```

Explanation

TM ENCRYPT SN RTV001

The tape volume specified by the serial number are encrypted and copied onto a stacked tape. The ENCRYPT command is the same as the STACK & ENCRYPT command.

TM ENCRYPT & STACK LABEL GIZA=

The label version of the encryption command causes TapeManager to search its database for all RTVs that match the requested label string and create a list of serial numbers to be passed to the TapeStack encryption process. The & STACK part is not required and is implied if more than one RTV is selected for input.

Tape Stacking & Encryption Reporting

To support the Unisys TapeStack product, a number of reports are enhanced and an additional report is available.

Stacked Tape Directory Report

The stacked tape report lists the virtual volumes (VTVs) on a stacked tape created by either the MCP or VTL stacking systems. The directory report is produced from the TapeManager database. Therefore, TapeManager must have been active and seen the stack tape created (appended or merged) to produce the directory report. For VTVs that have been encrypted, a small “e” is placed next to the serial number.

Syntax

```
TM  [ REPORT ] [ DIRECTroy ] [ <serial number> ]
    [ LIST   ]                [ SN ]
                                [ LABel ] [ <label ID> ]

> [ ATtributes ] [ = ] [ <file attributes> ]
  [ FILE       ] [ = ] [ <title specification> ]
```

Explanation

REPORT DIRECTORY SN STK001
LIST DIR LABEL DUMPSTACK

Creates a printed report of the virtual volumes contained on the specified stacked tape.

VTV Query

The Query/Find command has been enhanced to allow a query on a specific VTV.

Syntax

```
TM  [ INQire ] [ VTV ] [ <serial number> ]
    [ FIND   ]

> [ ON ] [ <serial number> ]
    [ SN ]
    [ LABel ] [ <label ID> ]
```


Explanation

FIND VTV STK033 ON RTV STK001 FIND VTV STK003 ON LABEL COPYSTACK

Displays a report for the requested VTV. If the VTV is found on the stacked tape multiple times, all VTVs with that serial number are shown.

Query (Find) Output

The output of some reports generated by the Query/Find command has been enhanced to support stacked tapes and virtual volumes. For queries that respond with any records that are virtual tape volumes (VTVs) a small “v” is appended to the serial number. For VTVs that have been encrypted, a small “e” is used instead of the “v”. If the tape record is for a stacked tape volume, a small “s” is appended to the serial number.

Examples

STK003s	STACKED/TAPE	10/29/2004 @ 16:05	1	1:0	DLT40
STK043	GIZA1/FILE000	10/29/2004 @ 15:23	1	1:0	DLT40
STK043v	GIZA1/FILE000	10/29/2004 @ 15:23	1	1:0	DLT40
STK055	GIZA2/FILE000	7/08/2005 @ 10:39	1	1:0	DLT40
STK055e	GIZA2/FILE000	7/08/2005 @ 10:39	1	1:0	DLT40

For queries that respond with a single record, the record detail report has been enhanced to report the volume type.

Examples

VOLUME TYPE:	NORMAL (RTV)
VOLUME TYPE:	STACKED TAPE (UNISYS)
VOLUME TYPE:	VIRTUAL VOLUME (VTV)

For queries that respond with a single record, the record detail report has been enhanced to report the volumekind.

Examples

VOLUMEKIND:	PHYSICAL (0)
VOLUMEKIND:	VIRTUAL (1)
VOLUMEKIND:	DON'T CARE (3)

For queries that respond with a single record and the record is for an RTV and the RTV has been stacked, the display will show what volume(s) the RTV has been stacked on.

Example

VOLUME COPIES ON: STK003, STK066

For queries that respond with a single record and the record is for a VTV, the display will show the status of the VTV and the stacked tape that it resides on.

Example

VOLUME STATUS:	VALID
VOLUME ON RTV:	STK003

Log Report

Tape Stacking

TapeManager places information about the various TapeStack processes in its log. The LOG report has been enhanced to select only these stacking and encryption information log records by using the STACKING option.

Example

```
TM REPORT LOG STACKING

LOG ENTRIES (STACKING ENTRIES)
-----TIME-----TYPE-----ENTRY-----
15:38:36  STACK      Giza STACK call returned error 16
16:14:25  STACK      VTV GIZA1/FILE000 [STK043] has been Stacked onto RTV
GIZASTACK [STK006] (Valid 1)
16:23:13  STACK      VTV GIZA2/FILE000 [STK050] has been Stacked onto RTV
GIZASTACK [STK006] (Valid 2)
16:33:57  STACK      VTV GIZA1/FILE000 [STK025] has been Stacked onto RTV
GIZASTACK [STK006] (Valid 3)
18:46:12  STACK      VTV GIZA4/FILE000 [STK003] has been Appended onto RTV
GIZASTACK [STK006] (Valid 4)
```

Summary Report

The TapeManager summary report will now show how many records in the TapeManager database are in use by virtual tape volume (VTV) records.

Example

```
DATABASE RECORD SUMMARY
Cartridge Records      2657  (303 Stacked Volume Records)
Added Records          60
Deleted Records        0
Cleaning Records       2
Other Records          0
Total Records          2719  (91% OF LICENSE)
```

Special Security for Encrypted Tape Key Values

The TapeManager collects and stores the pass phrases (KEY) used by any tape that is encrypted by the TapeStack software. These pass phrases, including the master pass phrase if configured, are encrypted before being stored. Various commands such as FIND and ad hoc reports will not show or allow the PASSPHRASE field or configured key values to be viewed without special security having been defined. The SECURE command must be used to specify the security settings for the pseudo command KEY. For example, TM SECURE KEY + USER (SAM) will only allow users logged in as user SAM to see or use the PASSPHRASE database field. This security is also used to determine who may see the key values set with the CONFIGURE ENCRYPTION command. If security for the pseudo command KEY has not been specified, then no access to the TapeManager will be allowed to see or use the key values.

Chapter 12

Tape Database Maintenance

ADD Command

The ADD command is used to add tape records to the database so that those tapes will be tracked. Its primary purpose is to initially add a range of SNs to the database so that the TM CONFIG OPERATIONS UNKNOWN option can be set to IGNORE. This command can also add tapes to the database that do not match the current tracking specification so that they will be tracked.

Syntax

```
TM — ADD — SN — <SN list> —————>
> —————|
  | WITH — <update spec> |
<update spec>
  |<—————| — ' — <value>—————|
  |<field name> — = —
```

Explanation

TM ADD SN 200000-201999

Creates records in the tape database for tapes with serial numbers from 200000 through 201999.

WITH REELLENGTH = 2400

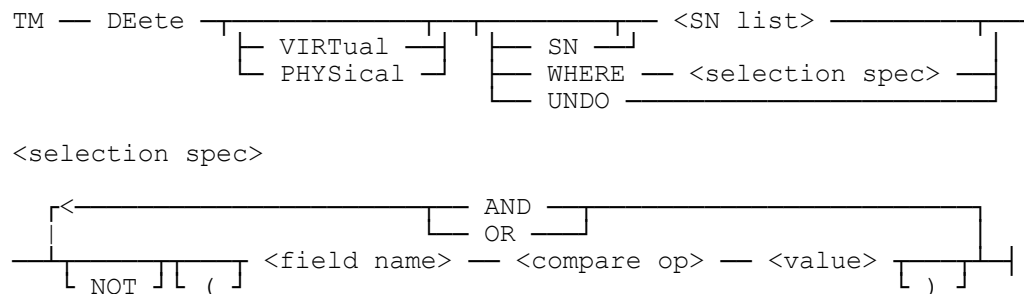
The WITH part is used to specify initial tape field values for the added tapes such as the REELLENGTH.

Note: *If many tapes are being added (i.e., TM ADD SN 100000-199999) it may take some time before a response is returned. Tapes added with the ADD command do not show up in any reports or displays until they have been used on the system.*

DELETE Command

The DELETE command is used to delete tape records from the database. It is used to remove tapes from the system that should no longer be tracked or reported. Deleted records are not actually removed from the database but rather marked as deleted.

Syntax



Explanation

TM DELETE MYSN

Removes the tape record from the database for the tape with the serial number of MYSN.

Note: If the serial number is within the range specified by the TM CONFIG TRACKING command and the system is in AUTO mode, the tape will be placed back in the system the next time it is seen.

TM DELETE WHERE DATENEW < TODAY – 5 YEARS

Removes all tape records that have a new date greater than 5 years old. The WHERE clause can be used with any database field (see Appendix B).

TM DELETE VIRTUAL SN V00021

VTL systems with the DSI VTL Agent TapeManager can track both a physical and virtual copy of a tape. This allows the VTL to make a physical copy of a virtual tape via a backend library and track both copies. The PHYSICAL or VIRTUAL modifier of the DELETE command allows either the physical or virtual copy of the tape record to be deleted from the database. If neither PHYSICAL or VIRTUAL is specified, then both the physical and virtual tape records are deleted (if found).

Note: For VTL systems that do not specify the VTL Agent entry in the LibraryManager configuration file all tapes are treated as physical.

TM DELETE UNDO

The UNDO option of the DELETE command removes the effects of the last DELETE command (i.e. un-deletes). The UNDO option can be used multiple times to undo successive DELETE commands in the reverse order in which they were done. UNDO will not undelete any records that may have been added back in that were part of the delete process. The UNDO will not be able to find any records to un-delete after a DATABASE REORGANIZE has been done. A database reorganize physically removes the deleted records from the database.

***Note:** A DATABASE REORGANIZE must be done to recover the database space used by deleted records. This is particularly important if the database record count is near the limit set by the license key. Use the STATUS DB command to display license and record count information.*

MODIFY Command

The MODIFY command is used to change fields in tape records in the database. Tapes may be selected by serial number, by label, or by the values in the records fields. Tapes that are selected may have their fields changed to new values.

Syntax

```

TM — MODIfy — [ SN ] — <SN list> —————>
                  [ LABEL — <label ID> ]
                  [ WHERE — <selection spec> ]

>— WITH — <update spec> —————|

<selection spec>

[ <— ] [ AND ] [ — ]
[ NOT ] [ ( ] <field name> — <compare op> — <value> [ ) ]

<update spec>

[ <field name> — ' — <value> —————|
  
```

Explanation

TM MODIFY SN 100101 WITH PERMANENT = TRUE

Selects the tape with serial number 100101 and changes the PERMANENT field to TRUE so that the tape cannot be purged.

TM MODIFY LABEL MYDB= WITH RETAINGENS = 4

Selects all tapes whose labels start with MYDB and changes the RETAINGENS field to 4 so that the tape cannot be purged unless there are four newer generations.

TM MODIFY SN 1234 WITH RETENTION = 0

Selects the tape with serial number 1234 and clears the retention values so that the tape can be purged.

TM MODIFY WHERE REELLENGTH = 0 WITH REELLENGTH = 2400

Selects all tapes whose REELLENGTH value is 0 and changes the REELLENGTH value to 2400.

Note: *Some fields in the record, such as SERIALNO, are read only and may not be modified.*

Note: *For multi-host TapeManager environments, the MODIFY command may not be able to update all records that match the <selection spec>. In a multi-host environment, a tape record is “owned” by one host at a time. Only the “owning” host can modify the tape record. Therefore, on multi-host systems the MODIFY command may need to be executed on each host in the multi-host environment in order to ensure that all records are updated.*

Chapter 13

TapeManager Macros

Overview of TapeManager Macros

The TapeManager macro facility provides a means for TapeManager commands and other strings to be processed based on a defined name. Invoking a macro name is the same as entering the command text manually.

TapeManager macros may be stored as text in an ordinary text file on MCP host machines. TapeManager macros are manually loaded from this text file using the LOAD MACROS command or the execution of a DO command referencing a file containing macro DEFINE commands. When macro definitions are loaded via the TM LOAD MACROS command, all the currently defined macros are deleted first. All the currently defined macros may be deleted with the TM UNLOAD MACROS command. The set of loaded macros can be modified on-line.

A TapeManager macro can override the definition of a standard TapeManager command. For instance, the macro with the name “PURGE”, could replace the standard TapeManager PURGE command. Other keywords (e.g., “SLOT”) are always recognized in context. (See OVERRIDE below)

The definition of a macro includes principally rules for expanding into text, which represents valid TapeManager command input. The definition may also include rules for invoking the macro automatically based on the text of a program’s system display or RSVP message, or a TapeManager event message.

The set of loaded macro definitions is recognized throughout the TapeManager software installation, so utility sessions, ODT input, and TMREMOTESPO input all are treated the same.

Defining a Macro

Macro definition uses the same syntax whether done on-line or in a loaded text file. The definition begins with the keyword DEFINE and ends with the keyword END. A name must be placed after the END, matching the name of the macro being defined. Semicolons in a text file separate successive macro definitions.

Macro definitions are not stored over TapeManager sessions. It is recommended that a site’s regularly used macro definitions be stored in a STARTUP file so that the macro definitions are loaded each time TapeManager is initiated. (see the DO command)


```

BEGIN ———— <macro statement> ———— END — <name> —————|
<macro statement>

——— <text> —————|
——— <formal name> ————|
——— <macro primitive> ————|

<text>

——— <text literal> —————|
——— <string> —————|

<macro primitive>

—— FA —— <text> —————|

<text literal>

——— <non-quoted string that does not include a semi-colon> ————|

<string>

——— <quoted string> —————|
——— # — <string primary> ————|

<string primary>

——— <intrinsic variable> —————|
——— <query field> —————|
——— EVALuate — <string> —————|

<intrinsic variable>

——— USERcode —————|
——— FILEid —————|
——— LABELid —————|
——— SERIALNO —————|
——— SCRATCHPOOL —————|
——— HOSTname —————|
——— TOD —————|
——— NOW —————|
——— MM —————|
——— DD —————|
——— YY —————|
——— YYYY —————|
——— TODAY —————|
——— CYCLE —————|
——— VERSION —————|
——— REELNUMBER —————|
——— FILESECTION —————|

<query field>

—— QUERY ———— . — <field name> —————|
—— . — LIST ————|

```

Macro Parameters

Macro parameters allow variable information to be passed to the macro define. Parameters may also be used in auto macros (described below) to acquire the parameter information from the message that triggers the auto macro. When a macro is invoked, the supplied parameters are inserted in the body of the macro at the designated places as if the text had been originally written in the macro definition. All defined parameters must be supplied when the macro is invoked. Any extra parameters supplied when the macro is invoked are ignored.

Macro Options

Macro options give the macro author control over how macro functions are used and how they operate.

The **REPLY** option defines a macro that is executed automatically (auto macro). This allows TapeManager to invoke a macro in response to a particular display or RSVP from a program. A program may any program producing display or RSVP text that fits the <message template>.

A message template is merely an abstract description of an acceptable message. It contains strings that are required to appear or portions that may contain anything as indicated by the **SKIP** keyword. The template can also specify that certain strings do not appear. Only if the program's text fits the template will the macro be invoked. Except as part of a string literal, spaces are ignored in matching a string to a template. A <string literal> that appears in a message template may contain wildcard characters so the template can match more than one specific message. If the **FILENAME** keyword appears following a string literal or <formal name>, then the matching string must conform to the system definition for a valid display form file name. If the **SKIP** keyword appears following a string literal, then anything that follows the given string literal will match.

The **REPLACE** option provides for replacing a current macro definition with a new macro definition. The **REPLACE** option ensures that the macro writer understands that a macro definition is being replaced for sites where there are multiple macro authors. If the name provided in the macro's definition matches a current macro name, an error is returned if **REPLACE** is not specified.

The **OVERRIDE** option provides for replacing a TapeManager command with a macro definition. Only TapeManager commands can be replaced. Individual syntax items of a command cannot be replaced. The **OVERRIDE** option ensures that the macro author understands that the macro will replace a TapeManager command. If the name provided in the macro's definition matches a TapeManager command name, an error is returned if **OVERRIDE** is not specified.

The **RESPONSE** option provides control over the display of text from an auto macro. If **NONE** is specified, this text is not displayed. If **ALL** is specified, then all response text from an auto macro is displayed with the system messages. If **EXPLICIT** is specified, then only responses coded directly within the macro are displayed. A response may be

coded in the macro body by specifying a quoted string as a macro statement. The default is NONE.

Macro Body

The macro body is a list of macro statements that are evaluated when the macro is invoked. Each macro statement must evaluate to a valid TapeManager command or macro primitive.

The text portion of the body of the macro is the non-variable part of the TapeManager command(s) to be executed. The text is entered, as it would be at any of the TapeManager command interfaces, with the need for the preceding TM. Depending on the syntax of the TapeManager command, some parts of the text may need to be enclosed in quotes.

Use of parameters (<formal name>) within the body allows variable information to be included in the evaluated command. A parameter name can be any alpha-numeric identifier. When the command is evaluated, any instance of the string that was identified as a parameter, is replaced by the passed information for that parameter. It is important to choose parameter names carefully as names that also match command syntax items may produce unexpected results.

Macro primitives are MCP commands available within the macro. These macro primitives allow the macro to control aspects of a waiting entry. Macro primitives are designed specifically for use with auto macros. These commands are not available from normal TapeManager command interfaces.

Intrinsic variables give the macro writer access to attributes of an outstanding tape assignment request. The various attributes of the request such as usercode of the program or the scratch pool requested, can be referred to symbolically. Intrinsic variables may be used wherever a value or string would be accepted, such as in a <selection spec> or <update spec>.

QUERY fields give the macro writer access to the results of a TM FIND command where the QUERY clause appears as the output destination of the FIND command. Any field of the current query database record can be accessed by giving the database field name prefixed by QUERY and a period (i.e. QUERY.FILEID). The requested item evaluates as a quoted string. As with intrinsic variables, query fields may be used wherever a value or string would be accepted. When a TM FIND:QUERY returns more than one database record, the information returned for the QUERY.<field name> refers to the first record found. If the .LIST option is used with QUERY, it evaluates to an ordered, comma separated list of quoted strings that contain the values of the specified database field for all records of the previous query. If the FIND:QUERY is not part of the macro definition, the results are undefined (usually a null string).

EVALUATE renders the <string> following it without the quotes. This is intended for use when some commands, such as the FA macro primitive, do not accept quoted parameters. (Example: FA SCRATCHPOOL = #EVAL #QUERY.POOLID)

Using Macros

Invoking a macro is as simple as giving its name as a command (i.e., TM <macro name>). Macros may be invoked automatically as well as by text input. The automatic method is controlled by the REPLY macro option as described above.

Examples

```
DEFINE FINDSPECIAL =  
  BEGIN  
  FIND WHERE POOLID = "SPECIAL" OR  
    OWNER = "SPECIAL" OR  
    CREATINGUSER = "SPECIAL" :PRINTER  
  END FINDSPECIAL
```

Macros can be used to make a long, often used command into a much shorter command. The FINDSPECIAL command will create a printed report of all cartridges that have the string SPECIAL as a Scratch Pool, Owner, or Creating Usercode.

```
DEFINE MYFIND <KEY> =  
  BEGIN  
  FIND LABEL <KEY>= SORT ON CREATINGUSER  
  :FILE MYFIND/RESULTS  
  END MYFIND
```

Parameters allow a single define to be used for multiple requests. The MYFIND command will create a file of all cartridges that have a label name that starts with the passed parameter.

```
DEFINE REPORTYESTERDAY =  
  BEGIN  
  REPORT ACTIVITY YESTERDAY;  
  REPORT EXCEPTIONS YESTERDAY  
  END REPORTYESTERDAY
```

Use macros to combine multiple commands into a single command. Issuing the command REPORTYESTERDAY will cause both an ACTIVITY and an EXCEPTION report for the previous day to be run.

```
DEFINE DBHOSTPOOL  
  : REPLY TO REQUIRES MT "DBBACKUP=" FILENAME SKIP =  
  BEGIN  
  FA SCRATCHPOOL=DBPOOL  
  END DBHOSTPOOL
```

Macros can be used to assign the SCRATCHPOOL attribute to a waiting entry. DBHOSTPOOL assigns the SCRATCHPOOL attribute using the FA macro primitive. It causes the FA (File Attribute) MCP command to be issued whenever a waiting entry is

seen that is waiting for an output tape and the label starts with the characters DBBACKUP.

```
DEFINE BLPACKREL <SN>  
  : REPLY TO DISPLAY "BL/PACK(" <SN> "): RELEASED" SKIP =  
  BEGIN  
  MODIFY <SN> WITH EXPIRED = TRUE;  
  LOG "BLPACKREL RELEASED " <SN>;  
  END BLPACKREL
```

BLPACKREL allows TapeManager to recognize the display produced by BL/PACK that releases a tape for reuse. The message template describes how to find the released serial number in the display message and to supply the found value as the <SN> parameter. With this value, the macro uses the MODIFY command to force the tape to be expired in the database, permitting the tape to be purged and reused. The LOG step enters the release into the TapeManager log file.

Other Commands Used with Macros

LOAD MACROS

The LOAD MACROS command is used to load a file that contains macro definitions. See the LOAD Command in the TapeManager Operations section.

UNLOAD MACROS

The UNLOAD MACROS command is used to remove all macros defines from TapeManager. See the UNLOAD Command in the TapeManager Operations section.

DO

The DO command is used to process TapeManager commands contained in a disk file. The DO command is useful for loading macro defines particularly as part of a STARTUP file. See the DO Command in the TapeManager Operations section.

STATUS MACROS

The STATUS MACROS command can be used to list the currently defined macros. See the STATUS Command in the TapeManager Reports section.

SELECT WHERE <selection spec>

The SELECT WHERE command can be used to predefine a selection string for use in later commands, so the entire selection string does not have to be repeated. Use SELECTED or * to invoke the selection string in a WHERE clause. The SELECT command only retains its value within the macro. SELECT NONE will clear the selection string.

```
TM SELECT WHERE POOLID = "ARCHIVE" AND CREATEDDATE < TODAY  
TM FIND WHERE *
```


Chapter 14

Batch Mode Execution

Starting the Utility in Batch Mode

The TapeManager utility may be executed in batch mode either by executing the utility from a WFL job, by file equating the utility's CARD file, or by setting the utilities TASKSTRING task attribute. If the utility any either of these conditions, it will expect to receive its input through the CARD file or TASKSTRING task attribute.

Batch Mode Parameters for CARD file

In batch mode the utility reads commands from the CARD file. The CARD file is declared as kind READER but may be equated to a disk file. This file will only be opened if the TASKSTRING task attribute has not been set and the CARD file has been file equated to another file. The format of the commands is the same as those described in the previous sections with the following enhancements and restrictions:

- Each command must end with a semicolon (;).
- A command may be continued over many cards. This includes strings but intervening spaces may be included in the string if the first part of the string does not end in column 72 and the next part of the string does not begin in column 1.
- The percent sign (%) may be used to place comments in the batch command file. The utility will stop scanning the record when a "%" is found that is not in a quoted string.
- The CARD file may be equated to almost any file containing TapeManager commands in EBCDIC. However, the utility will only scan the first 72 characters of a record. The remainder of the record will be ignored. Generally, a simple CANDE text file will be used as input.

Dollar (\$) Option Card

A dollar (\$) option card may be used to control the processing of a batch Utility run. The dollar option card is implemented as follows.

- The dollar option card must be the first card in the deck.
- There can only be a single dollar option card.
- There must be a "\$" in column 1 or column 2 to identify a dollar option card.
- A list of options may be set or reset by specifying the SET or RESET keyword. If SET or RESET is not specified SET is assumed.
- The following options are available on the dollar option card.

LIST dollar Option

The LIST option controls the creation of the printed listing of the batch run of the Utility. If the LIST dollar option is set, all input and output is sent to the printer. Each command read by the utility will be printed along with the results of the command. The default for the LIST option is SET.

Batch Mode Execution

IGNORE dollar Option

The IGNORE option controls the action taken by the Utility on either a syntax or processing error. If the IGNORE option is SET then the batch process will continue with the next command if a syntax error is found. Also if a process error (DSed) is detected with a TM WAIT(<task id>) the batch process will continue with the next command. If IGNORE is set the TASKVALUE of the TM Utility run is NOT set if there were any errors. If the IGNORE option is RESET then either a syntax or processing error will cause the batch job to abort and set the TASKVALUE to 1. The default for IGNORE option is RESET. RESUME is a synonym for IGNORE.

Batch Mode Parameters for TASKSTRING task attribute

If the TASKSTRING task attribute has been set the utility will use that string as the command input. The format of the commands is the same as those described in the previous sections with the following enhancements and restrictions:

- Each command must end with a semicolon (;).
- The total length of the string must not exceed 254 characters. This is an MCP/WFL restriction.
- Comments (%) must not be used in the string.
- Dollar (\$) option cards cannot be used.

Waiting for Asynchronous Commands to Complete

Various TapeManager commands cause asynchronous processes to be started. The command that starts the process(es) returns after the process has started but before the asynchronous process has completed. The following TapeManager commands cause asynchronous processes to be processed; CLEAN MT, DATABASE (BACKUP, REORGANIZE, RESTORE), PURGE, IMPORT, EXPORT, REPORT, FIND :PRINTER and all TapeStack commands.

By using the WAIT command and a <task id> associated with the asynchronous task, it is possible to pause execution until the asynchronous task has completed. A <task id> may be associated with a command by placing [<task id>] at the end of the command but before the semicolon (;). A <task id> can be any user defined alpha-numeric identifier up to 17 characters in length. The <task id> can then be used in a later WAIT command to pause the batch processing until the asynchronous task associated with the <task id> has completed.

See the WAIT command in Chapter 7 of this manual for additional information.

***Note:** The [<task id>] syntax is accepted for all TapeManager commands but is ignored if the command does not process an asynchronous task.*

Examples

Executing the TapeManager utility from WFL

```
100 BEGIN JOB TEST/BATCH;
200 TASK TSK;
300 ?DATA CARD/TAPEMANAGER
400 % TEST RUN
500 TM REPORT ALL BY SN; % PRINT ALL TAPES BY SN
700 TM FIND SN 100100; % DISPLAY A TAPES ATTRIBUTES
800 TM OLDEST DAILYDUMP;
900 TM PURGE WHERE INLIBRARY AND EXPIRED [PGTASK];
1000 TM WAIT(PGTASK); % WAIT FOR THE PURGING TO FINISH
1100 TM DB      % MULTI CARD COMMAND
1200 BACKUP;
1300 ?
1400 RUN SYSTEM/TAPEMANAGER/UTILITY [TSK];
1500     FILE CARD(TITLE=CARD/TAPEMANAGER);
1600 IF TSK(VALUE) = 1 THEN
1700     ABORT "ERROR IN TAPEMANAGER BATCH RUN";
1800 END JOB.
```

Executing TapeManager Utility In Batch Mode From CANDE

```
RUN $SYSTEM/TAPEMANAGER/UTILITY; FILE CARD(KIND=DISK,
TITLE=TAPEMANAGER/BATCH/INPUT)
```

Executing TapeManager Utility In Batch Mode with TASKSTRING

```
100 BEGIN JOB TEST/TASKSTRING;
200 TASK TSK;
300 RUN SYSTEM/TAPEMANAGER/UTILITY [TSK];
400     TASKSTRING="TM STATUS;" &
500         "TM STACK WHERE CREATEDDATE = TODAY
        [STKTSK];"&
600         "TM WAIT(STKTSK);";
600 IF TSK(VALUE) = 1 THEN
700     ABORT "ERROR IN TAPEMANAGER BATCH RUN";
800 END JOB.
```

Note: *The DO command may also be used to input a series of TapeManager commands from a file.*

Chapter 15

Diagnostic Commands

Caution

Dynamic Solutions International reserves the right to change the syntax and output of the diagnostics commands at any time without the normal advance notification.

LOG Command

The LOG command allows the operator to place a maintenance log entry into the TapeManager log file. A maintenance log entry allows for a time marker, event message, or information that would be useful in diagnosing a hardware or software problem.

Syntax

TM — LOG — <text> _____|

Explanation

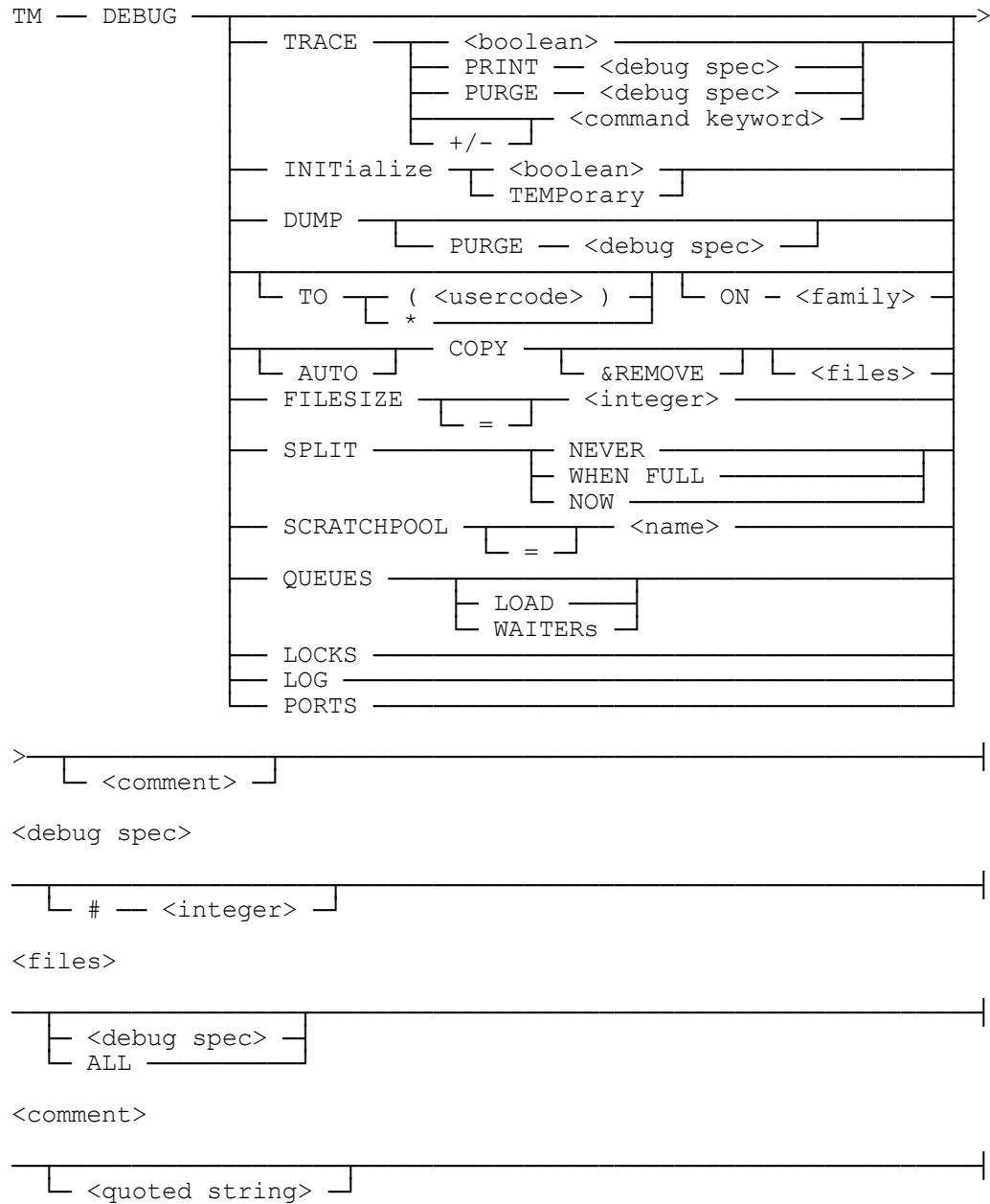
TM LOG * START OF TEST *****

The LOG command allows the operator to place a text entry into the TapeManager log file. These entries are shown in the reports generated by the LIST/REPORT MAINTENACE command and the LIST/REPORT LOG OPERATOR/ALL command.

DEBUG Command

The DEBUG command controls the various capabilities of the TapeManager and LibraryManager software modules diagnostic capabilities.

Syntax



Explanation

TM DEBUG TRACE ON “Test of MOVE command”

The DEBUG TRACE command causes the diagnostic tracing function to be activated (ON), deactivated (OFF), or its current status to be displayed. When tracing is active, information about the internal operations of the TapeManager are written to a disk file. The size of the disk file(s) is determined by the DEBUG FILESIZE command. If this record count is exceeded the file wraps so that the oldest information is overwritten. Each time tracing is activated a new set of trace files is created. If the LibraryManager software is also executing, separate trace files of the LibraryManager components are also produced. By default, the files are placed on the same family as the TapeManager files. The files will be named as follows:
<user name>/DEBUG/TRACE/<debug sequence #>/<module>/<date>/<time>. See the DEBUG TO and DEBUG ON commands below for additional information.

If a comment is included (highly recommended), that comment will be included in the trace output.

TM DEBUG INITIALIZE ON

In some situations it may be necessary to have tracing be activated when the software initializes. Setting INITIALIZE to ON will cause the tracing to be activated the next time the software is started. When the INITIALIZE option is set to OFF, trace files will not be created unless a TRACE ON command is given.

TM DEBUG INITIALIZE TEMPORARY

Setting the INITIALIZE option to TEMPORARY causes the TapeManager to start tracing when the software is started. These files are not saved unless a subsequent TRACE ON command is issued. This option is useful for diagnosing intermittent problems that do not occur on a predictable basis so that trace files do not accumulate unnecessarily.

TM DEBUG TRACE PRINT #143

The PRINT option of the DEBUG TRACE command will cause the specified trace file(s) to be printed. If a trace file set number is not given, the current trace file(s) are printed. The print attributes defined with the CONFIGURE REPORT command are used when printing trace files.

TM DEBUG TRACE PURGE #157

The PURGE option of the DEBUG TRACE command is used to remove trace files from disk. All trace files in the specified trace set are removed. If a trace file set number is not given the current trace files are removed. If the specified trace files are active (TRACE ON), tracing is turned off before the remove.

Diagnostic Commands

TM DEBUG TRACE + <command keyword>
- <command keyword>

The TRACE option will arm a trace for a particular command tracing to start when that command executes and finish with the command. Also, only traces occurring on the process executing the command will be collected and traces that are normally suppressed will be included. Command TRACE settings are not carried over when the system restarts.

TM DEBUG DUMP

The DEBUG DUMP command causes a program dump of all TapeManager stacks and libraries to be placed on disk. If the LibraryManager software is also executing, program dumps of the LibraryManager components are also produced. By default, the dump files are placed on the same family as the TapeManager files. The files will be named as follows:

<user name>/DEBUG/PDUMP/<debug sequence #>/<module>/<date>/<time>/<mix #>/<sequence #>. See the DEBUG TO and DEBUG ON commands below for additional information.

TM DEBUG DUMP PURGE

The PURGE option of the DEBUG DUMP command is used to remove dump files from disk. All trace files in the specified dump set are removed. If a dump file set number is not given the current dump files are removed.

TM DEBUG TO (MYUSERCODE) ON MYPACK

The TO and ON options control the placement of the trace and dump files. By default, trace and dump files are placed on the same family as the TapeManager database and program files. The ON option can be used to change the pack family used to store these files. The TO option can be used to change the directory name under which the files are stored. By default, the directory name is the usercode under which the TapeManager software is installed without the parenthesis (i.e., an installation usercode of (DSI) will cause the trace and dump files to be placed in the directory *DSI/DEBUG/=). If TapeManager was installed without a usercode or the TO option is used to set the debug usercode to *, then the debug directory name is DEBUG/=.

TM DEBUG COPY & REMOVE # 152 “Load fail problem”

The COPY option of the DEBUG command initiates a copy of trace and dump files to tape. The files collected will include some or all debug traces and dump files, the running set of code files, the TapeManager database files, the tape library configuration file, and the current MCP code file. If a debug serial number is not specified, the current debug serial number is assumed. &REMOVE option causes the dump and trace files to be removed after they have been copied to tape. The tape created will be called TMDUMP. The copy job will request a scratch tape according to the settings of the DEBUG SCRATCHPOOL option.

If a comment is included (highly recommended), it is placed in a file that is included on the tape.

TM DEBUG FILESIZE = 28800

The FILESIZE option allows the controlling of the size of trace files. This value represents the number of records to be stored in each trace file created. The default value is 14400 records. The value must be between 900 and 1,000,000. A change to this value will not affect a trace that is currently being taken but will take effect the next time a trace is started.

TM DEBUG SPLIT WHEN FULL

Setting this tracing option prevents the wraparound overwrite when a trace file fills up. Instead, a new set of trace files under the next debug serial number is created. Tracing picks up directly in the new files with no entries lost. Use the FILESIZE option to control the point at which the files will be split.

TM DEBUG SPLIT NEVER

Setting this tracing option causes trace files to wraparound and overwrite older entries when full. This is the default behavior.

TM DEBUG SPLIT NOW

Use this command to cause the trace files to be split immediately. Tracing must already be on.

TM DEBUG QUEUES

The QUEUES option displays the queue depths of various internal queues used by the TapeManager.

TM DEBUG QUEUES LOAD

The QUEUES LOAD option displays the details of the load queue. This information may be useful to understand why a tape did not load when requested.

TM DEBUG QUEUES WAITERS

The QUEUES WAITERS option displays the details of the waiters' queue. This information identifies the tape selected by TapeManager for assignment to each task.

TM DEBUG LOCKS

The LOCKS option displays the stack and mix numbers for the holder and contender of each interlock used by the TapeManager.

TM DEBUG LOG

The LOG option displays a snapshot of the system state into the TapeManager log. This includes QUEUES, LOCKS, and the calling list for each internal process and for each external process calling COMMANDER in TapeManager.

TM DEBUG PORTS

The PORTS option displays the current status and status history of the port files used by TapeManager and LibraryManager.

TM DEBUG

The DEBUG command without any options will display the current settings of the debug options.

Note: *Collection of DEBUG information takes additional processor and I/O time that may be noticeable on heavily loaded systems. It is therefore recommended that DEBUG information not be requested except as requested by DSI or to document a problem.*

TRACE Command

The TRACE command is the same as the DEBUG TRACE command. It is retained to be compatible with previous releases.

Syntax

```
TM — TRACE — <boolean>
```

Explanation

TM TRACE ON

The TRACE command causes the diagnostic tracing function to be activated (ON), deactivated (OFF), or its current status to be displayed. When tracing is active, information about the internal operations of the TapeManager are written to a disk file. The size of the disk file(s) is determined by the DEBUG FILESIZE command. If this record count is exceeded the file wraps so that the oldest information is overwritten. Each time tracing is activated a new set of trace files is created. If the LibraryManager software is also executing, separate trace files of the LibraryManager components are also produced. By default, the files are placed on the same family and under the same usercode as the TapeManager files. The files will be named as follows: DEBUG/TRACE/<debug sequence #>/<module>/<date>/<time>. This command is the same as the TM DEBUG TRACE <boolean> command.

TM TRACE

The TRACE command without any options will display the current settings of the TRACE/DEBUG options. This command is the same as TM DEBUG.

Note: *Collection of TRACE information takes additional processor and I/O time that may be noticeable on heavily loaded systems. It is therefore recommended that TRACE information not be collected except as requested by DSI or to document a problem.*

RESCUE Command

The RESCUE command is used to recover from a possibly hung TapeManager system. This command is not a normal TM command, but rather an AX or HI command executed from an Operator Console or remotespo program. The rescue operation causes all active TapeManager tasks to be aborted (DSed) with a program dump and restarted. Another task is then started to copy all the program dumps and related information to a tape so that it may be sent to Dynamic Solutions International (DSI) for analysis.

Explanation

<mix #> **AX RESCUE**

<mix #> **HI 911**

<mix #> **HI 999**

To start the rescue process, you must know the mix number of the SYSTEM/TAPEMANAGER/SUPPORT library. This can be found using the LIBS system command. For sites with many active libraries, LIBS NAME =TAPEMANAGER= will result in a response with fewer selections. (Note: Systems with B&L Lib running may also see OBJECT/TAPEMANAGER. This is not the same as SYSTEM/TAPEMANAGER/SUPPORT and will not respond to a rescue.)

Issuing the AX RESCUE, HI 911, or HI 999 to the SYSTEM/TAPEMANAGER/SUPPORT library will cause all active TapeManager processes to take program dumps, be DSed, and restarted. In most cases this will clear up any hung condition.

Once the dump and restart process has completed, TapeManager will start a process to copy the dumps, any related traces, the TapeManager data files, and current MCP (needed to analyze the dumps). The resulting tape should be sent to Dynamic Solutions International (DSI) support organization for analysis.

ABORT Command

The ABORT command is used to bring down TapeManager system in an emergency or if the normal QUIT command does not seem to function. This command is not a normal TM command, but rather an AX command executed from a Operator Console or remotespo program. The abort operation causes all active TapeManager tasks to be aborted (DSed) and the TapeManager support library to be DSed.

Explanation

<mix #> AX ABORT

To start the abort process, you must know the mix number of the SYSTEM/TAPEMANAGER/SUPPORT library. This can be found using the LIBS system command. For sites with many active libraries, LIBS NAME =TAPEMANAGER= will result in a response with fewer selections. (Note: Systems with B&L Lib running may also see OBJECT/TAPEMANAGER. This is not the same as SYSTEM/TAPEMANAGER/SUPPORT and will not respond to an abort.)

Issuing the AX ABORT to the SYSTEM/TAPEMANAGER/SUPPORT library will cause all active TapeManager processes to be DSed.

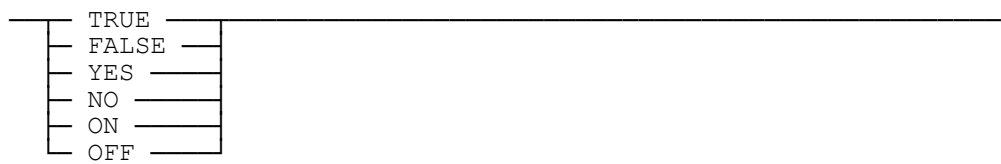
WARNING

Since ABORT DSes a library stack, any processes linked to that library stack will also be DSed. For users of other tape management systems such as B&L Lib and Metalogic TRIM, which usually link to SYSTEM/TAPEMANAGER/SUPPORT, these applications could also be DSed when the ABORT command is used. For these systems it is better to use the RESCUE command.

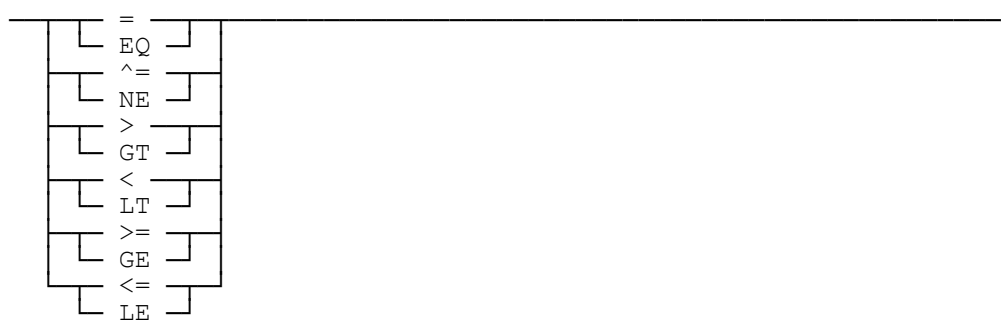
Appendix A

Common Syntax Elements

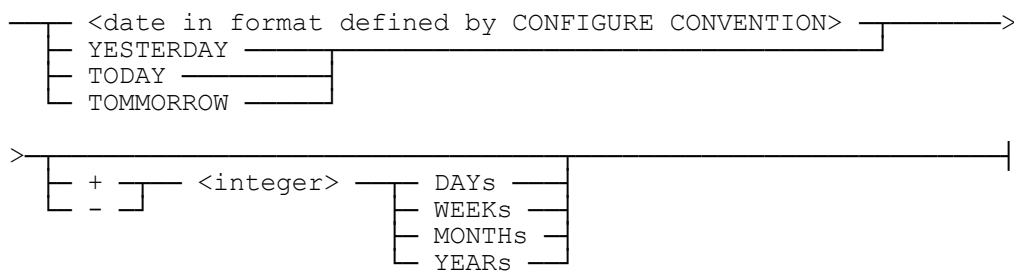
<boolean>



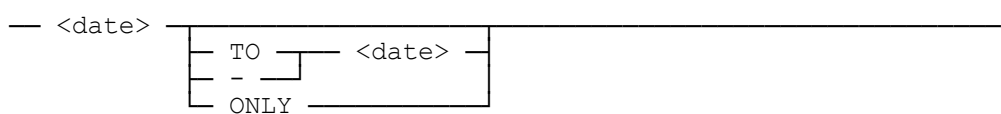
<compare op>



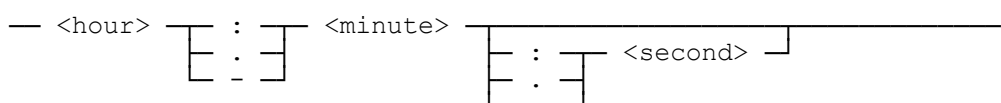
<date>



<date range>



<time>



<time range>

Common Syntax Elements

`<time>` — `<time>` — `TO` — `<time>` —

`<date/time range>`

`<date>` — `@` — `<time>` — `TO` — `<date>` — `@` — `<time>` —

`<door spec>`

`<name>` — `<side spec>` — `IN` — `<library spec>` —

`<library spec>`

`<selection spec>`

`<field name>` — `<compare op>` — `<value>` —

`<side spec>`

`SIDE` — `1` — `2` — `A` — `B` —

`<slot list>`

`<integer>` — `<side spec>` — `<integer>` —

`<slot spec>`

`<integer>` — `<side spec>` — `IN` — `<library spec>` —

`<SN list>`

`<serial number>` — `<serial number>` —

`<time>`

`@` — `<hours>` — `:` — `<minutes>` — `:` — `<seconds>` —

delimiters as defined in Convention Configuration

`<unit spec>`

Common Syntax Elements

— MT — <integer> —————|

<update spec>

— |<————— ' —————|

— <field name> — = — <value>—————|

Appendix B

Tape Database Fields

The TapeManager has a data dictionary for use in accessing the fields in tape records. The field names are used in the WHERE specification of many commands. The fields are also used in the SORT specifications of reports and update specifications in the ADD and MODIFY commands. The field names are also used by the FIELD_VALUE exported procedure for user interpretation of the TapeManager database records. Items in parenthesis () in the following descriptions are mnemonics which may be used in place of numeric values.

Caution

Dynamic Solutions International reserves the right to change the layout and structure of the TapeManager database at any time. The FIELD_VALUE exported procedure is provided to shield the user from changes that may occur.

Field Name	Type	Location	RW	Description
SERIALNO	str	[0]	R	The tape serial number.
TIMESTAMP	ts	[1]	R	The timestamp of the last change to this record.
RECORDTYPE	int	[2].[47:8]	R	The tape record type: 0 = empty record (EMPTY) 1 = control record (CONTROL) 2 = tape record (TAPE) 3 = continuation (CONTINUATION) 4 = deleted record (DELETED) 5 = cleaning cartridge (CLEANING) 6 = open systems (non-MCP) (OPEN)
RECORDMODIFIER	int	[2].[39:8]	R	The reason for the last change: 1 = modify command (MANUAL) 2 = log entry (SUMLOG) 3 = command action (COMMAND) 4 = remote host (REMOTEHOST) 5 = importer updated (IMPORTER) 6 = auto update (AUTOMATIC) 7 = TapeStack (TAPESTACK)

Tape Database Fields

Field Name	Type	Location	RW	Description
RECORDSTATE	int	[2].[31:8]	R	The record state: 0 = added record (ADDED) 1 = purged tape (PURGED) 2 = need close log (NEED_CLOSE) 3 = need EOT log (NEED_EOT) 4 = need EOJ log (NEED_EOJ) 5 = complete record (COMPLETED)
VTVINVALID	bool	[2].[23:1]	RW	If true VTV has been invalidated by the TapeStack utility.
VOLUMETYPE	int	[2].[22:3]	RW	Type of tape record: 0 = normal record (NORMAL) 1 = VTV record (VTV) 2 = Unisys stacked tape (USTACKED) 3 = STK stacked tape (SSTACKED)
VOLUMEKIND	int	[2].[19:4]	RW	Kind of tape record: 0 = physical tape (PHYSICAL) 1 = virtual tape (VIRTUAL) 2 = As is (leave this as it is) 3 = Don't care
REELLENGTH	int	[2].[15:16]	RW	The length of the physical tape.
READSNEW	int	[3].[47:16]	RW	The number of times tape has been read since entered in tape library.
WRITESNEW	int	[3].[31:15]	RW	The number of times the tape has been written to since entered into tape library.
DATENEW	date	[3].[16:17]	RW	The date that the tape was entered into the tape library.
READSCLEANED	int	[4].[47:16]	RW	The number of times tape has been read since it was last cleaned. (Record type 2 records only.)
WRITESCLEANED	int	[4].[31:15]	RW	The number of times tape has been written to since it was last cleaned. (Record type 2 records only.)

Tape Database Fields

DATECLEANED	date	[4].16:17]	RW	The date the tape was last cleaned. (Record type 2 records only.)
-------------	------	------------	----	--

Tape Database Fields

Field Name	Type	Location	RW	Description
CLEANSUSED	int	[4].[31:15]	RW	The number of this cleaning cartridge has been used. (Record type 5 records only.)
CLEANSAVAILABLE	int	[4].16:17]	RW	The original number of uses this cleaning cartridge has available. (Record type 5 records only.)
ERRORSNEW	int	[5].[47:16]	RW	The number of media errors detected since the tape was entered into tape library.
ERRORSCLEANED	int	[5].[31:16]	RW	The number of media errors detected since the tape was last cleaned.
ERRORSLAST	int	[5].[15:16]	RW	The number of media errors detected on the tapes last use.
LOCATION	str	[6].[47:12]	R	Current location of tape.
MOVEERRORS	int	[6].[35:4]	RW	The number of library robotic errors seen associated with this cartridge.
RECORDID	int	[6].[31:32]	R	Unique record identifier.
RETENTION	word	[7]	RW	The retention parameters word for this tape. In the MODIFY command, RETENTION may be set to a rule or label such that the tape takes the retention attributes of that rule or label. EX: MODIFY SN 123 WITH RETENTION = LABEL XTAPE. NONE or 0 can be used to clear the retention information.
PERMANENT	bool	[7].[47:1]	RW	If true tape may not be scratched.
RETAINBYDAYS	bool	[7].[46:1]	RW	If true the RETAINDAYS field contains the number of days a tape must be saved.

Tape Database Fields

Field Name	Type	Location	RW	Description
RETAINBYREEL	bool	[7].[45:1]	RW	If true the generations are calculated using the REEL number otherwise generations are calculated using the CYCLE attribute.
RETAINBYFACTOR	bool	[7].[44:1]	RW	If true the SAVEFACTOR field contains the number of days a tape must be saved.
RETAINBYDATE	bool	[7].[43:1]	RW	If true the RETAINDATE field contains the date until which the tape must be saved.
RETAINDATE	date	[7].[42:17]	RW	The date until which the tape must be saved.
RETAINLABELLEN	int	[7].[25:5]	RW	The number of leading label characters that must match to be considered part of the generation set.
RETAINGENS	int	[7].[20:9]	RW	The number of generations of this tape that must be saved.
RETAINDAYS	int	[7].[11:12]	RW	The number of days this tape must be saved.
RETENTION2	word	[8]	RW	This field will be used for future retention rule enhancements. (Not currently used.)
UPDATED	ts	[9]	RW	The timestamp of the tapes last updated (open time).
UPDATEDDATE	date	[9].[47:16]	RW	The time portion of the UPDATED database field.
UPDATEDTIME	time	[9].[31:32]	RW	The date portion of the UPDATED database field.
UPDATEDCOUNT	int	[10].[47:24]	RW	The number of times the tape has been updated (appended) including its creation.
OWNER	str	[10].[11:12]	RW	The usercode of the owner of this tape. (Not currently used.)

Tape Database Fields

Field Name	Type	Location	RW	Description
POOLID	str	[12..14]	RW	The scratch pool that this tape belongs to.
COMMENT	str	[15..24]	RW	A user defined comment for this tape.
USAGESTATE	int	[25].[47:36]	RW	This field is used to control the allocation of the tape. A non-zero value indicated that the tape is in use.
SCRATCHSTATE	int	[25].[11:12]	RW	(Not currently used.).
QUEUEDTIME	ts	[26]	RW	The time from which movement rules are triggered.
LABEL	str	[27..29]	RW	The current label (MFID) of the tape.
CREATED	ts	[30]	RW	The timestamp of the tapes creation (open time).
CREATEDDATE	date	[30].[47:16]	RW	The time portion of the CREATED database field.
CREATEDTIME	time	[30].[31:32]	RW	The date portion of the CREATED database field.
CREATINGHOST	str	[31..33]	RW	The HOSTNAME of the host that created this tape.
CREATINGUNITNO	int	[34].[47:16]	RW	The tape unit that created this tape.
TAPESIZE	int	[34].[31:32]	RW	The amount of information on the tape in GB as reported by TapeStack.
CREATINGMIXNAME	str	[35].[47:12]	RW	The name of the task that created this tape.
CREATINGJOBNAME	str	[35].[35:12]	RW	The name of the job that created this tape.
CREATINGACCESS	str	[35].[23:12]	RW	The access code of the creating task.

Tape Database Fields

Field Name	Type	Location	RW	Description
CREATINGCHARGE	str	[35].[11:12]	RW	The charge code of the creating task.
CREATINGUSER	str	[36..38]	RW	The usercode of the creating task.
LASTUSED	ts	[39]	RW	The timestamp of the tapes last use (open time).
LASTUSEDDATE	date	[30].[47:16]	RW	The time portion of the LASTUSED database field.
LASTUSEDTIME	time	[30].[31:32]	RW	The date portion of the LASTUSED database field.
LASTUSEDHOST	str	[40..42]	RW	The HOSTNAME of the host that last used this tape.
LASTUSEDUNITNO	int	[43].[47:16]	RW	The tape unit that last used this tape.
PASSPHRASE	str	[43].[31:12]	R	If the VTV is encrypted, the pass phrase used to encrypt the tape. Caller must have KEY security capability in order to access.
RETENTIONPARENT	str	[43].[19:12]	RW	The label of the parent tape which must be expired before this tape can be expired.
TIMEZONE	str/int	[43].[7:8]	RW	The time zone of the various time values in the database. Output is the abbreviated time zone string. Input is the abbreviated time zone string or the MCP value for the time zone.
LASTUSEDMIXNAME	str	[44].[47:12]	RW	The name of the task that last used this tape.
LASTUSEDJOBNAME	str	[44].[35:12]	RW	The name of the job that last used this tape.
LASTUSEDACCESS	str	[44].[23:12]	RW	The access code of the last using task.
LASTUSEDCHARGE	str	[44].[11:12]	RW	The charge code of the last using task.

Tape Database Fields

Field Name	Type	Location	RW	Description
LASTUSEDUSER	str	[45..47]	RW	The usercode of the last using task.
SAVEFACTOR	int	[48].[47:11]	RW	The SAVEFACTOR file attribute assigned to the tape.
CYCLE	int	[48].[36:14]	RW	The CYCLE file attribute assigned to the tape.
REEL	int	[48].[22:15]	RW	The REEL file attribute assigned to the tape.
MULTIREEL	bool	[48].[7:1]	RW	If true this is part of a multi-reel tape set.
GENERATION	int	[48].[6:4]	RW	The GENERATION file attribute assigned to the tape.
OPERATOREXPIRED	bool	[48].[2:1]	RW	If true then this tape has been forced into an expired state by the operator.
CREATORDSSED	bool	[48].[0:1]	RW	If true then the creating task was DSed.
VERSION	int	[49].[47:8]	RW	The VERSION file attribute assigned to the tape.
LABELLEVEL	int	[49].[39:9]	RW	The format level of the tape label.
LABELKIND	att	[49].[30:8]	RW	The LABELKIND file attribute assigned to the tape.
DENSITY	att	[49].[22:9]	RW	The DENSITY file attribute assigned to the tape.
ENCRYPTED	bool	[49].[13:1]	RW	True if this VTV was encrypted when it was stacked.
COMPRESSED	bool	[49].[12:1]	RW	True if this tape was purged with compression.

Tape Database Fields

Field Name	Type	Location	RW	Description
MOVERULES	str	[49].[11:12]	RW	The rules assigned to this tape that control its movement to/from locations..
FILEID	str	[50..52]	RW	The file ID (FID) of the first file on the tape.
RTVSN	str	[53]	RW	If record is VTV, the serial number of the tape VTV is on.
VTVSTACKTIME	ts	[54]	RW	If record is VTV, the timestamp of the time the VTV was created as reported by TapeStack.
VTVCOMMENT	str	[55].[47:12]	RW	VTV comment string reported by TapeStack.
VTVVOLID	int	[55].[35:19]	RW	VTV volume id as reported by TapeStack.
PROCESSINGDATE	date	[55].[16:17]	RW	The processing date the tape was created as defined by the SET PROCESSING DATE command.
CREATINGJOBNO	int	[56].[47:24]	RW	The job number that created this tape.
CREATINGMIXNO	int	[56].[23:24]	RW	The task number that created this tape.
LASTUSEDJOBNO	int	[57].[47:24]	RW	The job number that last used this tape.
LASTUSEDMIXNO	int	[57].[23:24]	RW	The task number that last used this tape.
NEXTLINK	int	[58].[47:8]	R	An index to available space for link fields.
HASCONT	bool	[58].[39:1]	R	If true this tape has a continuation record in the DATA2 file.
CONTRECORD	int	[58].[38:39]	R	Record number of the continuation record in the DATA2 file.

Tape Database Fields

Virtual Database Fields

The following items are “virtual” database fields. Virtual database fields do not actually reside in the database record but are calculated from database or other information. They may be used in the same way as the above database fields.

Field Name	Type	RW	Description
EXPIRED	bool	RW	If true this tape may now be purged and reused according to its retention rule. If set to true, the RETAINDATE field is set to TODAY and the RETAINBYDATE and OPERATOREXPIRED fields are set to TRUE. If set to false, the RETAINDATE field is set to 0 and the RETAINBYDATE and OPERATOREXPIRED fields are set to FALSE.
EXPIREDATE	date	R	This field returns the date on which the tape will become expired. If the tape does not have a retention rule or the rule is only based on Generations, the value returned is zero (0). WARNING: If the retention rule for the tape contains both days and generation attributes, only the days portion of the rule is used and may not show the true expiration date based on generations.
EXPIREDREASON	str	R	For a tape whose EXPIRED field is TRUE, the text of the reason the tape has expired is returned.
PURGED	bool	R	If true this tape has already been purged (i.e., is SCRATCH).
MOVEDESTINATION	str	R	Will contain the value of the next destination location if a movement rule exists for this tape label.

Tape Database Fields

Field Name	Type	RW	Description
MOVEDATE	date	R	This field returns the date on which the tape is to be moved to its next destination. If the tape does not have any move rules, the value returned is zero (0). WARNING: If the movement rules for the tape contain Generation based movements, the date returned may not be the true movement date when based on generations.
MOVEEXCEPTION	bool	R	If true this tape failed to follow the movement rule that is in existence for this tape label.
MOVERULES	str	RW	The text of the movement rule for this cartridge. In the MODIFY command, MOVERULES may be set to a rule or label such that the tape takes the movement attributes of that rule or label. EX: MODIFY SN 123 WITH MOVERULES = LABEL XTAPE. NONE can be used to clear the movement information
INLIBRARY	bool	R	If true this tape is resident in a tape library managed by the LibraryManager software. This field will return false if the library is offline or LibraryManager is not running.
SLOT	int	R	If INLIBRARY is TRUE, the slot that the cartridge is assigned to in the cartridge library is returned.
LIBRARYNAME	str	R	If INLIBRARY is TRUE, the name of the library containing the cartridge is returned.
INUSE	bool	R	If true this tape has been allocated for use.
IMAGECOUNT	int	R	The number of tape images (including this one) that matches that matches this tape image. A

Tape Database Fields

tape is considered a matching tape image if it has the same label and creation timestamp.

The following virtual database items are only available for virtual cartridges in DSI VTLs that have the DSI VTL Agent installed. Requests for cartridges other than above will return zero (false).

Field Name	Type	RW	Description
VTLCAPACITY	int	R	The maximum capacity of the virtual cartridge in MB.
VTLDISKUSED	int	R	The amount of disk storage in MB that is currently being used by this virtual cartridge.
VTLDATASIZE	int	R	The amount of data in MB that is currently written to this virtual cartridge.
VTLCOD	bool	R	If true the Capacity On Demand (COD) option is set for this virtual cartridge.
VTLREADONLY	bool	R	If true this virtual cartridge can only be read not written to.
VTLCOMPRESSION	bool	R	If true the data compression option is set for this virtual cartridge.

Appendix C

Sample Reports

All Tapes Report

ABC COMPANY
11/01/1996 @ 15:30

TM ALL
Page 1

ALL TAPES REPORT

SERIAL NUMBER	LABEL/FILE ID	CREATION DATE @ TIME	REEL NMBR	CYCLE: VERSION	DEN- SITY	CREATING PROGRAM
CCTC	CCTCTAPE/FILE000	7/10/96 @ 14:43	1	1:0	6250	
	*LIBRARY/MAINTENANCE					
AFX828	DEVBKUP0627/FILE000	6/27/96 @ 8:17	1	1:0	11000	
	*LIBRARY/MAINTENANCE					
095249	DK0906/TAPDIR	9/06/95 @	1	1:0	6250	
000096	DSIPACK96267/FILE000	9/23/96 @ 22:37	1	1:0	11000	*ARCHIVE/BACKUP
999999	DSITRACE/FILE000	9/06/96 @	1	1:0	11000	
031296	EOD031196/FILE000	3/12/96 @	1	1:0	6250	
FED	FED/FILE000	7/19/96 @ 10:49	1	1:0	6250	
	*LIBRARY/MAINTENANCE					
000169	FEDBACKUP091796/FILE000	9/17/96 @ 12:19	1	1:0	11000	
	*LIBRARY/MAINTENANCE					
AFX802	*SCRATCH* (POOL=DLT)				11000	
AFX795	*SCRATCH* (POOL=DLT)				11000	
AFX806	*SCRATCH* (POOL=DLT)				11000	
096701	*SCRATCH*				6250	
070196	*SCRATCH*				6250	
000168	*SCRATCH* (POOL=4MM)				11000	
SMC017	SMC01017/FILE000	8/27/96 @ 11:05	1	1:0	6250	
	*LIBRARY/MAINTENANCE					
TM2025	TAPEMANAGER/FILE000	8/12/96 @ 17:00	1	1:0	11000	
	*LIBRARY/MAINTENANCE					
000004	TEST/FILE000	7/02/96 @ 17:03	1	1:0	6250	
	*LIBRARY/MAINTENANCE					
R2177	UNIGATE2217/FILE000	7/25/96 @ 16:13	1	1:0	6250	
	*LIBRARY/MAINTENANCE					
DSI025	WFLBACKUP/FILE000	8/09/96 @ 8:50	1	1:0	11000	
	*LIBRARY/MAINTENANCE					
DSI021	WFLBACKXX/FILE000	8/09/96 @ 16:07	1	1:0	11000	
	*LIBRARY/MAINTENANCE					

Sample Reports

Tapes To Be Retired Report

ABC COMPANY
11/01/1996 @ 15:32

TM RETIRING
Page 1

TAPES TO BE RETIRED AS OF 11/01/96

SERIAL NUMBER	LABEL/FILE ID	DATE NEW	USAGE COUNT	I/O ERRORS	RETIRING REASON
AFX838 MONTHS	*SCRATCH* (POOL=DLT)	6/27/96	1	0	DATE NEW IS OLDER THAN 12
CCTC	CCTCTAPE/FILE000	7/10/96	4	0	USAGE COUNT EXCEEDS 3 USES
DSI025 MONTHS	WFLBACKUP/FILE000	8/09/96	1	0	DATE NEW IS OLDER THAN 12
ENVMGR	RON ENV/FILE000	7/11/96	3	0	USAGE COUNT EXCEEDS 3 USES
TM2024 ERRORS	TAPEMANAGER/FILE000	7/17/96	5	1	I/O ERROR COUNT EXCEEDS 1
TM2025 MONTHS	TAPEMANAGER/FILE000	8/12/96	2	0	DATE NEW IS OLDER THAN 12
TM2126	TAPEMANAGER/FILE000	8/30/96	4	0	USAGE COUNT EXCEEDS 3 USES
TRACE MONTHS	TRACE/FILE000	8/22/96	1	0	DATE NEW IS OLDER THAN 12
US2217 ERRORS	UGSNA02217/FILE000	7/01/96	4	4	I/O ERROR COUNT EXCEEDS 1
000169 MONTHS	FEDBACKUP091796/FILE000	9/17/96	1	0	DATE NEW IS OLDER THAN 12
000197 MONTHS	*SCRATCH* (POOL=ABCDEFG)	7/10/96	2	0	DATE NEW IS OLDER THAN 12
012345	ROUTER2215/FILE000	9/17/96	7	0	USAGE COUNT EXCEEDS 3 USES
2SI006 MONTHS	*SCRATCH* (POOL=MARK)	7/26/96	0	0	DATE NEW IS OLDER THAN 12
960806 MONTHS	JEFFCO/FILE000	8/06/96	2	0	DATE NEW IS OLDER THAN 12
999999	DSITRACE/FILE000	7/11/96	3	0	USAGE COUNT EXCEEDS 3 USES

15 tapes marked as needing retiring

Tapes To Be Scratched Report

ABC COMPANY
11/01/1996 @ 15:34TM SCRATCH
Page 1

TAPES TO BE SCRATCHED AS OF 11/01/96

SERIAL NUMBER	LABEL/FILE ID	CREATION DATE	SAVE DAYS	SAVE FACT	SAVE GENS	EXPIRE DATE	SCRATCH REASON
AFX803	TP/TP	7/01/96			0	12/01/96	EXPIRED - REPORT DATE GEQ 12/01/96 SAVE DATE
SMC017	SMC01017/FILE000	8/27/96	30	30		8/28/96	EXPIRED - REPORT DATE GEQ 30 DAYS
S02218	SOURCETAPE/FILE000	9/27/96	365	30		9/28/96	EXPIRED - REPORT DATE GEQ 365 DAYS
TM2126	TAPEMANAGER/FILE000	9/17/96	1	30	3	9/18/96	AT LEAST 3 GENERATIONS ARE NEWER
UT2218	UNIGATE02218/FILE000	9/11/96	1	30		9/12/96	EXPIRED - REPORT DATE GEQ 1 DAYS
000096	DSIPACK96267/FILE000	9/23/96	1	30		9/24/96	EXPIRED - REPORT DATE GEQ 30 SAVE FACTOR
012345	ROUTER2215/FILE000	9/17/96	1	30		9/18/96	EXPIRED - REPORT DATE GEQ 1 DAYS
999999	DSITRACE/FILE000	9/06/96	1	30		9/07/96	EXPIRED - REPORT DATE GEQ 1 DAYS

8 tapes marked as able to be scratched

Sample Reports

Tape Location Report

ABC COMPANY
11/01/1996 @ 15:36

TM LOCATION
Page 1

TAPE LOCATION REPORT BY SERIAL NUMBER

SERIAL NUMBER	LABEL/FILE ID	CREATION DATE @ TIME	LOCATION
000100	*SCRATCH* (POOL=4MM)		ON SITE
000101	*SCRATCH* (POOL=4MM)		ON SITE
000102	LABELTEST/FILE000	5/02/97 @ 18:52	ON SITE
000103	*SCRATCH* (POOL=4MM)		ON SITE
000105	*SCRATCH* (POOL=4MM)		ON SITE
000107	*SCRATCH* (POOL=4MM)		ON SITE
000109	*SCRATCH* (POOL=4MM)		ON SITE
000110	FMSDIR/EOM	5/31/96 @ 14:14	ON SITE
000112	MKT/FILE	11/02/96 @ 15:46	ON SITE
000114	PIMDIR/PIMBKP	11/08/96 @ 8:06	ON SITE
000115	SCRATC/ONSITE	3/19/94 @ 1:46	ON SITE
000116	PIMDIR/PIMBKP	11/08/96 @ 12:46	ON SITE
000117	PRTSAV/FILE	11/14/96 @ 7:06	ON SITE
000118	FMSDIR/EOY	12/29/95 @ 11:45	ON SITE
000121	PIMDIR/PIMBKP	10/01/96 @ 14:15	ON SITE
000122	EIMDIR/EIMBKP	11/12/96 @ 14:17	ON SITE
000126	FIS01/ONSITE	2/25/94 @ 1:53	ON SITE
000128	PIMDIR/PIMBKP	5/31/96 @ 13:05	ON SITE
000129	SCRATC/ONSITE	7/25/96 @ 11:15	ON SITE
000130	FMSDIR/ONSITE	5/24/95 @ 10:30	ON SITE
000131	PIMDIR/PIMBKP	10/31/96 @ 8:59	ON SITE
000132	PIMDIR/PIMBKP	10/31/96 @ 12:57	ON SITE
000133	SCRATC/ONSITE	8/14/95 @ 22:32	ON SITE
000134	EOY-IR/ONSITE	7/26/96 @ 8:00	ON SITE
000135	PIMDIR/PIMBKP	10/31/96 @ 16:34	ON SITE
000136	APSDIR/EOY	12/30/94 @ 19:17	ON SITE
000137	PIMDIR/PIMBKP	6/28/96 @ 12:47	ON SITE
000138	ATMDIR/ONSITE	7/27/95 @ 2:16	ON SITE
000140	*SCRATCH* (POOL=4MM)		ON SITE
000141	*SCRATCH* (POOL=4MM)		ON SITE
000142	*SCRATCH* (POOL=4MM)		ON SITE
000143	*SCRATCH* (POOL=4MM)		ON SITE
000144	*SCRATCH* (POOL=4MM)		ON SITE
000145	*SCRATCH* (POOL=4MM)		ON SITE
000147	*SCRATCH* (POOL=4MM)		ON SITE
000148	*SCRATCH* (POOL=4MM)		ON SITE
000149	*SCRATCH* (POOL=4MM)		ON SITE
000104	TEST8MM/TEST8MM	9/27/96 @ 8:50	VAULT
000106	CHRISBACKUP091796/FILE000	9/17/96 @ 18:00	VAULT
000111	EY1INT/BACKUP	1/20/96 @ 12:59	VAULT
000113	PRTSAV/FILE	9/18/96 @ 6:55	VAULT
000119	MICR/MICR	11/08/96 @ 12:47	VAULT
000120	ASAVE/ONSITE	5/28/96 @ 18:19	VAULT
000123	FMSDIR/OFFSIT	11/15/96 @ 11:42	VAULT
000124	EIMDIR/EIMBKP	11/08/96 @ 13:30	VAULT
000125	FIS02/OFFSIT	2/25/94 @ 1:45	VAULT
000127	PRTSAV/FILE	10/03/96 @ 9:44	VAULT
000139	EOY-IR/OFFSIT	2/24/95 @ 13:55	VAULT
000146	BLSRCDBOFF020197/BLSRCDBOFF020197	2/03/97	VAULT

Tape Activity Report

ABC COMPANY
11/01/1996 @ 15:38

TM ACTIVITY
Page 1

TAPE ACTIVITY ON 10/01/96

SERIAL NUMBER	LABEL/FILE ID	USING PROGRAM	TAPE UNIT	R/W	I/O ERRORS	DATE AND TIME
MARK	TEST8MM	(MTM) CANDE/CODE2150 ON DSIPACK	201	R	0	10/01/96 @ 14:57
R02218	ROUTER02218/FILE000	*SYSTEM/FILEDATA	48	R	0	10/01/96 @ 11:00
000104	TEST8MM	(MTM) CANDE/CODE2150 ON DSIPACK	201	R	0	10/01/96 @ 14:42

Sample Reports

Tape Exceptions Report

ABC COMPANY
11/01/1996 @ 15:40

TAPE EXCEPTIONS ON 10/01/96

TM EXCEPTION
Page 1

SERIAL NUMBER	LABEL/FILE ID	USING PROGRAM	TAPE UNIT	R/W	I/O ERRORS	EXCEPTION REASON
MARK	MARKSBACKUP	*LIBRARY/MAINTENANCE	201	R	0	TAPE MOT TRACKED
R02218	ROUTER02218/FILE000	*SYSTEM/FILEDATA	48	R	0	LABEL MISMATCH
000083	*UNLABELLED*	! (MTM) CANDE/CODE2210 ON DSIPACK	225	W	0	UNLABELED TAPE
000104	TEST8MM	(MTM) CANDE/CODE2150 ON DSIPACK	225	W	4	MEDIA ERRORS

Tape Library Inventory Report

ABC COMPANY
11/01/1996 @ 15:42TM INVENTORY
Page 1

INVENTORY OF TAPE LIBRARY

SLOT	SERIAL NUMBER	LABEL/FILE ID	CREATION DATE @ TIME	REEL NMBR	CYCLE: VERSION	CREATING PROGRAM
1	DSI104	*SCRATCH* (POOL=DLTLIB)				
2	DSI119	*SCRATCH*				
3	DSI193	*SCRATCH* (POOL=DLTLIB)				
4	DSI180	DSITEST/FILE000	4/23/97 @ 11:44	1	1:0	*LIBRARY/MAINTENANCE
5	DSI112	TESTDB/QCAUDIT11	2/18/97 @ 16:17	1	1:0	*SYSTEM/COPYAUDIT
6	DSI099	TEST8MM/TEST8MM	10/01/96 @ 8:56	1	1:0	(MTM) OBJECT/TEST8MM ON DSIPACK
7	DSI074	TESTDBDUMP/TESTDBDUMP	4/30/97 @ 12:01	1	1:1	(MTM) WRITEVOLUME01/CYCLE01
8	DSI005	DSI-27K-TEST/DSI-27K-TEST	3/13/97 @ 9:34	1	1:0	*DSITEST/27006
9	DSI012	MEMORY/DUMP	4/09/96	1	1:0	
10	DSI187	*SCRATCH* (POOL=DLTLIB)				
11	DSI191	*SCRATCH* (POOL=DLTLIB)				
12	DSI178	*SCRATCH* (POOL=DLTLIB)				
13		*EMPTY*				
14		*EMPTY*				
15		*EMPTY*				
16		*EMPTY*				
17		*EMPTY*				
18		*EMPTY*				
19		*EMPTY*				
20		*EMPTY*				
21		*EMPTY*				
22		*EMPTY*				
23		*EMPTY*				
24		*EMPTY*				
25		*EMPTY*				
26		*EMPTY*				
27		*EMPTY*				
28		*EMPTY*				

Sample Reports

Tape Inquiry Output to Printer

ABC COMPANY
11/01/1996 @ 15:44

TM INQUIRY
Page 1

TAPE INQUIRY REPORT
LABEL DSI=

SERIAL NUMBER	LABEL/FILE ID	CREATION DATE @ TIME	REEL NMBR	CYCLE: VERSION	DEN- SITY	CREATING PROGRAM
MRBWRM	DSI-27K-TEST/DSI-27K-TEST	3/04/97	1	1:0	11000	
WALCH	DSI-27K-TEST/DSI-27K-TEST	3/13/97 @ 12:51	1	1:0	11000	*DSITEST/27006
DSIXXX	DSI-27K-TEST/DSI-27K-TEST	3/13/97 @ 12:51	1	1:0	11000	*DSITEST/27006
DSI325	DSI-27K-TEST/DSI-27K-TEST	3/13/97 @ 12:51	1	1:0	11000	*DSITEST/27006
777771	DSI-27K-TEST/DSI-27K-TEST	4/18/97 @ 9:00	1	1:0	11000	*DSITEST/27006
777774	DSI-27K-TEST/DSI-27K-TEST	4/18/97 @ 15:03	1	1:0	11000	*DSITEST/27006
777778	DSI-27K-TEST/DSI-27K-TEST	4/18/97 @ 15:03	1	1:0	11000	*DSITEST/27006
666663	DSI-27K-TEST/DSI-27K-TEST	4/21/97 @ 10:01	1	1:0	11000	
BANG	DSI-5K-TEST/DSI-5K-TEST	3/13/97 @ 16:58	1	1:0	11000	*DSITEST/5418
TESTER	DSI-5K-TEST/DSI-5K-TEST	3/13/97 @ 17:06	1	1:0	11000	*DSITEST/5418
DSIEMU	DSIEMU02202/FILE000	3/17/97 @ 14:32	1	1:0	6250	*LIBRARY/MAINTENANCE
BACK1	DSIPACKBACKUP0301/FILE000	3/01/97 @ 17:45	1	1:0	38000	*LIBRARY/MAINTENANCE
BACKUP	DSIPACKBACKUP1025/FILE000	10/25/96 @ 15:58	1	1:0	11000	*LIBRARY/MAINTENANCE
TM030	DSIPROBS031797/FILE000	3/17/97	1	1:0	6250	
DSISCN	DSITEST/FILE000	4/23/97 @ 11:44	1	1:0	6250	*LIBRARY/MAINTENANCE
TM0510	DSITESTSUMLOGS/FILE000	5/09/97	1	1:0	38000	
TM0331	DSITRACE/FILE000	5/01/97	1	1:0	6250	

17 records selected.

Appendix D

Programmatic Interfaces

The TapeManager Support library exports a number of functions that allow user written programs to interface with the TapeManager systems and its database.

TAPEMANAGER LIBRARY DECLARATION

In order to access these library procedures, the library must be declared in your program. The declaration used will depend on whether you are running the TapeManager software in active or passive mode.

For active mode declare the library as follows;

```
LIBRARY TAPEMANAGER (LIBACCESS = BYFUNCTION,  
                     FUNCTIONNAME = "TAPEMANAGER.");
```

For passive mode declare the library as follows (you will need to change the usercode and family as needed for the installation at your site);

```
LIBRARY TAPEMANAGER (LIBACCESS = BYTITLE,  
                     TITLE = "(UC) SYSTEM/TAPEMANAGER/SUPPORT  
                           ON TMPACK.");
```

FIELD_VALUE Procedure

```
BOOLEAN PROCEDURE FIELD_VALUE (FIELD_NAME, TAPE_RECORD, FORM,  
                               VALU, VALUE_TYPE);  
ARRAY  
    FIELD_NAME[0]  
    , TAPE_RECORD[0]  
    , VALU[0]  
;  
REAL  
    FORM  
    , VALUE_TYPE  
;  
LIBRARY TAPEMANAGER;
```

Function: The FIELD_VALUE procedure allows the user to extract data from a TapeManager record without needing to know the field location of the data.

Programmatic Interfaces

Usage: The FIELD_VALUE procedure is exported from the SYSTEM/TAPEMANAGER/SUPPORT library. TapeManager database records are obtained by using the FILE option of the FIND/INQUIRY command.

Parameters:

FIELD_NAME	(Input)	the name of the field to be extracted from the TAPE_RECORD. The name must terminate in a NUL (48"00"). The valid field names are listed in Appendix B of this manual.
TAPE_RECORD	(Input)	this is a TapeManager database record that was extracted to a file with the FIND/INQUIRE command.
FORM	(I/O)	this field is currently not used and is set to zero.
VALU	(Output)	this parameter returns the value of the requested field. For all field types except string, the first word of the array returns the raw (binary) value of the field. The second and following words of this parameter contain an EBCDIC string representation of the field value delimited by a NUL. String fields start in the first word and continue until complete. Fields of type word are undefined and do not have a string representation. If needed this parameter will be RESIZED to contain all of the field value results.
VALUE_TYPE	(Output)	this parameter returns the type of the requested field in bits [7:8]. For some fields the length of the string portion of the VALU parameter are returned in bits [47:16]. The possible field types are; 1 = integer 2 = boolean 4 = date 5 = timestamp (in TIME(6) format) 7 = string (delimited by a NUL) 9 = file attribute value (integer) 10 = word 15 = time (in TIME(11) format)

Results: The FIELD_VALUE procedure returns a value of FALSE if the procedure completes correctly. If there is an error in returning the requested value, the procedure returns a TRUE with an error value in bits [11:8] of the return value.

Possible errors:

- 1 = the field name is unknown or badly constructed
- 2 = the field type was unknown. Contact DSI for a software correction/upgrade.
- 3 = the tape record passed is invalid
- 4 = the procedure faulted. Contact DSI for a software correction/upgrade
- 5 = a bad parameter was passed. Check that the FORM or VALUE_TYPE parameters are not literals.

Appendix E

Migrating From Other Tape Management Systems

The TapeManager system supports the migration from other Tape Management Systems (TMS) with the following features.

TMS Data Import

Data from another TMS system is migrated into TapeManager using the `SYSTEM/TAPEMANAGER/IMPORTER/...` program. There is a different Importer program for various TMS products. Contact Dynamic Solutions International (DSI) for the current list of Importer programs available.

Other Migration Support

TapeManager also supports the following functions used by other TMS products.

TapeManager will recognize the special `SERIALNO` value of `GETGnn`, where `nn` is has the value of 00 to 99. This represents a request by the calling program for a specific generation of the tape based on the requested `FILENAME (TITLE)`. A tape's generation is determined automatically by the definition of a generation set defined with the `CONFIGURE RETENTION` command. Generation 00 is the most recent generation. A `SERIALNO` value of `GETGXX` is also accepted to request the most recent generation of a tape.

TapeManager will recognize a special `NOTE` attribute value assigned to the file requesting an input tape as follows. If the `NOTE` string starts with `TM` or `TAPEMANAGER`, the rest of the `NOTE` string will be scanned for usercode and generation request information. If the `NOTE` string contains `USER <usercode>`, the usercode will be used during input tape selection. Only tapes that were created by the requesting usercode will be considered for selection. If the `NOTE` string contains `GEN nn`, then `nn` will be used to select a particular generation of the requested input tape as described above for the `SERIALNO` attribute. If both the `NOTE` attribute with the `GEN` value and the `SERIALNO` attribute with `GETGnn` are specified, the value in the `NOTE` attribute takes precedence.

Glossary

A

attribute

1. A quality added to text to make it stand out from surrounding text, such as underlining, boldface, subscript, superscript, or struck out text. Attributes can be combined so that a character or text has several attributes at the same time.
2. A configurable quality used to define a file or station and so on.

C

command

an instruction to a computer to perform a special task.

COMS

Unisys ClearPath Communications Management System.

CSV

Comma Separated Values is a file format that is used by spread sheet and other programs for importing and transferring data.

cursor

The blinking underline or block on the screen that indicates where the next character can be entered. As characters are entered, the cursor moves to the right.

D

DELETE

Display data control key which enables you to delete the character at the current cursor position. Characters to the right of the cursor within the same field and on the same line shift one character position to the left.

F

field

1. An area on a screen or form in which data is displayed or entered. The delimiters of the field can be visible or invisible to the terminal operator.
2. A consecutive group of bits within a word or a component of a record that represents a logical piece of data.

File

A named group of related records.

form

A special screen containing prompts requesting information and empty form fields in which the requested information can be entered.

Glossary

H

HOME

A field cursor movement key that moves the cursor to the home position, the first unprotected character position of the screen. If the display has no unprotected fields or no fields at all, the home position is row 1, column 1.

I

Input

Text typed into the computer.

M

MCP

The Master Control Program or operating system of a Unisys ClearPath system.

menu

A special group of fields that show the user a set of options from which to choose.

message boxes

Message boxes are pop up windows that provide status and error messages.

message line

Displays the INSERT operator guidance message.

mix number

A number assigned to a job or task by the ClearPath operating system (MCP).

P

pack

A disk drive on a Unisys ClearPath system.

parameter

A data item provided to or by a program or procedure (subroutine).

Process

1. Execution of a program or procedure.
2. A software application: activity or series of operations that produces specified results.

R

railroad diagram

A graphic representation of the syntax of a command or statement.

S

screen

An image that appears on the display area of a terminal or workstation prompting the user to enter data, displays information or presenting options from which to choose.

scroll

To move forward and backward within a list, within help text, or within other displayed items.

session

A session is a Logical connection between two units on a network.

Specify

A key on a Unisys T-27 (or compatible) terminal that, when pressed, sends a message containing the current cursor position to the host system.

station

The outer end of a communication line. A station can correspond to a single terminal connected on a single line, or several stations can be connected on a line.

system

Operating system

T

tape library

A hardware device containing multiple magnetic tape cartridges along with robotics to load them into one or more tape drives.

terminal

I/O device designed to receive or send information in a network.

U

user

Individual accessing the computer.

User code

The <string> used to identify the user to the host system.

user interface

The appearance of a program to a user.

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