

TapeManager/LibraryManager Release Notes

7.067X

Release 7.067X

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DSI Library Controller Firmware	3.003.068 (SCSI)
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	5.003.096 (Windows)

The following changes and corrections have been made to the following software products. Use the TM VERSION command to find your current version of the TapeManager/LibraryManager software and review the changes made since that release. For instructions on how to use a new command or feature refer to one of the following documents; TapeManager Operations Guide, Cartridge Library Installation Guide, or TapeManager/LibraryManager D-Notes.

Release 7.067X (7.067.553)

Warnings

1. On very busy systems, one or more purge requests made via the TM PURGE command may fail with a message like PURGE FAILED – UNIT IS IN USE. Purges are run at a low priority and are given a limited amount of time (2.5 minutes) to complete their task. This is considered normal as the software is optimized to keep drives clear for active requests. If this situation is seen, the chance of it occurring can be reduced by doing one or more of the following, a) do the TM PURGE command when the system is less heavily loaded, b) increase the priority of the purge workers via the PR ODT command, c) decrease the number of purge workers (WORKERS=n) so that there is less contention between them, or d) increasing the IDLE TIME value for the library.
2. The duplicate placement of a tape into the purge queue can lead to unexpected results. Presently, TapeManager does not check for this condition which can lead to an attempt to purge an in-use tape. TapeManager will reject the purge if the tape is in use, with warning messages displayed. Note that with multiple hosts sharing the same

inventory of tapes, this can lead to mis-coordination between hosts with respect to the tape in question. (415)

Corrections

1. Previously, a tape that was added to the TapeManager database by being "discovered" mounted on a drive would not necessarily have the correct scratch pool assigned. This would be corrected the first time the tape was purged thereafter, but until then the database would be wrong. This has been corrected.
2. The SUMMARY report was incorrectly including VTV record information in the Cartridge Summary and Scratch Pool Summary statistics. This has been corrected.
3. Entering a library name longer than 17 characters could cause a string protect fault. This has been fixed.
4. The STKSEL form when used with the APPEND option did not allow for all the option fields to be blank. This has been corrected.
5. A possible fault in the version handling section when a non-numeric version string is seen has been corrected.
6. A macro name appearing as the first command item when entered from the MARC directive would not be recognized. This has been fixed.
7. Previously, when TapeManager was installed on family DISK, a TM DB BACKUP TO DISK command would fail with a WFL syntax error. This has been corrected.
8. Previously retention and movement rules created immediately after a fresh TapeManager install would result in a bad SYSTEM/TAPEMANAGER/LABELRULES file and a message of the form "rule removed for bad timestamp" would be displayed. This has been fixed.
9. TapeManager now supports the LTO-4 tape unit for the MT report and MT status.
10. When TapeManager is running at the time of a halt/load and no database close/open cycle has occurred, a timestamp mismatch can occur on the DRIVELOG file when it restarts. This has been fixed.
11. When a stacked tape was purged remote hosts were not being correctly updated with deleted VTV records. This has been corrected.

Release 7.067W (7.067.541)

Corrections

1. A problem was introduced in the 7.067V release that did not allow new database records to be created. This has been corrected.

2. Problems with the EMAIL command where multiple addresses and/or ambiguous addresses (e.g. SUPPORT@DYNAMICSOLUTIONS.COM) caused errors preventing the sending of mail have been fixed.

Release 7.067V (7.067.537)

Enhancements

1. Backward compatibility for TM database version 3 is provided by this release. In a fall-back from TM 8.068 this is the minimum level that can convert the database back to version 2.

Corrections

1. The output of the CONFIGURE :FILE or :PRINT was not correct for the CONFIGURE STACKING component. The boolean values for the REPORT and AUTO UNSTACK were reversed. This has been corrected.
2. Previously the email configuration was not given when the request was TM CONFIG:PRINT. This has been fixed.
3. For tapes that are "discovered" (found by being mounted rather than by a creation log record), only the date portion of the creation timestamp is available. Some reports when displaying this timestamp would incorrectly drop the time field which caused subsequent fields to mis-align in their report columns. This has been corrected.
4. The CONFIGURE EMAIL command was not correctly distinguishing between an account name (SUPPORT, SPUPERVISOR, OPERATOR) and an email address that started with one of those names. This has been corrected.
5. If there were many purge workers active when trying to shut down TapeManager the wait for TapeManager to shut down could be excessive. That delay has been reduced but not eliminated as TapeManager must wait for the current purge process(es) to complete.
6. TapeStack VTV records are meant to be reused after a stacked tape has been purged. TapeManager was not correctly reusing those records which could lead to the database growing larger than it should. This has been corrected.
7. Previously, an invalid index fault could occur if a macro to be expanded were empty, i.e. resulted in no text to process. This has been corrected.

Release 7.067U (7.067.527)

Corrections

1. For multi-host installations using TCPIP connect, occasional "Wrong host connect" aborts could occur on sync host processes. This would only happen if there were three hosts or more. This has been fixed.
2. Previously, commands submitted via the SEND TM system interface did not have TapeManager security rules applied. Now, they will.
3. The TM CONFIG OPER SUPPRESS was not working on MCP 53.1. This has been fixed.
4. TapeManager was not correctly interpreting the display NO FILE INPUTTAPE (UNLABELED MT) [NNNNNN] #1 for handling in passive mode. The symptoms were that an input tape being read as unlabeled was not being loaded. This has been corrected. This problem only affected sites using TapeManager as called by B&L STCDRIVER and using Unisys TapeStack.
5. The input file for Utility can now be UNITS=CHARACTERS. Utility will only use 72 characters per record, however.
6. If the CONFIGURE OPERATIONS ASSIGN SERIALNUMBER option was set and an input tape was requested that had VTVs the waiting task was FAed with multiple serial numbers rather than just one one needed. This has been corrected.
7. In situations where an auto-unstack was triggered TapeManager might have multiple VTVs to choose from for the unstack. This enhancement makes sure that if there are multiple copies of a VTV on various stacked tapes that a tape within a library is picked if one is available.
8. Previously, if a remote host connection using TCP/IP were terminated between message segments it was possible for RMTPROCESSOR to become stuck in a high CPU use condition requiring a DS to fix. This has been corrected.
9. In TM 7.067T only, a TM MODIFY of a string field could corrupt an adjacent field. Symptoms of this include tapes mysteriously appearing as "in use", bad timestamps or the RTV serial number of a VTV being invalid. The problem with MODIFY has been fixed. DSI recommends doing a TM DB REORG using release TM 7.067U to detect and correct these errors. In most cases, if the DB REORG cannot fix the errors, the information can be recovered from the TapeManager log by using TM REPORT ACTIVITY for the affected serial number, or contact DSI for additional instructions. If uncorrected by hand, these data will self-correct the next time the tape is written.
10. On remote hosts where the system clock lags another host by more than a few seconds, and on TM 7.067T only, tapes purged on that other host would not show as purged on the lagging host. This has been fixed.

11. A TM QUIT on a multi-processor system where tapes are being written (initially labeled) could show errors concerning the LABELRULES file and some rules in the file would be damaged and removed on a subsequent restart of TapeManager. This has been fixed.

Release 7.067T (7.067.512)

Enhancements

1. When a DB RESTORE is done, the current TapeManager log gets overwritten by the restored one. Now, the current log is preserved as SYSTEM/TAPEMANAGER/LOG/PRERESTORE.

Corrections

1. Tape drive CTLs were being included in the CONFIG MT and LIST MT listings. CTLs are no longer added to the drive database. Note: if CTLs are currently in the drive database they will need to be removed with the TM DELETE MT xxx command in order not to show up in the MT report.
2. The TapeManager Utility was only allowing 1-4 WORKERS to be set for purging. This has been corrected. One to 10 purge workers may now be specified in the Utility.
3. The MODIFY command was padding strings with nuls rather the spaces as it should. This could lead to some queries returning incorrect results if that string field was queried upon. This has been corrected though string items modified before this change still have the incorrect padding. The detour is to use the equal sign (=) at the end of a string in a query. Example: TM FIND LABEL ABC= instead of TM FIND LABEL ABC.
4. When TapeManager is DSed (definitely not recommended) the linkage to DSISUPPORT is now taken down cleanly. This should prevent delinkage errors by "orphan code found".
5. TapeManager database backup and reorganize have been changed so that a FAMILY restriction applied via a default queue (WFL CLASS) will not impede the process.
6. When doing a TapeStack with Library Maintenance source tapes, a large number of IOs to the Drive Log were being generated. If the Drive Log was shared in a multi-host environment, these IOs were then propagated to the other hosts which may have caused those hosts to slow down. This change dramatically reduces the number of IOs done to the Drive Log during a TapeStack process.
7. If a STACK or APPEND command with a WHERE clause had a large number of selection conditions, TapeManager could fault with an Invalid Index at 32493107. This problem has been corrected.

8. A TM QUIT could sometimes hang while trying to close the database. This has been fixed.
9. A deadlock could occur when a database reorganize is run while a host synchronize is happening. Both processes would fail to proceed. This has been fixed.
10. When any task goes to EOT, TapeManager looks to see if it had used any tapes and updates its database if so. A change has been made to reduce the number of DB stores done under this circumstance.
11. The filtering of remote DB updates has been changed to prevent new uses of recently created tapes to back-date the database. This necessary as a VTL can turn the virtual tape around to another host before the writing host can update the other host's database.
12. Under unknown conditions tapes could end up without a creation timestamp. These tapes could be purged incorrectly if there was a by generation retention policy. This correction causes tapes that do not have a creation timestamp to be ignored when calculating a generational set. This correction also ensures that these tapes will not be purged if AUTO PURGE is not set.
13. For multi-host installations it was possible for the TAPEMANAGER or LOGPROCESSOR tasks to go waiting on "No matching port" when one of the hosts was synchronizing or just after disconnecting. This change reduces the likelihood of this happening.

Release 7.067S (7.067.488)

Enhancements

1. DBCLOSE is now one of the choices for a WAIT statement. The process is suspended until the database completes closing.
2. The compiled code in the release package now is at MCP 53.1. TapeManager will install and run on any MCP from 50.1 to 54.1.

Corrections

1. Previously, the number of tapes tracked would not be reported correctly after a TM DB RESTORE. This has been fixed.
2. Previously, the Utility did not accept a sequence number range with non-numeric characters for the ADD and MODIFY screens. This has been fixed.
3. For installations, if a Default Queue were configured having a FAMILY attribute that conflicted with the intended TapeManager install location, typically masking DISK, the install would fail. Now, the install program will propagate the QUEUE(CLASS) attribute for its subsidiary jobs so that install can run successfully under an explicitly assigned queue.

4. TapeManager will now automatically purge tapes that have the LOCKED attribute set as long as a retention rule has been defined for that tape. Previously this had only been done for TapeStack tapes.
5. Under certain conditions a library with many drives could get a fault at 04220000 with the REQUESTED MEMORY SIZE GREATER THAN 65535 WORDS message. This patch prevents this fault from occurring.
6. The response to the LOAD/MOUNT command has been changed to "Unable to process command: library is offline or busy" if the library is offline and therefore unable to allocate a tape unit.
7. An EXPORT of a large number of tapes (@ 1000) could cause an Invalid Index fault at 04528500. This has been corrected.
8. For Ad Hoc reports, if the first record reported requires more than one print line, the second print line would have the last item of the report repeated at the front of that line. This has been corrected.
9. When shutting down some TapeManager waiting entries such as operator alerts or license warnings might P-DS. While this did not hurt anything these waiting tasks now exit correctly.
10. A change has been made accounting for additional port state transitions in TCP/IP remote hosting. This will improve the stability of the connection, the performance of remote libraries, and prevent certain RMTPROCESSOR runaway conditions.
11. An error termination for "Illegal downward resize" could occur when starting the Utility or TMRemoteSPO. This has been fixed.
12. Infrequently, when a tape library that was disabled is re-enabled, remote service for that library would fail to re-initiate. This could happen only if it was the last (or only) library defined for that host system. A correction has been made to retain the TLREMOTE process even after the last tape library is disabled. This will eliminate the possibility that remote service will not resume when a disabled library is enabled.
13. An AX RESCUE could cause an excessive number of program dumps leading to a "no disk" condition on the pack where TapeManager is installed if a program such as TMRemoteSPO were in the mix at the time. There is no problem for systems that only used the MARC directive or direct ODT command entry. This has been fixed.

Release 7.067R (7.067.471)

Enhancements

1. The TapeManager Utility program has been enhanced to allow commands to be passed to it in batch mode via the TASKSTRING task attribute. Upon execution if the utility program detects that the TASKSTRING attribute has been set it will use that string as input and run in batch mode. If the task

string has not been set the utility will look for the card file for input. If the card file is not found it will execute in interactive mode. See the following example.

```
BEGIN JOB TEST/TASKSTRING;  
RUN SYSTEM/TAPEMANAGER/UTILITY;  
TASKSTRING="TM STACK WHERE CREATEDDATE = TODAY [STKTSK];  
TM WAIT(STKTSK);"  
END JOB.
```

2. The tape detail report generated when a FIND/INQUIRY finds a single tape will now show library information when the ALL option is specified if that tape is found to be in a library.
3. The mounted message displayed as a result of the LOAD command has been enhanced to show the tape label and serial number as well as the slot and unit number.

Corrections

1. A unit load command might fail for no apparent reason when loading by serial number. A trace of the problem would show "INVALID SN IN SLOT PASSED TO UNIT_LOAD". This problem has been corrected.
2. There seems to be some confusion between the interface used by calling media managers and the interface used to manage some StorageTek libraries since they both refer to CSC. To help alleviate that confusion all references in the documentation and messages displayed by TapeManager have been adjusted as follows. References to the interface used by calling media managers is now referred to as CSCLIB. References to the interface used to control some StorageTek libraries is now consistently referred to as CSC-A.
3. The DELETE VTV command was being incorrectly logged as a TM entry. DELETE VTV is now logged as a STACK entry such that it will show up on LOG STACK reports.
4. The FIND WHERE : PRINTER and the REPORT MOVEMENT printer reports could fault with an Integer Overflow while building the heading. This problem has been corrected.
5. Under rare conditions in a multi-host environment the LOGPROCESSOR could F-DS with an INVALIDOP in the HOST_RPC_HANDLER at 19994960. This problem has been corrected.
6. The WHY parameter that is passed to the PRINT_LABEL procedure of the LabelManager was incorrectly being passed as zero. The WHY parameter is now set to the correct value as documented.
7. Previously, a TM MOVE to location could fault with ZERODIVIDE if the TapeManager database were closed at the time. This has been fixed.

8. Previously, a call to the programmatic interface, such as used by the MARC directive, that occurs immediately after a TapeManager shutdown could re-initiate TapeManager and cause the MCP to deny the linkage, causing the calling program to be terminated. Now, such a program will get a "TapeManager not available" result.
9. Logic has been added to allow a retry of the empty tape unit selector via a different mechanism should the primary mechanism fail due to a timeout with the library controller.
10. The timeout value when connecting to large ACSLS controlled libraries was too short for the library controller to collect the inventory. The timeout value when connecting to a library has been increased.
11. A request made of a remote host to modify a tape that has no record there could get DSED for ARRAY TOO LARGE. This has been fixed.
12. When starting up a multi-host TapeManager, if another host has a copy of the database but never submitted any transactions to make that database, the synchronize process would send the entire database from that host, a clear waste of time. This has been fixed.
13. If the system time at a remote host is set to a very old value other TM hosts could request excessive numbers of records from it on re-sync. A change has been made that prevents the host timestamp from being back-dated in this manner.
14. Recent changes to the Library Controller firmware and the LibraryManager software made cartridge loads for ACSLS (LibAttach) controlled libraries more efficient. It was found that remote hosts using these libraries were not taking full advantage of these enhancements. Remote hosts now use these enhancements fully.
15. A recent change (7.067M) to prevent mismatch bar codes messages during purging caused a slow start of the purging process when requesting a large number of purges by slot was requested. The purge by slot with a large number of slots starts substantially faster now.
16. If a bad slot number for a load or inventory report was entered an error was not always returned. An error is now returned when a bad slot number is entered for these commands.

Release 7.067Q (7.067.447)

Enhancements

1. The stacked tape directory report (TM REPORT DIR) will now show a total for the VTV SIZE column.
2. If the Unisys TapeStack SIZE function has been run against a tape, the size information will now be shown in the tape detail display.

3. The tape cartridge cleaning functions (CONFIGURE CLEAN, CLEAN SN, REPORT CLEAN) are obsolete and being removed from TapeManager in the 8.068 TapeManager release. Usage of these functions will now generate a deimplementation warning.

Corrections

1. Additional checks have been placed on the DriveManager lock to prevent deadlocks in case of a fault or DS.
2. Previously, a report command having both USING and FILE parts did not work as both files ended up with the same title. This has been fixed.
3. The DECRYPT function (specifically the STKSL3 form) was not building the DECRYPT command correctly and returning various errors. This has been corrected.
4. The output on the VOLUME COPIES line of the tape record detail report was not useful in that it just showed if the serial number had been stacked before. If the referenced serial number had been purged and rewritten then this really wasn't a copy of the referenced tape. The VOLUME COPIES line will now only show tape serial numbers that contain actual copies of the referenced volume either in VTV form or as a duplicate tape.
5. When purging new or unlabeled tapes in a drive that had a location defined for it, the message "Invalid serial number :" could be displayed. This has been corrected.
6. If the DB RESTORE command was entered via MARC the restore process would try to copy files with incorrect titles. This has been corrected.
7. A change has been made to improve the performance at a remote host when a large number of VTV are deleted due to the scratching of a stacked tape.
8. Retention for rules where GENERATIONS is used would sometimes be incorrect. This would occur when numerous deleted VTVs were present. This has been fixed.
9. The TM MODIFY command with a serial number range was displaying an incorrect starting serial number in the completion message. This has been corrected.
10. The TM REPLACE MT nnnnn command could cause the caller to hang on the drive lock if the specified unit was not in the drive table. This has been corrected.
11. In some cases ACSLS could return a slot count greater than expected. In some cases this could lead to a retry loop that would cause the library to never go ready. A change has been made such that a slot count greater than that defined in the configuration file for an ACSLS library is ignored. An additional check is also being made to prevent a future occurrence of a loop in the inventory process.

12. If a library declared more than 39 drives, one or more of the following problems could be experienced. The STATUS LIBRARY response could show one more drive than expected. The software would report an Invalid Index at 19894000. The display of a STATUS MT ALL could be incorrect with unit numbers of zero and invalid status information. This problem has been corrected. Note: it is important that the TapeManager and LibraryManager softwares be at this level or above to get the full correction.
13. On single processor systems where remote hosts are present, RMTPROCESSOR could loop endlessly on shutdown. This has been fixed.
14. A problem with reading the encryption pass phrases from the TapeManager database was causing tapes created with the TapeStack Encrypt command or the TM ENCRYPT command to not be decryptable automatically with TapeManager. This correction fixes this problem. Note: any tapes created with the ENCRYPT commands are still good. This version or higher of TapeManager will be needed to do automatic decryption.
15. A movement report could get an integer overflow fault on TM 7.067N and higher. This has been fixed.
16. If a large number of drives beyond the actual number of drives in a library is declared in the library configuration file, the software might Invalid Index at 19894000. This has been corrected. Any drives declared beyond the actual number in the library are ignored.

Release 7.067P (7.067.423)

Enhancements

1. A new CONFIGURE MT option, IGNORE, has been added. If CONFIGURE MT xxx IGNORE = TRUE then that drive will be ignored by the DriveManager for statistics tracking and reporting. This option is intended for pseudo tape units that are used as communications interfaces for third party TCP/IP interfaces, etc.
2. The execution of <SELECTION SPEC> has been optimized to perform an "early out" whenever the result of the expression is already determined, as A AND B resolves to FALSE when A is FALSE, or as A OR B resolves to TRUE when A is TRUE. Use this to reduce search time, especially where a potentially very slow operation, like EXPIRED, is involved. Place checks on simple values and Booleans at the start of an expression and leave the more complicated ones for last.

Example:

```
TM PURGE WHERE INLIBRARY AND EXPIRED
```

is much faster than

TM PURGE WHERE EXPIRED AND INLIBRARY.

Corrections

1. Additional warnings have been added for configuration options that are not effective when running in passive mode.
2. In some cases two entries for the same drive could be listed by the LIST MT report due to the way the MCP reported the drive number. This has been corrected so that a given drive is only tracked and reported once.
3. Previously a wait on "No file" could occur if a library were disabled while another library is being initialized.
4. On TM 7.0670 only, the create time was not reported for a TM FIND that returned only one record. This has been fixed.
5. Previously, it was possible for tapes that are shared by multiple hosts to each be marked in the database as owned by the other host. This made it impossible for TapeManager to correct the databases. Now, if a request arrives to modify a tape whose LASTUSEDHOST is the same as the requestor's host name, the request will be honored even though the modifying host is not the owner. Symptoms of this are displays on each machine: "NOT MODIFIED, USE HOST xxx".
6. Previously, RMTPROCESSOR could fail to shutdown with the rest of TapeManager and go on accumulating process time rapidly. This has been fixed.
7. Previously, if more than one host was marked RECEIVE +DRIVELOG any change in the MT configuration would cause the configuration update to keep repeating at each such host. This has been fixed.
8. Previously, if TapeManager were to hang in shut down after the MCP delinks, it could stay in the mix unnoticed until the MCP queues it attaches fill the H/L disk leading to a halt/load if the situation isn't recognized. Now TapeManager will detach those queues so they will stop accumulating messages.
9. Previously, an automatic TRACE SPLIT could cause a deadlock in the remote logging code. Now logging code avoids sending a remote log record during a TRACE SPLIT.
10. On TM 7.0670 only, the TM PURGE LIBRARY <lib> WHERE variant of the purge command did not correctly add the restraints needed and allowed the entire database to be evaluated instead of just the named tape library, causing the command to take a long time to complete. This has been fixed.
11. The install program could get DSed for ARRAY TOO LARGE on systems running very many library programs. This has been fixed.

12. If the purge queue is cleared before the first worker can start an invalid index could occur in the worker. This has been fixed.
13. The TM INSTALL command using a container file was unwrapping the container twice. This has been fixed.
14. On TM 7.0670 only, a TM DB REORG would incorrectly flag link fields as overlapping. This has been fixed.
15. A SEG ARRAY error at 08275000 could occur with remote library connection. This has been fixed.

Release 7.0670 (7.067.397)

Enhancements

1. Remote host synchronizing has been improved to be faster when each host has most of the database intact. This will make recovery of a host group from a power down go much faster.
2. The AUTOUNLOAD drive feature can now be configured in TapeManager. The TM CONFIG MT command has been extended to include:

AUTOUNLOAD ON

ON causes the feature to be turned on whenever TapeManager sets drive attributes, typically on startup.

AUTOUNLOAD OFF

ON causes the feature to be turned off whenever TapeManager sets drive attributes.

AUTOUNLOAD SYSTEM

SYSTEM causes the TapeManager to leave the feature unchanged.

If left unspecified, the AUTOUNLOAD feature will be handled as previously, where library drives were always set to AUTOUNLOAD ON when the library was enabled.

By setting the AUTOUNLOAD feature to OFF sites can allow tapes to be quickly used by successive programs without having to wait for the tape to unload and reload for each use. In such cases, it is important to set the IDLE TIME configuration for the tape library to a tolerably low figure (one minute or less) so that drives can be unloaded when programs are done.

Corrections

1. In versions 7.067L thru 7.067N movement accounting was incorrect for tapes having a WITH MATCH clause in both the RETENTION rule and the MOVEMENT rule.
2. Under rare circumstances a library going offline could cause a deadlock in the DSICONTROLLER support library that will have any other libraries going offline. This has been corrected.
3. If the primary calls on REPORT_LOG_ENTRIES failed TapeManager did not shut down as expected. TapeManager will now shut down if the primary RLE calls return an error.
4. When unstacking a range of serial numbers or volids it was possible that the unstack process could fault with a SEG ARRAY ERROR at 44413644. This has been corrected.
5. When doing a TM INQUIRE VTV command and there are many VTVs with the same serial number the reporter function of TapeManager could fault with an Invalid Index at 39430800. This has been fixed.
6. Previously a virtual tape having the same serial number as a tape in a library would be reported as "INLIBRARY". This has been fixed.
7. Previously, tape labels with underscores or dashes might not be counted correctly if the retention rule contained a "GENERATIONS WITH MATCH" clause, causing a tape that should be expired to report as not expired. This has been fixed.
8. Previously an automatic unstack that requested a matching cycle and version could cause LOGPROCESSOR to loop indefinitely, requiring a TapeManager restart or AX RESCUE. This has been fixed.
9. On rare occasions, the message:

THE ID BEING WRITTEN DOES NOT MATCH THE LAST ID READ

along with an I/O error on the TapeManager data file would be seen. This has been fixed.
10. The STACK WHERE command has additional filtering automatically added to filter out the selection of scratch and stacked tapes as these tapes will cause errors in the stack/append process.
11. The PURGE WHERE command now has additional filtering automatically added so that scratch tapes and tapes with only VTV records are not selected for purging.
12. Previously an integer overflow error could occur when stacking an especially large tape. This has been fixed.
13. Finding audit tapes could be confounded if there were stacked copies of the target tape. This has been fixed.

14. The TM LOAD SLOT command could fail on ACSLS controlled libraries with the message "The TAPELIBRARY SUPPORT procedure was passed an invalid slot number parameter". This has been corrected.
15. Additional checking has been added to database reorganize to detect and fix overlapping link fields.
16. The TM CONFIGURE MT PURGE options and the TM CONFIGURE OPERATIONS AUTO PURGE option could conflict with each other as well as being confusing. A change has been made that will not allow the TM CONFIGURE MT PURGE option to be set for drives that are known to be in a tape library. The TM CONFIGURE OPERATIONS AUTO PURGE option should be used for automated tape libraries. The TM CONFIGURE MT PURGE options should only be used for stand-alone drives and auto-loaders. As a secondary check, if a purge worker detects that it is trying to purge a tape on a drive with the MT PURGE option set to something other than NEVER it will abort the purge and let the other process do the purge.
17. Previously, tape stacking could cause the remote host software to fail to finish synchronizing. This has been fixed.
18. After an unstack the resulting tape would show as unlabeled in the TapeManager database until that tape was mounted again. An unstacked tape will now display correctly in the database.
19. Previously, a lengthy TM MODIFY in a multi-host environment could be reported as finished by the WAIT statement even though other hosts are still working on parts of the request. A change has been made to insure that all hosts have processed all requests from a MODIFY before the command completes.
20. Under certain very tight timing conditions on multiprocessor systems, the TM WAIT command could fail to pause until the related task had completed. This has been corrected.
21. Under certain conditions the MCP could take a non-fatal system dump with a GetStatus error. A correction has been made to prevent this from occurring.

Release 7.067N (7.067.368)

Enhancements

1. The TCPIP port number used to connect to the Library Controller can now be changed by modifying the YOURNAME attribute of the IPDUMMY file in the SYSTEM/DSICONTROLLER/SUPPORT library. This change requires the Windows Library Controller program to be at release 5.003.084 or higher to use this feature.
2. Additional logging is done when a stacked tape is purged. An entry is made for each VTV record that is deleted. Also when a tape is stacked if a record

with the same RTVSN and Volume ID is found that record is reused so that duplicate entries are not found on the directory report.

Corrections

1. Previously for remote hosts, records for deleted entries were replicated on the local host. Now, if the entry does not exist on the local host, no deleted entry will be made.
2. If a tape is discovered via the unknown or mismatch processes and the processing date is set then the processing date for that tape will only be set if the creation date of the tape and the current date match. Otherwise the processing date is not set for a discovered tape.
3. On TM 7.067M only, an invalid index fault could occur on slot load command. This is fixed.

Release 7.067M (7.067.365)

Corrections

1. For Export and Purge operations, if the items entered are slot numbers, the slots are now evaluated to serial numbers at command entry time. This should help resolve any issues where the inventory changes before the export of purge operation is attempted especially on ACSLS controlled libraries. For ACSLS libraries the Library Controller firmware must be upgraded to 5.003.087 to take full advantage of this change.
2. In TM 67L only, a tape purged on a remote host but not rewritten would show as expired, not scratch. This has been fixed.
3. Previously, for systems using TCPIP remote hosting, an interruption of the network could result in difficult reconnection of a remote tape library. Typically, both the host side and the client side needed to be restarted via TM QUIT TL and then restarted. Now, a remote library under TCPIP will reconnect automatically.

Release 7.067L (7.067.359)

Enhancements

1. The TCPIP port number used to connect to the Library Controller can now be changed by modifying the YOURNAME attribute of the IPDUMMY file in the SYSTEM/DSICONTROLLER/SUPPORT library. This change requires the Windows Library Controller program to be at release 5.003.084 or higher to use this feature.
2. Additional logging is done when a stacked tape is purged. An entry is made for each VTV record that is deleted. Also when a tape is stacked if a record

with the same RTVSN and Volume ID is found that record is reused so that duplicate entries are not found on the directory report.

Corrections

1. When a tape was ADDED that had been previously DELETED, the old information for the deleted tape was not being erased. The old tape information is now cleared on tape adds.
2. During startup or shutdown a FAULT IN START_LIBRARY_TIMER could occur. This has been fixed.
3. Previously, movement or retention rules that were modified or set did not affect existing VTVs of the affected RTV. VTVs created subsequently would correctly have the rules that were set for the RTV. Furthermore, when accounting for VTV volumes in generations for rules, any given RTV serial number can only count once. This includes all VTVs of it as well. This change enforces this policy and corrects the setting of rules in existing VTVs.
4. Records created by the TapeStack DIRECTORY process when the original RTV record is missing were missing some attributes needed to make them usable. This has been corrected.
5. When a tape is purged, the information about that tape is now cleared at the time of the purge rather than at the time the tape is rewritten as was previously done. This should allow for less complex queries as scratch tapes no longer need be filtered out.
6. The MERGE and DUPLICATE commands were not validating that a supplied list of serial numbers were all stacked tapes. An error is returned for the MERGE and DUPLICATE commands if any of the serial numbers in the SN list are not stacked tapes.
7. An auto macro may not assign the right tape based on timing of the request. A change has been made to make such macros execute at the right time, reducing the possibility of assigning the wrong serial number.
8. Tape libraries controlled by ACSLS that use the Access Control feature may see the library slot count reported by ACSLS change (up and down). This change allows LibraryManager to handle a slot count that can change. This patch also forces LibraryManager to do a reconnect to an ACSLS controlled library after an import to make sure the slot count and inventory are correct.
9. A possible cause of the log entry, "An attempt was made to update an unlocked record" has been fixed.

Release 7.067K (7.067.345)

Corrections

1. Systems running MCP 52 and higher could not use the TM CONFIG OPER SUPPRESS feature. A previous fix in 7.067J caused system dumps by CONTROLLOR. This has now been fixed.
2. When a tape is queued for purge that is currently in use, PURGEWORKER could fail to notice that the slot was empty and give an error "BARCODE DOES NOT MATCH" instead. This is fixed.
3. Large ACSLS controlled libraries (i. e SL8500) could take a very long time to respond to some commands such as import. For these commands the timeout has been increased up to 12 minutes.
4. When running the Importer program, invalid warning messages were being displayed. This has been corrected.

Release 7.067J (7.067.341)

Enhancements

1. A new option has been added to the TM CONFIGURE MT command. The option COMPRESSION may be set to the value NONE, COMPRESSED, or NONCOMPRESSED. This option affects purge actions that are triggered by the PURGE = EXPIRED/ALL option. The NONE option leaves the current compression as is while COMPRESSED forces the tape to be compressed and NONCOMPRESSED forces the tape to not be compressed.

Corrections

1. Due to a known MCP problem, not all tape labels would be printed. TapeManager has long had a work around for this but it was not always effective depending on the timing of events. A more reliable work around has been added to fix this. This could also be the reason for the occasional failure to immediately put away a dismounted tape in an automated tape library.
2. Online help text is now available for the INSTALL command.
3. The scratch pool request was not being passed to TapeStack for UNSTACK requests. This only occurred at sites that had the stacked tape naming issue. This has been corrected.
4. When importing from an ACSLS controlled CAP that is not set to auto, it could not be determined how many tapes were actually imported by ACSLS. This has been corrected.
5. The mixing of auto-loaders and robotic tape libraries was producing long delays for the auto-loader jobs, due to the excessive load of searching the

tape library for tapes that are never going to be found there. Some timing adjustments have been made to reduce this effect.

Release 7.067I (7.067.326)

Enhancements

1. The WHERE selection expression has been added as an option to the EXPORT command. The WHERE expression allows selection of tapes for export based on database field values. The EXPORT WHERE was implemented to allow exports to be automated in batch processes, i.e. `TM EXPORT WHERE CREATEDDATE = TODAY`.
2. The CONFIGURE SUBSTITUTE DENSITY command has been enhanced. The density can now be configured to clear rather than change a particular density. (i.e. `TM CONFIGURE SUBSTITUTE DENSITY BPI38000 = CLEAR`) A density can also be changed to a scratch pool. (i.e. `TM CONFIGURE SUBSTITUTE DENSITY BPI38000 = VIRTUAL`).
3. A WAIT command and task id option have been implemented. The purpose of the WAIT command is to allow a batch (Utility) run of TapeManager commands to pause until a previous asynchronous task has completed before continuing with following operations. The WAIT command can wait for a) an operator OK, b) a number of seconds, c) a task to complete, or d) the TapeManager database to be open. When used to wait on an asynchronous task, the command used to start the task must have a task id associated with it. The task id is associated with a command by placing [`<task id>`] at the end of the command string. The WAIT command can then pause until this task has completed. Example: `TM PURGE WHERE INLIBRARY AND EXPIRED [PURGETASK]; WAIT(PURGETASK)`; Additional information can be found in the 7.067I TapeManager Operations Guide Chapter 7 (WAIT command) and Chapter 14 (Batch Execution).
4. Some sites had experienced an issue where the requested tape name for a stacked tape was not being applied. This release adds an additional mechanism to make sure the requested tape label is applied to stacked tapes.
5. When using the TapeStack DUPLICATE command or a MERGE (Consolidate) where there is only one input tape, the label of the input tape is now duplicated to the output tape unless overridden by the TO LABEL command option.
6. The number of tape units that may be declared in the tape library configuration file has been increased. A library declaration may now declare up to 999 tape units. A total of 65,000 tape units may be declared in a single configuration file.
7. The IMPORT command is now allowed for ACSLS controlled tape libraries when the CAP is configured for manual operation.

Corrections

1. When stacking tapes using the TapeStack software, it could take up to 2 minutes before a source tape was Uled once it had been mounted. This has been improved such that the UL should happen within a few seconds of the source tape becoming ready.
2. The results of the SIZE command (TapeStack TSIZE) were not being stored in the TapeManager database. The tape size information is now stored in the TAPESIZE database field.
3. Due to a change in recent releases of TapeStack, the TapeStack trace (TSULOG) was not being saved when it was requested. Now, the TapeStack trace is requested whenever a TapeStack command is issued via TapeManager. The TapeStack trace is saved to the same family as the TapeManager trace.
4. Previously, if a tape library had more than approximately 1000 slots, it could not be shared by the remote library mechanism, causing a STRING PROTECT fault. Now, tape libraries of any size can be accessed remotely.
5. If TapeManager is Dsed during a shutdown it could become hung and a halt/load required to recover TM functionality. A change has been made to avoid this occurring.
6. If a remote host synchronize is terminated and the host left enabled then there was a possibility that the host could end up repeatedly starting a synchronize and failing. A change has been made to make sure that one host synch attempt fully finishes before another is started.
7. If the library inventory of a library client host becomes out-of-sync with the server host, cartridge loads could fail with the slot being empty. A change has been made to force the client host to reacquire the library inventory from the server host should a load fail with a slot empty error.
8. When the operations DUPLICATE VOLUME is set to IGNORE and the stacking options AUTO UNSTACK is TRUE the LOGPROCESSOR task could become non-responsive, accumulating processor time rapidly. A change has been made to prevent this.
9. Previously, if a QUIT were attempted while tape purge was waiting, a tight processor loop could occur. Depending on how the QUIT command was entered, this could be the MCP process, TAPEMANAGER_TERMINATION. This change prevents the processor loop and allows the shut down to finish after a one minute timeout.
10. Previously if the TM QUIT TL command were entered twice then TapeManager would quit. This has been fixed.
11. The TapeStack Merge (Consolidate) or Duplicate processes could create TapeManager database records with incorrect information if the original tape had been reused before the merge or duplication. This has been corrected.

However, if a stacked taped is merged or duplicated that is unknown to the TapeManager database the records created for those VTVs will have little information. NOTE: This correction also requires an updated TapeStack support library with a compile date of 8/28/2006 or greater. Using an older version of TapeStack when doing a merge or duplicate will cause the TapeManager database to not be updated.

12. During host synchronization it was possible for a NODATAFORREAD result to cause the sync to abort and restart. This has been fixed.
13. Phantom waiters entries could be appear when a stacked tape is purged. The waiting entries would be for the SNs of the VTVs on the tape. Although the waiters go away when TapeManager is restarted, a change has been made to prevent their creation.
14. A purge attempt by the MCP runner, PURGIT, could be delayed for a long time, giving the MT unit the appearance of being hung. This has been fixed.
15. It was possible for a TM QUIT operation to fall into a tight processor loop. This has been fixed.
16. When using the recover from log feature, a tight processor loop in LogProcessor could occur during startup if there where no changes to the database that day. This has been fixed.
17. Previously it was possible for the command processor to get an INVALID INDEX fault if the input text was within five characters of the provided space. This has been fixed.
18. A macro name could fail to be recognized if the macro table were changed by another command at the same time. This has been fixed.
19. Deleted VTVs were not being removed by the reorganize process. This has been fixed.
20. Previously, depending on the speed and number of processors in the system, it was possible that TapeManager would not recognize commands from an ODT until the next time it was restarted. This has been fixed.
21. A tape with no bar code when used in a tape library could cause the LibraryManager to lose track of that library. Another symptom could be a tape library software "lock up" where a given library no longer responds to TapeManager requests. The problem was introduced in 7.067H and is now corrected.

Release 7.067H (7.067.275)

Enhancements

1. The STKSL500 and STKSL8500 are now recognized as valid tape library types.
2. Default trace file size is now 144,000.

3. DSI2000 and DSI4000 are now valid library types in the LibraryManager configuration file.
4. The install process has been improved to properly install code files under SECADMIN security.

Corrections

1. When tapes were imported into a library controlled by ACSLS, LibraryManager might not detect the changed inventory for some time. LibraryManager will now update its inventory when ACSLS imports tapes in a more timely manner.
2. Some library commands are not available when the library is controlled by ACSLS. Previously, some of these commands appeared to execute but did nothing. Now a "feature is not available with ACSLS attached libraries" response is given.
3. The DRIVEMANAGER could fault with a message REQUESTED MEMORY SIZE GREATER THAN 65535 WORDS @ (11145580). This could occur on new installs (empty database). This problem has been corrected.
4. TapeManager will no longer try to automatically restore a database backup when a DB REORGANIZE fails if it were attempting to convert between database versions.
5. Setting OPER SUPPRESS=TRUE would not always enable the ODT error suppression. Now ODT error suppression will be enabled whenever the option is set.
6. TapeManager was not logging stacking commands entered via TapeManager. Stacking commands are now logged in the TapeManager log file.
7. In the WHERE specification, strings that started with wild card characters were not being correctly handled. Wild card characters may now start a string in the WHERE specification where appropriate.
8. The 7.067G release introduced a problem that gave a NO TAPES MATCHED SELECTION SPECIFICATION error when trying to unstack individual VTVs. This problem has been corrected.
9. When the ASSIGN SERIALNUMBER option is set to ALWAYS, or SYSTEM and MCP OP 27 is set, TapeManager sets a temporary serial number of TBA to prevent the wrong tape from being assigned to a task. If the requested tape is already mounted and that tape is not in the TapeManager database, it could take some time (1-2 minutes) before the TBA serial number is cleared or changed to the serial number of the mounted tape. This process has been changed such that TBA will be set to the mounted tape in 1-2 seconds when the above conditions occur.

10. The LibraryManager inventory could become corrupted when load operations fail without correct error information from the library or library controller. Additional checks have been added to prevent this inventory corruption.
11. The Utility program was not correctly requesting a trace when the "Include diagnostic trace" was selected. This has been corrected.

Release 7.067G (7.067.255)

Enhancements

1. A new configuration option, SUBSTITUTE, has been implemented. The CONFIGURE SUBSTITUTE allows density or scratchpool values defined in programs or WFLs to be replaced by different values. Defaults may also be defined that allow a task to be assigned a density or scratchpool where none was requested. The purpose of this option is to help sites migrate to tape devices that have different density and/or scratchpool assignments than used previously without having to immediately change programs and WFLs that have these values hard coded.
2. A new feature has been added to the LABEL command to allow user generated labels. The TM LABEL WITH <update spec> command creates a temporary tape record which is passed to the LabelManager for a user specified label. The temporary tape record is not stored in the database and is discarded once passed to the LabelManager or if TapeManager is shut down. Data entered in the <update spec> portion of the command may or may not be printed depending on the label printing program. A form has been added to the TapeManager Utility to aid in creating these user labels. EX:
TM LABEL WITH SERIALNO = ABC123 LABEL = MYTAPE CREATEDDATE = 1/2/2003

Corrections

1. If a TapeStack process was faulted or was Dsed, debugging information was lost. TapeStack debugging information is now retained even when the stack is DSed.
2. The density fields on some Utility forms were too short to allow the entry of modern density mnemonics. These fields have all been expanded to support the largest mnemonics.
3. The Find Records (INQREC) form of the Utility was not accepting non-numeric tape ranges. This has been corrected.
4. Forms to configure cleaning cartridges were missing from the Utility. This has been corrected.
5. TapeManager would fault with a Seg Array error at 32494370 when trying to stack or append tapes that had very long Label and File Ids. This has been corrected.

6. An invalid index could occur if a macro having a bracketed parameter (<id>) as the last item in a DO file. This has been fixed.
7. Certain variations of the Stack and Unstack command were not being handled correctly. Symptoms included UNSTACK not decrypting tapes known to be encrypted, the stack or unstack process fault Dsing, or tapes being missed in the unstack. These problems have been corrected.
8. Recent versions of TapeStack have been setting the LOCKEDFILE attribute for stacked tapes requiring operator input when purging an expired stacked tape. Tapemanager will now force stacked tapes to be purged without operator intervention if they are expired.
9. Previously, a semicolon encountered in between the commands of a stream of TapeManager input would end the stream at that point without error. This could also terminate the processing of a DO file. One way for this to happen without noticing is if a macro ended in a semicolon and its invocation was also followed by a semicolon.

This has been fixed.

A note about using semicolons in macros: a macro may, but does not have to, have a semicolon as the last item before the END. However, if omitted, the macro may use text following its invocation as part of the command it builds. For example, this macro:

```
TM DEFINE MYFIND = BEGIN FIND WHERE CREATED=TODAY END  
MYFIND
```

can be extended, like this:

```
TM MYFIND AND POOLID = BACKUP
```

Release 7.067F (7.067.232)

Enhancements

1. When presented with a long list of serial numbers, such as from a query list, TapeManager will now compact the list by using ranges wherever possible.

Corrections

1. Previously if a SCRATCH report specified a date range, i.e. ON <date1> TO <date2>, the report could be incorrect. This has been fixed.
2. Previously, when the TCPIP connection method was used for multi-hosting, it could occur that incorrect message types would be received causing the display, "* UNEXPECTED REMOTE HOST MSG TYPE *". An integer overflow fault could occur subsequently. A change has been made to disconnect any host for which this occurs.

3. The install program has been changed to provide support for a wider range of MCP releases. Now the program will install the newest code that can run on the target machine.
4. Previously if the recover from log database configuration were set, LOGPROCESSOR could loop endlessly if there had been no transactions made by LOGPROCESSOR on the first day of the log search and other transactions were made, e.g. TM DELETE, TM MODIFY, etc. This has been fixed.
5. Previously a message "POSSIBLE DRIVELOG CORRUPTION" could occur several times during startup. This has been fixed.
6. Previously it was possible for the TM ADD command to cause a display, "THE ID BEING WRITTEN...DOES NOT MATCH THE LAST ID READ". This has been fixed.
7. The MODIFY command had a problem such that certain database field names if entered in a particular order could cause a syntax error. This has been corrected.

Release 7. 067E (7.067.220)

Enhancements

1. The number of remote libraries allowed to connect to a library server host has been increased to 30 from 15.

Corrections

1. The TM CONFIG:PRINT report did not properly format all printer attributes when if they took up more than one line. This has been fixed.
2. Previously, putting the REPLACE option in a macro definition after the REPLY option could cause the macro to fail to execute on an appropriate display or RSVP. Also, replaced macros did not show properly in the TM STATUS MACRO response, although they did perform correctly. These problems have been fixed.
3. Previously, it was possible for an invalid index fault to occur on a macro DEFINE. This has been fixed.
4. When the LABEL field of a tape record is modified the RECORDTYPE and RECORDSTATE fields are now set appropriately for a normal tape record.
5. The Delete Records (DELREC) form of the Utility was not accepting non-numeric tape ranges. This has been corrected.
6. Previously if the email SIGNATURE was configured to a file title, an error would occur on email send which would prevent the email from being sent. This has been fixed.

7. Previously if a REPORT LOG had an invalid character at the end, the syntax problem was not detected and the time range used was empty cause no records to be reported. This has been fixed.
8. When a report was attached to an email, some records contained unexpected characters causing the report to display incorrectly via PC software. This has been fixed.
9. Previously, if a fault occurred during a QUIT operation the QUIT would be aborted. Now, TapeManager will ignore the error and continue with the QUIT.

Release 7.067D (7.067.207)

Corrections

1. If an ad hoc report used the LOCATION field as the first item in a report, the report would be confused with the LOCATION report. Now, if the items following the LOCATION syntax match the syntax expected for an ad hoc report, the ad hoc report is called.
2. The number of days left displayed for a demonstration period or expiration warning could be wrong if the period extended over a new year. This has been corrected.
3. Support for the LTO-3 tape drive has been added to TapeManager.]
4. A change has been made to the handling of the assignment of an input tape to a task requesting a label that is not in the TapeManager database. Previously, when user code matching is configured (TM OPER USERCODE = TRUE), "TBA" was assigned as the serial number, pending the resolution of the label by the database. In the case where the desired tape is mounted but does not qualify to be added to the database (tracking restricted), the task would need manual intervention. Now, such cases will be given two chances to be resolved by the database, a time of approximately four minutes, after which the "TBA" will be removed allowing normal assignment by the MCP.
5. Previously, a large number of movement and retention rules could cause a waiting entry for insufficient sort disk. This has been fixed.
6. Previously, when no remote hosts were configured, a TM STATUS HOST command would cause a false assert fault. This has been fixed.

Release 7.067C (7.067.190)

Enhancements

1. TapeManager now supports the encryption capability available with the Unisys TapeStack product. The following commands are now available; ENCRYPT, DECRYPT, STACK&ENCRYPT, APPEND&ENCRYPT. The CONFIGURE ENCRYPTION command has been added to manage some encryption features. A full description of all the Stacking and Encryption

features supported by TapeManager can be found in Chapter 11 of the TapeManager Operations Guide (7.067C, September 2005).

Corrections

1. Previously, back-to-back TM DB BACKUP commands could encounter an error on the second one relating to unavailability of the TapeManager log file. This has been fixed.
2. Certain actions caused TapeManager to create an audit file when the database audit option was set to false. This problem has been corrected.
3. Previously, for systems using remote hosts, if ten or more jobs were waiting for tapes at once, an INVALID INDEX could occur in RMTPROCESSOR. The fix for this problem in 7.067B was incomplete and is now correct.
4. When a library was configured with CONNECTION = ACSLS, certain title constructions of the SL ACSSUPPORT library were not being handled correctly causing a fault at 05519500. Various title constructions are now handled correctly.

Release 7.067B (7.067.176)

Enhancements

1. The DSI9x00 (REO) virtual tape and virtual tape libraries are now supported. The library TYPE may be identified as REO, DSI9000, DSI9200, or DSI9500. The drive TYPE is LTO2. The virtual tape and libraries are connected to the host via Fibre Channel (FC). Due to the use of FC the PORT address allowed when declaring a library in the SYSTEM/TAPELIBRARY/CONFIGURATION file has been expanded to 255.

Corrections

1. The location report was giving an erroneous syntax error when a sorting order was specified, e.g. TM LIST LOC X BY DATE was not recognized. This has been fixed.
2. A task which selects an input tape by an auto macro and does so repeatedly and rapidly could eventually fail to have the auto macro executed. This has been corrected.
3. Previously, a waiting request would try to find a matching auto macro on every retry. Now the search for a matching auto macro will be done only once per tape request.
4. In the case where a task performs a conditional input tape open, fails to open the tape, and then immediately goes waiting on another condition (e.g. an accept) TapeManager would display the error message, "SS FA SOFT ERROR=2..." every two minutes while the task was waiting. This has been corrected.

5. A fault for NON ANCESTRAL TASK REFERENCE could occur when a TM QUIT is done via the Utility or TMRemoteSPO, but not when done at an ODT, if a purge, import or export process were active. This has been fixed.
6. In rare circumstances, but especially after a TM DB BACKUP has finished, SYSTEM/TAPEMANAGER/SUPPORT could abort with "Initiate Active Task", taking out the TapeManager system. This has been fixed.
7. The auto macro for a task request that loads more than one tape could get skipped if the log reports from the MCP are delayed more than usual. Now TapeManager will execute such auto macros regardless of how long MCP log reports are delayed.
8. The CONVENTION configuration did not appear in the output for TM CONFIG:PRINT. This has been fixed.
9. Previously, for TM CONFIG OPER UNKNOWN = AUTO and TM CONFIG TRACK LIBRARY ONLY, tapes would not be added to the database as expected if cartridge is loaded to a drive from a door and there is no empty slot, or a cartridge is loaded to a drive from a door and the slot allocated to it is taken before the drive becomes ready. Furthermore, under the same circumstances, if a cartridge having a serial number not in the database were SN'ed to a serial number that is in the database, the database would not be updated to reflect the change.

These problems have been fixed.

10. Starting with TM 7.067, the movement report always listed no tapes. This has been fixed.
11. Previously, for systems using remote hosts, if ten or more jobs were waiting for tapes at once, an INVALID INDEX could occur in RMTPROCESSOR. This has been fixed.

Release 7.067A (7.067.163)

Enhancements

1. Compatibility between Version 1 and Version 2 databases has been extended to allow V2 hosts to share all records with a V1 host not requiring V2 semantics. This permits the upgrade of one host to TM 7.067 while others remain at 6.066 with no loss in function to the older software hosts.

Corrections

1. The location report was giving an erroneous syntax error when a sorting order was specified, e.g. TM LIST LOC X BY DATE was not recognized. This has been fixed.
2. ADDED records were not correctly being updated when CONFUIRE OPERATIONS MISMATCH = AUTO. This has been corrected.

3. Version 2 databases (TM 7.067 only) did not produce a complete scratch report. Some tapes could be missing if there were tapes having GENERATIONS specifications in their retention rule. This has been corrected.
4. The Configure Email form of the TapeManager Utility was not passing email addresses to TapeManager correctly. The form also had a From field which was never implemented. The From field has been removed and email addresses are now handled correctly.

Release 7.067 (7.067.158)

Notes

1. All corrections documented through TM 6.066l are included in the base release for TM 7.067. (See the latter part of this document.) If you are upgrading from a release prior to 6.066l, you should review the changes made between your current release and 6.066l as well as reviewing the changes made fro 7.067.

Enhancements

1. Unisys TapeStack utility is now fully supported by TapeManager. All functions of the TapeStack utility may be called from TapeManager. TapeManager has also implemented the following enhancements for use with the TapeStack utility.
 - (a) TapeManager tracks all virtual tapes (VTVs) created on stacked tapes.
 - (b) A stacked tape directory may be listed without the need to mount the tape.
 - (c) Tapes may be selected for Stacking, Appending, Unstacking, etc. by using TapeManager enhancements that allow for selection by label or selection specification (WHERE).
 - (d) TapeManager allows the specification of a scratch pool for output tapes created by TapeStack.
 - (e) TapeManager allows stacked tapes to be given a label other than the default tape label.

See chapter 11 of the TapeManager Operations Guide for additional information on TapeStack and the TapeManager interface.
2. TapeManager database management has been enhanced with the following features.
 - (a) An optional database audit trail has been implemented. Initially it is intended for diagnostic purposes. The audit is activated via CONFIGURE DB AUDIT = TRUE. Information in the audit trail can be viewed with the REPORT/LIST AUDIT command. (NFR)

- (b) The database configuration has been enhanced to allow missing database entries to be automatically recovered from the system log. TM CONFIG DB RECOVER FROM LOG = TRUE will cause TapeManager to look for missing changes to the tape database in the system sumlog. All available log files (SYSTEM/LOG and SUMLOG/=) that apply to the time since the last database change made by a log entry (labeled or purged) will be used to find the correct label information. You must have the system LOGGING option for major type 15 set for SUMLOG ALL in order for this to work. (NFR)
 - (c) The INUSE virtual database item has been added. INUSE is a read-only, Boolean item that can be used in a query to determine in the cartridge has been allocated for use. (NFR)
3. TapeManager multihost capabilities have been enhanced with the following features.
- (a) The TapeManager log may now be combined on multiple hosts in a manner similar to the TapeManager database. Entering CONFIGURE HOST xxxxxx RECEIVE + LOG at each host will cause each host to have a combined TapeManager log. (NFR)
 - (b) The DRIVELOG may now be shared/combined among hosts. Setting RECEIVE + DRIVELOG causes drive tracking to be information to be replicated from the other host.
 - (c) The remote configuration sharing option CONFIG MT is now available. Setting CONFIG MT causes purge and location configuration for drives to be replicated from the other host. (NFR)
4. LibraryManager has been enhanced with the following feature.
- (a) The TM PURGE command has been enhanced to allow use of a <selection spec>. For example: TM PURGE LIBRARY WHERE EXPIRED will cause all expired tapes in an attached tape library to be queued for purging. TM PURGE LIBRARY L1 WHERE COMMENT = "Year end discard" will find all the tapes with the specified comment in library L1 and queue them for purging. Note: tapes are selected without regard to their retention rule (unless EXPIRED is used) but the purge process will still check the retention rule before the tape can be purged. (NFR)
 - (b) Cleaning cartridges listed in the inventory report will now show how many cleaning uses are left for the cartridge.
 - (c) The message that states that a cleaning cartridge is used up and has been ejected from the library is now made a waiting entry so the operator will not miss it. (NFR)
 - (d) The tape drive cleaning command has been enhanced with the ":STATUS", ":CLEAR", ":STOP", and ":RESUME" command options.

5. The reporting and query features of TapeManager have been enhanced with the following features.
 - (a) The CONFIGURE REPORT command has been enhanced to allow a priority to be defined for TAPEMANAGER/REPORT stack which is processed off when the REPORT command is used. Use CONFIGURE REPORT PRIORITY = <integer> or USER to set the default priority. The integer must be a value from 1 to 99. If USER is specified, the priority of the caller will be used. USER is the default value.
 - (b) The keyword NONE is now accepted in a WHERE or MODIFY clause as the value of a date or timestamp. This is useful for finding dates that were not set, such as tapes where the PROCESSINGDATE is not present. (NFR)
 - (c) The value of Boolean database item can now be given directly in selection expressions with an implied value of TRUE. For example, TM FIND WHERE EXPIRED.
 - (d) The support version, e.g. "66D", is now displayed in the response to TM STATUS TM.
6. ACCESSCODE can now be used to qualify the security of TapeManager commands. In the specification for a user, the access code required can be given optionally as "/<accesscode>". For example, TM SECURE CONFIGURE +USER(OPS/2NDSHIFT) (NFR)
7. Retention and movement rules can now include a file id part. For example, TM CONFIG RETEN XXX/AB= DAYS=14
The file id part is applied only to the first file on the tape for multi-file volumes. (NFR)
8. The LABEL command was enhanced to add the ":ALIGN" option. The ALIGN option passes a request to the label printing library to print an alignment pattern. The ALIGN option cannot be used with the SN or LABEL syntax.
9. The install program has been enhanced to select files for e-mode Epsilon machines and to use files compiled for the next MCP level in preference to those compiled for two releases prior, as was the previous behavior. Furthermore, no longer will TARGET=LEVEL2 code be installed. Instead, the lowest common denominator code level will be TARGET = ALL.

Release 6.066I

Enhancements

1. TapeManager will issue a warning whenever an enabled remote host does not start communicating within 15 minutes. This is to alert shops of the possibility that their hosts are not connected as they expect.

Corrections

1. If there were no cleaning tapes, or the cleaning tapes were used up, a drive cleaning request was being dropped. The cleaning request is now requeued and a prompt displayed every 60 seconds.
2. Previously the connection of a remote tape library with SERVICE = TM was unreliable. Improvements have been made to the connection dialog process to make this service connection more dependable.
3. Previously it was possible for the TM QUIT command to cause a fault if an IMPORT, EXPORT or PURGE were running at the time. This has been fixed.
4. A change has been made to insure that uses of cleaning cartridges are tracked properly across remote hosts.
5. Previously, only when no remote hosts are configured, a new movement or retention rule would cause a FALSE ASSERT in WORKPROCESSOR and the new rule would not be effective until the next TapeManager restart. This has been fixed.
6. Minor fixes were made to the Utility. In the location configuration screen, the quotes in the location title are now optional. In the Ad Hoc report, the title will be retained after the report is produced.

Release 6.066H

Corrections

1. The setting of CONFIG LOCATION will now be properly reported in the TM CONFIG HOST <xxx> response. Previously, this setting was obeyed but not reported.
2. Another case of repeated cartridge loading has been fixed.
3. Previously, the TM INSTALL command did not properly provide the intended default usercode and family name for a container file or directory specification when these are not given. Instead an error message would occur saying the file could not be found. Now, if the usercode and/or family name of such a file is not given in the command, TapeManager will look for the file in the directory where it is installed.
4. Recent configuration extensions, such as the RECEIVE clause of a remote host configuration, were not given by a TM CONFIG: PRINT command. This has been fixed.
5. Previously DB REORGANIZE could encounter a missing index set file and hang on "NO FILE" if the database was created by a very old version of TapeManager and had incorrectly named index files. Now, such a database will be properly reorganized and the index set files properly named.
6. A change has been made to the handling of TM CONFIG OPER ASSIGN SERIAL = NEVER as it conflicts with TM CONFIG OPER USERCODE = TRUE. Previously, a phony serial number (TBD) was assigned to all input

tape requests when USERCODE = TRUE. This was needed to prevent an incorrect tape assignment should the wrongly usercoded tape be mounted. Now, if ASSIGN SERIALNO = NEVER then no such assignment will occur.

7. When an unlabelled tape was mounted, TapeManager would not always recognize its barcode. This has been fixed.
8. Sometimes a TCPIP remote host would connect to TapeManager on the wrong host. This has been fixed.
9. Corrected the Location Report form (LOCREP) that was leaving out a space when a sort order was requested.
10. The location report was giving an erroneous syntax error when a sorting order was specified, e.g. TM LIST LOC X BY DATE was not recognized. This has been fixed.

Release 6.066G

Enhancements

1. The keyword NONE is now accepted in a WHERE or MODIFY clause as the value of a date or timestamp. This is useful for finding dates that were not set, such as tapes where the PROCESSINGDATE is not present.

Corrections

1. Previously if the license warning waiter task were running and tapes were being added to the database at the same time, TapeManager could hang until the waiter task was DSed or OKed. This has been fixed.
2. Various potential shut down hangs have been identified and fixed, all involving cases of the database being unavailable.
3. The possibility of a fatal database error following a TapeManager upgrade when a Utility or TMRemoteSPO session remains up has been eliminated.
4. Previously, if a command were entered from a batch source, such as an ODT, the requirements of the TM SECURE settings would not be applied. Instead, any non-public command would be rejected. This has been fixed.
5. TM CONFIG OPER SUPPRESS = TRUE did not work on certain systems, such as LX7100's and all e-mode Epsilon machines. This has been fixed.

Release 6.066F

Enhancements

1. You must use this release (or a subsequent TM 6.066 support level) for backward compatibility with the TM 7.067 database and label rules file. DSI recommends that everyone install TM 6.066F (or later) before proceeding to install TM 7.067.

2. Help text is now available for the TM EMAIL command.

Corrections

1. Libraries controlled by StorageTek ACSLS or Library Manager will now have all drives automatically marked as SHARED. The SHARED option in the library configuration file is no longer needed.
2. The unit type string for LTO2 was coded as LT02. This has been fixed.
3. Previously if the TM SECURE: FILE command had been used to recover TapeManager security settings, the change would not be effective on the next TapeManager restart unless some other security command was entered that made a change to the configuration. A change has been made to make such security changes update the control file and thus become effective after the next TapeManager restart.
4. Previously, the TM SECURE command would reject user codes that started with digits. Now, a user code that starts with a digit can be used to secure commands properly.
5. Previously, in situations where a cartridge load happens very quickly (e.g., MO disks), it was possible for the load request for that cartridge to be retained for as long as the requesting task stays in the mix, causing the cartridge to be repeatedly loaded whenever it is returned to a library slot. Furthermore, if a task issued two cartridge load requests in a row it was also possible for the second one to be lost, requiring the task to be OK'ed in order for the second load to be performed. This has been fixed.
6. Previously, the check on serial number validity performed during a database reorganize was not thorough enough. In particular, SNs with embedded or leading spaces were not detected. This has been fixed.
7. Previously any attempt to purge a tape while the TapeManager database was closed would leave the MCP PURGIT process hung waiting for the database to be available. Now, the purge will fail after a timeout of 60 seconds.
8. Previously for the TM DB RESTORE command, if "ON PACKNAME" were all that was given for a disk file directory, an invalid index fault could occur. Now, TapeManager will insert the user code (or "*") where it is installed.
9. The TM VERSION response will now show the versions of all software for remote libraries. Previously, all remote libraries had to be running the same version.
10. Previously, if a license warning task was in the mix, a critical block exit could occur when TapeManager was shut down. This has been fixed.

Release 6.066E

Corrections

1. Previously in TM 6.066 it was possible for the LibrarySupport software to abort with a string protect exception when a remote host was enabled and a remote library was declared using the CONNECTION = TM syntax. This has been fixed.
2. The DEFAULT and *UNKNOWN* retention rules were not being correctly reloaded after a database close/open. This problem is now corrected.
3. Under certain timing conditions a tape drive could be left in a RESERVED FOR CLEANING condition after the drive had been cleaned. This problem has been corrected.
4. The *UNKNOWN* retention rule might not be applied to an unknown tape if a deleted record with the same serial number was in the database. This has been corrected.
5. A new feature in the 6.066 release was supposed to pick up the LABEL and FILEID from the creating file name for unlabeled tapes, however, only the LABEL was being picked up. The FILEID field was empty. This has been corrected.
6. The syntax "#" followed by a number could cause an invalid index. This has been fixed.
7. Attempts to clear an *UNKNOWN* retention rule by setting it to NONE were not effective until the next restart. This has been corrected.
8. An invalid index could occur repeatedly in the host synch process if the synchronize attempt were repeated many times. This has been fixed.
9. Previously when three or more hosts were present it was possible for synchronizing to go on indefinitely. This has been fixed.
10. A spurious negative acknowledge could prevent synchronization from finishing. This is fixed.

Release 6.066D

Corrections

1. A fault by library link error could occur following a TM DISABLE LIB. This has been fixed.
2. Previously if there were queued labels to print when TapeManager was shut down there could be a hang up in the LABELMANAGER process preventing the shut down from completing. This has been fixed.
3. A correction has been made that prevents LibraryManager from trying to reconnect to an off-line library when the calling stack is an MCP Independent Runner (IR) such as PURGIT. IR processes have limited stack sizes and can get stack overflows without warning so recovery/retry processing should be restricted.

4. Previously the TM VERSION command was not handled properly by the security system (TM SECURE), causing a TM VERSION request to be rejected as "not allowed" when it should be allowed. This has been fixed.
5. Previously if there were a problem with the drive log file requiring it to be rebuilt, TapeManager could be DSed for an I/O error. This has been fixed.
6. Cases where previously the host synchronize task(s) would not complete as expected MAY be fixed. A TapeManager log entry is made when it appears that this task is in a loop and the loop is aborted after 256 attempts to finish synchronizing. The host is then considered to be properly synchronized.
7. A change has been made to the TM DB BACKUP command ensuring that when issued from a batch run of the Utility, the command will not finish until the backup actually starts. This allows the writing of WFL jobs that do a TM database backup followed by a backup of the TM install family with assurance that the second part does not proceed before the first is done.
8. Previously, while doing a purge tape on a system that was running heavily loaded for a long time, it was possible to get the display message, "IMSG POOL DRY". The purge would work just fine, however. A change has been made that should eliminate such messages.
9. Previously if the LABELRULES file were not found when TapeManager starts, some or all of the rules entries would not be refreshed by a cooperating remote host, depending upon whether an explicit change had been made to the rules on that other host. Now, the LABELRULES file is rebuilt with all the information coming from other hosts.

Release 6.066C

Corrections

1. The syntax, "TM REPORT LOCATION;" (note the semicolon) was previously failing to produce the correct report, showing instead "NO TAPES MATCHED SELECTION SPECIFICATION ". This has been fixed.
2. When multiple remote hosts fully exchange configuration data and there are numerous retention and movement rules it was possible for the synchronize process to hang. This has been fixed.
3. At a trace split point it was possible for a false assert to occur. This has been fixed.
4. "LOG TO MEMORY" could hang on a fresh install. Most everything would work and it would go away if the database were closed and re-opened however some reports would be rejected. This has been fixed.
5. Previously the first TapeManager log entry would be overwritten with the entry for the setting of DL LIBMAINTDIR each time TapeManager is started. This has been fixed.

6. Previously calculations involving PROCESSING DATE did not work as intended. Specifically, if the created time were after the midnight time of the specified PROCESSING DATE the created date was used instead of PROCESSING DATE for calculations of expiration or movement rules. This has been fixed.
7. Previously the syntax, TM DB BACKUP TO TAPE, produced a backup job that failed with a syntax error. This has been fixed. Note that the equivalent syntax, TM DB BACKUP, did not have a problem.
8. Previously, as of TM 6.066B, the host sync process could fail due to a sort error (insufficient disk). This has been fixed.
9. Previously the reporting of "expired" did not always account for the setting of PROCESSING DATE. This has been fixed.
10. So called "soft" errors produced by FA actions performed by TapeManager itself or via the FA function used in macro programming will no longer produce error displays. These will continue to be logged however.

Release 6.066B

Corrections

1. Previously in TM 6.066 only it was possible for delays in the TCP/IP connection between hosts to cause the synchronize action between them to fail. This would be seen as a P-DS of the SYNCHOST process. Now a longer time limit is specified, 5 minutes instead of 10 seconds, for the protocol to complete a single transmission.
2. Previously some tape information, such as creating usercode and task, could be lost if the creating task ended before the log record from it could be processed. Now, this information will be captured as long as TapeManager is still running when the task goes to EOT.
3. Previously in TM 6.066 only if two hosts in a remote host configuration both elected to receive configuration changes from the other for retention or movement, there could be significant delays or even total hangs in the synchronizing process. This has been fixed.

Release 6.066A

Enhancements

1. The message that states that a cleaning cartridge is used up and has been ejected from the library is now made a waiting entry so the operator will not miss it.

Corrections

1. Using DEBUG TRACE SPLIT could deadlock with TapeManager logging. This has been fixed.
2. Previously it could occur that the "TM LOG TO MEMORY" process would be running when TapeManager shut down resulting in a DS for "parent process terminated". This has been fixed.
3. Previously it was possible that disabling a host during synchronization could cause a deadlock in RMTPROCESSOR. This has been fixed.
4. Previously if the last host in the remote hosts configuration had aborted during synchronization then all hosts were synchronized all the way back to the oldest database record. While not harmful, this wastes a lot of time and has been fixed.
5. The ad hoc report was giving a syntax error in some situations when attempting to use the FILE attribute. This has been corrected.
6. The CONFIGURE commands were not clearing the screen to the end-of-page when displaying a single configuration section. This has been corrected.
7. The SERIAL option of CONFIGURE LIBRARY MT SELECTION was not allocating drives correctly with libraries having more than one module. The SERIAL option now works correctly with modular libraries but may still produce drive utilization that is not an even distribution due to the primary goal of trying to use the pass thru as little as possible.
8. Previously in TM 6.066 only database records that were modified at TapeManager's behest on another host where reported as "UNKNOWN MODIFIER" in reports such as the response to TM FIND:ALL. The modifier is now reported as "TAPEMANAGER".
9. Previously when the DEBUG TRACE option SPLIT = FULL were selected and there was no LibraryManager software library linked, the TM DEBUG command would abort with a linkage error due to AUTOLINK = FALSE. This has been fixed.
10. Previously if a given label set had a movement rule that was more specific than an applicable retention rule, say "AB2XYZ" vs. "AB=XYZ", and the more specific rule did not also have retention specifications, retention was not applied for tapes matching the more specific rule. (This was also true with retention and movement reversed.) Now, only specifications for movement or retention will only be applied from the most specific rule.
11. TCPIP connection to remote hosts was routinely producing program dumps. This has been fixed.
12. A fault in TLREMOTE could cause a false assert in the LibraryManager software. This has been fixed.
13. If a tape library is full due to importing tapes and a tape in a drive is rewound and ejected, The LibraryManager could fault with an Invalid Index at 20296000. This has been corrected.

14. In some instances (particularly from TM Utility), attempting to create a retention rule with a DAYS = option caused TapeManager to reply with "A RETENTION rule has not been configured for nnnnn". This has been corrected and the retention is now correctly created.

Release 6.066

Enhancements

1. A DRIVEMANAGER module has been added to TapeManager. The DriveManager monitors tape unit activity. The following enhancements were done as part of the DriveManager implementation.
 - a. The MT report has been added to show the tape unit statistics.
 - b. The STATUS MT command has a new :ALL option that causes the drive statistics to be displayed.
 - c. The CONFIGURE MT command has been added. A tape unit may now be configured to have an assigned Location. A tape drive may also be configured to automatically purge tapes when mounted. (The latter is a replacement for the PURGEONMOUNT program.)
 - d. The REPLACE MT command has been implemented to clear the drive statistics when a drive is replaced. Note: this is done automatically for tape units that report their serial number when used with MCPs that support drive serial number reporting.
 - e. The DELETE MT command has been implemented to remove tape units from the DriveManager drive log.
2. The TapeManager can now e-mail the output of various commands and reports when used with the 48.1 or later MCP Email system.
 - a. The CONFIGURE EMAIL command was implemented to allow sites to customize the usage of email with the TapeManager.
 - b. The EMAIL command was implemented to allow various TapeManager output to be included in an email.
 - c. Includes the provision to automatically e-mail the Supervisor account when a TapeManager process fatally faults.
3. The TapeManager reporting system has been enhanced with the following features.
 - a. All REPORTs (not LISTs) may now be sent to a disk file instead of to the printer by using the FILE option of the REPORT command. The file titles will allow PC style file extensions (i.e. TXT) so that they may be used directly by open systems.
 - b. Ad hoc reports that are sent to a disk file may now be formatted as CSV files. CSV files can be opened directly by MS Excel and other spreadsheet programs. (See FORMAT option.)

- c. The LOG, MAINT, ACTIVITY, and EXCEPTION reports may now specify a TapeManager log file other than the current log file by specifying the USING clause in the command.
 - d. The LIST/REPORT ACTIVITY report has been enhanced with the “:ALL” option. The “:ALL” option causes the all activity for all tapes to be listed instead of just the last activity for each tape.
 - e. The SCRATCH report can now specify a BY clause so that the output may be sorted by something other than the serial number.
 - f. The TapeManager reporter process will no longer run as a Control process and use a more normal priority. Long, processor intensive reports will no longer use more resources than a normal program. This change is only for REPORT commands and does not effect LIST commands.
4. LibraryManager has been enhanced with the following changes.
- a. The following library types are now recognized: ATL P4000 and P7000, Plasmon G638.
 - b. The following drive types are now recognized: SDLT320 and STK9940.
 - c. The management of cleaning tapes in libraries has been implemented. The CONFIGURE TRACKING command can now define bar codes that are to be used for cleaning tapes and the number of uses of those cleaning tapes. The CLEAN MT command can force the cleaning of a tape unit. The REPLACE SN command will now clear usage information for cleaning tapes. A library will automatically eject cleaning tapes once their usage available count reaches zero.
 - d. The CONFIGURE LIBRARY command now has the MT SELECTION option. This option allows the site to control how tape units are selected in the tape library.
 - e. The CONFIGURE LIBRARY command now has a FILTER option. The FILTER option allows tapes with certain bar code ranges to be dropped from the INVENTORY report. This feature is designed for libraries shared between MCP and open systems.
 - f. LibraryManager now supports a new Windows based Library Controller. This controller is similar to the TCPIP based Library Controller except that its operating system is MS Windows XP and it does not have the reboot card.
 - g. LibraryManager now supports STK tape libraries shared between MCP and open systems using the STK Horizon Library Manager (HLM) product. This feature requires the Windows based Library Controller.
 - h. The total number of libraries declared (Local, Remote, and Alternate) has been increased from 9 to 15. There is still a limit of 9 local and remote library declarations.

- i. Shared tape libraries will now have all tape units marked as SHARED automatically (client and server) without needing to be declared as SHARED in the SYSTEM/TAPELIBRARY/CONFIGURATION file.
 - j. A tape library configuration file for one host may be tested on another host by running the SYSTEM/TAPELIBRARY/SUPPORT program with a VALUE=9 and TASKSTRING=<hostname>.
5. The TapeManager database management has been enhanced with the following features.
- a. The DB RESTORE command has been implemented to aid in the restoration of the TapeManager database. The DB RESTORE will cause TapeManager to recovery its database from a backup copy on disk.
 - b. The following new virtual database items have been added for use in FIND and ad hoc reports; EXPIREDREASON, PURGED, SLOT, and LIBRARYNAME.
 - c. The CREATEDDATE and CREATEDTIME items have been added to the database dictionary for use in the FIND command and ad hoc reports.
 - d. The MODIFY command was enhanced to allow a label name as the value for the RETENTION and MOVERULES database items. This feature causes the retention or movement rules for the designated tape label to be applied to the tape record being modified.
 - e. The DELETE command has been enhanced to be able to use the WHERE clause similar to the MODIFY command. Since this feature can be dangerous, a DELETE UNDO command was implemented to recover from a DELETE WHERE that caused unexpected results.
 - f. The STATUS DB command will now return the number of records in the database. This command will also display current TapeManager license information.
 - g. The SUMMARY report will now show the percentage of TapeManager license used in the Database Record Summary section. This report will also recommend that a TapeManager database reorganize be done if the number of deleted records is 5% or greater of the total number of database records.
 - h. TapeManager will now display a warning if the database reaches or exceeds 95% of its licensed capacity.
 - i. The DB REORGANIZE process has been enhanced to check the string fields in the database to make sure those fields are a valid length and do not contain any null characters.
 - j. Database reorganize now checks for additional cases of damaged records including validity of record type, record state and record modifier values. Additionally, these checks are also enforced for updates coming from other hosts when remote hosting is configured.

- k. Two additional virtual database fields have been implemented, EXPIREDATE and MOVEDATE. EXPIREDATE returns the date that a tape can be purged. MOVEDATE returns the date a tape is to be moved to its next scheduled location. Both fields are read-only. WARNING: Both fields return a date based on a DAYS (SAVFACTOR, etc) portion of the retention or movement rule. If the rule contains GENERATION based attributes then the returned date may not be accurate (may change) based on tapes created in the future.
6. Multi-host TapeManager operations have been enhanced as follows.
 - a. It is now possible to pass configuration information between TapeManager hosts. The CONFIGURE HOSTS command has been enhanced to allow the site to specify which configuration changes made at one host will be received by other TapeManager hosts.
 - b. It is now possible to update the TapeManager software on one host from another TapeManager host using the INSTALL command. This feature requires that BNA is installed on both machines.
 - c. BNA is no longer required for multi-host tape library configurations. LibraryManager was enhanced to use the TapeManager TCPIP transport feature.
 - d. Changes in remote host status are now entered in the TapeManager log.
 7. The macro capabilities of TapeManager have been enhanced as follows.
 - a. A list of active macros is available with the STATUS MACROS command.
 - b. The macro QUERY function has been enhanced with the “:LIST” option that returns the requested database item in a list for all records matching the query.
 - c. The #EVALUATE function has been added to macro definitions to allow items that would normally evaluate to a quoted item to be evaluated as a non-quoted item.
 - d. The “:RESPONSE” option has been added to control when a macro will display messages from the macro.
 - e. CYCLE and VERSION have been added as additional macro intrinsic variables.
 8. Commands that allow dates have been enhanced to allow date calculations. A date may now be entered as a <date> +/- a number of days, weeks, months, or years (i.e. TODAY + 3 MONTHS).
 9. The CONFIGURE RETENTION rules have been enhanced to allow a retention rule to be defined for tapes that are not in the database (i.e. unknown tapes). A retention rule may now be defined for *UNKNOWN* which will be applied to any purge request for tapes not in the TapeManager database. The GENERATIONS option of the retention rule is not allowed for the *UNKNOWN* rule.

10. The Install program will now automatically force all copies of TapeManager Utility and TMREMOTESPO to de-link from TapeManager so that the installation may continue. MARC directives and other programs will still need to be shut down manually for the installation to proceed.
11. The Utility program has been improved as follows.
 - a. DELETE WHERE and DELETE UNDO are supported.
 - b. Forms have been updated to support the report to disk file feature.
 - c. The COMND form has been enhanced to remember and redisplay the last command entered on this form.
 - d. The MOVEMENT report is now a report selection.
 - e. Added support for Ad Hoc report FORMAT feature.
12. The TM DEBUG diagnostics have been improved as follows.
 - a. The DEBUG TRACE feature allows trace files to be split instead of overwritten by wraparound. The split can occur automatically when the file is full or manually via the TM DEBUG SPLIT NOW command.
 - b. Tracing will turn itself off whenever space is exhausted on the disk family holding the TapeManager trace files. Previously only a display message noted this occurrence. Now TapeManager will also log it.
 - c. When the DEBUG TRACE option SPIT when FULL is set, the TM DEBUG command will display the percentage full of the current trace. When the LibraryManager software is running, the number given represents percentage of the fullest file.
 - d. The default trace file size has been increased by a factor of six, yielding a new value of 86400. This change only affects new installations of TapeManager software.
13. TapeManager will now support both the full mnemonic for DENSITY and the abbreviated mnemonics in the WITH and WHERE clauses of FIND, MODIFY, etc. For example, TapeManager will now accept DLT35 as well as FMTDLT35 for the DENSITY value.

Corrections

1. All corrections through TapeManager release 5.065R are included in this release.
2. For very large TapeManager databases, reports would sometimes go waiting with the SORT FILE FULL, OK TO EXPAND SORT FILE message. Reports should no longer need operator intervention.
3. Under certain timing conditions, the purge worker could leave a drive in a HOLD state. This has been corrected.
4. Programs for which the ACTOR and DECLARER are not the same could have their entries stuck in the TM DEBUG QUEUE WAITERS list. This

change permits only the ACTOR process to make or clear entries from the list.

5. Previously, if the task that created a tape volume had not finished (EOT) by the time the tape was requested for another task, TapeManager did not allow the assignment due to the unresolved state of the creating task. In particular it was unknown if the creating task faulted and was DSED. Some tape work models found this behavior problematic, as their tape creation tasks would virtually run forever. This change allows the assignment of such tapes to a successor task without the creator finishing and still provides the CREATORDSED database entry as long as the tape is not rewritten. Note that this change adds a new index, MIXINDEX, to the TapeManager database.
6. A minor syntax-checking problem with the DB BACKUP TO DISK has been corrected. The error messages are now more appropriate.
7. TapeManager would display INVALID ADHOC PARAMS ARRAYS PASSED TO REPORTER @ 39152595 when the TITLE was specified and the title string length was evenly divisible by 6. This has been corrected.
8. The utility was being DSed with SEG ARRAY ERROR @ (29640000) when a batch file command was spread over more than 14 input lines. This has been corrected. A single batch command may now be contained in up to 910 input lines.
9. Previously, an ad hoc report referencing EXPIRED in a WHERE clause could miss a number of possibly qualifying records, especially if there had been additions to the database since the last reorganize. This has been fixed.
10. Fixed a problem where if a task requested the same input tape twice in a row there was the possibility that the second request would not be filled. This is much more likely on a system using MO drives where the loading and unloading is much faster than DLT.
11. Previously, another host would not necessarily properly receive a rule change. This would occur for retention rules if a rule of identical spelling had been previously deleted. This has been fixed.
12. Previously, the attribute clause for a movement report would cause a syntax error, e.g. TM REPORT MOVE TO OFFSITE ATTR= DESTINATION=LOCALPTR. This has been fixed.
13. Remote configuration update for rules changes (retention and movement) would only work under certain circumstances such as the retention rule for a label not having a movement rule. This has been fixed.
14. The SERIAL option of CONFIGURE LIBRARY MT SELECTION was not correctly selecting drives in multi-module libraries. The MT selection process will now only look within the local (to the slot) module for the first try at selecting a drive. This should cause drive usage distribution to be more even within the library module.

15. A FALSE ASSERT dump could occur during exchange of configuration data between hosts. This has been fixed.
16. Previously if a program assigned a serial number to an input tape an auto macro to override that setting would fail on the second reel. This has been fixed.
17. If CONFIGURE SUPPRESS was set to FALSE, it was being set back to TRUE whenever TapeManager was started. This has been corrected.
18. Some values for real numbers could cause an EXPONENET UNDERFLOW in the trace routine. This is now trapped.
19. The TapeManager Utility was incorrectly processing commands that could have embedded semi-colons (;) such as the EMAIL command. This has been corrected. A side effect of this change was a change to the format of the Utility batch report.
20. An unlabeled tape that was purged would still be reported as unlabeled instead of scratch. This has been corrected for all future unlabeled tapes that are purged.
21. Previously, if three or more hosts were simultaneously synchronizing there was a chance that one of them could encounter an internal deadlock requiring a TapeManager restart. This has been fixed.
22. The BACKUP TO TAPE command (all variations) was generating a WFL that had a syntax error and so would not execute. This has been corrected.
23. Previously, if a configuration required assigning serial numbers and the requested input tape was not then in the database and would not be put in the database then the only way to complete file assignment was to IL the task. Now, TapeManager will clear the "TBA" serial number used to prevent incorrect file assignment after two tries at looking up the label in the database. Note, that if the OPERATIONS configuration item USERCODE is set, this cannot be safely done and the task will need to be IL'ed.
24. TapeManager would get an Invalid Index at 23207880 if the SECURE command was entered with the FILE option but no file name specified. TapeManager will now give an error if the file name is not specified.
25. The CONFIGURE LIBRARY FILTER option was giving an error when the option was attempted to be set for a library attached via ACSLS. This has been corrected. ACSLS attached libraries can now set this option.
26. TapeManager was allowing an SN to be added more than once which could cause problems in multi-host environments. TapeManager will now return an error if adding an SN that is in the database in the added state.
27. Previously, since TM 5.065T, a TM DB REORG could fail, becoming hung on the mix index file. This has been fixed.
28. The drive selection process when using the MT SELECTION option of CONFIGURE LIBRARY was not working correctly for multi-module libraries.

In particular, drives in the 2-n modules were not being allocated correctly no matter which drive selection option had been selected. This has been corrected.

29. The LIST or REPORT command could have faulted with an Invalid Index when using the USING <filename> syntax. This problem has been corrected.
30. Sometimes Install could fail to note the update to SYSTEM/DSISUPPORT from the WFL modify. This is a key step to completing the install. Improvements have been made to eliminate this possibility.
31. Previously, in a remote hosts configuration, tapes mounted either manually or by an autoloader and having a LASTUSEDHOST value for another host in the network could lose some label information especially if the system clocks are not (very) closely coordinated between the two machines. This has been fixed.
32. For remote host configurations, there previously were potential dangers to doing a TM MODIFY on a tape having a LASTUSEDHOST that was not the host name of the machine doing the modify. Specifically, if this were done at the same time as the other host was updating the label information for that tape, the new label information could be lost. Furthermore, it was forbidden to change the LASTUSEDHOST field in this manner. These issues have been addressed such that now these updates can be done normally through the TM MODIFY command when the two hosts are communicating. Beware that if the hosts are not communicating, then it is advised not to do such updates as there will then be two "versions" of the tape with the one on the updating host located only there and the one on the other host which will not receive the updated information. If the desired outcome is for the information of the TM MODIFY to become the dominant version then it is necessary to set LASTUSEDHOST to the host name of the updating machine. The easy way to do this is to use the #HOSTNAME intrinsic variable, e.g.:

```
TM MODIFY SN XYZ123 WITH LASTUSEDHOST = #HOSTNAME
```

33. A problem with configuring e-mail has been fixed. TM CONFIG SIGNATURE was erroneously giving a syntax error.

Also, previous documentation showed a TM CONFIG EMAIL FROM option. This option is not and never was available.

34. This change addresses possible loss of tape label information caused by use of the TM MODIFY command during times when one or more hosts of a remote host configuration is not communicating. During these times any host not communicating with the "owning" host, that of LASTUSEDHOST value name, has authority to update the tape DB record. This leads to there being two versions of that tape's record. Previously when the hosts re-connected, TapeManager resolved this conflict strictly by the most recent record timestamp, an inadequate approach as newer tape label information as evidenced by a later creation time could be lost this way.

The approach now provided takes the creation timestamp (database field CREATED) into account by not permitting this field to go backward in time. In cases where the creation timestamp matches, the record timestamp is still used to determine the newest version. A side effect of this is to disallow the backdating of CREATED.

35. Previously in TM 5.065 and TM 6.066 only, deleting and re-adding a retention rule would not work. The rule could not be added back until TapeManager was restarted. This has been fixed.
36. Previously in TM 6.066 only, a TM DB RESTORE would not restore the label rules (retention and movement rules configuration) from the database source. This has been fixed.
37. Previously a TM DEBUG TRACE SPLIT could cause TapeManager to hang in remote configuration update. This has been fixed.
38. Previously in TM 6.066 only, a remote configuration for retention or movement rules was not updated for any label other than the first one listed. This has been fixed.
39. TapeManager could display "POSSIBLE DRIVELOG CORRUPTION" messages when it was started. These were in error and are no longer displayed.
40. Previously in TM 5.065 and TM 6.066 only, the deletion of a retention rule did not always update the associated tape records, leaving those tapes with retention rules still set. This has been fixed.