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StorageTek T10000A to StorageTek T10000B Migration: z/OS Migration Plan

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Introduction

Oracle's StorageTek T10000 Fibre Connectivity (FICON) tape drive family offers industry-leading performance and capacity. The high performance of the StorageTek T10000 reduces the wall clock time of batch production and backup applications, and the increased capacity lowers the cost of storage. While using existing StorageTek T10000 media, the StorageTek T10000B increases the native cartridge capacity to 1000 GB (1 TB). This was achieved by writing an increased number of tracks on tape and increased linear recording density. The capacity has also been increased on the existing StorageTek VolSafe (now 1 TB) and StorageTek Sport (now 240 GB) tape cartridges when used on the StorageTek T10000B tape drive. This increased capacity saves library slots and improves throughput by reducing mount/dismount cycles.

This white paper is for the use of Oracle employees. The document briefly describes how to migrate from the StorageTek T10000A tape drives to the StorageTek T10000B tape drives in both the native (direct attached) z/OS environment and the Virtual Storage Manager (VSM) environment.

(Note: This document assumes that customers have already defined the StorageTek T10000B tape drives in their LIBGEN, and that the StorageTek T10000B tape drives have already replaced some drives in their tape environment. Those processes will not be covered by this white paper, but they must be completed prior to proceeding with the migration plan.)

Enhanced Legacy Read Compatibility

The StorageTek T10000B, shown in the figure below, provides improved backward read compatibility in that it can read cartridges written on the StorageTek T10000 tape drive family to facilitate migration to the StorageTek T10000B recording format. Cartridges rewritten on the StorageTek T10000B are automatically written at the higher recording density.



StorageTek T10000 drive delivers enhanced read compatibility to optimize return on investment from StorageTek solutions.

Data Cartridge Guidelines

Separate media subpools for the StorageTek T10000 tape drive family should be created and managed when more than one drive type exists in the same TapePlex for native z/OS drives. For Real Tape Drives (RTDs), separate multivolume cartridge (MVC) pools are only required if the customer intends to continue using mixed drive types. If the StorageTek T10000A tape drives will be eliminated after migration to the StorageTek T10000B tape drives, it is not necessary to define separate MVC pools. Guidelines for creation and maintenance of media subpools are located in StorageTek Host Software Component (HSC) documentation. The guidelines using mixed drive types are as follows:

- StorageTek T10000B drives can read tapes previously written by StorageTek T10000A drives.
- StorageTek T10000B drives can overwrite tapes written by StorageTek T10000A drives, but only from the beginning of the tape.
- StorageTek T10000B-written tapes cannot be read by StorageTek T10000A drives.
- StorageTek T10000B-written tapes can be overwritten by StorageTek T10000A drives, but only from the beginning of the tape.
- StorageTek T10000B drives cannot be appended to StorageTek T10000A-written tapes.

StorageTek VolSafe Guidelines

There are two primary guidelines for StorageTek VolSafe.

- StorageTek T10000B drives will not be appended to StorageTek T10000A VolSafe tapes containing customer data.
- StorageTek T10000B drives will read a StorageTek T10000A VolSafe tape.

Legacy Drive Considerations

During the StorageTek T10000B migration, it is recommended that some number of the StorageTek T10000A tape drives remain in the environment until all media has been converted to the StorageTek T10000B, if that is the ultimate goal. This will mitigate the possibility of encountering cartridges written on the StorageTek T10000A tape drives that the StorageTek T10000B tape drives are unable to read. The probability of this occurring is extremely low. It is not anticipated that the StorageTek T10000B tape drive will encounter legacy read errors. However, it is still recommended that the customer keep some legacy StorageTek T10000A tape drives in the environment until all data has been migrated to the StorageTek T10000B format.

Host Software Levels Supporting StorageTek T10000B

Table 1 shows host software levels supporting the StorageTek T10000B tape drive.

TABLE 1. HOST SOFTWARE LEVELS SUPPORTING STORAGE TEK T10000B

APPLICATION	SOFTWARE LEVEL	PROGRAM TEMPORARY FIX OR PATCH	ADDITIONAL PROGRAM TEMPORARY FIXES
NCS			
StorageTek Storage Management Component (SMC) 6.1	SMC6100	L1A00OS	L1A00OZ
StorageTek SMC 6.2	SMC6200	L1A00OT	L1A00P0
StorageTek MVS / StorageTek CSC 6.1	SCS6100	L1C109M	
StorageTek MVS / StorageTek CSC 6.2	SCS6200	L1C109N	
StorageTek MVS / StorageTek HSC 6.1	SOS6100	L1H14EN	
StorageTek MVS / StorageTek HSC 6.2	SOS6200	L1H14EP	
StorageTek VM StorageTek HSC 6.1	SMS6100	L1H14EM	
StorageTek VM / StorageTek HSC 6.2	SMS6200	L1H14EO	

StorageTek Virtual Tape Control System (VTCS) 6.1	SWS6100	L1H1429
StorageTek VTCS 6.2	SWS6200	L1H142C
StorageTek Enterprise Library Software (includes SMC, HSC, VTCS, CDRT, HTTP Server)	SSEA700	

Microcode Levels to Support StorageTek T10000B

It is recommended that the latest microcode levels be used when performing a migration procedure. If the latest microcode is not available, note that it is mandatory to use firmware update 1.37.114 or later when using both the StorageTek T10000A and StorageTek T10000B tape drives in the same environment. The following levels are current as of March 23, 2009.

Tape Drive Microcode Levels

The following are tape drive microcode levels:

- StorageTek T10000B FICON: 1.38.x09
- StorageTek T10000A FICON: 1.38.x09
- StorageTek Virtual Operator Panel (VOP): VOP 1.0.12

Library Microcode Levels

The following are library microcode levels:

- StorageTek SL8500: 3.98b
- StorageTek 9310: No support
- StorageTek L700: 3.17.03

Virtual Tape Storage System Drive Microcode Levels

The following is a Virtual Tape Storage System (VTSS) drive microcode level: StorageTek VSM4 / StorageTek VSM5—D02.06.00.E6.

StorageTek T10000 3490 Media Values

Table 2 shows the StorageTek T10000 3490 media values and recording techniques.

TABLE 2. STORAGETEK T10000 3490 MEDIA VALUES AND RECORDING TECHNIQUES

VOLATTR MEDIA	TRANSPORT MODEL	RECORDING TECHNIQUE	STORCLAS MEDIA	CARTRIDGE TYPE	DENSITY	ENCRYPTED?
T10000T1	T1A34-T10KA	T1A34	T1A000T1	T10000 full capacity	Single	No
	T1AE34-T10KA	T1AE34	T1A000E1	T10000 full capacity for encryption	Single	Yes
T10000TS	T1A34-T10KA	T1A34	T1A000TS	T10000 sport	Single	No
	T1AE34-T10KA	T1AE34	T1A000ES	T10000 sport for encryption	Single	Yes
T10000T1	T1B34-T10KB	T1B34	T1B000T1	T10000 full capacity	Double	No
	T1BE34-T10KB	T1BE34	T1B000E1	T10000 full capacity for encryption	Double	Yes
T10000TS	T1B34-T10KB	T1B34	T1B000TS	T10000 sport	Double	No
	T1BE34-T10KB	T1BE34	T1B000ES	T10000 sport for encryption	Double	Yes

StorageTek T10000 3590 Media Values

Table 3 shows StorageTek T10000 3590 media values and recording techniques.

TABLE 3. STORAGETEK T10000 3590 MEDIA VALUES AND RECORDING TECHNIQUES

VOLATTR MEDIA	TRANSPORT MODEL	RECORDING TECHNIQUE	STORCLAS MEDIA	CARTRIDGE TYPE	DENSITY	ENCRYPTED?
T10000T1	T1A35-T10KA	T1A35	T1A000T1	T10000 full capacity	Single	No
	T1AE35-T10KA	T1AE35	T1A000E1	T10000 full capacity for encryption	Single	Yes
T10000TS	T1A35-T10KA	T1A35	T1A000TS	T10000 sport	Single	No
	T1AE35-T10KA	T1AE35	T1A000ES	T10000 sport for encryption	Single	Yes

T10000T1	T1B35-T10KB	T1B35	T1B000T1	T10000 full capacity	Double	No
	T1BE35-T10KB	T1BE35	T1B000E1	T10000 full capacity for encryption	Double	Yes
T10000TS	T1B35-T10KB	T1B35	T1B000TS	T10000 sport	Double	No
	T1BE35-T10KB	T1BE35	T1B000ES	T10000 sport for encryption	Double	Yes

Use Table 2 and Table 3 as guidelines to do the following:

- Create VOLATTR statements that segregate encrypted/unencrypted media.
- Specify the correct STORCLAS MEDIA values to assign the desired cartridge type and recording technique to MVCs
- Determine which transport models (tape drives) can write to / read from which media. A higher-capability transport (double density versus single, or encryption versus unencryption) can read from media written by a lower-capability transport, but can only write to that media from the beginning of the tape (see the appendix). A lower-capability transport, however, cannot read from media written by a higher-capability transport, but it can write to that media from the beginning of the tape.

StorageTek T10000B Migration in a Native z/OS Environment

This white paper discusses strategies for migration from the StorageTek T10000A devices currently defined in 3590 image to the StorageTek T10000B in 3590 image. Migration from 3490 image to 3590 image is not covered in this document.

Table 4 lists the device type and UCB type information for the StorageTek T10000 devices in 3590 image.

TABLE 4. UCB TYPE INFORMATION

DRIVE	DEVICE TYPE	UCB TYPE
StorageTek T10000A	3592J1A	78048083
StorageTek T10000B	3592E05	78048083

StorageTek T10000B Recommended Migration Procedure for 3590 Image

- Define UNITATTRs if necessary. It is no longer necessary to define UNITATTRs for transports located in an automated library. However, if there are standalone StorageTek T10000A or StorageTek T10000B drives that exist in a native z/OS environment outside an automated cartridge

system, then they will require UNITATTRs. For example:

```
UNITATTR ADDR (0600 - 060F) MODEL (T1A35) 3590 image (T1A34 for
3490E image)
UNITATTR ADDR (0800 - 080F) MODEL (T1B35) 3590 image (T1B34 for
3490E image)
```

Note: It is not necessary to reinitialize scratch cartridges previously used on a StorageTek T10000A drive. See the earlier section titled “Enhanced Legacy Read Compatibility.”

- Define VOLATTRs for the StorageTek T10000B tape cartridges on non-encryption enabled drives as follows:

```
For 3490E: VOLATTR SERIAL (50000-50999) MEDIA (T10000T1) RECTECH
(T1B34)
For 3590: VOLATTR SERIAL (50000-50999) MEDIA (T10000T1) RECTECH
(T1B35)
```

- Define VOLATTRs for the StorageTek T10000B tape cartridges on encryption-enabled drives as follows:

```
For 3490E: VOLATTR SERIAL (50000-50999) MEDIA (T10000T1) RECTECH
(T1BE34)
For 3590: VOLATTR SERIAL (50000-50999) MEDIA (T10000T1) RECTECH
(T1BE35)
```

- Direct allocation to the StorageTek T10000B devices by defining or modifying SMC POLICY or TAPEREQ statements for scratch requests based on user-defined parameters, such as DATASETNAME or JOBNAME. At this point, data sets will begin writing to the StorageTek T10000B media.
- If migrating data that is *not* managed by DFSMSHsm, move existing data written on the StorageTek T10000A drives to the StorageTek T10000B, using one of these two options:
 - Leave existing tape data sets on the cartridges where they currently reside, and allow them to age there while you start writing new data on the StorageTek T10000B.
 - Move and recatalog nonunique data sets currently residing on cartridges written on the StorageTek T10000A drives to the StorageTek T10000B media, which can be accomplished by using standard copying utilities such as IEBGENER for physical sequential data sets. Nonunique data sets are those that are independent of any software product–controlled database, such as DFSMSHsm, DB2, IMS, or any z/OS system data sets that might reside on tape.
- Direct DFSMSHsm migration functions to the StorageTek T10000B devices using one of these two options:

- Define the StorageTek T10000B as the only migration device for both migration and recycle functions: This is the most straightforward option. To accomplish this, an esoteric must first be defined in the z/OS IOGEN, which contains only the StorageTek T10000B devices. For illustration purposes, the esoteric of NEWDRVB is used.

DFSMSHsm ARCCMDxx parmlib definitions are used to direct allocation for each DFSMSHsm function. TAPEREQ statements are not necessary to direct allocation if using an esoteric containing only the StorageTek T10000B devices. To direct migration output to the StorageTek T10000B, define the following:

```
SETSYS TAPEMIGRATION (ML2TAPE (TAPE (NEWDRVB) ) )
SETSYS MIGUNITNAME (NEWDRVB)
```

The recycle function is an extension of migration. If the StorageTek T10000B has been defined as the only migration device, the recycle parameter definition in ARCCMDxx must be defined as follows:

```
SETSYS RECYCLEOUTPUT (MIGRATION (NEWDRVB) )
```

- Define the StorageTek T10000B device as the output device for the recycle function: This option uses only the StorageTek T10000B device as the output device for the recycle function of DFSMSHsm. Migration (ML2) continues to be directed to other devices as currently defined in the ARCCMDxx parameters. This option requires that all partial tapes for *both* migration and recycle be marked full at the end of the task. This option enables a staged migration to the StorageTek T10000B media, but results in low-capacity use for all migration and recycle volumes. TAPEREQ statements cannot be used with this option to direct allocation because the data set names of ML2 volumes and recycled ML2 volumes cannot be distinguished. To direct recycle output to the StorageTek T10000B devices, the recycle parameter in ARCCMDxx must be defined as follows:

```
SETSYS RECYCLEOUTPUT (MIGRATION (NEWDRVB) )
```

The following command is required to force all migration and recycle volumes to be marked full at the completion of the respective task:

```
SETSYS PARTIALTAPE (MIGRATION (MARKFULL) )
```

- Other DFSMSHsm ARCCMDxx parameter updates and considerations:
 - The USERUNITTABLE must contain all of the esoteric unit names used to direct allocation within DFSMSHsm. If a new esoteric has been defined in the z/OS IOGEN and used in DFSMSHsm ARCCMDxx parameters, then it must be defined as follows, using OLDDRVA to illustrate a currently defined esoteric and NEWDRVB as the new StorageTek T10000B esoteric:

```
SETSYS USERUNITTABLE (OLDDRVA:OLDDRVA, NEWDRVB:NEWDRVB)
```

- The TAPEUTILIZATION parameter manages the amount of data written by DFSMSHsm to the tape media. For example, to fully use a StorageTek T10000B 3490E cartridge, the

recommendation is to set this parameter to 10,000 percent. The results can be unpredictable if a percentage greater than 10,000 percent is defined. For any 3590-1 device, the recommended value is 97 percent.

For 3490 image:

```
SETSYS TAPEUTILIZATION (UNITTYPE (NEWDRVB) PERCENTFULL (10000) )
```

For 3590 image:

```
SETSYS TAPEUTILIZATION (UNITTYPE (NEWDRVB) PERCENTFULL (97) )
```

- For customers who do not use the TAPECOPY or DUPLEX functions, TAPEUTILIZATION can be set to NOLIMIT, which enables DFSMSHsm to write data to a logical end-of-volume. However, NOLIMIT will allow data sets to span volumes, resulting in two volumes being mounted to satisfy a recall request.
- Device selection for DFSMSHsm recall is based on information recorded in the migration control data set (MCDS). DFSMSHsm records the device type used for each migrated data set. The information stored for the device type is the hexadecimal representation of the device type from the z/OS UCB, which is an entry of x'78048083' for the 3590-1 device type. Because the StorageTek T10000A and StorageTek T10000B devices are all 3590-1 device types, all would be eligible for allocation. If there is a mix of StorageTek T10000A and StorageTek T10000B devices, the StorageTek HSC will influence specific allocations by examining the density byte in the CDS for the StorageTek T10000 volume serial number (VOLSER) and that will tell SMC which StorageTek T10000 device should be allocated for the recall.

StorageTek T10000B Migration in a Virtual Storage Manager Environment

In addition to the legacy drive considerations, it is further recommended that if a customer has connectivity to multiple automated cartridge systems, that one StorageTek T10000A RTD per automated cartridge system remain in the configuration for every VTSS, until all media has been converted to the StorageTek T10000B, if that is the ultimate goal.

StorageTek T10000B Recommended Migration Procedure

- Ensure adequate empty MVCs are available for migrations until active MVCs can be recycled to be StorageTek T10000B writable. An MVC that is 100 percent empty can still have a storage class association. An MVC drain will guarantee that the MVC is 100 percent empty and that its associated storage class has been removed, if desired.
- Use the current MVC pool to define all MVCs in VOLATTRs with a media of T10000T1 or T1 and a recording technique of T1B34 for unencrypted drives, or T1BE34 for encrypted. For example:

```
VOLATTR SER (MVC000-MVC999) MEDIA (T10000T1) RECTECH (T1B34)
```

Even though all MVCs are defined with a recording technique of StorageTek T10000B, the host software will know which of the currently active MVCs have been previously written on a StorageTek T10000A transport and will only recall from those.

Note: Existing VOLATTR statements defining StorageTek T10000A cartridges must be changed to add the RETECH parameter if it is not already defined.

- Review media in the storage class constructs to ensure that the definitions are correct for the new media setup. For example:

```
STOR NAME(S1) ACS(00) MEDIA(T1B000T1) MVCPOOL(T10KB)
```

- At this point, new migrations will begin going to the StorageTek T10000B media. Migrate the virtual tape volumes (VTVs) currently residing on cartridges written by the StorageTek T00000A drives using one of the following two techniques.
 - Allow RECLAIM to move the data naturally when MVCs become eligible to be reclaimed with the understanding that MVCs that do not meet RECLAIM criteria will eventually need to be drained; or
 - MVCDRAIN all the MVCs, for example:

```
VT MVCDRAIN MVCid(mvc volser)
```

Actively using MVCDRAIN is typically more aggressive in migrating off of old media to replace the remaining StorageTek T00000A drives with StorageTek T00000B drives to achieve a total StorageTek T00000B RTD environment.

Special Note If Performing a Multivolume Cartridge Audit

An MVC AUDIT will update the media field of the MVC to reflect the media type and recording technique defined on the VOLATTR statement for that MVC. Therefore, during migration, if the VOLATTR defines all MVCs as

```
VOLATTR SERIAL(MVC900-MVC999) MEDIA(T10000T1) RECTECH(T1B34)
```

but there are MVCs containing active VTVs written with a recording technique for a StorageTek T10000A, the recording technique of the MVC will change erroneously to T1B34 (or T1BE34) at the end of the audit. This behavior can be circumvented by performing the following procedure:

1. Change the VOLATTR statements for the MVC(s) to be audited to
VOLATTR SERIAL(MVC925) MEDIA(T10000T1) RECTECH(T1A34)
2. Reload the VOLATTR statements using the HSC VOLDEF command.
3. Run VTCS AUDIT against the MVC(s) requiring AUDIT.
4. Change the VOLATTR statements back to the original state.

5. Reload the VOLATTR statements again using the HSC VOLDEF command.
6. Schedule the affected MVC(s) to be **DRAINED**.

Special Considerations

On the VTCS CONFIG GLOBAL statement, there is a RECALWER parameter that specifies whether the VTCS recalls VTVs with read data checks back into the buffer on a recall or drain operation. The default is RECALWER=YES. During the StorageTek T00000A to StorageTek T00000B migration, the customer might want to consider changing this recall with error parameter to RECALWER=NO to avoid possible data check errors from being recalled into the buffer, and then written out to the StorageTek T10000B media in error. They will still have the original MVC with the VTV on it, but cannot get a RECALL of this MVC from a StorageTek T10000A device. The parameter can be permanently changed in CONFIG or temporarily changed via a parameter on the MVCDRAIN.

Conclusion

Oracle's StorageTek T10000 FICON tape drive family delivers industry-leading performance and capacity. As explained, the high performance of the StorageTek T10000 reduces the wall clock time of batch production and backup applications, and the increased capacity lowers the cost of storage. While using existing StorageTek T10000 media, the StorageTek T10000B increases the native cartridge capacity to 1000 GB (1 TB). This increased capacity saves library slots and improves throughput by reducing mount/dismount cycles. Together, these benefits create lasting enterprise value from StorageTek solutions.

Appendix: Reclaim Process

This appendix describes how to reclaim or reuse a cartridge in a StorageTek T10000A tape drive when the cartridge was previously written on a StorageTek T10000B tape drive. *Reclaim* can be described as the process of overwriting from the beginning of tape (BOT), a cartridge that was previously written in a density or format other than the drive version on which reuse is desired. This is not to be confused with the VSM MVC reclaim process.

Note: This reclaim process requires microcode level R1.41.x11 or later for both the StorageTek T10000A tape drives and the StorageTek T10000B tape drives.

To allow a reclaim to occur as a part of OPEN or end-of-volume processing (that is, “on the fly” during job processing), the IBM z/OS system needs to be enabled for tape density changes. This is done in the SYS1.PARMLIB member DEVSUPxxx. To allow reclaims to occur, the VOLNSNS parameter must be specified with a value of YES. The default value for the VOLNSNS parameter is NO, so an installation must update their systems to allow reclaims to occur.

When a cartridge that was last written on a StorageTek T10000B is mounted for output on a StorageTek T10000A drive with the intent of writing from BOT, the z/OS system attempts to verify the correct cartridge has been mounted by validating the VOLSER from the cartridge with the VOLSER that was requested in the JOB’s Job Control Language. The StorageTek T10000A drive cannot read the current contents of the StorageTek T10000B written cartridge; therefore, the attempt to validate labels results in an I/O error of “not capable.” An IECIOS00 error message will be generated, and it will contain the sense data associated with the error. In addition, it will contain the text error description “unsupported format.” Because information about the cartridge is available from the RFID even though the drive cannot read the tape itself, the VOLSER that was last recorded in the VOL1 label on a standard label tape is able to be returned via the sense data.

For native tapes not managed by a VSM, the process of allowing the reclaim to occur varies depending upon whether the installation has a tape management system installed and, if one is installed, on how the tape management software is configured. In addition, the process also depends upon whether the cartridge is being reclaimed as a standard labeled (SL) or nonlabeled (NL) cartridge.

Reclaiming a Cartridge as a Standard Labeled Tape with Direct-Attached Drives

An example process for a direct-attached StorageTek T10000A drive reclaiming a cartridge as an SL tape that was last written on a StorageTek T10000B drive is given in the figure. In this example, a cartridge labeled “INV719” was previously written as an SL tape on a StorageTek T10000B drive. Now the goal is to write on the cartridge using a StorageTek T10000A drive. The operator allows the cartridge to be relabeled for use on a StorageTek T10000A drive with the U response to message IEC704A.

```

09.49.37 JOB08509 ---- TUESDAY, 24 MAR 2009 ----
09.49.37 JOB08509 IRR010I USERID JOANM IS ASSIGNED TO THIS JOB.
09.49.37 JOB08509 ICH700011 JOANM LAST ACCESS AT 09:48:21 ON TUESDAY, MARCH 24, 2009
09.49.37 JOB08509 $HASP373 RECLAIM STARTED - INIT A - CLASS A - SYS MVSD
09.49.37 JOB08509 IEF403I RECLAIM - STARTED - TIME=09.49.37
09.49.37 JOB08509 *IEC501A M 0D88,INV719,SL,NOCOMP,RECLAIM,STEP1,TTA2E.TAPEDATA
09.50.01 JOB08509 IOS000I 0D88,DE,IOE,02,0600,**,RECLAIM 472
472 004910D050205451 2502FF30C0003215 C9D5E5F7F1F90290 4104230028682011
472 UNSUPPORTED FORMAT
09.50.01 JOB08509 IEC512I LBL ERR 0D88, ,NL,INV719,SL,RECLAIM,STEP1,TTA2E.TAPEDATA
09.50.01 JOB08509 *IEC704A L 0D88,INV719,SL,NOCOMP,RECLAIM,STEP1,TTA2E.TAPEDATA
09.50.01 JOB08509 *20 IEC704A REPLY 'VOLSER,OWNER INFORMATION','M'OR'U'
09.50.16 JOB08509 R 20,U
09.50.27 JOB08509 IEC705I TAPE ON 0D88,INV719,SL,NOCOMP,RECLAIM,STEP1,TTA2E.TAPEDATA,MEDIA7
09.50.34 JOB08509 IEC205I SYSUT2,RECLAIM,STEP1,FILESEQ=1, COMPLETE VOLUME LIST, 553
553 DSN=TTA2E.TAPEDATA,VOLS=INV719,TOTALBLOCKS=1

```

Reclaiming a cartridge as SL tape

The z/OS system reports an error of “not capable” with an IOS000I message that contains the sense data for the failing attempt to validate the label. The sense data displayed in the IOS000I message contains the VOLSER of the last VOL1 label written on tape. In the example message shown in the figure, this is the hex EBCDIC code for INV719 (C9D5E5F7F1F9). The z/OS system then displays an IEC512I LBL error message indicating that the cartridge needs to be relabeled, and displays the old VOLSER and the requested VOSLER. The operator must then enter U to the IEC704A message to allow use of the VOLSER reported by the drive. Alternatively, the operator can reply to the IEC704A message with the VOLSER and owner information.

It should be noted that the message sequence shown in the figure will vary slightly if the cartridge is being reclaimed as an NL tape.

On systems that have a tape management system installed, it might be possible to avoid the operator intervention (the need for the operator to reply as shown in the figure) depending upon the capabilities of the tape management software. Most tape management software can be configured to allow the relabeling to occur without the need for an operator response, if the tape management software determines from its own records that the cartridge is a scratch tape. Customers interested in implementing this feature should check the documentation for their particular tape management software or contact their software vendor.



StorageTek T10000A to StorageTek T10000B
Migration: Multiple Virtual Storage Migration
Plan
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