

T10 Suggestions...

This is a list of suggestions that we have compiled highlighting features that, if available, we believe would make using these devices that much better and would make our lives as device clients, easier...

Note: I'm not sure if there are any considerations of VTL's in the T10 standard, but we have added a few suggestion of expanding the Library standards and drive standards to better utilize these devices.

All Devices

- 1) Standardize all SenseKey/ASQ/ASCQ across all different vendors. For example, different vendors may have different SenseKey/ASQ/ASCQ for door open condition and I/E door open condition.
- 2) A standardized command such as ModeSense to give us the error history (count, error codes, and time stamps) of the drive, robotic and/or media.
- 3) Application level Reserve/Release Command. This would be a Reserve/Release command that allows the setting of a key, which would be used to allow other commands to be sent to the device. This would be a way to protect a device that we are trying to exclusively use, from interference by another application on the same initiator.

Library Devices

- 1) Read Element enhancements:
 - a. We would like to see if the spec could be expanded to include if possible, the Medium type (SDLT, LTO-2, LTO-3) of the media in the slot, as well as special case media (Cleaning, WORM), without having to load the media first.
 - b. Can the standard also include Write Protected to the spec, so if the vendor is able to detect this via the barcode scanner or some other method, it could be part of the Storage Element page, and we could find this out before loading it into the drive.
 - c. For the Data Transfer Element page, can it be expanded to show us what type of Medias this drive can write to and Read from?
- 2) Can a Test Unit Ready Not Ready ASC/ASCQ be added to tell of a Door/Open, something has changed, only if a tape was accessed (removed or added from a slot). This way we could only try to re-inventory the library when something truly has changed, not when the user just opened and closed the door.
- 3) Can a Test Unit Ready Not Ready ASC/ASCQ be added to tell of a possible hardware change? This would be a condition that we could search for to detect if a drive was swapped out, removed or inserted...

Tape Devices

- 1) Can a SCSI command be added that could accept a 128 bit (or a variable length key), and a bit mask for standard encryption algorithm so when writing or reading from the drive, this key could be used to Encrypt/Decrypt data. This would help in offloading the costly CPU cycles of encryption/decryption to the tape drive.
- 2) Can a command be added to have a “uniform” way of finding out “**consistently**” if an error is caused by a media or by the drive hardware.
- 3) Some device support allowing the Early Warning size to be set, but can this be made a standard. This would allow us to calculate how much space we will need at the end of a tape and make sure that there will be sufficient space for dumping our data to the tape before running out of space.
- 4) The addition of a Mode Sense call that would have information about a drive that is part of a Library. The Mode Page could let us know the Library Serial Number that this drive is a part of, as well as it’s element address. This could be something that a Library could set on it’s drives by sending a Mode Select for the same page.

VTL’s

- 1) A standardized command to differentiate a SCSI Library from a VTL.
- 2) A standardized command to differentiate a SCSI Tape Drive from a VTL Tape Drive.
- 3) A special set of commands (e.g. the host ID is included in Read/Write command) for VTL that allows multiple concurrent streams to write to a VTL Tape drive.