



Issue:

The continued requirement for back up has driven the growth for both Tape technologies, as well as Virtual Tape Library products. As a result of this, the need to automate the testing of these devices has increased.

Solution:

The SANBlaze storage emulator operating in Initiator mode can act as a tape exerciser. Using built in features such as tape test scripts, custom CDB editor and tape device profiles, the system simplifies test set-up, operation and complexity.

Benefits:

Cost: The SANBlaze storage emulator can replace multiple host/initiator systems, as well as custom developed tape exerciser systems.

Operational Flexibility: Several test scripts have been developed to test tape devices. Hundreds of configurations and tests can be saved and started via script or web interface, with no physical reconfiguration required.

Tape Device Qualification and Performance Testing with SANBlaze Tape Initiator

The SANBlaze emulator in initiator mode can be used to fully qualify existing tape changer devices, using both the standard SCSI command set, and vendor unique CDBs.

SANBlaze has enhanced the product by introducing a significant library of tape oriented commands, built in tape test scripts, and a number of additional features which include:

Tape Device Scripting

The “Key Stroke Recording” scripting interface has been significantly enhanced, such that complex tests can be recorded, then played back against a device under test.

For example, a script can be recorded that:

1. sets a block size for sequential IO to the tape device
2. rewinds the tape
3. while scsi status is good
 - a. writes data to the tape
4. loop to 1

Any built-in tape command can be added to a script, such as “load tape from media changer slot, exchange slots, rewind, read, write, seek to tape mark, etc.”.

Scripts can be set to stop on error, after a certain pass/fail criteria, or run until interrupted by the user.

Custom CDB editor for user defined CDBs

If a command needed for a tape test is not available in the built in list, the custom CDB editor can be used to create the command. Once a command has been created by the user, it will appear in the dropdown list of available commands and will be usable as though it were built in, both from the web based scripting interface and the command line interface.

The following built in commands are integrated into the SANBlaze Initiator software, enabling comprehensive testing of tape devices, tape loaders and disk based tape emulation devices.

Inquiry	MoveMedium
InquiryVPD	Read12
TestUnitReady	Read10
RequestSense	Read6
ModeSense	Read16
ReportLUNs	SetBlockSize64KByte(any size)
SeqRead	SeqWriteFixed
SpaceEOD	SetBlockSizeVariable
Load	Erase
ReadBlockLimits	SeqWrite
ReadPosition	WriteFilemark
Locate	FormatMedium
SpaceFilemark	Write6
SeqReadFixed	Write10
SpaceBlocks	Write12
Unload	Write16
Rewind	WriteSame10
ReadCapacity10	WriteSame16
ReadCapacity16	Stop Unit
	Start Unit

Tape Library Profiles

The SANBlaze system can also be used to emulate Tape library/changer on the target side.

SANBlaze provides several example tape library profiles with the target emulation software, which can fully emulate a tape changer device. For example, a profile of a Storage Tek STK-SL500 and an IBM4560SLX are included.

The built in library profiles can easily be modified using a built in profile editor. For example, if the operator wanted to replace the HP Ultrium tape drive in a tape changer array to an IBM Ultrium device, they could simply edit the profile and make the change.

Devices can also be added and removed from profiles, such that if it was required to prototype a tape changer with four robotic arms, six tape drives and 20 tape slots, this can simply be done by copying a tape library profile and editing it.