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Compatibility Guide

StorNext 4.3.2

Quantum StorNext 4.3.2 Compatibility Guide, 6-67688-03 Rev A, January 2013

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StorNext Metadata Controller (MDC) Basic RAM and Disk Requirements

The minimum amount of RAM and available hard disk space required to run StorNext SNFS and SNSM are presented here. StorNext utilizes database and journal files, and these are stored on the MDC. Consequently, the amount of local disk space that is required increases with the number of data files stored on StorNext file systems. If necessary, upgrade the RAM and local disk storage in the MDC to meet the minimum requirements before installing StorNext.

Note: The RAM requirements are for running StorNext File System and Storage Manager only. Running additional software (including the StorNext client software) requires additional RAM.

No. of File Systems	RAM	File System Disk Space	Storage Manager Disk Space
1–4*	4 GB	4 GB	• For application binaries, log files, and documentation: up to 30GB (depending on system activity)
5–8**	8 GB	6 GB	• For support directories: 3 GB per million files stored

* Two or more CPU cores are recommended for best performance.

** Two or more CPU cores are required for best performance.

StorNext MDC Additional RAM and Disk Requirements for Deduplication and Replication

In order to use the data deduplication and replication features, your system must have the following memory and disk capacity in addition to the base memory and disk capacity required to run StorNext File System and Storage Manager.

Note: Deduplication is supported only on 64-bit operating systems.

Deduplication Repository Configuration	Minimum Additional RAM	Minimum Additional Disk Space Available
Base Deduplication Repository	----	50 MB
Systems Licensed for 0 - 1 TB of Data	1 GB	1 TB
Systems Licensed for 1 - 10 TB of Data	6 GB	10 TB
Systems Licensed for 10 - 50 TB of Data	13 GB	50 TB
Systems Licensed for 50 - 150 TB of Data	28 GB	150 TB

StorNext MDC LAN Requirements

The following LAN requirements must be met before installing StorNext on the MDC:

- A separate, dedicated switched Ethernet LAN is mandatory for the metadata network if 100 Mbit/s or slower networking hardware is used.
- The MDC and all clients must have static IP addresses.
- Verify network connectivity with pings, and also verify entries in the /etc/hosts file. Alternatively, telnet or ssh between machines to verify connectivity.
- If using Gigabit Ethernet, disable jumbo frames and TOE (TCP offload engine).
- The hostname localhost is resolvable on the MDC.
- The hostname localhost on the MDC must resolve to a an IPv4 address on the loopback device.
- The hostname localhost must not resolve to an IPv6 address.
- In cases where gigabit networking hardware is used and maximum StorNext performance is required, a separate, dedicated switched Ethernet LAN is recommended for the StorNext metadata network. If maximum StorNext performance is not required, shared gigabit networking is acceptable.

Note: StorNext does not support file system metadata on the same network as iSCSI, NFS, CIFS, or VLAN data when 100 Mbit/s or slower networking hardware is used.

StorNext MDC Other Requirements

The following requirements must be met before installing StorNext on the MDC:

- The MDC does not have SELinux enabled.
- The following packages must be installed:
  - gcc
  - make
- *kernel-source (for systems running SUSE Linux)
- **kernel-devel (for systems running RedHat Linux)
- Quantum recommends that system clocks are synchronized using NTP for easier debugging, particularly in an HA environment.
- The version of the kernel-source or kernel-devel package must correspond to the version of the booted kernel. In addition, the system must have basic utilities installed such as perl, bash, grep, the Bourne shell, etc. as well as basic libraries. In general, StorNext will not install on a stripped-down installation of Linux. For management servers running Red Hat Enterprise Linux version 5 or 6, before installing SNFS and SNSM you must first install the kernel header files (shipped as the kernel-devel or kernel-devel-smp RPM, depending on your Linux distribution).
- For servers running SUSE Linux Enterprise Server, you must install the first kernel source code (shipped as the kernel-source RPM). StorNext will not operate correctly if these packages are not installed. You can install the kernel header files or kernel source RPMs by using the installation disks for your operating system.

StorNext Upgrade Matrix

Sites running the following StorNext versions may upgrade directly to this release assuming the platform, service pack, architecture (32 or 64-bit), and StorNext component(s) are supported in this release.

- StorNext 4.1.0
- StorNext 4.1.1
- StorNext 4.1.2
- StorNext 4.1.3
- StorNext 4.2.0
- StorNext 4.2.1
- StorNext 4.2.1.0.1
- StorNext 4.2.2
- StorNext 4.2.2.0.1 (appliance only release)
- StorNext 4.3.0
- StorNext 4.3.1
- StorNext 4.3.2-LTO-6

All other versions of StorNext require additional steps to upgrade to this release.

StorNext Discontinued Operating Systems and Service Packs

No operating systems or service packs were dropped from the release

StorNext Components
Supported Operating Systems and Service Packs
(bold indicates a combination new in this release**)**

Operating System	Kernel or Release	Platform	MDC Server[1]	File System SAN Client	Distributed LAN Server G300	File System LAN Client[2]	Storage Manager / SNAPI	Distributed Data Mover	Replication / Dedup Server
Windows Server 2003[5]	R2 SP2	x86 32-bit		✓		✓			
		x86 64-bit	✓	✓	✓[3, 4]	✓			
Windows XP[5]	SP2	x86 32-bit		✓		✓			
		x86 64-bit		✓		✓			
	SP3	x86 32-bit		✓		✓			
		x86 64-bit		✓		✓			
Windows Vista[5]	SP1	x86 32-bit		✓		✓			
		x86 64-bit		✓		✓			
	SP2	x86 32-bit		✓		✓			
		x86 64-bit		✓		✓			
Windows Server 2008[5]	SP1	x86 32-bit		✓		✓			
		x86 64-bit	✓	✓	✓[3, 4]	✓			
	SP2	x86 32-bit		✓		✓			
		x86 64-bit	✓	✓	✓[3, 4]	✓			
	R2	x86 32-bit		✓		✓			
		x86 64-bit	✓	✓	✓[3, 4]	✓			
	R2 SP1	x86 64-bit	✓	✓	✓[3, 4]	✓			
Windows 7[5]		x86 32-bit		✓		✓			
		x86 64-bit		✓		✓			
	SP1	x86 32-bit		✓		✓			
		x86 64-bit		✓		✓			
Windows 8		**x86 64-bit**		✓		✓			
RHEL 5[5 6 7]	2.6.18-164.EL (Update 4)	x86 64-bit	✓	✓	✓	✓	✓	✓	✓
	2.6.18-194.EL (Update 5)	x86 64-bit	✓	✓	✓	✓	✓	✓	✓
	2.6.18-238.EL (Update 6)	x86 64-bit	✓	✓	✓	✓	✓	✓	✓
	2.6.18-274.EL (Update 7)	x86 64-bit	✓	✓	✓	✓	✓	✓	✓
	2.6.18-308.EL (Update 8)	x86 64-bit	✓	✓	✓	✓	✓	✓	✓
RHEL 6[5 6]	2.6.32.71.EL	x86 64-bit	✓	✓	✓	✓	✓	✓	✓
	2.6.32.131.EL (Update 1)	x86 64-bit	✓	✓	✓	✓	✓	✓	✓

[1] High Availability is available on all supported Linux MDC platforms. Platforms that support MDC Servers also can be configured as a name server.

[2] StorNext Distributed LAN clients can be connected to either Distributed LAN Servers or StorNext G300 appliances.

[3] Distributed LAN Server on Windows supports up to 128 Distributed LAN Clients.

[4] Gateway instrumentation is not available for Windows.

[5] RHEL and SLES kernel and Windows service pack levels listed indicate the supported versions. Updates within the same service pack (e.g. security updates) are, in general, supported unless otherwise noted.

[6] The "Xen" virtualization software is not supported.

[7] HBA multipath customers: please verify with your HBA vendor that your current multipath driver is supported for any planned Linux OS version/update/service pack level. If your driver is not supported for your planned Linux OS version/update/service pack, the StorNext client or server may not be functional after your Linux upgrade.

StorNext Components
Supported Operating Systems and Service Packs
(**bold** indicates a combination new in this release)

Operating System	Kernel or Release	Platform	MDC Server[1]	File System SAN Client	Distributed LAN Server G300	File System LAN Client[2]	Storage Manager / SNAPI	Distributed Data Mover	Replication / Dedup Server
	2.6.32.220.EL (Update 2)	x86 64-bit	✓	✓	✓	✓	✓	✓	✓
	2.6.32.279.EL (Update 3)	x86 64-bit	✓	✓	✓	✓	✓	✓	✓
SLES 10[5 6 7 8]	2.6.16.60-0.54.5 (SP3)	x86 32-bit		✓		✓			
	2.6.16.60-0.54.5 (SP3)	x86 64-bit	✓	✓	✓	✓	✓	✓	✓
	2.6.16.60-0.85.1 (SP4)	x86 32-bit		✓		✓			
	2.6.16.60-0.85.1 (SP4)	x86 64-bit	✓	✓	✓	✓	✓	✓	✓
SLES 11[5 6 7 8]	2.6.27.19-5	x86 64-bit		✓		✓			
	2.6.32.12-0 (SP1)	x86 64-bit	✓	✓	✓	✓	✓	✓	✓
	3.0.13-0.27.1 (SP2)	x86 64-bit		✓		✓			
Solaris 10	Any	sparc 64-bit		✓					
	Any	Opteron x86 64-bit		✓		✓			
		Intel x86 64-bit		✓		✓			
IBM AIX	6.1	64-bit Power Architecture		✓					
	7.1	64-bit Power Architecture		✓					
HP-UX	11i v3[9]	Itanium 64-bit		✓					
CentOS[10]	Equivalent supported RHEL5 and RHEL6	x86 64-bit		✓		✓			
Scientific Linux[10]	Equivalent supported RHEL5 and RHEL6	x86 64-bit		✓		✓			
Oracle Linux[10]	Equivalent supported RHEL5 and RHEL6	x86 64-bit		✓		✓			

Operating systems and platforms for which support has been added in this release are shown as **BOLD** in the table.

RHEL and SLES kernel levels are listed indicating which kernel levels were used for the majority of testing. Other kernel levels within the same service pack are in general supported unless otherwise noted.

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[8] A "roll" of a particular digit is not indicative that a new SLES service pack has been declared by Novell. The kernel revisions listed in this document are typically (but not always), the first kernel revision of the service pack.

[9] HPUX 11iv3 requires the "0909 Patch set".

[10] Platform is supported only if the issue can be reproduced on the equivalent Red Hat release. Only the "standard" versions of this platform are supported. "Special" or "optimized" versions are not supported.

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StorNext Client Interoperability	
StorNext SAN Client Version	**Platform**
StorNext 3.0.x and older	Back-revision clients running these StorNext versions are not supported, even during the upgrade process. Clients must be upgraded with MDCs to achieve a compatible back-rev client version.
StorNext 3.1.x	Back-revision clients are not supported, even during the upgrade process. Clients must be upgraded with MDCs to SN 4.3.x.
StorNext 3.5.x	Certain back-revision clients, as follows, are supported: • AIX 5.3 • HPUX 11iv2 • SGI IRIX 6.5.30 • SLES10 Itanium • SLES11 Itanium • SLES10 32-bit • RHEL4 Quantum recommends that clients be upgraded along with the MDC.
StorNext 4.0.x StorNext 4.1.x	Certain back-revision clients, as follows, are supported: RHEL4 Quantum recommends that clients be upgraded along with the MDC.
StorNext 4.2.x	Quantum recommends that clients be upgraded along with the MDC.
StorNext 4.3.x	Quantum recommends that clients be upgraded along with the MDC.

General information on client interoperability:

- The StorNext MDC must be running an equivalent or more recent version of StorNext than the client is running.
- All components (e.g. File System, Storage Manager, etc.) installed on the same machine must be running the same version of StorNext
- The StorNext DDM component must be at the same version at that running on the MDC.

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StorNext Virtual Machine Support

Operating System	Kernel or Release	Platform	File System SAN Client (See Note A)	File System LAN Client (See Note B)
Windows Server 2003 Server 2008 XP Vista 7	All SN supported service packs	x86 32-bit	✓	✓
		x86 64-bit	✓	✓
RHEL5	All SN supported service packs	x86 64-bit	✓	✓
RHEL6	All SN supported service packs	x86 64-bit	✓	✓
SLES 10	All SN supported service packs	x86 32-bit	✓	✓
		x86 64-bit	✓	✓
SLES 11	All SN supported service packs	x86 64-bit	✓	✓

NOTE A: Setting up a SAN client within a virtual machine can be complicated and should be done with great care to avoid data loss.

Guests running StorNext SAN clients have limited cluster functionality due to the use of RDMs to access storage. In particular, snapshots, vMotion, DRS, and fault tolerance are disabled. If these features are required, use DLC clients instead.

To configure StorNext SAN clients in VMware guests, be aware of the following considerations:

- StorNext Data LUNs must be assigned to each StorNext SAN client VM using Raw Device Maps (RDMs) in /Physical Mode/ on a Shared virtual SCSI adapter.
- Never use /Virtual Mode/ RDMs for StorNext LUNs.
- Consult your storage vendor for details on properly configuring the storage for use as VMware vSphere to use raw LUNs as RDMs.
- On each SAN client, generate a raid-strings file by running the command:
  - cvlabel -R > /usr/cvfs/config/raid-strings
  - Then open /usr/cvfs/config/raid-strings in a text editor and change the third column to JBOD for all storage types. This disables StorNext multi-path handling, which is not needed in a guest. The host will handle multi-pathing.

NOTE B: To configure StorNext Distributed LAN Clients in VMware guests, follow the same procedures you would for a physical system. There are no VMware-specific requirements or issues.

Compatibility with other Products

Product	Reference
Xsan to StorNext Compatibility	Please see the Xsan compatibility matrix document for Xsan compatibility with StorNext
SNAPI to StorNext Compatibility	Please see the SNAPI compatibility matrix document for compatibility between SNAPI and StorNext.
StorNext Partial File Retrieval (PFR) to StorNext Compatibility	Please see the PFR compatibility matrix document for compatibility between PFR and StorNext.
Advanced Reporting	Sites running roll-your-own (non-appliance) StorNext are compatible with the following Advanced Reporting versions: • RHEL5: StorNext Advanced Reporting 2.0.4 (1371) • RHEL6: StorNext Advanced Reporting 2.0.4 (1369) StorNext appliances M330, M660 running StorNext 4.3.2 are compatible with StorNext Advanced Reporting 2.0.4 or 2.0.5. StorNext appliance M440 running SN 4.3.2 is compatible with StorNext Advanced Reporting 2.0.5.

StorNext Browser Support

The following browsers are supported with the GUI for this release:

- Firefox versions 4 through 15 (Quantum recommends FF15)
- Internet Explorer versions 7 through 9 (Quantum recommends IE9)
- Chrome version 18

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Quantum Supported Libraries and Tape Drives
(**bold** indicates a combination new in this release)

Vendor Library Family	Libraries	Minimum / Recently Tested Library Firmware Level	Drive Types	Minimum / Recently Tested Drive Firmware Level	Notes
Quantum	Scalar i500	Please see applicable i500 documentation for library and drive firmware recommendations	IBM LTO-2 IBM LTO-3 IBM LTO-3 WORM IBM LTO-4 IBM LTO-4 WORM IBM LTO-5 **IBM LTO-6** HP LTO-4 HP LTO-5 IBM LTO-5 **HP LTO-6**		
	Scalar i6000 / i2000	Please see i6000 / i2000 documentation for library and drive firmware recommendations	IBM LTO-1 FC and SCSI IBM LTO-2 FC and SCSI IBM LTO-3 (2G and 4G IBM LTO-3 WORM IBM LTO-4 4G IBM LTO-4 WORM IBM LTO-5 **IBM LTO-6** HP LTO-3 2G HP LTO-3 4G HP LTO-3 WORM HP LTO-4 4G HP LTO-4 WORM HP LTO-5 **HP LTO-6** Quantum DLT-S4 Quantum SDLT 320 SCSI Quantum SDLT 600 FC		
	Scalar i80 / i40	Please see i80 / i40 documentation for library and drive firmware recommendations	HP LTO-4 HP LTO-5		
	Scalar 24	Please see Scalar 24 documentation for library and drive firmware recommendations	IBM LTO-1 IBM LTO-2 IBM LTO-3 IBM LTO-4		Not including WORM
	Scalar 50	Please see Scalar 50 documentation for library and drive firmware recommendations	HP LTO-4		

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Vendor Library Family	Libraries	Minimum / Recently Tested Library Firmware Level	Drive Types	Minimum / Recently Tested Drive Firmware Level	Notes
	Scalar 100	Please see Scalar 100 documentation for library and drive firmware recommendations	IBM LTO-1 IBM LTO-2 IBM LTO-3 AIT-2		Not including WORM NOTE: 2.10.0013 firmware not to be used.
	Scalar 1000	Please see Scalar 1000 documentation for library and drive firmware recommendations	IBM LTO-2 IBM 3590B1A AIT-1		Must use SDLC[11] / DAS, SDLC [11]/SCSI Target Mode or Native SCSI
	Scalar 10000	Please see Scalar 10000 documentation for library and drive firmware recommendations	IBM LTO-1 IBM LTO-2 IBM LTO-3 IBM LTO-4 IBM LTO-3 WORM AIT-2 AIT-2 WORM IBM 3592		Must use SDLC [11] / DAS, SDLC [11] / SCSI Target Mode or Native SCSI
	PX500	Please see PX500 documentation for library and drive firmware recommendations	HP LTO-3		Not including WORM 30.0
	PX720	Please see PX700 documentation for library and drive firmware recommendations	HP LTO-2 HP LTO-3 DLT-S4		Not including WORM
	DXI 7500	Please see DXI 7500 documentation for firmware recommendations	Supported i2k emulation modes include: DLT7000, SDLT320, SDLT600, DLT-S4, Quantum/Certance LTO-2, 3, HP LTO-1, 2, 3, 4, IBM LTO-1, 2, 3, 4		
	DXI 8500	Please see DXI 7500 documentation for firmware recommendations	Supported i2k emulation modes include: DLT7000, SDLT320, SDLT600, DLT-S4, Quantum/Certance LTO-2, 3, HP LTO-1, 2, 3, 4, IBM LTO-1, 2, 3, 4		

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[11] Scalar Disitrbuted Library Controller has been tested up to version 2.8

Non-Quantum Supported Libraries and Tape Drives

(bold indicates a new combination)

Vendor Library Family	Libraries	Minimum / Recently Tested Library Firmware Level	Drive Types	Minimum / Recently Tested Drive Firmware Level	Notes
Dell	PV136T	Minimum: 3.11 Recently Tested: Unavailable	IBM LTO-2 IBM LTO-3 IBM LTO-4		
	PowerVault ML6000 (6010, 6020, 6030)	Minimum: 585G.GS003 Recently Tested: N / A	IBM LTO-3 IBM LTO-4 IBM LTO-5 **IBM LTO-6**	Minimum: 93G6 Minimum: A232 Minimum: A420	LTO-3, LTO-4, LTO-5 WORM capability supported
HP	ESL E Series	Minimum: 4.10 Recently Tested: 7.50	HP LTO-3 HP LTO-3 WORM HP LTO-4 HP LTO-4 WORM HP LTO-5 HP LTO-5 WORM	Recently tested: L68W Recently tested: I25W	
	MSL 6000	Minimum: 5.07 Recently Tested: Unavailable	HP LTO-2 HP LTO-3 HP LTO-3 WORM HP LTO-4	Recently tested: L67W	MSL 6000 does not support HP LTO-5
	MSL G3 Series (2024/4048/8096)	Minimum 2024: 0370 (3.70) Minimum 4048: 0600 (6.00), Recently tested: 7.20 Minimum 8096: 0850 (8.50)	HP LTO-2 HP LTO-3 HP LTO-3 WORM HP LTO-4 HP LTO-4 WORM HP LTO-5 **HP LTO-6**		HP LTO-5 WORM validation was not successful in SN 4.x testing and is not supported
	EML E-Series	Minimum: 1070 Recently Tested: 1395	HP LTO-3 HP LTO-4 LTO-4 WORM HP LTO-5	Recently tested: I25S	HP LTO-5 WORM validation was not successful in SN 4.x testing and is not supported
	ESL G3	Minimum: Recently Tested: 620H	HP LTO-4 4G HP LTO-4 WORM HP LTO-5 **HP LTO-6**	Recently tested: H63W Recently tested: I3FW	LTO-3 drives are not supported on the ESL G3 library
IBM	TS3500	Minimum: 7422 Recently Tested: A420	IBM LTO-2 IBM LTO-3 IBM LTO-4 IBM LTO-5 IBM 3592 (J1A and E05) IBM TS1120 (E05) IBM TS1140	Minimum: 93GE Minimum: A239 Minimum: A6S0 Minimum: D3I3_642 for TS1140 with TS3500	Same as IBM3592 E05

Non-Quantum Supported Libraries and Tape Drives
(bold indicates a new combination)

Vendor Library Family	Libraries	Minimum / Recently Tested Library Firmware Level	Drive Types	Minimum / Recently Tested Drive Firmware Level	Notes
Oracle SCSI/FC Libraries	TS3310	Minimum: 587G.GS003 Recently Tested: N / A	IBM LTO-3 IBM LTO-4 IBM LTO-5 **IBM LTO-6**	Minimum: 93GE Minimum: A239 Minimum: A6S0	
	L180/L700/L1400	Minimum: 3.18.02 Recently Tested: Unavailable	T9840C T9840D T10000A[12] T10000B[12] T10000C[12, 13] HP LTO-3 HP LTO-4 IBM LTO-3 IBM LTO-4	Minimum: 1.40 Minimum: 1.40	
	SL3000	Minimum: 2.35 LTO-5 requires minimum 2.35 Recently Tested: Unavailable	T9840C T9840D T10000A[12] T10000B[12] T10000C[12, 13] HP LTO-3 HP LTO-4 HP LTO-5 IBM LTO-3 IBM LTO-4 IBM LTO-5	Minimum: 1.40 Minimum: 1.40 Recently tested: I2DS	
	SL500	Minimum: 1373 LTO-5 requires minimum 1395 Recently Tested: Unavailable	HP LTO-3 HP LTO-4 HP LTO-5 IBM LTO-3 IBM LTO-4 IBM LTO-5	Recently tested: I2DS	
	9740	Minimum: 2000 Recently Tested: Unavailable	Sun/STK 9840		Obsolete
Oracle ACSLS 7.3 ACSLS 7.3.1 ACSLS 8.0.x[14]	L180/L700/L1400	Minimum: 3.18.02 Recently tested (L700): 3.18	T9840C T9840D T10000A[12] T10000B[12]	Minimum: 1.40 Minimum: 1.40	

[12] When using T10000 drives, the STK library parameter "Fastload" must be set to "OFF".

[13] When using a T10000 Rev C drive with ACSLS 8.0.x, please assure that your cleaning cartridges are suppord in that ACSLS release. Quantum has found a case where a cleaning cartridge isn't recognized by ACSLS 8.0.x and reports incorrect media type in the StorNext GUI. This report of incorrect media type does not prevent the cleaning cartridge from being successfully used, but can cause operator confusion. ACSLS 8.1.x corrects the issue.

[14] The Oracle FC and ACSLS sections have been modified to include drive and library permutations that are "paper certified" based on testing that has been performed and validated by Sun/STK.

Non-Quantum Supported Libraries and Tape Drives

(bold indicates a new combination)

Vendor Library Family	Libraries	Minimum / Recently Tested Library Firmware Level	Drive Types	Minimum / Recently Tested Drive Firmware Level	Notes
ACSLS 8.1.x			T10000C[12, 13] HP LTO-3 HP LTO-4 IBM LTO-3 IBM LTO-4	Recently tested: L6CS	
	SL3000	Minimum: 2.35 LTO-5 requires minimum 2.35 Recently Tested: 3.60	T9840C T9840D T10000A[12] T10000B[12] T10000C[12, 13] HP LTO-3 HP LTO-4 HP LTO-5 IBM LTO-3 IBM LTO-4 IBM LTO-5	 Minimum: 1.40 Minimum: 1.40 Recently tested: 1.44.210 Recently tested: 1.53.311 Recently tested: I2DS	 Requires minimum ACSLS 7.3.1 Requires minimum ACSLS 7.3.1
	SL500	Minimum: 1373 LTO-5 requires minimum 1395 Recently Tested: Unavailable	HP LTO-3 HP LTO-4 HP LTO-5 IBM LTO-3 IBM LTO-4 IBM LTO-5	 Recently tested: I2DS	 Requires minimum ACSLS 7.3.1 Requires minimum ACSLS 7.3.1
	SL8500	Minimum: 4.14 LTO-5 requires minimum 6.02 Recently Tested: 7.05	T9840C T9840D T10000A[12] T10000B[12] T10000C[12, 13] HP LTO-3 HP LTO-4 HP LTO-5 IBM LTO-3 IBM LTO-4 IBM LTO-5	 Minimum: 1.40 Minimum: 1.40 Recently tested: 1.44 Recently tested: 1.53.311 Recently tested: I2DS	 Requires minimum ACSLS 7.3.1 Requires minimum ACSLS 7.3.1
Qualstar	XLS	Minimum: 0880 Recently Tested: Unavailable	IBM LTO-3 IBM LTO-4 IBM LTO-5		

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(bold indicates a new combination)

Vendor Library Family	Libraries	Minimum / Recently Tested Library Firmware Level	Drive Types	Minimum / Recently Tested Drive Firmware Level	Notes
Sony	Petasite CSM-200	Minimum: 6.30 Recently Tested: Unavailable	IBM LTO-4 drive (T1600)		
Spectra Logic	T-Series (T50e, T120, T200, T380, T680, T950, and T-Finity)	Minimum: Unavailable Recently Tested: 2000	LTO-3 LTO-4 LTO-5 IBM TS1140	Vendor supported: 93G0 Recently tested: 97F9 Recently tested: B170 Recently tested: 3524	See Bulletin 46 Library firmware is known as BlueScale 11. Both L700 emulation and Native mode are supported In L700 emulation mode, LTO-5 drives report as LTO-4, limiting the capacity of the media.