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StorNext®

Compatibility Guide

(applies to StorNext 5.3.0 through StorNext 6.3.1)
6-68043-02, Rev. YA

Quantum 6-68043-02 Rev. YA StorNext 6 Compatibility Guide, November 2019

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1.0 StorNext Requirements

The following requirements must be met before installing StorNext.

- Security-Enhanced Linux (SELinux) is disabled.
- Quantum requires that system clocks be synchronized for proper functionality and recommends that NTP be used to ensure clocks remain synchronized across all nodes.
- The following packages must be installed:
  - gcc
  - make
- kernel-source (for systems running SUSE Linux)
- kernel-devel (for systems running Red Hat Linux)

Note: 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, etc. as well as basic libraries. In general, StorNext will not install on a stripped-down installation of Linux.

1.1 Terminology

Acronyms used within the document:

Acronym	Description
APFO	Advanced Path Failover
DDM	Distributed Data Mover
DLC [1]	Distributed LAN Client
DLS [2] [3]	Distributed LAN Server / Gateway
FX	StorNext FX Client
HA [4]	High Availability
LTFS	Linear Tape File System
LTS	Long Term Support (Ubuntu)
MDC	Meta-data Controller
RHEL	Red Hat Enterprise Linux
SLES	SuSE Linux Enterprise Server
SC	File System SAN Client
SN	StorNext
SNFS	StorNext File System
SNSM	StorNext Storage Manager
XWD	Xcellis Workflow Director
XWE	Xcellis Workflow Extender

2.0 System Requirements for Quantum StorNext Metadata Controllers

- StorNext 6 shared file system requires 3GB of memory.

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[1] StorNext Distributed LAN clients can be connected to either Distributed LAN Servers or StorNext G3xx or Xcellis Workflow Extenders.
[2] Distributed LAN Server on Windows supports up to 128 Distributed LAN Clients.
[3] Gateway instrumentation is not available for Windows.
[4] HA is not supported on G300 and Xcellis Workflow Extender Gateway Appliances. HA is supported on all other StorNext Appliances and MDCs.

- StorNext 6 managed file systems require 7GB of memory for each file system.

- StorNext MDC nodes require a minimum of 16 GB each.

- Running larger Storage Manager deployments requires additional memory for the Storage Manager database, growing up to 48 GB for systems as the number of managed files approaches 1 Billion.

- Additionally, Quantum recommends another 8 GB of RAM on the MDC node(s) for each file system to be used for buffer cache, to take advantage of the performance improvements in StorNext 6.

- For planning purposes, 10B unmanaged and 1.4B managed file counts are a guideline but are not an absolute or enforced limit. These values reflect our current guidelines for configuring a StorNext solution the number of files and the performance of your solution may vary.

- LTFS StorNext Support and Memory Requirements

  o StorNext Storage Manager support for LTO-8 tape devices with Linear Tape File System (LTFS) requires StorNext 6.0.6 or later.

  o Using LTO-7 tape devices and LTO M8 media with Linear Tape File System is not supported.

  o Support for LTO-7 M8 media with LTFS requires StorNext 6.2.0 (or later).

  o Reading and writing LTFS tape is slower than ANTF.

      ▪ Trade-off performance for vendor independence.

      ▪ StorNext performance is on par with any other implementation of LTFS.

  o For any MDC or any DDM client running movers and using LTFS there is extra memory needed.

  o LTFS will utilize more memory than ANTF. Each time a tape is opened, the full directory structure is pulled into memory. Thus, a potential significant amount of memory is required on top of the normal StorNext requirements.

  o For StorNext, for each file on a tape, there is an associated Object file that contains specific path information. Thus the #'s listed need to be doubled. Running with StorNext, the formula from the site would actually be drives x million files x 2 +1.

  o Example:

      ▪ Customer has 2 million files written to an LTFS tape. Each time that tape is open the minimum amount of memory required is 2 * 2 + 1 = 5 GB of memory.

      ▪ If on top of this one has 5 tape drives and the potential of 2 million files on each tape the minimum amount of memory required would be 5 * 2 * 2 + 1 = 21GB.

3.0   StorNext and StorNext FX Client RAM, Disk and CPU Requirements

To install and run the StorNext or StorNext FX client software, the system must meet the following minimum hardware requirements.

For SAN (FC-attached) clients or LAN clients:
- 1 GB RAM
- 500 MB available hard disk space

For SAN clients acting as a Gateway server:
- 2 GB RAM
- 500 MB available hard disk space

Note: Gateway servers may require additional RAM depending on the number of file systems, LAN clients, and NICs used. See "Gateway Server Memory Tuning" in the StorNext User's Guide for Gateway server memory tuning guidelines.

4.0   StorNext and StorNext FX Client File System Buffer Cache

See StorNext File System Buffer Cache.

5.0   StorNext Software Upgrade Matrix

Sites running the following StorNext versions may upgrade directly to this release assuming the platform, service pack, architecture (x86 and compatible and Intel 64 and compatible), and StorNext component(s) are supported in this release.

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

Customers who remain current can generally upgrade to the latest release in a single update or upgrade. Customers who fall behind on updates or upgrades require more complex procedures and should contact Quantum Professional Services.

<u>**Important Notes**</u>

- ☐   If your system is running StorNext 5.4.0.3 with Storage Manager, then you must read and execute the instructions in Product Alert Number 48 when upgrading to later versions of StorNext.

- ☐   Your system must be at StorNext 5.3.0 (or later) to upgrade directly to StorNext 6.0.6.1.

- ☐   Your system must be at StorNext 5.4.0 (or later) to upgrade directly to StorNext 6.2.x.

- ☐   Windows MDC that are configured with small inodes and want to use large inodes feature, cannot be upgraded. For large inodes support a Linux MDC must be used.

- ☐   StorNext 6.x does not support M330 appliances.

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StorNext Software Supported Upgrades / Updates																						
MDCs at StorNext Release…	StorNext 5.3.0	StorNext 5.3.1	StorNext 5.3.1.1	StorNext 5.3.2.1	StorNext 5.4.0.1	StorNext 5.4.0.2	StorNext 5.4.0.3	StorNext 5.4.0.4	StorNext 5.4.1	StorNext 5.4.1.1	StorNext 6.0	StorNext 6.0.1	StorNext 6.0.1.1	StorNext 6.0.5	StorNext 6.0.5.1	StorNext 6.0.6	StorNext 6.0.6.1	StorNext 6.1.0	StorNext 6.1.1	StorNext 6.2.0	StorNext 6.2.1	StorNext 6.3.0
Can go to StorNext Release																						
StorNext 6.0.6.1	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓						
StorNext 6.1.1					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
StorNext 6.2.0																						
StorNext 6.2.1					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
StorNext 6.3.0					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
StorNext 6.3.1					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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6.0   StorNext Appliance Upgrade Matrix

StorNext Appliances at StorNext Release…	StorNext 5.3.0	StorNext 5.3.1	StorNext 5.3.1.1	StorNext 5.3.2.1	StorNext 5.4.0.1	StorNext 5.4.0.2	StorNext 5.4.0.3	StorNext 5.4.0.4	StorNext 5.4.1	StorNext 6.0	StorNext 6.0.1	StorNext 6.0.1.1	StorNext 6.0.5	StorNext 6.0.5.1	StorNext 6.0.6	StorNext 6.0.6.1	StorNext 6.1.0	StorNext 6.1.1	StorNext 6.2.0	StorNext 6.2.1	StorNext 6.3.0
…Can upgrade / update to StorNext Release																					
StorNext 6.0.6.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
StorNext 6.1.1					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
StorNext 6.2.0																					
StorNext 6.2.1					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
StorNext 6.3.0					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
StorNext 6.3.1					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table title: **Quantum Appliance Supported Upgrades / Updates**

7.0   Supported Operating Systems and Platforms

☐ Windows Service Pack levels that are listed, indicate the supported versions. "Dot" releases, for example Windows 8.1, are distinct and not supported unless called out. RedHat Enterprise Linux is specified at the update level. Unless otherwise noted, kernel releases up to and including the release listed in this document is supported. Those beyond the kernel version listed are not supported. SuSE Enterprise Linux is specified at the Service Pack level. Unless otherwise noted, kernel releases up to and including the release listed in this document is supported. Those beyond the kernel version listed are not supported. Debian support is specified at the level of X.Y release levels. Ubuntu support is specified at the level of X.Y.Z release levels.

☐ HA and GUI are not supported on G300 and Xcellis Workflow Extender Gateway Appliances. HA and GUI are supported on all other StorNext Appliances and MDCs. Only 64-bit platforms are supported.

☐ StorNext does not install or start on a system today that has Red Hat Security-Linux (SELinux) enabled. There are checks in several configuration files and daemons that prevent the installation and use of StorNext with Red Hat Secure Linux (SELinux). There are no plans to add support for Red Hat Secure Linux (SELinux) currently.

Windows Clients							
Windows 7	**SP1**						
Windows 8	**Base**						
Windows 8.1	**Base**						
Windows 10	**Base - Windows 10 Creator's Update supported with StorNext 6.x (or later)**						
StorNext Releases	**MDC**	**SNSM**	**DDM**	**DLS**	**SAN**	**DLC**	**FX**
5.3.*					✓	✓	✓
5.4.*					✓	✓	✓
6.*					✓	✓	✓

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Windows MDC Servers							
Windows Server 2008	R2 SP1						
Windows Server 2012	Base, R2						
StorNext Releases	**MDC**	**SNSM**	**DDM**	**DLS**	**SAN**	**DLC**	**FX**
5.3.*	✓			✓	✓	✓	✓
5.4.*	✓			✓	✓	✓	✓
6.*	✓			✓	✓	✓	✓

Windows Server 2016	Base						
StorNext Releases	**MDC**	**SNSM**	**DDM**	**DLS**	**SAN**	**DLC**	**FX**
6.0.x					✓	✓	✓
6.1.x					✓	✓	✓
6.2.x	✓				✓	✓	✓
6.3.x	✓				✓	✓	✓

Windows Server 2019	Base						
StorNext Releases	**MDC**	**SNSM**	**DDM**	**DLS**	**SAN**	**DLC**	**FX**
6.0.x							
6.1.x							
6.2.x							
6.3.x	✓			✓	✓	✓	✓

Red Hat Servers & Clients							
RedHat 6	Update 6 – Kernel 2.6.32-504.EL						
StorNext Releases	**MDC**	**SNSM**	**DDM**	**DLS**	**SAN**	**DLC**	**FX**
5.3.*	✓	✓	✓	✓	✓	✓	✓
5.4.*	✓	✓	✓	✓	✓	✓	✓
6.*	✓	✓	✓	✓	✓	✓	✓

Red Hat 6	Update 7 – Kernel 2.6.32-573.EL						
StorNext Releases	**MDC**	**SNSM**	**DDM**	**DLS**	**SAN**	**DLC**	**FX**
5.3.*							
5.4.*	✓	✓	✓	✓	✓	✓	✓
6.*	✓	✓	✓	✓	✓	✓	✓

Red Hat 6	Update 8 – Kernel 2.6.32-642.EL						
StorNext Releases	**MDC**	**SNSM**	**DDM**	**DLS**	**SAN**	**DLC**	**FX**
6.*	✓	✓	✓	✓	✓	✓	✓

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Red Hat 6 CentOS 6	**Update 9 – Kernel 2.6.32-696.30.1**

Note: StorNext 6.0.6.1 has been successfully tested with Red Hat EL and CentOS 6 update 9. Support for this distribution requires using an updated kernel which includes the fixes necessary to correct *Spectre* and *Meltdown* security vulnerabilities 1, 2 and 3.

StorNext 6.0.6.1 does not work with Red Hat EL and CentOS 7 update 5.

If you are an administrator of a non-StorNext Appliance system, then you must be careful when upgrading a Red Hat EL and CentOS operating system. You must only upgrade to levels supported in this document.

StorNext Releases	MDC	SNSM	DDM	DLS	SAN	DLC	FX
6.*	✓	✓	✓		✓	✓	✓

Red Hat 6 CentOS 6	**Update 10 – Kernel 2.6.32-754.12.1**

StorNext Releases	MDC	SNSM	DDM	DLS	SAN	DLC	FX
6.*	✓	✓	✓	✓	✓	✓	✓

Red Hat 7	**Base – Kernel 3.10.0-123.EL** **Update 1 – Kernel 3.10.0-229.EL**

StorNext Releases	MDC	SNSM	DDM	DLS	SAN	DLC	FX
5.3.*	✓	✓	✓		✓	✓	✓
5.4.*	✓	✓	✓		✓	✓	✓
6.*	✓	✓	✓	✓	✓	✓	✓

Red Hat 7	**Update 2 – Kernel 3.10.0-327.EL**

StorNext Releases	MDC	SNSM	DDM	DLS	SAN	DLC	FX
5.3.*							
5.4.*					✓	✓	✓
6.*	✓	✓	✓	✓	✓	✓	✓

Red Hat 7	**Update 3 – Kernel 3.10.0-514.EL**

StorNext Releases	MDC	SNSM	DDM	DLS	SAN	DLC	FX
6.*	✓	✓	✓	✓	✓	✓	✓

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Red Hat and CentOS 7	Update 4 – Kernel for 6.0.6.1 - 3.10.0-693.2.2

StorNext 6.0.6.1 has been successfully tested with Red Hat EL and CentOS 7 update 4. Support for this distribution requires using the updated kernel, which includes the fixes necessary to correct *Spectre* and *Meltdown* security vulnerabilities 1, 2 and 3.

StorNext 6.0.6.1 does not work with Red Hat EL and CentOS 7 update 5.

If you are an administrator of a non-StorNext Appliance system, then you must be careful when upgrading a Red Hat EL and CentOS operating system. You must only upgrade to levels supported in this document.

StorNext Releases	MDC	SNSM	DDM	DLS	SAN	DLC	FX
6.0.6.1	✓	✓	✓		✓	✓	✓
6.1.x	✓	✓	✓	✓	✓	✓	✓
6.2.x	✓	✓	✓	✓	✓	✓	✓
6.3.x	✓	✓	✓	✓	✓	✓	✓

Red Hat 7 CentOS 7	Update 5 – Kernel 3.10.0-862.11.6

StorNext Releases	MDC	SNSM	DDM	DLS	SAN	DLC	FX
StorNext 6.*	✓	✓	✓	✓	✓	✓	✓

Red Hat 7 CentOS 7	Update 6 – Kernel 3.10.0-957.21.2

StorNext Releases	MDC	SNSM	DDM	DLS	SAN	DLC	FX
StorNext 6.*					✓	✓	✓

Red Hat 7 CentOS 7	Update 7 – Kernel 3.10.0-1062.e17

StorNext Releases	MDC	SNSM	DDM	DLS	SAN	DLC	FX
StorNext 6.3.1					✓	✓	✓

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SUSE SLES Servers & Clients							
SUSE SLES 11	**SP2 – Kernel 3.0.13-0.27**						
	SP3 – Kernel 3.0.76-0.11						
StorNext Releases	**MDC**	**SNSM**	**DDM**	**DLS**	**SAN**	**DLC**	**FX**
5.3.*	✓	✓	✓	✓	✓	✓	✓
5.4.*	✓	✓	✓	✓	✓	✓	✓
6.0.x	✓	✓	✓	✓	✓	✓	✓
6.1.x	✓	✓	✓	✓	✓	✓	✓
6.2.x					✓	✓	✓
6.3.x					✓	✓	✓

SUSE SLES 11	**SP4 – Kernel 3.0.101-63**						
StorNext Releases	**MDC**	**SNSM**	**DDM**	**DLS**	**SAN**	**DLC**	**FX**
5.0							
5.3.0							
5.3.*	✓	✓	✓	✓	✓	✓	✓
5.4.0.*	✓	✓	✓	✓	✓	✓	✓
6.0.x	✓	✓	✓	✓	✓	✓	✓
6.1.x	✓	✓	✓	✓	✓	✓	✓
6.2.x					✓	✓	✓
6.3.x					✓	✓	✓

SUSE SLES 12	**Base – Kernel 3.12.28-4**						
StorNext Releases	**MDC**	**SNSM**	**DDM**	**DLS**	**SAN**	**DLC**	**FX**
5.3.0					✓	✓	✓
5.3.1.x					✓	✓	✓
5.3.2.x					✓	✓	✓
5.4.0.*	✓	✓	✓		✓	✓	✓
6.0.x	✓	✓	✓		✓	✓	✓
6.1.x	✓	✓	✓		✓	✓	✓
6.2.x					✓	✓	✓
6.3.x					✓	✓	✓

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SUSE SLES 12	SP1 – Kernel 3.12.49.11						
StorNext Releases	**MDC**	**SNSM**	**DDM**	**DLS**	**SAN**	**DLC**	**FX**
5.4.0.*	✓	✓	✓		✓	✓	✓
6.0.x	✓	✓	✓		✓	✓	✓
6.1.x	✓	✓	✓		✓	✓	✓
6.2.x					✓	✓	✓
6.3.x					✓	✓	✓

Miscellaneous Clients Only

Debian	7.0, 7.1, 7.2 and 7.8 only – Kernel 3.16.0-4		
StorNext Releases	**SAN**	**DLC**	**FX**
5.3*	✓	✓	
5.4*	✓	✓	
6.*	✓	✓	

Debian	8.11 – Kernel 3.16.0-6		
StorNext Releases	**SAN**	**DLC**	**FX**
6.2.x	✓	✓	
6.3.x	✓	✓	

Debian	9.4 – Kernel 4.9.82-1+deb9u3		
StorNext Releases	**SAN**	**DLC**	**FX**
6.3.1	✓	✓	✓

Oracle Solaris	10, 11, 11.1, 11.2 and 11.3		
StorNext Releases	**SAN**	**DLC**	**FX**
6.0.x	5.4.0.1	5.4.0.1	
6.1.x and later			

IBM AIX	7.1		
StorNext Releases	**SAN**	**DLC**	**FX**
6.0.x	5.4.0.1		
6.1.x and later			

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HPE HP-UX	11i version 3		
StorNext Releases	**SAN**	**DLC**	**FX**
6.0.x	5.4.0.1		
6.1.x and later			

Scientific Linux	Red Hat 7 based versions		
StorNext Releases	**SAN**	**DLC**	**FX**
5.0			
5.3*	✓	✓	
5.4*	✓	✓	
6.*	✓	✓	

Oracle OEL	Red Hat 6 equivalent		
StorNext Releases	**SAN**	**DLC**	**FX**
5.0	✓	✓	
5.3*	✓	✓	
5.4*	✓	✓	
6.*	✓	✓	

Oracle OEL	Red Hat 7 equivalent		
StorNext Releases	**SAN**	**DLC**	**FX**
5.0			
5.3*	✓	✓	
5.4*	✓	✓	
6.*	✓	✓	

Ubuntu Linux	14.04.0, 14.04.1 LTS versions, 14.04.2 LTS versions		
StorNext Releases	**SAN**	**DLC**	**FX**
5.3*	✓	✓	
5.4*	✓	✓	
6.*	✓	✓	

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Ubuntu Linux	16.04.0 LTS version - Kernel 4.4		
StorNext Releases	**SAN**	**DLC**	**FX**
6.*	✓	✓	

Ubuntu Linux	16.04.2 LTS version – Kernel 4.8 16.04.3 LTS version – Kernel 4.10 16.04.4 LTS version – Kernel 4.13		
StorNext Releases	**SAN**	**DLC**	**FX**
6.2.x	✓	✓	
6.3.x	✓	✓	

Ubuntu Linux	18.04 LTS version – Kernel 4.15 18.04.2 LTS version – Kernel 4.18		
StorNext Releases	**SAN**	**DLC**	**FX**
6.2.x	✓	✓	
6.3.x	✓	✓	

8.0   StorNext Client Interoperability

In general back-revision clients are supported for the interval of time that is required to upgrade a configuration; with the assumption that once the configuration process is complete, all clients would be at the same level.

The following table describes back-revision clients that are supported with the StorNext 6.0.x releases.

StorNext Client Interoperability	
StorNext SAN Client Version	**Platform**
StorNext 5 Release 5.x	Quantum recommends that clients be upgraded along with the MDC.
StorNext 6 Release 6.x	Quantum recommends that clients be upgraded along with the MDC.

Important Notes

☐   If a StorNext version is not listed, it is not supported as a back-revision client, even during the upgrade process.

☐   The StorNext SAN or Distributed LAN client's software installed into a client may be a supported earlier version, or the same version as the MDC/appliance. For example, StorNext 5.4 SAN or DLC client can be used with a StorNext 6.1 MDC/appliance.

☐   The use of StorNext SAN or Distributed LAN client software that is newer than the version installed onto an MDC/appliance is not supported. For example, StorNext 6.1 SAN or DLC client cannot be used with a StorNext 6.0 MDC/appliance.

☐   Some StorNext 6x features, such as file system auditing, can be used with StorNext 5 Linux or Windows clients. Refer to the StorNext 6 User's Guide for additional details.

 All core software components (file system and Storage Manager) installed on the same MDC/appliance must be the same version of StorNext.

 Xcellis Workflow Extenders, G3xx gateways, Distributed Data Movers and Distributed LAN client gateways must use the same version of StorNext that is installed on the MDC/appliance.

9.0 StorNext Virtual Machine Support

StorNext supports SAN client and DLC clients running within VMware virtual machines where the operating system the client is running on is Linux or Windows. Only 64-bit platforms are supported. The following table shows general compatibility.

Operating System	Kernel or Release	File System SAN Client (*See Note A*)	File System LAN Client (*See Note B*)
Windows Server 2008 Windows Server 2012 Windows 7 Windows 8, 8.1 Windows 10	All SN supported service packs in the supported operating systems and platforms table.	✓	✓
RHEL 6.x	All SN supported service packs in the supported operating systems and platforms table.	✓	✓
RHEL 7.x	All SN supported service packs in the supported operating systems and platforms table.	✓	✓
SLES 11.x	All SN supported service packs in the supported operating systems and platforms table.	✓	✓
SLES 12.x	All SN supported service packs in the supported operating systems and platforms table.	✓	✓

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

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□ 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.

10.0 General Compatibility with other Products

StorNext Partial File Retrieval (PFR)			
Partial File Retrieval Version	**StorNext 5 Release 5.3.x, 5.4.x**	**StorNext 6 Release 6.0.x through 6.1.x**	**StorNext 6 Release 6.2.x, 6.3.x**
1.2	Yes	Yes	No

Notes: For PFR 1.0.2 and earlier only, StorNext Partial File Retrieval utilizes the StorNext API (SNAPI) 2.0.x component. PFR 1.1 and above use Web Services which are included in StorNext 4.2 and above.

StorNext API (SNAPI)				
SNAPI 2.0.x (Server Side)	**RHEL6 & Appliance**	**RHEL7 & Appliance**	**SLES11**	**SLES12**
StorNext 5.3.x	2.0.3	2.0.3	2.0.3	No
StorNext 5.4.x	2.0.3	2.0.3	2.0.3	2.0.3
StorNext 6.0.x	2.0.3	2.0.3	2.0.3	No
StorNext 6.1.x	2.0.3	2.0.3	2.0.3	2.0.3
StorNext 6.2.x	No	No	No	No
StorNext 6.3.x	No	No	No	No

Notes:

StorNext 6.0.0 and StorNext 6.0.5 includes StorNext Application Programming (SNAPI) version 2.0.3 to ensure StorNext Storage Manager interoperability with Quantum AEL and Scalar libraries, as well as ongoing support for ISV and end-user applications.

Beginning with StorNext 4.x, StorNext web services replaced SNAPI. Web services provides all the functionality of SNAPI, plus additional capabilities, and is included with StorNext at no additional charge.

StorNext Web Services enables you to run third-party application program interfaces (APIs) with StorNext. To view the latest commands supported by the StorNext Web Services, refer to the StorNext 6 Web Services Guide.

SNAPI server supports back-level and forward-level connectivity to certain SNAPI client versions, per the table below.

SNAPI 2.0.x (Client Side) Compatibility with SNAPI			
	SNAPI 2.0.1 Client	**SNAPI 2.0.2 Client**	**SNAPI 2.0.3 Client**
SNAPI 2.0.1 Server	Yes	Yes	Yes
SNAPI 2.0.2 Server	Yes	Yes	Yes
SNAPI 2.0.3 Server	Yes	Yes	Yes

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Product	Reference
StorNext Connect	For compatibility between StorNext Connect and StorNext, see Planning and Compatibility.
StorNext Appliance Controller	For compatibility between StorNext Appliance Controller and StorNext, see Appliance Controller Compatibility.
Lattus	For compatibility between Lattus and StorNext, see the appropriate *Lattus Release Notes* document available online at Lattus PDF Downloads.
DXi	For compatibility between DXi and StorNext, see the appropriate DXi product page online at http://www.quantum.com/documentation.

11.0 Quantum Appliance Compatibility

- This table uses StorNext M440 as a generic term that applies to the StorNext M441D, M441Q, M445D SSD and M445Q SSD models.

- This table uses StorNext M660 as a generic term that applies to the StorNext M661, M661XL, M662 M662XL and M665 SSD models. R710 versions of this product are past Service End of Life and will not be tested post 6.2.0. Only R720 versions are supported going forward.

- This table uses G300 as a generic term that applies to the StorNext G301 and G302 models. R510 versions of this product are past Service End of Life and will not be tested post 6.2.0. Only R520 versions are supported going forward, these are AKA XWE (R520).

- Appliances must be at StorNext 5.3.1 in order to update to StorNext 5.3.2.

- If your system is running StorNext 5.4.0.3 with Storage Manager, then you must read and execute the instructions in Product Alert Number 48 when upgrading to later versions of StorNext.

Quantum Appliance Compatibility with StorNext Releases													
Appliance	M330	M44x	M66x	G3xx	Pro Foundation	Artico (R520)	Artico (R630)	Xcellis Foundation	Xcellis Workflow Director	Xcellis Workflow Extender (R520)	Xcellis Workflow Extender (R630)	Xcellis Workflow Director Gen2	Xcellis Workflow Extender Gen2
StorNext Release													
StorNext 6.0		✓	✓	✓	✓	✓	✓		✓	✓	✓		

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Quantum Appliance Compatibility with StorNext Releases													
Appliance	**M330**	**M44x**	**M66x**	**G3xx**	**Pro Foundation**	**Artico (R520)**	**Artico (R630)**	**Xcellis Foundation**	**Xcellis Workflow Director**	**Xcellis Workflow Extender (R520)**	**Xcellis Workflow Extender (R630)**	**Xcellis Workflow Director Gen2**	**Xcellis Workflow Extender Gen2**
6.0.1		✓	✓	✓	✓	✓	✓		✓	✓	✓		
6.0.1.1							✓	✓	✓		✓		
6.0.5		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
6.0.5.1		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
6.0.6		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
6.0.6.1		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
6.1		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6.2.x		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6.3.x		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.0 StorNext Browser Support

StorNext user interfaces have been tested with the following browser versions.

Browser	Version
Google Chrome	78.0.3904.87 (64-bit)
Google Chrome	72.0.3626.119 (Official Build) (64-bit)
Google Chrome (macOS)	78.0.3904.70 (Official Build) (64-bit)
Google Chrome	74.0.3729.169
Internet Explorer	11.1451.16299.0
Microsoft Edge	41.16299.1419.0
Mozilla Firefox	70.0.1 (64-bit)
Mozilla Firefox	65.0.2
Safari (macOS)	13.0.3 (13608.3.10.10.1)

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13.0 Supported Quantum Library and Drive List

Note

- StorNext Storage Manager support for Linear Tape File System (LTFS) based on Open LTFS and is compatible with other vendor's implementations. LTFS tape format provides many of the same features as Quantum ANTF format, with the additional benefit of multi-vendor portability. LTFS is an ideal format for long-term archiving use, but it is slower than ANTF.

- The StorNext 6 implementation of LTFS is based on Open LTFS version 2.2.2.

- Support for LTO-8 with LTFS requires StorNext 6.0.6 (or later).

- Support for LTO-M8 with LTFS requires StorNext 6.2.0 (or later)

- Advanced Path Failover does not support Quantum LTFS.

- Starting with the StorNext 6.2.0 release, customers running with EDLM or ActiveVault in the library must update their Library Firmware to the version listed below and ensure that the library is configured to use the StorNext WebServices for communication (refer to the specific Quantum Library documentation for details on configuring the WebServices). The reason for this change is because SNAPI is no longer delivered in StorNext 6.2.0 (or later) and EDLM and ActiveVault took advantage of SNAPI. Now the library has been updated to use StorNext WebServices instead.

  - Scalar i6000, the firmware version will need to be i13 or later.
  - Scalar i500, the firmware version will need to be 710G or later.

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			Supported Quantum Library and Drive List					
Vendor	Libraries	Drive Types [5]	StorNext 5.3.0	StorNext 5.3.1.x	StorNext 5.3.2.x	StorNext 5.4.x	StorNext 6.0.x, 6.1.x	StorNext 6.2.x, 6,3,x	Notes
Quantum	Scalar i500	IBM LTO-2	✓						• LTFS is only available for LTO-5/6/7/8 drives which support partitioning. • Support for LTFS with LTO-7 drives requires StorNext 5.4.0 or later. • Support for LTFS with LTO-8 drives requires StorNext 6.0.6 or later. • LTO-8 support includes support for LTO-M8 formatted media. • Support for LTO-7 M8 media with LTFS requires StorNext 6.2.0 or later. • If using EDLM or ActiveVault, must be at version 710G or later.
		IBM LTO-3	✓	✓	✓	✓	✓	✓	
		IBM LTO-4	✓	✓	✓	✓	✓	✓	
		IBM LTO-5	✓	✓	✓	✓	✓	✓	
		IBM LTO-6	✓	✓	✓ [6]	✓ [9]	✓ [9]	✓ [9]	
		IBM LTO-7	✓ [7]	✓ [10]	✓ [9]	✓ [9]	✓ [9]	✓ [9]	
		IBM LTO-8							
		HPE LTO-4	✓	✓	✓	✓	✓	✓	
		HPE LTO-5	✓	✓	✓	✓	✓	✓	
		HPE LTO-6	✓	✓	✓	✓	✓	✓	
	Scalar i6000 / i2000	IBM LTO-1	✓						• LTFS is only available for LTO-5/6/7/8 drives which support partitioning. • Support for LTFS with LTO-7 drives requires StorNext 5.4.0 or later. • Support for LTFS with LTO-8 drives requires StorNext 6.0.6 or later. • LTO-8 support includes support for LTO-M8 formatted media. • Support for LTO-7 M8 media with LTFS requires StorNext 6.2.0 or later.
		IBM LTO-2	✓						
		IBM LTO-3	✓	✓	✓	✓	✓	✓	
		IBM LTO-4	✓	✓	✓	✓	✓	✓	
		IBM LTO-5	✓	✓	✓	✓	✓	✓	
		IBM LTO-6	✓	✓	✓ [8]	✓ [8]	✓ [8]	✓ [8]	
		IBM LTO-7	✓ [9]	✓	✓	✓ [81]	✓ [81]	✓ [81]	
		IBM LTO-8					✓	✓	
		HPE LTO-3	✓	✓	✓	✓	✓	✓	
		HPE LTO-4	✓	✓	✓	✓	✓	✓	
		HPE LTO-5	✓	✓	✓	✓	✓	✓	
		HPE LTO-6	✓	✓	✓	✓	✓	✓	

[5] StorNext supports LTO WORM functionality where offered by the drive vendor. Please see the vendor website for more details.
[6] APFO (IBM) supported
[7] The i500 requires firmware version 8.4 or later to support LTO-7
[8] APFO supported i6k only with LTO-6 or LTO-7
[9] LTO-7 is not available in the Scalar i2000 library.

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Library	Drive							Notes
	Quantum DLT-S4	✓						• If using EDLM or ActiveVault with the i6000, must be at version i13 or later.
	Quantum SDLT 320 SCSI	✓						
	Quantum SDLT 600 FC	✓						
Scalar i40 / i80	HPE LTO-4	✓	✓	✓	✓	✓	✓	• LTFS is only available for LTO-5/6/7/8 drives which support partitioning. • Support for LTFS with LTO-7 drives requires StorNext 5.4.0 or later. • Support for LTO-7 M8 media with LTFS requires StorNext 6.2.0 or later.
	HPE LTO-5	✓	✓	✓	✓	✓	✓	
	HPE LTO-6	✓	✓	✓	✓	✓	✓	
	IBM LTO-5	✓	✓	✓	✓	✓	✓	
	IBM LTO-6	✓	✓	✓	✓	✓	✓	
	IBM LTO-7		✓	✓	✓	✓	✓	
Scalar i3	IBM LTO-6				✓	✓	✓	• LTFS is only available for LTO-5/6/7/8 drives which support partitioning. • Support for LTFS with LTO-7 drives requires StorNext 5.4.0 or later. • Support for LTFS with LTO-8 drives requires StorNext 6.0.6 or later. • LTO-8 support includes support for LTO-M8 formatted media. • Support for LTO-7 M8 media with LTFS requires StorNext 6.2.0 or later.
	IBM LTO-7				✓	✓	✓	
	IBM LTO-8					✓[10]	✓	
Scalar i6	IBM LTO-6				✓	✓	✓	• LTFS is only available for LTO-5/6/7/8 drives which support partitioning. • Support for LTFS with LTO-7 drives requires StorNext 5.4.0 or later. • Support for LTFS with LTO-8 drives requires StorNext 6.0.6 or later. • LTO-8 support includes support for LTO-M8 formatted media. • Support for LTO-7 M8 media with LTFS requires StorNext 6.2.0 or later.
	IBM LTO-7				✓	✓	✓	
	IBM LTO-8					✓	✓	
Scalar 24	IBM LTO-1	✓						
	IBM LTO-2	✓						
	IBM LTO-3	✓	✓	✓	✓	✓	✓	
	IBM LTO-4	✓	✓	✓	✓	✓	✓	
Scalar 50	HP LTO-4	✓	✓	✓	✓	✓	✓	
Scalar 100	IBM LTO-1	✓						

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[10] Scalar i3 with LTO-8 is only supported starting at 6.0.5

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								Notes
	IBM LTO-2	✓						• Do not use firmware version 2.10.0013.
	IBM LTO-3	✓	✓	✓	✓	✓	✓	
Scalar 1000	IBM LTO-2	✓						• You must use SDLC [11] - SCSI Target Mode or Native SCSI. • DAS/ACI is not supported.
	IBM 3590B1A	✓	✓	✓	✓	✓		
Scalar 10000	IBM LTO-1	✓						• Must use SDLC [11] SCSI Target Mode or Native SCSI. • DAS/ACI is not supported.
	IBM LTO-2	✓						
	IBM LTO-3	✓	✓	✓	✓	✓	✓	
	IBM LTO-4	✓	✓	✓	✓	✓	✓	
	IBM LTO-5	✓	✓	✓	✓	✓	✓	
	IBM 3592	✓	✓	✓	✓	✓	✓	
PX500	HPE LTO-3	✓	✓	✓	✓	✓	✓	
PX720	HPE LTO-2	✓						
	HPE LTO-3	✓	✓	✓	✓	✓	✓	
	DLT S4	✓						

14.0 Supported Non-Quantum Library and Drive List

Large, complex StorNext Storage Manager solutions support the use of non-Quantum software such as Oracle StorageTek Automated Cartridge System Library Software (ACSLS) for centralized, multi-platform tape library management. Additionally, Storage Manager supports physical library partitioning to improve the utilization and logical sharing of enterprise-level tape libraries.

Note: Effective with the next StorNext feature release after StorNext 6.0.6, support for all versions of the T9840 drives will be dropped.

Non-Quantum Supported Libraries and Tape Drives										
Vendor	Libraries	Drive Types [8]	StorNext 5.3.0	StorNext 5.3.1.x	StorNext 5.3.2.x	StorNext 5.4.x	StorNext 6.x	StorNext 6.1.x	StorNext 6.2.x, 6.3.x	Notes
Dell	PV136T	IBM LTO-2	✓							
		IBM LTO-3	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-4	✓	✓	✓	✓	✓	✓	✓	
	PowerVault ML6000	IBM LTO-3	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-4	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-5	✓	✓	✓	✓	✓	✓	✓	

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

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			StorNext 5.3.0	StorNext 5.3.1.x	StorNext 5.3.2.x	StorNext 5.4.x	StorNext 6.x	StorNext 6.1.x	StorNext 6.2.x, 6.3.x	
Non-Quantum Supported Libraries and Tape Drives										
Vendor	**Libraries**	**Drive Types [8]**								**Notes**
	6010 / 6020 / 6030	IBM LTO-6	✓	✓	✓	✓	✓	✓	✓	
HPE	ESL E Series	HPE LTO-3	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-4	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-5	✓	✓	✓	✓	✓	✓	✓	
	MSL 6000	HPE LTO-2	✓							
		HPE LTO-3	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-4	✓	✓	✓	✓	✓	✓	✓	
	MSL G3 Series 2024 / 4048 / 8096	HPE LTO-2	✓							
		HPE LTO-3	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-4	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-5	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-6	✓	✓	✓	✓	✓	✓	✓	
	EML E Series	HPE LTO-3	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-4	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-5	✓	✓	✓	✓	✓	✓	✓	
	ESL G3	HPE LTO-4	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-5	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-6	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-7			✓	✓	✓	✓	✓	
	MSL 6480	HPE LTO-3	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-4	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-5	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-6	✓	✓	✓	✓	✓	✓	✓	
IBM	TS3100	IBM LTO-7		✓	✓	✓	✓	✓	✓	
	TS3500	IBM LTO-2	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-3	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-4	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-5	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-6	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-7		✓	✓	✓	✓	✓	✓	
		IBM 3592 (J1A and E05)	✓	✓	✓	✓	✓	✓	✓	

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Non-Quantum Supported Libraries and Tape Drives										
Vendor	Libraries	Drive Types [8]	StorNext 5.3.0	StorNext 5.3.1.x	StorNext 5.3.2.x	StorNext 5.4.x	StorNext 6.x	StorNext 6.1.x	StorNext 6.2.x, 6.3.x	Notes
		IBM TS1120	✓	✓	✓	✓	✓	✓		
		IBM TS1130	✓	✓	✓	✓	✓	✓		
		IBM TS1140	✓	✓	✓	✓	✓	✓		
		IBM TS1150		✓	✓	✓	✓	✓		
	TS3310	IBM LTO-3	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-4	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-5	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-6	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-7		✓	✓	✓	✓	✓	✓	
	TS4500	TS1140		12	12	12	12	12	12	
		TS1150		✓	✓	✓	✓	✓		
		IBM LTO-7		✓	✓	✓	✓	✓	✓	
Oracle SCSI / FC	L180 / L700 / L1400	T9840C	✓	✓	✓	✓	✓	✓		
		T9840D	✓	✓	✓	✓	✓	✓		
		T10000A [15]	✓	✓	✓	✓	✓	✓	✓	
		T10000B [15]	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-3	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-4	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-3	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-4	✓	✓	✓	✓	✓	✓	✓	
	SL3000	T9840C	✓	✓	✓	✓	✓	✓		
		T9840D	✓	✓	✓	✓	✓	✓		
		T10000A [15]	✓	✓	✓	✓	✓	✓	✓	
		T10000B [15]	✓	✓	✓	✓	✓	✓	✓	
		T10000C [13] [15]	✓	✓	✓	✓	✓	✓	✓	
		T10000D [15]	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-3	✓	✓	✓	✓	✓	✓	✓	

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[12] The tape device and library have been tested individually, but this specific combination has not been tested. Although not formally tested, this drive and library pair is expected to work without any issues.

[13] When using a T10000 Rev C drive with ACSLS 8.0.x, please assure that your cleaning cartridges are supported 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.

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				Non-Quantum Supported Libraries and Tape Drives					
Vendor	**Libraries**	**Drive Types [8]**	StorNext 5.3.0	StorNext 5.3.1.x	StorNext 5.3.2.x	StorNext 5.4.x	StorNext 6.x	StorNext 6.1.x	StorNext 6.2.x, 6.3.x	**Notes**
		HPE LTO-4	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-5	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-6	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-3	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-4	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-5	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-6	✓	✓	✓	✓	✓	✓	✓	
	SL500	**HPE LTO-3**	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-4	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-5	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-3	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-4	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-5	✓	✓	✓	✓	✓	✓	✓	
	SL150	**HPE LTO-5**	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-6	✓	✓	✓	✓	✓	✓	✓	
	9740	**Sun/STK 9840**	✓	✓	✓	✓	✓	✓		
Oracle ACSLS 7.3 / 7.3.1 / 8.0.x / 8.1.x / 8.2.x / 8.3 / 8.4 [14]	**L180 / L700 / L1400**	**T9840C**	✓	✓	✓	✓	✓	✓		
		T9840D	✓	✓	✓	✓	✓	✓		
		T10000A [15]	✓	✓	✓	✓	✓	✓	✓	
		T10000B [15]	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-3	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-4	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-3	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-4	✓	✓	✓	✓	✓	✓	✓	
	SL3000	**T9840C**	✓	✓	✓	✓	✓	✓		
		T9840D	✓	✓	✓	✓	✓	✓		
		T10000A [15]	✓	✓	✓	✓	✓	✓	✓	
		T10000B [15]	✓	✓	✓	✓	✓	✓	✓	
		T10000C [13 15]	✓	✓	✓	✓	✓	✓	✓	
		T10000D [15]	✓	✓	✓	✓	✓	✓	✓	

[14] ACSLS versions are supported on Solaris and Linux installs, ACSLS 8.3 is the first version that supports Oracle Linux (6.5 or 6.7).
[15] When using T10000 drives, the STK library parameter "Fastload" must be set to "OFF".

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Vendor	Libraries	Drive Types [8]	StorNext 5.3.0	StorNext 5.3.1.x	StorNext 5.3.2.x	StorNext 5.4.x	StorNext 6.x	StorNext 6.1.x	StorNext 6.2.x, 6.3.x	Notes
		HPE LTO-3	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-4	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-5	✓	✓	✓	✓	✓	✓	✓	Requires minimum of ACSLS 7.3.1
		HPE LTO-6	✓	✓	✓	✓	✓	✓	✓	Requires minimum of ACSLS 8.2
		IBM LTO-3	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-4	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-5	✓	✓	✓	✓	✓	✓	✓	Requires minimum of ACSLS 7.3.1
		IBM LTO-6	✓	✓	✓	✓	✓	✓	✓	Requires minimum of ACSLS 8.2
		IBM LTO-7				✓	✓	✓	✓	Requires minimum of ACSLS 8.4
	SL500	**HPE LTO-3**	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-4	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-5	✓	✓	✓	✓	✓	✓	✓	Requires minimum of ACSLS 7.3.1
		IBM LTO-3	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-4	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-5	✓	✓	✓	✓	✓	✓	✓	Requires minimum of ACSLS 7.3.1
	SL8500	**T9840C**	✓	✓	✓	✓	✓	✓		
		T9840D	✓	✓	✓	✓	✓	✓		
		T10000A [15]	✓	✓	✓	✓	✓	✓	✓	
		T10000B [15]	✓	✓	✓	✓	✓	✓	✓	
		T10000C [13] [15]	✓	✓	✓	✓	✓	✓	✓	
		T10000D [15]	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-3	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-4	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-5	✓	✓	✓	✓	✓	✓	✓	Requires minimum of ACSLS 7.3.1
		HPE LTO-6	✓	✓	✓	✓	✓	✓	✓	Requires minimum of ACSLS 8.2
		IBM LTO-3	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-4	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-5	✓	✓	✓	✓	✓	✓	✓	Requires minimum of ACSLS 7.3.1
		IBM LTO-6	✓	✓	✓	✓	✓	✓	✓	Requires minimum of ACSLS 8.2
		IBM LTO-7			✓	✓	✓	✓	✓	Requires minimum of ACSLS 8.3
	SL150	**HPE LTO-5**	✓	✓	✓	✓	✓	✓	✓	
		HPE LTO-6	✓	✓	✓	✓	✓	✓	✓	Requires minimum of ACSLS 8.2

Non-Quantum Supported Libraries and Tape Drives

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Non-Quantum Supported Libraries and Tape Drives										
Vendor	Libraries	Drive Types [8]	StorNext 5.3.0	StorNext 5.3.1.x	StorNext 5.3.2.x	StorNext 5.4.x	StorNext 6.x	StorNext 6.1.x	StorNext 6.2.x, 6.3.x	Notes
Qualstar	XLS	IBM LTO-3	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-4	✓	✓	✓	✓	✓	✓	✓	
		IBM LTO-5	✓	✓	✓	✓	✓	✓	✓	
Sony	Petasite CSM-200	IBM LTO-4 (T1600)	✓	✓	✓	✓	✓	✓	✓	
Spectra Logic	T-Series T50e / T120 / T200 / T380 / T680 / T950 / T-Finity	IBM TS1140	✓	✓	✓	✓	✓	✓		StorNext 6.0.5 and later support the use of LTO-8 tape devices in all Spectra libraries
		LTO-4	✓	✓	✓	✓	✓	✓	✓	
		LTO-5	✓	✓	✓	✓	✓	✓	✓	
		LTO-6	✓	✓	✓	✓	✓	✓	✓	
		LTO-7				✓	✓	✓	✓	
		LTO-8					✓	✓	✓	

15.0 Advanced Path Failover Compatibility

Using the StorNext Distributed Data Mover (DDM) feature can boost overall data movement performance by distributing data movement across multiple systems. To ensure data integrity, StorNext software requires the use of SCSI Persistent Reservations on StorNext metadata controllers and DDM clients. As SCSI persistent reservations control access to shared devices, such as tape, Storage Manager retains control of the tape device paths, even if a failover were to occur.

StorNext Storage Manager supports IBM Advanced Path Failover (APFO) for redundant paths to IBM LTO-6, LTO-7 and LTO-8 tape devices. Using IBM APFO requires SCSI Persistent Reservations to be turned off, as device reservations are handled by IBM's software, not StorNext.

☐ StorNext 6.0.5 (or later) supports LTO-8 tape devices paired with Quantum Scalar i3, i6, i500 and i6000 libraries.

☐ StorNext 5 supports IBM Advanced Path Failover (APFO) with IBM LTO-6 and LTO-7 tape devices installed in Scalar i500 and i6k libraries.

Notes:

• IBM strongly recommends that tape and disk I/O use separate HBAs when used with the IBM Advanced Path Failover (**lin_tape**) driver.

• Advanced Path Failover does not support Quantum Linear Tape File System.

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• IBM **lin_tape** driver versions 3.0.10 and 3.0.18 cannot be used with StorNext.

• Please refer to the IBM **lin_tap.ReadMe** the latest details about supported operating system versions and for a listing of supported/non supported versions of the Join Driver.

• SCSI-3 persistent reservations must be enabled in the **lin_tape.conf** file for IBM APFO if data path failover is not enabled. For additional information on how to configure **SCSI Persistent Reservations**, see the Tape Devices and Persistent SCSI Reserve.

Minimum Tested Version of Firmware / Driver Version	
	StorNext 6.0 (or later)
IBM lin_tape driver version	3.0.23
Quantum Scalar i3 and i6	150G.GS080 – i2.1
Quantum Scalar i6k	760Q.GS25000 – i13
Quantum Scalar i500	700G.GS013 - i9
IBM LTO-6 Drive FH	H990
IBM LTO-7 Drive HH	HB81
IBM LTO-7 Drive FH	HB80
IBM LTO-8 Drive HH	HB83
IBM LTO-8 Drive FH	HB82

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16.0 Xsan Compatibility

Apple Xsan Server with StorNext FX Clients										
Xsan Controller Version	StorNext 6.3.x	StorNext 6.2.x	StorNext 6.1.x	StorNext 6.0.x	StorNext 5.4.x	StorNext 5.3.2.x	StorNext 5.3.1	StorNext 5.3.0	StorNext 5.2.2	StorNext 5.2.x
Xsan 5.0.1 Catalina (10.15)	✓	✓*	✓*	✓*	✓*	✓*	✓*			
Xsan 5.0.1 Mojave (10.14)	✓	✓	✓*	✓*	✓*	✓*	✓*			
Xsan 5.0.1 High Sierra (10.13)	✓*	✓*	✓	✓*	✓*	✓*	✓*			
Xsan 5 Sierra (10.12)	✓*	✓*	✓*	✓	✓*	✓*	✓*	✓*		
Xsan 4.1 El Capitan (10.11)								✓	✓	
Xsan 4 Yosemite (10.10)								✓	✓	✓

Note: ✓* indicates the version is supported but it has not been tested.

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StorNext MDC with Apple Xsan Clients

StorNext MDC Controller Version	Xsan 5.0.1 macOS (10.15)	Xsan 5.0.1 macOS (10.14)	Xsan 5.0.1 macOS (10.13)	Xsan 5 macOS (10.12)	Xsan 4.1 macOS (10.11)	Xsan 4 macOS (10.11)
StorNext 6.3.x	✓	✓	✓	✓		
StorNext 6.2.x	✓*	✓	✓	✓		
StorNext 6.1.x	✓*	✓	✓	✓		
StorNext 6.0.5, 6.0.6.x	✓*	✓	✓	✓		
StorNext 6.0, 6.0.1, 6.0.1.1	✓*	✓*	✓*	✓	✓	✓
StorNext 5.4.x	✓*	✓*	✓*	✓	✓	✓
StorNext 5.3.2.x	✓*	✓*	✓*		✓	✓
StorNext 5.3.1					✓	✓
StorNext 5.3.0					✓	✓
StorNext 5.2.2					✓	✓
StorNext 5.2.0, 5.2.1						✓

Note: ✓* indicates the version is supported but it has not been tested.

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17.0 StorNext Security

StorNext supports two security models:

- UNIX permission bits
- Access Control Lists (ACL)

Although StorNext supports both security models, the version used depends on the client platform and system configuration settings within StorNext.

Display and manipulation of ACLs for NFSv4 is only supported when the NFS server is a StorNext Appliance running StorNext 5.4.0.1 or later.

See the StorNext 6 Documentation Center for complete details on StorNext security.

18.0 Multiple Protocol Access to NAS

Multiple Protocol Access to NAS begins with StorNext 6.2 and Appliance Controller 2.2.

See Multi-protocol File Locking for information about multi-protocol access and file locking support and compatibility.

- Multi-protocol file locking is a StorNext NAS feature supported:
  - o With StorNext 6.2 (or later) and Appliance Controller 2.2 (and later)
    - Native downrev StorNext Clients are also supported

- Multi-protocol file locking is not supported:
  - o Prior to StorNext 6.2 and Appliance Controller 2.2

19.0 Network File System (NFS) Support

NFSv3 and NFSv4 are supported, as listed below:

Support: StorNext NAS running on StorNext 6.2 (or later) and Appliance Controller 2.2 (and later)
Note: For earlier releases, these are limitations

- POSIX advisory lock failover in a NFS-HA configuration is supported

  - o NFSv3 is required

- NFSv3 in an NFS-HA and NAS Scale-Out configuration, including POSIX lock failover, is supported

- NFSv4 with NFS-HA and POSIX advisory lock failover is supported, but ONLY for dual-server node Xcellis Workflow Director, Xcellis Foundation, and Artico (R630) systems

  - o See NAS Cluster Configuration for additional information about NFS and NAS Cluster configuration

- Concurrently sharing the same StorNext file system from multiple NFSv3 servers is supported

Limitations: StorNext NAS running on any version of StorNext and Appliance Controller

- Lock recovery is NOT supported for NFSv4 clients running CentOS version 7.4
- NFSv4 failover is NOT supported with scale-out NAS clusters

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- o See NAS Cluster Configuration for additional information about NFS and NAS Cluster configuration

- • NFSv4 delegations are NOT supported

- • The display and manipulation of ACLs is ONLY supported when using NFSv4 and with StorNext version 5.4.0.1 or later releases

  - o ACLs are enforced for NFSv3, but CANNOT be displayed or manipulated

- • Concurrently sharing the same StorNext file system from multiple NFSv4 servers is NOT supported

Limitations: Customer-supplied NAS (not StorNext NAS) running on any version of StorNext software

- • Due to issues with lock recovery that may occur after rebooting, file locking is NOT supported when concurrently sharing the same StorNext file system from multiple NFS servers

- • NFS is ONLY supported when using Linux NFS servers

- • The display and manipulation of ACLs is NOT supported for NFSv3. However, ACLs are still enforced

- • The display and manipulation of ACLs for NFSv4 is NOT supported

- • NFSv4 delegations are NOT supported

20.0 Data snpolicy Replication Compatibility

The following table provides compatibility between StorNext releases when using the replication feature.

To ensure maximum snpolicy replication performance, Quantum strongly recommends that all systems utilizing snpolicy replication upgrade to StorNext 5.0.0 (or later).

Note: If a source replication policy uses deduplication, the target policy must also use deduplication.

Source Release	Target Release								
	StorNext 5.0.x	StorNext 5.1.x	StorNext 5.2.x	StorNext 5.3.x	StorNext 5.4.x	StorNext 6.0.x	StorNext 6.1.x	StorNext 6.2.x	StorNext 6.3.x
StorNext 5.0.x	✓	✓	✓	✓	✓	✓			
StorNext 5.1.x	✓	✓	✓	✓	✓	✓			
StorNext 5.2.x	✓	✓	✓	✓	✓	✓			
StorNext 5.3.x	✓	✓	✓	✓	✓	✓			

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Source Release	Target Release								
	StorNext 5.0.x	StorNext 5.1.x	StorNext 5.2.x	StorNext 5.3.x	StorNext 5.4.x	StorNext 6.0.x	StorNext 6.1.x	StorNext 6.2.x	StorNext 6.3.x
StorNext 5.4.x	✓	✓	✓	✓	✓	✓			
StorNext 6.0.x	✓	✓	✓	✓	✓	✓			
StorNext 6.1.x	✓	✓	✓	✓	✓	✓	✓		
StorNext 6.2.x			✓	✓	✓	✓	✓	✓	
StorNext 6.3.x			✓	✓	✓	✓	✓	✓	✓

21.0 FlexTier™ License Compatibility

StorNext's capability to tier to object storage systems and clouds has been tested with a wide range of disk-based object stores and cloud storage providers. The table below provides the current list of compatible object stores and cloud services. You can request formal compatibility testing for devices and providers not listed below from Quantum Sales.

Vendor/ Provider	Feature/ Platform	StorNext 6.3.x	StorNext 6.2.x	StorNext 6.1.1	StorNext 6.0.5.x	StorNext 6.0.x	License Type
Amazon S3	Simple Storage Service	✓	✓	✓	✓	✓	FlexTier for Public Cloud
	Infrequent Access	✓	✓	✓	✓	✓	FlexTier for Public Cloud
	Glacier	✓	✓	✓	✓	✓	FlexTier for Public Cloud
	Government Cloud	✓	✓	✓	✓	✓	FlexTier for Public Cloud
	Commercial Cloud Services	✓	✓	✓	✓	✓	FlexTier for Public Cloud
	Snowball	✓	✓				FlexTier for Public Cloud

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Vendor/ Provider	Feature/ Platform	StorNext 6.3.x	StorNext 6.2.x	StorNext 6.1.1	StorNext 6.0.5.x	StorNext 6.0.x	License Type
Microsoft	Azure AppendBlob	✔	✔	✔	✔	✔	FlexTier for Public Cloud
	Azure BlockBlob	✔	✔				FlexTier for Public Cloud
	Azure Data Box	✔					FlexTier for Public Cloud
Google	Cloud Platforms using S3	✔	✔	✔	✔	✔	FlexTier for Public Cloud
	Native Google	✔	✔				FlexTier for Public Cloud
NetApp	Webscale StorageGRID	✔	✔	✔	✔	✔	FlexTier for Private Cloud
IBM	Cloud Object Storage (Cleversafe)	✔	✔	✔	✔	✔	FlexTier for Private Cloud
SCALITY	RING	✔	✔	✔	✔	✔	FlexTier for Private Cloud
HGST	ActiveScale	✔	✔	✔	✔	✔	FlexTier for Private Cloud
SwiftStack	Using S3	✔	✔	✔			FlexTier for Private Cloud
Quantum	Lattus AXR	✔	✔	✔	✔	✔	Object Storage
	Lattus S3	✔	✔	✔	✔	✔	Object Storage
	P100/X100	✔	✔	✔	✔		FlexTier for Private Cloud
Cloudian	HyperStore	✔	✔	✔	✔	✔	FlexTier for Private Cloud
StorExcel	ORockCloud	✔	✔	✔	✔	✔	FlexTier for Private Cloud
KeeperTech	KeeperSAFE	✔	✔	✔	✔	✔	FlexTier for Private Cloud
Object Matrix	MatrixStore	✔	✔	✔	✔	✔	FlexTier for Private Cloud

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Vendor/ Provider	Feature/ Platform	StorNext 6.3.x	StorNext 6.2.x	StorNext 6.1.1	StorNext 6.0.5.x	StorNext 6.0.x	License Type
Wasabi	Hot Cloud Storage	✓	✓	✓	✓	✓	FlexTier for Private Cloud
Caringo	Swarm	✓	✓	✓	✓	✓	FlexTier for Private Cloud
Hitachi Vantara	HCP	✓	✓				FlexTier for Private Cloud

The following object stores and cloud services require that you use the **S3 Compatible** option in the **Provider** list in the StorNext GUI:

S3 Compatible	
Caringo	Swarm
Cloudian	HyperStore
HGST	ActiveScale
Hitachi Vantara	HCP
IBM	Cloud Object Storage (Cleversafe)
KeeperTech	KeeperSAFE
NetApp	Webscale StorageGRID
Object Matrix	MatrixStore
Quantum	P100/X100
SCALITY	RING
StorExcel	ORockCloud
SwiftStack	Using S3
Wasabi	Hot Cloud Storage

Object stores and cloud services not listed have their own **Provider** option in the GUI.

See Configure Object Storage and Cloud Destinations for additional information.

22.0 FlexSync™ Compatibility

- ☐ FlexSync is a license enabled option for use with StorNext 6.0 (or later).
- ☐ Supported FlexSync data mover platforms include Xcellis Workflow Directors, Xcellis Workflow Extenders and M4xx and M6xx series appliances.
- ☐ You can use Flexsync with StorNext Storage Manager managed file systems (source or destination), if the FlexSync version is 2.1.0 or greater and the StorNext version is 6.3.0 or greater. See FlexSync and Managed Files for additional information.

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- FlexSync supports third party file systems.
- Data protection solutions based on FlexSync must have at least one (1) data mover; multiple data movers can be used to maximize performance.
- A single data mover configuration can be used to protect local or cross-mounted file systems.
- FlexSync configurations that transmit data across a WAN or LAN connection to a remote destination use delta block compression to transfer only new or changed blocks to maximize network bandwidth. FlexSync software must be installed on all WAN or LAN connected destinations. At least two (2) FlexSync data movers must be licenses for WAN and LAN connected configurations.
- The FlexSync license is installed on the Xcellis or M-Series system that is also used when configuring FlexSync. This license key will state the total number of licensed data movers.

See the FlexSync Documentation Center for additional details regarding prerequisites, system guidelines, and compatibility.

23.0 QXS Interoperability and Certification

- All Quantum-branded fibre channel QXS models and iSCSI QXS models can be used as primary storage in a StorNext environment.
- QXS 12G chassis and components (not drives) cannot be interconnected with QXS 6G.
- Usage of virtual volumes is not recommended for StorNext file systems used for bandwidth intensive streaming workloads.
- Thin-provisioned and tiered storage devices should not be used if performance or consistency of performance is expected or desired.

24.0 Offline File Manager (OFM) Compatibility

Offline File Manager (for Microsoft Windows)		
Supported Operating System	OFM 2.0	OFM 1.1
Windows 10	✓	✓

Offline File Manager (for Apple macOS)			
Supported Operating System	OFM 2.0	OFM 1.1	OFM 1.0.x
Catalina (10.15)	✓	✓*	✓*
Mojave (10.14)	✓	✓	✓*
High Sierra (10.13)	✓	✓	✓

Note: ✓* indicates the version is supported but it has not been tested.

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