# StorNext 3.5 Release Notes

| | |
|---|---|
| **Product** | StorNext 3.5 |
| **Supported Platforms: Storage Manager, File System MDC, Distributed LAN Server and Client, and SAN Client** | Red Hat® Enterprise Linux® 5<br>• x86 64-bit<br>SUSE™ Linux Enterprise Server 10<br>• x86 64-bit |
| **Supported Platforms: File System MDC, Distributed LAN Server and Client, and SAN Client** | Windows Server 2003®<br>• x86 64-bit<br>Windows Server 2008®<br>• x86 64-bit |

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|---|---|
| **Supported Platforms: SAN Client and Distributed LAN Client** | Windows Server 2003®<br>• x86 32-bit<br>Windows XP®<br>• x86 32-bit and 64-bit<br>Windows Vista®<br>• x86 32-bit and 64-bit<br>Windows Server 2008®<br>• x86 32-bit<br>Sun Solaris™ 10<br>• Opteron and Intel x86 64-bit |
| **Supported Platforms: SAN Client** | Sun Solaris™ 10<br>• SPARC 64-bit<br>IBM AIX<br>• 64-bit Power Architecture<br>HP-UX<br>• IA-64 |
| **Date** | December 2008 |

# Contents

# Purpose of this Release

StorNext 3.5 includes new features and enhancements that extend the capabilities of StorNext Storage Manager (SNSM) and StorNext File System (SNFS). This document describes these new features, as well as supported platforms and system components. This document also lists currently known issues, issues that were resolved for this release, and known limitations.

Visit www.quantum.com/ServiceandSupport for additional information and updates for StorNext.

# New Features and Improvements

StorNext 3.5 includes the following new features and product improvements:

- **Alternate retrieval location feature**. This new feature allows you to retrieve a copy of a truncated file from a specified remote machine in situations where central archive tape copies of the file are not accessible from the StorNext Storage Manager machine.
- **Retrieve to affinity feature**. When enabled, this feature allows you to retrieve off-line files to a specified affinity that might be different from the affinity used for ingest. For example, if a specific file was steered to affinity A1 on ingest and then off-lined, this feature allows the file to be steered to A2 upon retrieval.
- **Quality of Service (QOS) enhancements**. It is now possible to assign prioritization of StorNext File System I/O bandwidth for non-real time operations by reserving bandwidth. The QOS levels can be set per node, which allows users to prioritize file system access for specific actions or operations such as background processing of critical data sets.
- **Cluster-Wide Central Control**. The purpose of this feature (currently supported on the Linux platform only) is to provide cluster-wide central control. A central control file called nss-cctl.xml provides a way to restrict the behavior of SNFS cluster nodes (fsm, file system client, cvadmin client) from a central place: an NSS server. This includes optional NOEXEC and NOSUID enforcement for executables.
- **Distributed LAN Client and SAN Client enhancements.** Support has been added for large deployments of Distributed LAN clients. StorNext File System now supports Distributed LAN client environments in excess of 1000 clients, and should support deployments as large as 5000 clients. File system aggregate throughput is not adversely impacted.
- **Rescan Library Function Added.** A Rescan button has been added to the Configure Library Screen (accessible from the SNSM home page's Admin menu by choosing Library > Config Library). This button enables you to rescan your library after adding drive slots or media slots to ensure that StorNext recognizes the new devices and can fully utilize them.

- **Windows client enhancements**. The StorNext Windows client now supports mounting StorNext file systems on a folder, and dynamic mapping and unmapping of file systems without rebooting. In addition, in most cases StorNext installations and upgrades from StorNext 3.5 to future releases on Windows no longer require a system reboot. (Upgrades *to* StorNext 3.5 from a prior release require a single reboot.)
- **Cvfsck and metadata durability improvements**. The file system error checking and metadata durability have been enhanced. Specifically, Cvfsck performance has been improved.
- **Improvements to overall reliability for metadata dumps and backups in Storage Manager**
- **Maximum Number of Tape Drives Increased**. The maximum number of tape drives supported in a StorNext configuration has been changed from 64 to 256 drives.

# Discontinued Support on Some Platforms

Some StorNext services that were supported on various platforms in StorNext 3.1.2 and other previous releases are no longer supported in StorNext 3.5. These services will continue to be supported for previous StorNext releases, but going forward beginning with release 3.5 will not be supported.

Table 1 shows the StorNext services for which support is discontinued as of StorNext 3.5.

Table 1 Discontinued Platforms

| StorNext 3.5 Discontinued Support By OS Platform | | |
|---|---|---|
| **Operating System** | **Platform(s)** | **StorNext Services No Longer Supported** |
| SGI IRIX | 64-bit MIPS | Support discontinued for all services |
| HP-UX | PA-RISC | ▪ PA-RISC support discontinued for all services<br>(IA-64 SAN client support continues.) |
| IBM AIX | 64-bit Power Architecture | ▪ MDC Server discontinued<br>(SAN client support continues) |
| Red Hat Enterprise Linux 4 | x86 32-bit | Support discontinued for all services |
| | IA-64 | Support discontinued for all services |
| | x86 64-bit | Support discontinued for the following services:<br>▪ MDC Server<br>▪ Distributed LAN Server<br>▪ Storage Manager |
| Sun Solaris 9 | SPARC 64-bit | Support discontinued for all services |
| Sun Solaris 10 | SPARC 64-bit | Support discontinued for the following services:<br>▪ MDC Server<br>▪ Storage Manager<br>(SAN client support continues) |
| SuSE Linux Enterprise Server 10 | x86 32-bit | Support discontinued for all services |
| | IA-64 | Support discontinued for all services |
| Windows 2003 Server | x86 32-bit | Support discontinued for the following services:<br>▪ MDC Server<br>▪ Distributed LAN Server<br>(SAN client and Distributed LAN Client support continues) |
| Windows XP | x86 32-bit | ▪ Distributed LAN Server discontinued<br>(SAN client and Distributed LAN Client support continues) |
| | x86 64-bit | ▪ Distributed LAN Server discontinued<br>(SAN client and Distributed LAN Client support continues) |

# Other Changes

StorNext 3.5 includes other operational and functional changes you should be aware of.

## Configuration File Changes

The following variables have been deprecated (removed) from the configuration file's "Globals" section:

- AttrTokenSize
- BufferPoolSize
- DirCacheSize
- DirFDCacheSize
- ForceStripeAlignment
- IoHangLimitSecs
- JournalIcBufNum
- JournalIcBufSize
- MaxMBPerClientReserve
- Mbufs
- MbufSize
- ReaddirForcedVersion
- StaticInodes

In addition, the following settings have been removed from the configuration file's "StripeGroup" section:

- StripeClusters
- Regular

For detailed explanations regarding why these items were deprecated, see the cvfs_config(4) man page.

## ONC Portmapper Services Deprecated

ONC Portmapper Service is used by remote network applications to locate the correct port and application on the local computer. This service was used by StorNext version 2.6 and earlier to locate the correct port for FSMPM/Name Services. Since StorNext version 3.5 is not supported in the same network environment as StorNext 2.6, Quantum's ONC Portmapper is no longer installed or enabled.

Although unlikely, there might be other non-Quantum applications which rely on ONC Portmapper Services. In those cases the vendor should provide their own ONC portmapper service. You may need to re-enable their service.

### Single LUN Stripe Group I/O Characteristics

The I/O characteristics on a single LUN stripe group have changed in release 3.5. In prior releases all I/Os were broken down into, at most, StripeBreadth-sized I/Os aligned on the stripe group's StripeBreadth value. This was the case even when there was a single LUN in a stripe group. In StorNext 3.5, I/Os are no longer forced into StripeBreadth-sized chunks when there is only one LUN in the stripe group. All I/Os in this case should match the DMA I/O requests, or the I/O requests coming out of the file system's buffer cache. Be aware of the change in behavior when evaluating performance characteristics between differing StorNext releases.

# Configuration Requirements

Before installing StorNext 3.5, note the following configuration requirements:

- 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.
- A separate, dedicated switched Ethernet LAN is mandatory for the metadata network if 100 Mbit/s or slower networking hardware is used.
- 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.
- The operating system on the metadata controller must always be run in U.S. English.
- For Windows systems (server and client), the operating system must always be run in U.S. English.

**Caution:** If a Library used by StorNext Storage Manager is connected via a fibre switch, zone the switch to allow only the system(s) running SNSM to have access to the library. This is necessary to ensure that a "rogue" system does not impact the library and cause data loss or corruption. For more information, see StorNext Product Alert 16.

### Library Requirements

The following libraries require special configurations to run StorNext.

#### DAS and Scalar DLC Network-Attached Libraries

Prior to launching the StorNext Configuration Wizard, DAS, and Scalar DLC network-attached libraries must have the DAS client already installed on the appropriate host control computer.

### DAS Attached Libraries

For DAS attached libraries, refer to "Installation and Configuration" and "DAS Configuration File Description" in the *DAS Installation and Administration Guide*. The client name is either the default StorNext server host name or the name selected by the administrator.

StorNext can support LTO-3 WORM media in DAS connected libraries, but WORM media cannot be mixed with other LTO media types in one logical library.

To use LTO-3 WORM media in a logical library, before configuring the library in StorNext, set the environmental variable XDI_DAS_MAP_LTO_TO_LTOW in the **/usr/adic/MSM/config/envvar.config** file to the name of the library. The library name must match the name given to the library when configuring it with StorNext. If defining multiple libraries with this environmental variable, separate them with a space. After setting the environmental variable, restart StorNext Storage Manager (SNSM).

> **Note:** SDLC software may not correctly recognize LTO-3 WORM media in the library and instead set it to "unknown media type." In this case you must manually change the media type to "LTO3" using the SDLC GUI.

### Scalar DLC Attached Libraries

For Scalar 10K and Scalar 1000 DLC attached libraries, refer to "Installation and Configuration" and "Client Component Installation" in the *Scalar Distributed Library Controller Reference Manual* (6-00658-02).

The DAS client should be installed during the installation of the Scalar DLC attached libraries. Use this procedure to install the DAS client.

1. Select **Clients > Create DAS Client**.

   The client name is either the default StorNext server host name or the name selected by the administrator.

2. When the DAS client is configured in Scalar DLC, select **Aliasing**.
3. Select **sony_ait** as the **Media** aliasing.

   The default value is 8mm.

4. Verify that **Element Type** has **AIT** drive selected.
5. Click **Change** to execute the changes.

### ACSLS Attached Libraries

Due to limitations in the STK ACSLS interface, StorNext supports only single ACS configurations (ACS 0 only). StorNext support requires that the ACSLS client be installed on the appropriate host machine.

### Scalar i500 (Firmware Requirements)

For Scalar i500 libraries that do not have a blade installed, the library and drives must meet the following minimum firmware requirements. (These requirements apply *only* to Scalar i500 libraries that do not have a blade installed.)

- Scalar i500 minimum firmware level: 420GS.GS00600

- HP LTO-4 Fibre/SAS tape device minimum firmware level: H35Z

> **Caution:** If you do not meet the minimum firmware requirements, you might be unable to add a library to the Scalar i500 using the StorNext Configuration Wizard.

### Disk Requirements

Disk devices must support, at minimum, the mandatory SCSI commands for block devices as defined by the SCSI Primary Commands-3 standard (SPC-3) and the SCSI Block Commands-2 (SBC-2) standard.

Disk devices must meet the requirements specified by Windows Hardware Quality Labs (WHQL) testing.

Disk devices must be configured with 512-byte or 4096-byte sectors, and the underlying operating system must support the device at the given sector size. StorNext 3.5 only supports 4096-byte sectors on Windows and Linux systems.

In some cases, non-conforming disk devices can be identified by examining the output of cvlabel –vvvl. For example:

```
/dev/rdsk/c1d0p0: Cannot get the disk physical info.
```

If you receive this message, contact your disk vendors to determine whether the disk has the proper level of SCSI support.

### Disk Naming Requirements

When naming disks, names should be unique across all SANs. If a client connects to more that one SAN, a conflict will arise if the client sees two disks with the same name.

### LDAP Support Requirement

LDAP (Lightweight Directory Access Protocol) support requires Windows Active Directory.

# Operating System Requirements

Table 2 shows the operating systems, kernel versions, and hardware platforms that support StorNext File System, StorNext Storage Manager, and the StorNext client software.

This table also indicates the platforms that support the following:

- MDC Servers
- Distributed LAN Servers
- File System LAN Clients

Table 2 StorNext Supported OSes and Platforms

| StorNext 3.5 File System and Storage Manager Supported Operating Systems and Platforms | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Operating System** | **Kernel or Release** | **Platform** | **MDC Server** | **File System SAN Client** | **Distributed LAN Server** | **File System LAN Client** | **Storage Manager** |
| Windows 2003 Server | SP2 | x86 32-bit | | ✓ | | ✓ | |
| | | x86 64-bit | ✓ | ✓ | ✓* | ✓ | |
| Windows XP | SP2<br>SP3 | x86 32-bit | | ✓ | | ✓ | |
| | | x86 64-bit | | ✓ | | ✓ | |
| Windows Vista | SP1 | x86 32-bit | | ✓ | | ✓ | |
| | | x86 64-bit | | ✓ | | ✓ | |
| Windows 2008 Server | — | x86 32-bit | | ✓ | | ✓ | |
| | | x86 64-bit | ✓ | ✓ | ✓* | ✓ | |
| Red Hat Enterprise Linux 4 | 2.6.9-67.EL (Update 6)<br>2.6.9-78.EL (Update 7) | x86 64-bit | | ✓ | | ✓ | |
| Red Hat Enterprise Linux 5 (all versions, excluding virtualization) | 2.6.18-53.EL (Update 1)<br>2.6.18-92.EL (Update 2) | x86 64-bit | ✓ | ✓ | ✓ | ✓ | ✓** |
| SUSE Linux Enterprise Server 10 | 2.6.16-46-0.12 (SP1)<br>2.6.16-60-0.27 (SP2) | x86 64-bit | ✓ | ✓ | ✓ | ✓ | ✓ |
| Sun Solaris 10 | 5.10 | SPARC 64-bit | | ✓ | | | |
| | — | Opteron x86 64-bit | | ✓ | | ✓ | |
| | — | Intel x86 64-bit | | ✓ | | ✓ | |
| IBM AIX | 5.3‡ | 64-bit Power Architecture | | ✓ | | | |
| HP-UX | 11i v2‡ | IA-64 | | ✓ | | | |
| **Apple MacOS X Support** | | | | | | | |
| StorNext File System and the StorNext client software are fully interoperable with Apple Xsan. | | | | | | | |

**Notes**:

When adding StorNext Storage Manager to a StorNext File System environment, the metadata controller (MDC) must be moved to a supported platform. If you attempt to install and run a StorNext 3.5 server that is not supported, you do so at your own risk. Quantum strongly recommends against installing non-supported servers.

* Windows Distributed LAN Server supports up to 128 distributed LAN clients.

** Due to a bug in RHEL5, Storage Manager systems will crash when running kernels based on 2.6.18-8. This has been corrected in RHEL5 updates 1 and 2. For additional details, refer to CR 16484 in the Known Issues section of this document.

‡ StorNext support will transition from HP-UX 11i v2 to 11i v3, and from IBM AIX 5.3 to 6.1 on a future date.

**Note:** For systems running Red Hat Enterprise Linux version 4 or 5, before installing StorNext you must first install the kernel header files (shipped as the kernel-devel-smp or kernel-devel RPM).

For systems running SUSE Linux Enterprise Server, you must first install the kernel source code (typically shipped as the kernel-source RPM).

**Caution:** Red Hat 5 ships with secure Linux kernel enabled by default. To ensure proper StorNext operation, you must not install Red Hat 5 with secure Linux enabled. The secure Linux kernel must be off, or the file system could fail to start.

**Note:** GNU tar is required on Solaris systems. In addition, for systems running Solaris 10, install the Recommended Patch Cluster (dated March 10, 2006 or later) before installing StorNext.

To enable support for LUNs greater than 2TB on Solaris 10, the following patches are required:

- 118822-23 (or greater) Kernel Patch
- 118996-03 (or greater) Format Patch
- 119374-07 (or greater) SD and SSD Patch
- 120998-01 (or greater) SD Headers Patch

# Supported Libraries and Tape Drives

Libraries and tape drives supported for use with StorNext 3.5 are presented in Table 3. Where applicable, minimum firmware levels for libraries are provided.

Table 3 StorNext Supported Libraries and Tape Drives

| StorNext 3.5 Supported Libraries and Tape Drives | | | | |
|---|---|---|---|---|
| **Vendor** | **Libraries** | **Drive Types** | **Minimum Library Firmware Levels** | **Notes** |
| **Quantum / ADIC** | Scalar i500 | IBM LTO-1, IBM LTO-2, IBM LTO-3, IBM LTO-4 IBM LTO-3 WORM, IBM LTO-4 WORM, HP-LTO-4 | 420G.GS00400 415G.GS00400 for Dell PV ML6000 | Library firmware upgrade may be required for LTO-3 WORM support. |
| | Scalar i2000 | IBM LTO-1, IBM LTO-2, IBM LTO-3, IBM LTO-4 IBM LTO-3 WORM, IBM LTO-4 WORM, HP LTO-4, HP LTO-4 WORM, DLT-S4 | 120A | Library firmware upgrade may be required for LTO-3 WORM support. |
| | Scalar 24 | IBM LTO-1, IBM LTO-2, IBM LTO-3 | 107A.GY002 | Not including WORM. |
| | Scalar 50 | HP LTO-4 | V42.0 | |
| | Scalar 100 | IBM LTO-1, IBM LTO-2, IBM LTO-3 AIT-2 | 2.05.0003 | Not including WORM. |
| | Scalar 1000 | IBM LTO-2 IBM 3590B1A AIT-1 | 3.00.0017 | |
| | Scalar 10K | IBM LTO-1, IBM LTO-2, IBM LTO-3 IBM LTO-3 WORM IBM LTO-4, AIT-2, AIT-2 WORM | 110A.00001 | Must use SDLC/CSI or SCSI alone.<br><br>Library firmware upgrade may be required for LTO-3 WORM support. |
| | Scalar AML/J, AML/E, AML/2 | None | | Last supported StorNext release was SN 3.0.1. |
| | PX500 | | 001A | Last supported StorNext release was SN 3.0.1. |
| | PX502 | HP LTO-3 | 30.0 | Not including WORM. |
| | PX720 | HP LTO-2, HP LTO-3 DLT-S4 | 4.00 | Not including WORM. |
| **HP** | ESL E series | HP LTO-3, HP LTO-4 | 4.10 | Not including WORM. |
| | MSL 6000 | HP LTO-2, HP LTO-3 | 0507 | Not including WORM. |
| | EML | HP LTO-3 | 1070 | Not including WORM. |
| **IBM** | TS3500 | IBM LTO-2, IBM LTO-3, IBM LTO-4 | 4680 | |

| StorNext 3.5<br>Supported Libraries and Tape Drives (Continued) | | | | |
|---|---|---|---|---|
| **Vendor** | **Libraries** | **Drive Types** | **Minimum Library Firmware Levels** | **Notes** |
| **Dell** | PV136T | IBM LTO-2, IBM LTO-3, IBM LTO-4 | 3.11 | |
| **Qualstar** | XLS | IBM LTO-4 | 0880 | |
| **Sony** | Petasite | IBM LTO-4 drive (T1600) | 6.30 | |
| **Sun / StorageTek** | **ACSLS**: 9310 | 9840, 9940 and T10K | | |
| | **ACSLS**: 9710, 9740<br>**SCSI/FC**: 9740 | 9840 and 9940 | For ACSLS 9740, 2000 | |
| | **ACSLS**: L5500 | | | |
| | **ACSLS**: L700<br>**SCSI/FC**: L700 | T10K | 0236 | When using T10000 drives, the STK library parameter Fastload must be set to OFF. |
| | **ACSLS**: L180<br>**SCSI/FC**: L180 | T10K | 0200 | |
| | **ACSLS**:<br>SL8500 | T10K<br>HP LTO-2, HP LTO-4<br>IBM LTO-2, IBM LTO-4<br>Sun/Stk 9940B | 3.77 | |
| | **ACSLS**: SL500 | IBM LTO-3, IBM LTO-4<br>HP LTO-4 | 1201 | Not including WORM. |

**Notes**:

Sun/Storage Tek no longer supports ACSLS version 6.x. Version 7.0 or higher is required.

Before using DLT cleaning with DLT-S4 or SDLT 600 drives, configure the library (Scalar i2000 or PX720) to disable reporting of the media ID. If media ID reporting is not disabled, StorNext will not recognize the cleaning media (SDLT type 1).

# Minimum Firmware Levels for StorNext Drives

Where applicable, the minimum firmware levels for StorNext-supported drives are shown in Table 4.

Table 4 Minimum Firmware Levels for Drives

| StorNext 3.5<br>Minimum Firmware Levels for Drives | | |
|---|---|---|
| **Drive Type** | **Minimum Drive Firmware Level** | **Notes** |
| IBM LTO-1 | 25D4 | Includes ULT3580-TD1 and Ultrium-TD1 |
| IBM LTO-2 | 3AY4 | ULT3580-TD2 and Ultrium-TD2 |
| IBM LTO-3<br>IBM LTO-3 WORM | 4C17 | ULT3580-TD3 and Ultrium-TD3 |
| IBM LTO-4 | 71G0 | |
| HP LTO-2 | No minimum level required | |
| HP LTO-3 | No minimum level required | |
| HP LTO-4 | No minimum level required | |
| DLT-S4 | 1F1F | |
| 3590B1A | No minimum level required | |
| T10K | No minimum level required | |
| AIT-1<br>AIT-2<br>AIT-2 WORM | No minimum level required | |
| 9940A | No minimum level required | |

**Note**: When using IBM Ultrium-TD3 drives with SUSE Linux Enterprise Server 10, you must upgrade the drive firmware to version 64D0 or later.

# Supported System Components

System components that are supported for use with StorNext 3.5 are presented in Table 5.

Table 5 StorNext Supported System Components

| Component | Description |
|---|---|
| Browsers | Internet Explorer 6.0 or later (including 7.0)<br>Mozilla Firefox 1.5 or later (including 2.0 or later)<br>(Minimum browser resolution: 800x600)<br>**NOTE:** Disable pop-up blockers. |
| LTO-1 Media to LTO-3 or LTO-4 Drive Compatibility | LTO-1 media in an LTO-3 or LTO-4 library (LTO-3 or LTO-4 drives) are considered for store requests unless they are logically marked as write protected. When LTO-1 media is mounted in an LTO-3 or LTO-4 drive, StorNext marks the media as write protected. Quantum recommends circumventing LTO-1 media for store requests by following this procedure:<br>**1** From the SNSM home page, choose **Attributes** from the **Media** menu.<br>**2** On the **Change Media Attributes** window, select the **LTO-1** media from the list.<br>**3** Click the **Write Protect** option.<br>**4** Click **Apply** to make the change.<br>**5** Repeat the process for each piece of LTO-1 media. |
| NFS | Version 3 |
| Addressable Power Switch | WTI RPS-10m<br>WTI IPS-800<br>The RPS-10m (master) is supported.<br>The RPS-10s (slave) is not supported. |

# Hardware Requirements

To successfully install StorNext 3.5, the following hardware requirements must be met:


- StorNext Storage Manager Requirements on page 17
- StorNext File System Requirements on page 18
- StorNext Client Software Requirements on page 18


**Note:** The following requirements are for running StorNext only. Running additional software (including the StorNext client software) requires additional RAM and disk space.

## StorNext Storage Manager Requirements

The hardware requirements for StorNext Storage Manager are presented in Table 6.

Table 6 Storage Manager Hardware Requirements

| File Systems | RAM | Disk Space |
|---|---|---|
| 1–4* | 2 GB | • For application binaries, log files, and documentation: up to 30GB (depending on system activity)<br>• For support directories: 3 GB per million files stored |
| 5–8** | 4 GB | |

* Two CPUs recommended for best performance.
** Two CPUs required for best performance.

**Note:** If a file system uses deduplicated storage disks (DDisks), note the following additional requirements:

- Requires 2 GB RAM per DDisk in addition to the base RAM noted in Table 6.
- Requires an additional 5GB of disk space for application binaries and log files.
- Deduplication is supported only for file systems running on a Linux operating system (x86 32-bit or x86 64-bit).
- An Intel Pentium 4 or later processor (or an equivalent AMD processor) is required. For best performance, Quantum recommends an extra CPU per DDisk.

### StorNext File System Requirements

The hardware requirements for StorNext File System are presented in Table 7.

Table 7 File System Hardware Requirements

| File Systems | RAM | Disk Space |
|---|---|---|
| 1–4* | 2 GB | 2 GB |
| 5–8** | 4 GB | 4 GB |

* Two CPUs recommended for best performance.
** Two CPUs required for best performance.

### StorNext Client Software Requirements

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

For SAN (FC-attached) clients or for Distributed LAN Clients:

- 1 GB RAM
- 500 MB available hard disk space

For SAN clients acting as a Distributed LAN Server:

- 2 GB RAM
- 500 MB available hard disk space

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

# Resolved Issues

The following sections list resolved issues in this release of StorNext:

- StorNext File System Resolved Issues on page 19
- StorNext Storage Manager Resolved Issues on page 20
- StorNext GUI Resolved Issues on page 22
- StorNext Installation Resolved Issues on page 22

**Note:** There is no change to cryptographic functionality in StorNext release 3.5.

## StorNext File System Resolved Issues

Table 8 lists resolved issues that are specific to StorNext File System.

Table 8 StorNext File System Resolved Issues

| Operating System | CR Number | SR Number | Description |
|---|---|---|---|
| Linux | 24489 | n/a | Resolved a kernel panic that was caused by running a health check. |
| | 24750 | 826136 | Performance improvements added to fsclean. |
| | 24898 | n/a | Corrected a condition that caused Red Hat 5 to hang on boot while running the /etc/rc.sysinit script due to Red Hat errors 156355 and 156695. (For more information about these Red Hat errors, see https://bugzilla.redhat.com/show_bug.cgi?id=156355 and https://bugzilla.redhat.com/show_bug.cgi?id=156695.) |
| | 25231 | 871620 | Resolved a condition that occurred after the automounter mounted or unmounted file systems on a client. The mount failed with a "no such file or directory" message. |
| | 25756 | 889550 | Resolved a condition in which tapes did not move from data class to migrate class as expected. |
| AIX | 24884 | 840822 | Resolved a condition in which StorNext 3.1.x running on AIX 32-bit clients returned incorrect pwd value. |
| | 25137 | 842264 | Corrected a situation that caused crashes in cvfs_create_attr. |
| Windows | 16612 | 712214 | Resolved a condition in which cvfsck didn't return the correct allocation bit map. |
| | 16614 | 712214 | Improvements were made to cvfsck, including better updating of the number of free inodes. |
| | 23161 | 723675 | Corrected a condition in which Windows continuously requested a reboot if a file system was mapped but had no access to the LUNs. |
| | 23500 | n/a | Resolved a condition that caused disks to be listed in the wrong order when adding a drive. |
| | 23588 | 729104 | The error message for cvlabel when converting from VTOC to EFI labels has been rewritten for greater clarity. |
| | 24012 | 769476 | Resolved a condition that caused a panic when a client was rebooted during real-time I/O. |
| | 24165 | 770396 | Corrected a condition during Windows client shutdown that caused FSM to consume a lot of memory and potentially panic. |

| Operating System | CR Number | SR Number | Description |
|---|---|---|---|
| Windows | 24210 | n/a | The ARCHIVE bit is now cleared when all copies are complete. |
| | 24610 | 738298 | Corrected a condition in which Microsoft Word 2007 failed on Windows XP but not on Windows Vista or Windows Server 2003. |
| | 24754 | 825458 | Cvupdatefs is now able to roll back bad updates. |
| | 25164 | 861094 | Corrected a problem that sometimes occurred when truncating a file with SetEndOfFile where the truncation was lost and the FSM did not receive the updated file size. |
| | 26247 | n/a | Corrected a condition that generated an "Access Denied" message after attempting to remap a file system. |
| All | 23610 | 597058 | Resolved a condition in which rebooting clients when ServerLicensedClients = MaxLicensedConnects didn't decrement ServerLicensedClients. |
| | 24053 | 773540 | Corrected a condition in which running the cvfsdb "show ntsd" command failed when the Windows NT Security index inode had more than one extent. |
| | 24626 | 818454 | Corrected a condition the produced an assert in FsRasSentTimeout. |
| | 24628 | 812522 | Checking was added to ensure that the smallest LUN is larger than 5GB. (Previously the validation checked for LUNs larger than or equal to 5GB.) |
| | 24861 | 809080 | The backup script has been modified to better handle empty lines in the fsmlist file. |
| | 25597 | 892710 | Corrected a condition in which zero-length restore journal led to backup failure. |

## StorNext Storage Manager Resolved Issues

Table 9 lists resolved issues that are specific to StorNext Storage Manager.

Table 9 StorNext Storage Manager Resolved Issues

| Operating System | CR Number | SR Number | Description |
|---|---|---|---|
| Linux | 16690 | 717777 | Resolved a condition in which incorrect interpretation of the drive check condition caused drives to go offline. |
| | 25179 | 875712 | Corrected a condition in which fsrmcopy prevented store candidates from being stored until fsclean ran. |

| Operating System | CR Number | SR Number | Description |
|---|---|---|---|
| Windows | 25117 | 850986 | Resolved an issue where Sonic Scenarist HD DVD did not work correctly with StorNext. |
| | 25780 | n/a | Resolved blockpool errors that caused health check to fail. |
| All | 23313 | 717930 | Corrected a condition in which any file named "filelist" residing under /usr/adic could cause a backup to fail. |
| | 23858 | 717578 | Resolved a condition in which the last I/O block of a session was not written to tape, but no error was reported. For more detailed information, see StorNext Product Alert 16. |
| | 24159 | 751246 | To help with debugging, an unmodified version of the metadump is now saved before applying restore journals. |
| | 24433 | 760590 | Resolved a condition in which running fsclean -r can left a file in a state where data was lost. |
| | 24666 | 812928 | Corrected a condition affecting class truncation policy scheduling. |
| | 24834 | 837806 | Resolved an issue affecting cleaning an sdisk. |
| | 25121 | 866044 | Corrected a problem that prevented adding a drive to a vault using the StorNext GUI. |
| | 25127 | n/a | StorNext now reports backup failures by sending messages to email subscribers and including the information in the backup information report. |
| | 25684 | 899288 | An error occurred when more than 63 drivepools are defined. |
| | 25765 | 870012, 886856 | MSM fails on startup if there are requests stored but not processed, causing "double free" errors. |
| | 25889 | 899288 | Resolved a condition caused by defining more than 63 drivepools. |

## StorNext GUI Resolved Issues

Table 10 lists resolved issues that are specific to the StorNext GUI.

Table 10 StorNext GUI Resolved Issues

| Operating System | CR Number | SR Number | Description |
|---|---|---|---|
| Linux | 24574 | n/a | Fixed an issue in Red Hat 5 where displaying logs showed only a partial view of a log. |
| | 25789 | n/a | Corrected a condition during drive labeling in which changing the label from VTOC to EFI in the Stornext GUI displayed "Success" even though the drive did not change. |
| Linux (Red Hat 5 only) | 24698 | n/a | When using the StorNext GUI to configure a library, two possible device paths to the same library appeared. (One path was a symbolic link to the other path.) |
| All | 24665 | 757180, 771186 | Added the ability to roll all log, error, and message files associated with StorNext. |

## StorNext Installation Resolved Issues

Table 9 lists resolved issues that are specific to StorNext installation.

Table 11 StorNext Installation Resolved Issues

| Operating System | CR Number | SR Number | Description |
|---|---|---|---|
| Windows | 16667 **move to LINUX** | 718001 | Resolved a condition in which running install.stornext -upgrade failed during an upgrade if /usr/adic/* was relocated to another directory by means of the Installation Configuration menu (option 1). |
| Linux | 23305 | n/a | When upgrading from a StorNext File System-only configuration to add StorNext Storage Manager, some components remain from the File System installation and the new installation could fail. |

# Known Issues

The following sections list known issues in this release of StorNext, as well as associated workarounds, where applicable:



## StorNext File System Known Issues

Table 12 lists known issues that are specific to StorNext File System.

Table 12 StorNext File System Known Issues

| Operating System | CR Number | SR Number | Description | Workaround (if applicable) |
|---|---|---|---|---|
| Linux | 16484 | n/a | Due to a bug in the RHEL5 "scsi generic" driver (RedHat Bug 248564), a system panic will occur on Storage Managers running RedHat kernels based on 2.6.18-8. | RHEL5 updates 1 and 2 contain a fix for this problem. |
| | 24890 | 836284 | DMA I/Os may hang when the file offset is not aligned and disks configured with 4096-byte sectors are used. For example:<br>dd if=/stornext/sr83628a/file2g of=/dev/null bs=1880000 count=1 skip=40 | This issue will be addressed in a future StorNext release.<br>As a workaround, use the "memalign=4k" mount option.<br>Note: this mount option should NOT be used with file systems containing LUNs configured with 512-byte sectors. |
| | 25864 | n/a | An NFS server that exports a StorNext file system with the default export options may not flush data to disk immediately when an NFS client requests it. This could result in loss of data if the NFS server crashes after the client has written data, but before the data has reached the disk. | This issue will be addressed in a future StorNext release.<br>As a workaround, add the no_wdelay option to each line in the /etc/exports file that references a StorNext file system. For example, typical export options would be (rw,sync,no_wdelay). |

| Operating System | CR Number | SR Number | Description | Workaround (if applicable) |
|---|---|---|---|---|
| Linux | 25124 | 833282 | A "no space" error appears after you attempt to add a file to a directory known to contain sufficient space.<br><br>There has been only one known instance of this problem, which is a corrupted B-tree for one directory. Please report any additional instances to Quantum Support.<br><br>Identify this problem by looking for these indicators:<br><br>1. Attempts to add a file to an affected directory produce a "no space" error.<br><br>2. Files can be added to other directories in the same file system without error.<br><br>3. Running the command cvadmin -F <FileSystemName> -e show reports free space in the metadata stripe groups for the file system of the affected directory. | After collecting debugging information, the following workaround can be applied:<br><br>1) Rename the corrupt directory <dir> to <dir>.corrupt<br><br>2) Create a new directory named <dir><br><br>3) Move all files from the corrupt directory <dir>.corrupt to the newly created directory <dir><br><br>4) Delete the empty corrupt directory <dir>.corrupt |
| | 25978 | n/a | Scheduled tasks for "partial backups" and for "rebuild policy" can fail if they overlap. | This issue will be addressed in a future StorNext release.<br><br>The default scheduler value for a partial backup is two hours. If you have a large managed file system you might need to adjust schedules to permit longer times if your partial backups require more than two hours to complete. Changing the allotted time will ensure that the partial backup completes before the rebuild policy task starts. |
| | 26159 | n/a | Error messages may appear during file copying due to the way some applications process temporary files. The error messages are generated because transient files are removed before they are stored. | These error messages are not generated because of a StorNext error. If you receive these error messages under the circumstances described, you can safely ignore the error messages. |

| Operating System | CR Number | SR Number | Description | Workaround (if applicable) |
|---|---|---|---|---|
| Linux | 26321 | n/a | Due to the way Linux handles errors, the appearance of SCSI "No Sense" messages in system logs can indicate possible data corruption on disk devices.<br>This affects StorNext users on Red Hat 4, Red Hat 5, SuSe 9, and SuSe 10. | This issue is not caused by StorNext, and is described in detail in StorNext Product Alert 20.<br>For additional information, see Red Hat 5 CR 468088 and SuSE 10 CR 10440734121. |
| Solaris | 24331 | 755956 | Running an anonymous FTP server inside of a StorNext file system could cause a system to crash with the following error:<br>CVFS ASSERTION FAILED: f_cvp->cv_opencnt == 0 | This issue will be addressed in a future StorNext release.<br>To work around this issue, install Very Secure FTP Daemon (vsftpd) and use it instead of the FTP daemon (in.ftpd) that is shipped with Solaris. |
| HP-UX | 24309 | n/a | If the cvpaths file contains an invalid wild-card specification (that is, a wild-card pattern that does not include a leading '/' character), the fsmpm process could panic and the cvlabel command might fail with a core dump. | This issue will be addressed in a future StorNext release. |
| Windows | 24366 | 24817, 24819 | Changing the owner or group of a file or directory on a Windows client changes the uid or gid on the Linux side, sometimes incorrectly. Linux changes to the uid, gid or mode bits is not reflected in Windows. | The workaround is to allow Windows to initially set the Linux mode bits, the uid and gid on initial file or directory creation (if Windows is creating the file or directory,) but never again after that.<br>Windows' owner, group and permissions fields will be independent of any changes made by Linux after the file or directory is initially created. |
| | 25707 | n/a | Running the command df showed mapped drives but not the mapped folders and directories for cvfs and ntfs file systems. | The workaround is to use the command mountvol, which shows the directories and folders in the file system that are mount points. |
| | 26114 | n/a | Running cvfsck can crash when a data file is empty. | This issue will be addressed in a future StorNext release. |
| | 26115 | n/a | Failover did not execute properly after an upgrade. | This issue will be addressed in a future StorNext release. |

| Operating System | CR Number | SR Number | Description | Workaround (if applicable) |
|---|---|---|---|---|
| Windows | 26019 | n/a | Changing the Global Log level (Tools -> Global Options) or Name Server settings may result in a software hang or an error message "Error starting services" or the notice "Global options will not be activated until the next reboot..."<br><br>The system behavior is dependent upon internal timing of stopping SNFS services. StorNext Services are stopped when:<br>• Setting Global Options in the Client Configuration tool.<br>• Changing the Name Servers configuration.<br>• Using Start->All Programs->StorNext File System menus "Services Stop" or "Services Stop and Remove".<br>Behavior may appear similar to that of a hung system, but has been seen to eventually recover to the desired state. In some cases a hard reboot has been necessary. | This issue will be addressed in a future StorNext release.<br><br>Workaround options include disabling DLC Server (if enabled) and unmounting file systems before changing Global Log levels, and then rebooting after this operation. (Rebooting may not be necessary, but is recommended.)<br><br>Normally the hang is temporary (but can last up to 3-4 minutes) at which point services can be started manually with "Services Start". If the problem persists, a reboot may be necessary. Configuration changes will take affect after the computer reboots.<br><br>Note: Rebooting after changing settings avoids this issue. Unmounting all file systems prior to changing global setting also reduces the risk of this issue occuring. |
| | 26116 | n/a | Running cvfsck took a long time. | This issue will be addressed in a future StorNext release. |
| | 26117 | n/a | The alloc_session_lock wasn't initialized, causing a coredump. | This issue will be addressed in a future StorNext release. |
| | 26337 | n/a | Windows Client Configuration tool failure. When stopping and starting SNFS services using the menu, the message "Could not unmount the file system 'snfs1" was displayed. Restarting the client configuration tool was successful. | This issue will be addressed in a future StorNext release. |
| | 26252 | n/a | Backup and other applications could fail to function properly when a file system is mounted on a directory using StorNext. | This issue will be addressed in a future StorNext release.<br><br>In the meantime, do not mount file systems on a directory that uses StorNext. |

| Operating System | CR Number | SR Number | Description | Workaround (if applicable) |
|---|---|---|---|---|
| Windows | 15032 | n/a | If you are using Promise RAID controllers on a Windows Server 2008 64-bit system, you must install Promise's PerfectPath software.<br><br>If you do not install this software, you will be unable to use your Windows Server 2008 system. | Promise is working on a solution to this problem, but in the meantime they have provided the following workaround:<br><br>1. Install the PerfectPath software on your Windows Server 2008 64-bit system.<br><br>2. Restart your system. The login prompt will *not* appear after you restart. Instead, the **Windows Boot Manager** screen appears showing an error message: "Windows cannot verify the digital signature for this file" (\Windows\system32\DRIVERS\ perfectpathdsm.sys)<br><br>3. From the **Windows Boot Manager** screen, press **Enter** to continue. A second **Windows Boot Manager** screen appears, asking you to choose an operating system or specify an advanced option.<br><br>4. On the second **Windows Boot Manager** screen, press **F8** to specify advanced options. The **Advanced Boot Options** screen appears.<br><br>5. On the **Advanced Boot Options** screen, use the arrow keys to choose the option **Disable Driver Signature Enforcement**. Choosing this option will cause the system to display the login prompt normally after you reboot.<br><br>6. Restart your system. |

| Operating System | CR Number | SR Number | Description | Workaround (if applicable) |
|---|---|---|---|---|
| Windows | 24034 | n/a | Windows has different limitations regarding maximum allowable path names. The limitations depend upon whether you are using the NTFS API or the WIN32 API.<br><br>The WIN32 API has a maximum path name length of 260 characters, including all path characters (for example, c:\,) and the path's NUL termination character. The NTFS API allows 32,000 characters. | There isn't an easy work-around for this problem.<br><br>The path name in the command del \\?\<drive letter>:\<directory>\...\<filename> must not be longer than 260 characters.<br><br>However, applications can use this path-naming syntax to access files with path names longer than 260 characters. That is, an application can use the syntax \\?\<drive letter>:\ <directory>\...\<filename> on Windows APIs to access paths longer than 260 characters.<br><br>Windows has additional restrictions on file names. For more information, contact Microsoft. |
| | 24174 | n/a | Issues may arise due to the way Windows handles Posix-compliant file names.<br><br>NTFS and Posix subsystems allow trailing periods and spaces in file names, whereas WIN32 subsystem does not. (MS-DOS support allows only 8.3 format.)<br><br>Even though StorNext supplies the unicode file names with a space on the end, when StorNext is called by Windows to delete the file, the file name supplied does not have the space on the end. For this reason file names with spaces or periods as the last character cannot be deleted using Windows Explorer. | A partial workaround for this problem is to use the MS-DOS shell instead of Windows Explorer as follows:<br><br>del \\?\<drive letter>:\<directory>\...\<filename><br><br>This format directs the del command to use the NTFS interface instead of the WIN32 interface.<br><br>This will not work on file names that contain the following Windows reserved characters:<br><br>* ? \ < > " : \|<br><br>In addition, you will not be able to delete a directory with a name that ends with a period or a space. |

| Operating System | CR Number | SR Number | Description | Workaround (if applicable) |
|---|---|---|---|---|
| All | 24110 | 773540 | Changes are requested for raid strings inquiry table handling. | This issue will be addressed in a future StorNext release. |
| | 25538 | n/a | EnableSpotlight is a feature on XSan systems only. On systems that do not have an XSan metadata controller, the parser may error out. | If a configuration is copied from an XSan metadata controller to a StorNext metadata controller, edit the configuration file to remove or comment out the EnableSpotlight parameter in the Globals section. |
| | 25551 | 892030 | When running the command cvcp -xyz, some of the files copied do not have the mtime updated on the resulting new files. | This issue will be addressed in a future StorNext release.<br>A workaround is to set the environment variable CV_BULK_SIZE=0. This stops cvcp from using bulk create, and the files are created serially. |
| | 25663 | n/a | The configuration file contains a MediaType section that has not been used for several StorNext releases. Leaving this section in the configuration file(s) for StorNext 3.5 could cause parser breaks. | If any configuration files contain a MediaType section, remove or comment out the section. |
| | 25670 | n/a | Using the values "up" or "down" in affinities or any other string-type keyword in the configuration file caused a parser error. | To avoid parser errors, do not use "up" or "down" when naming items in the configuration file. |

## StorNext Storage Manager Known Issues

Table 13 lists known issues that are specific to StorNext Storage Manager.

Table 13 StorNext Storage Manager Known Issues

| Operating System | CR Number | SR Number | Description | Workaround (if applicable) |
|---|---|---|---|---|
| Linux | 25743 | n/a | Deleting ddisk does not kill the blockpool process when disk proxy is enabled. | This issue will be addressed in a future StorNext release. |

| Operating System | CR Number | SR Number | Description | Workaround (if applicable) |
|---|---|---|---|---|
| Linux | 25837 | 836242 | Running fsmedcopy fails if the output medium does not have sufficient space to hold the copies from the input.<br><br>However, the copies successfully transferred to the new media can be identified with the fsfileinfo command. | This issue will be addressed in a future StorNext release.<br><br>As a workaround, a few fsmedcopy runs will get all the files from the larger input media to the new (smaller) media. |
| | 24649 | n/a | StorNext Storage Manager in a High Availability configuration could encounter a problem reserving tape drives following a failover. A "target reset" is used by the newly activated metadata controller to release "scsi reserve" device reservations made by the former metadata controller. The target reset operation might fail due to device driver problems on systems running SUSE Linux Enterprise Server 10 with tape drives attached via an LSI fibre host bus adapter. Any such reserved drives will not be accessible by the new metadata controller. | There are two possible workarounds, which also apply to versions of StorNext prior to 3.1.2.<br><br>1) Following a failover, release any tape drive reservations held by the former metadata controller. This must be done for each tape drive still reserved by the former metadata controller by running /usr/adic/TSM/util/fs_scsi on the metadata controller which owns the reservation:<br><br># /usr/adic/TSM/util/fs_scsi<br><br>Choice==> 10 (list drives)<br><br>Choice==> 1 (select drive, e.g. /dev/sg0)<br><br>Choice==> 3 (select Test Ready)<br><br>Choice==> 24 (select Release)<br><br>Choice==> 0 (select Quit to exit fs_scsi)<br><br>OR<br><br>2) Add the following setting to the /usr/adic/TSM/config/fs_sysparm_override file: FS_SCSI_RESERVE=none;. ("none" means don't try to reserve tape drives.) StorNext must be restarted for this change to take effect.<br><br>WARNING: This workaround could leave tape drives exposed to unexpected access by other systems, which could lead to data loss. |

| Operating System | CR Number | SR Number | Description | Workaround (if applicable) |
|---|---|---|---|---|
| All | 12321 | n/a | Removing affinities does not unconfigure them from managed file systems. | This issue will be addressed in a future StorNext release. |
| | 25506 | n/a | End of tape or medium not correctly detected. | This issue will be addressed in a future StorNext release. |

## StorNext GUI Known Issues

Table 15 lists known issues that are specific to the StorNext GUI process.

Table 14 StorNext GUI Known Issues

| Operating System | CR Number | SR Number | Description | Workaround (if applicable) |
|---|---|---|---|---|
| Linux | 24326 | n/a | On an HA system, deleting a file system through the StorNext GUI could not successfully complete due to contradictory constraints in the GUI. | This issue will be addressed in a future StorNext release.<br>The workaround is to manually delete the file system instead of using the StorNext GUI. Contact Quantum Technical Support for assistance. |
| | 25685 | n/a | The StorNext GUI will label all disks in a stripe group according to the single label type (EFI or VTOC) specified per stripe group.<br>The GUI will overwrite any pre-existing labels if (and *only* if) the label type is changed from VTOC to EFI or vice versa. | This issue will be addressed in a future StorNext release. |
| | 26364 | n/a | After installing the full SN3.5 installation disks, all of the client download files are present in the directory /usr/cvfs/CLIENTS, but the AIX client is not recognized by the StorNext GUI so cannot be downloaded. | This issue will be addressed in a future StorNext release.<br>In the meantime, the workaround is to use the following commands:<br>cd /usr/adic/www/downloads/<br>touch sn_dsm_irix65m_client.tar |

## StorNext Installation Known Issues

Table 15 lists known issues that are specific to the StorNext installation process.

Table 15 StorNext Installation Known Issues

| Operating System | CR Number | SR Number | Description | Workaround (if applicable) |
|---|---|---|---|---|
| Linux | 23486 | 729897 | For sites that have an AML library, when converting to HA the archives aren't accessible when the secondary server takes over. | This issue will be addressed in a future StorNext release.<br>The workaround is to make sure entries are made in the sn_client_map.txt file for both peers. An entry must exist for each library peer combination. |
| Linux (RHEL5 and SUSE10 only | 25611 | n/a | In rare instances, problems in the SCSI generic driver included with RedHat Enterprise Linux 5 (RHEL5) and SUSE Linux Enterprise Server 10 (SLES10) could prevent data from being written to tape.<br>This includes RHEL5 update 2 (RHEL5u2) and SLES10 service pack 1 (SLES10sp1). The problem is fixed in SLES10sp2. RHEL5u2 and SLES10sp2 are the most recent versions as of the date this document was written. | StorNext 3.5 includes changes that address this issue.<br>When StorNext 3.5 starts up, the following parameters unique to the SCSI generic (sg) device driver are set for systems running RHEL5 and SLES10 (including SLES10 sp2):<br>• /sys/module/sg/parameters/allow_dio is set to 1<br>• /sys/module/sg/parameters/def_reserved is set to 524288<br>These settings do not affect the standard "scsi tape" or "scsi disk" device drivers. This issue is addressed at length in StorNext Product Alert 15. This alert also provides a workaround for versions of StorNext prior to 3.1.2. |
| Linux (RHEL4 and RHEL5 only) | 24692 | n/a | When you mount a CD in a Red Hat 4 or 5 system, CDs are mounted by default with a noexec (non-executable) option which prevents you from proceeding with the StorNext installation. | Remount the CD by typing mount -o remount, exec ...<br>Alternatively, mount the CD to a different directory by typing the following:<br># mkdir /mnt/MOUNT_PATH<br># mount /dev/cdrom /mnt/MOUNT_PATH # cd /mnt/MOUNT_PATH |

| Operating System | CR Number | SR Number | Description | Workaround (if applicable) |
|---|---|---|---|---|
| Windows | 25777 | n/a | Including the .auth_secret file in a non-XSan environment causes the file system to not communicate with the FSMPM. | This issue will be addressed in a future StorNext release. |
| | 25866 | n/a | StorNext upgrades on Vista machines can fail in the middle of installation. This problem is caused by the way Windows Vista handles software upgrades. A related error is described in Microsoft article 263253. | Microsoft has a utility called the Windows Installer Cleanup Utility that removes files left behind by incomplete installations. Access the Microsoft website and search for article ID 290301.<br>To work around this issue, follow these steps:<br>1. Click Start, and then click Run.<br>2. In the Open box, type Regedit and then click OK.<br>3. On the Edit menu, click Find.<br>4. In the Find what box, type Snfs_XXX.dat and then click Find Next.<br>5. If the search result selects a string value called PackageName, continue with these steps. Otherwise, repeat steps 3-4.<br>6. Double-click the PackageName string value.<br>7. In the Value data box, change the installation directory path to the new pathname. For example if the old installation directory path contained OCT10, change that to the current path (e.g, NOV12.)<br>8. On the Registry menu, click Exit. |
| All | 25192 | n/a | VMware snapshots may not be used for virtual machines running StorNext. StorNext does not currently process the loss of state synchronization when a snapshot is restored, so incorrect behavior may result. | This issue may be addressed in a future StorNext release. |

# Operating Guidelines and Limitations

Table 16 lists updated information and guidelines for running StorNext, as well as known limitations in this release.

Table 16 StorNext Operating Guidelines and Limitations

| Operating System / Affected Component | Description |
|---|---|
| Windows | As of StorNext release 3.5 the Authentication tab has been removed from the Windows Configuration utility. (For several previous StorNext releases a message warned that this tab would be removed in an upcoming release: "WARNING: Active Directory will be the only mapping method supported in a future release. This dialog will be deprecated.") |
| | When you are upgrading to StorNext 3.5 from a release prior to version 3.0, you must uninstall StorNext before installing. After uninstalling you must reboot, install StorNext 3.5. |
| | When a StorNext file system is mounted to a drive letter or a directory, configure the Windows backup utility to NOT include the StorNext file system. |
| | In StorNext releases prior to 3.5, the StorNext Windows client attempted to keep the UNIX uid, gid and mode bits synchronized with similar fields in the Windows security descriptor. However, these Windows and UNIX fields were often not synchronized correctly due to mapping and other problems. One consequence of this problem was that changing the owner in Windows incorrectly changed the UNIX uid and file permissions and propagated these errors into sub-directories.<br><br>In release 3.5, the StorNext Windows client sets the UNIX uid, gid and mode bits only when Windows creates a file. The StorNext Windows client will no longer change the Unix uid, gid or mode bits when a Windows user changes the Windows security descriptor or Read-Only file attribute.<br><br>If you change the UNIX mode bits and the file is accessible from Windows, you must change the Windows security descriptor (if Windows Security is configured On) or Read-Only file attribute to ensure the change is reflected on both Windows and UNIX. |

| Operating System / Affected Component | Description |
|---|---|
| Windows | If you are using the StorNext client software with Windows Server 2003, Windows Server 2008, Windows XP, or Windows Vista, turn off the Recycle Bin in the StorNext file systems mapped on the Windows machine.<br><br>You must disable the Recycle Bin for the drive on which a StorNext file system is mounted. Also, each occurence of file system remapping (unmounting/mounting) will require disabling the Recycle Bin. For example, if you mount a file system on E: (and disable the Recycle Bin for that drive) and then remap the file system to F:, you must then disable the Recycle Bin on the F: drive.<br><br>As of release 3.5, StorNext supports mounting file systems to a directory. For Windows Server 2003 and Windows XP you must disable the Recycle Bin for the root drive letter of the directory-mounted file system. (For example: For C:\MOUNT\File_System you would disable the Recycle Bin for the C: drive.) For Windows Server 2008 and Windows Vista you must disable each directory-mounted file system.<br><br>**For Windows Server 2003 or Windows XP:**<br><br>**1** On the Windows client machine, right-click the **Recycle Bin** icon on the desktop and then click **Properties**.<br><br>**2** Click **Global**.<br><br>**3** Click **Configure drives independently**.<br><br>**4** Click the **Local Disk** tab that corresponds to the mapped or directory-mounted file system.<br><br>**5** Click the checkbox **Do not move files to the Recycle Bin. Remove files immediately when deleted**.<br><br>**6** Click **Apply**, and then click **OK**.<br><br>**For Windows Server 2008 and Windows Vista:**<br><br>**1** On the Windows client machine, right-click the **Recycle Bin** icon on the desktop and then click **Properties**.<br><br>**2** Click the **General** tab.<br><br>**3** Select the mapped drive that corresponds to the StorNext mapped file system. For directory-mounted file systems, select the file system from the list.<br><br>**4** Choose the option **Do not move files to the Recycle Bin. Remove files immediately when deleted**.<br><br>**5** Click **Apply**.<br><br>**6** Repeat steps 3-5 for each remaining directory-mounted file system.<br><br>**7** When finished, click **OK**. |

| Operating System / Affected Component | Description |
|---|---|
| All | Be aware of the following limitations regarding file systems and stripe groups:<br>• The maximum number of disks per file system is 512<br>• The maximum number of disks per data stripe group is 128<br>• The maximum number of stripe groups per file system is 256<br>• The maximum number of tape drives is 256 |

# Documentation

The following documents are currently available for StorNext products:

| Document Number | Document Title |
|---|---|
| 6-01658-05 | *StorNext User's Guide* |
| 6-00360-14 | *StorNext Installation Guide* |
| 6-01376-09 | *StorNext File System Tuning Guide* |
| 6-01620-08 | *StorNext Upgrade Guide* |
| 6-01688-05 | *StorNext CLI Reference Guide* |
| 6-00361-27 | *StorNext File System Quick Reference Guide* |
| 6-00361-28 | *StorNext Storage Manager Quick Reference Guide* |

# Contacting Quantum

More information about this product is available on the Quantum Service and Support website at www.quantum.com/ServiceandSupport. The Quantum Service and Support website contains a collection of information, including answers to frequently asked questions (FAQs). You can also access software, firmware, and drivers through this site.

To request a software upgrade, visit www.quantum.com/ServiceandSupport/Upgrade/Index.aspx. For further assistance, or if training is desired, contact Quantum Global Services:

| | |
|---|---|
| **North America** | +1 800-284-5101 |
| **UK, France, and Germany** | 00800 4 QUANTUM |
| **EMEA** | +44 1256 848 766 |
| **World Wide Web** | www.quantum.com/ServiceandSupport |