



Sun StorEdge™ QFS and Sun StorEdge SAM-FS 4.2 Release Notes

Release 4.2

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Sun StorEdge QFS and Sun StorEdge SAM-FS 4.2 Release Notes

This document contains important information about the Sun StorEdge™ QFS and Sun StorEdge SAM-FS 4.2 releases. These releases incorporate design changes, feature changes, and function enhancements. These releases also include fixes to the software. System administrators and programmers who are familiar with these software products will see changes that can affect daily operations and automated scripts that were written to co-exist with previous releases of this software. For these reasons, Sun Microsystems recommends that you study these release notes before upgrading to the Sun StorEdge QFS and Sun StorEdge SAM-FS 4.2 releases.

If you are installing this product's base release and its software patches, study these release notes and the patch README files included with the software patches. The patch README files contain information that supplements the information in this document.

You can obtain a copy of the Sun StorEdge QFS and Sun StorEdge SAM-FS 4.2 software through Sun Microsystems or through your authorized service provider.

Features in this Release

The following sections describe the new features in this release:

- [“New Device Support” on page 2](#)
- [“New File System Interface Driver” on page 2](#)
- [“Sun Cluster 3.1 4/04 Interoperability With Sun StorEdge QFS Software” on page 2](#)
- [“StorADE Support” on page 3](#)
- [“SAM-QFS Manager Enhancements” on page 3](#)

New Device Support

This release added support for the following new devices:

- QUALSTAR RLS-5 series automated libraries with SAIT-1 drives.
- Plasmon Ultra Density Optical (UDO) disk media drives. Requires a minimum firmware level of A028.

New File System Interface Driver

This release replaced the `samsys` driver module with the `samioc` driver module. This driver module is automatically loaded when the `samfs` file system module is loaded.

The `samioc` interface implements an `ioctl` call, rather than a system call, to communicate with the file system. The system creates a pseudo-device, `/devices/pseudo/samioc@0:syscall`, when the driver module is installed. Sun StorEdge QFS and Sun StorEdge SAM-FS applications use this device to communicate with the file system.

The new driver does not consume a SolarisTM Operating System (Solaris OS) system call number. It is no longer necessary to configure a `samsys` entry in the `/etc/name_to_sysnum` file.

Sun Cluster 3.1 4/04 Interoperability With Sun StorEdge QFS Software

This release allows you to configure a Sun StorEdge QFS file system as either a shared file system or as a highly available file system on a SunTM Cluster. Such capability requires a minimum Sun Cluster 3.1 4/04 software level and a minimum operating system level of Solaris 8 OS 2/02 or Solaris 9 OS 4/03. This release supports the following file system types:

- For a Sun StorEdge QFS highly available file system on a Sun Cluster, `HASStoragePlus` moves the file system from one node to another in response to a Sun Cluster node failures.
- For a Sun StorEdge QFS shared file system on a Sun Cluster, the `SUNW.qfs` resource type automates metadata server failover in response to Sun Cluster node failures and Sun Cluster administrative requests.

The Sun StorEdge QFS 4.2 software supports ORACLE[®] Real Application Cluster (RAC) software at the ORACLE 9i Release 2 (9.2.0.1), Patchset 5 (9.2.0.5), and patch 3556420 release level.

StorADE Support

The Sun Storage Automated Diagnostic Environment (StorADE) patch 116720-08 contains device health and attribute support for Sun StorEdge SAM-FS automated libraries, tape drives, and optical disks. StorADE supports file system and device SNMP traps beginning with patch 116720-07.

SAM-QFS Manager Enhancements

This release supports the following SAM-QFS Manager features:

- SAM-QFS Manager prevents users from configuring overlapping partitions in a file system by detecting overlapping partitions when a user creates or grows a file system.
- SAM-QFS Manager discovers and displays devices with EFI labels.
- You can use SAM-QFS Manager to configure and to grow file systems with striped groups. You need to configure the striped groups before you set the DAU size.

Heterogenous File Sharing

Enhanced interoperability with Tivoli SANergy File Sharing software allows Sun StorEdge QFS shared file systems to support multiplatform clients. This enables users that are implementing storage area networks (SANs) to consolidate data resources and share common storage volumes, and files. This eliminates LAN traffic and a dependencies on NFS for sharing. Sun StorEdge QFS shared file systems with clients that include Microsoft Windows, HP-UX, and IRIX hosts can share centralized storage volumes and files.

Product Changes

For the 4.2 release, the license file is `/etc/opt/SUNWsamfs/LICENSE.4.2`. Licenses generated for Sun StorEdge SAM-FS or Sun StorEdge QFS 4.1 and 4.0 software work with 4.2 unless you also changed the equipment in your environment. The installation software copies your existing license file to the new location automatically.

Note – If you made changes to your site’s configuration during the upgrade procedure, you might need a new license in order for the configuration changes to work correctly.

System Requirements

The following sections describe some of the system requirements that must be met in order to use the Sun StorEdge QFS and Sun StorEdge SAM-FS 4.2 releases.

Note – For more information about system requirements, see the *Sun StorEdge QFS and Sun StorEdge SAM-FS Software Installation and Configuration Guide*.

Operating System Requirements

The Sun StorEdge QFS and Sun StorEdge SAM-FS 4.2 releases require the following minimum operating system levels:

- Solaris 8 OS 7/01
- Solaris 9 OS 4/03

Some feature might require operating system support levels that are higher than these. For information, see the feature descriptions.

Sun Cluster Requirements

The Sun Cluster 3.1 4/04 release supports configuring Sun StorEdge QFS shared and highly available file systems.

SAM-QFS Manager Requirements

SAM-QFS Manager is compatible only with Sun Web Console version 2.0.2 applications such as Sun StorEdge Enterprise Storage Manager 2.1. Installing this product over any other Sun Web Console version breaks both applications.

If you have the Java™ Runtime Environment (JRE) 1.4.2, or later, installed on the management station, set the JAVA_HOME environment variable to point to JRE 1.4.2 before you install SAM-QFS Manager. Failure to do so prevents the Sun Web Console from initializing.

Tivoli SANergy Requirements

If you plan to enable the Sun SAN-QFS file system, verify that you have Tivoli SANergy File Sharing software at release level 2.2.3 or later. For more information about the SAN-QFS file system, see the *Sun StorEdge QFS and Sun StorEdge SAM-FS File System Administration Guide*.

Compatibility With Previous Sun StorEdge QFS and Sun StorEdge SAM-FS Releases

The following sections present information that pertains to your file systems if you decide to revert to a previous release level.

Upgrading From or Reverting to a Previous Sun StorEdge QFS or Sun StorEdge SAM-FS File System Release

If you are upgrading to the 4.2 releases, the `pkgadd(1M)` command moves your 4.0 or 4.1 host licensing information to the 4.2 license file, which is `/etc/opt/SUNWsamfs/LICENSE.4.2` file.

If you choose to revert to either the 4.1 or 4.0 releases, use the `backto(1M)` script to return a host's configuration files to the appropriate state for those releases. The conversion from 4.2 to a previous release level does not occur unless you run the `backto(1M)` script manually.

The following additional information applies if you are upgrading from 4.0 or downgrading from 4.2 to 4.0:

- During an upgrade from 4.0, the `pkgadd(1M)` command performs the following copies:
 - It copies the script files in `/etc/opt/SUNWsamfs` and `/opt/SUNWsamfs/sbin` that might have been modified to `/etc/opt/SUNWsamfs/scripts`.
 - It copies `/etc/opt/SUNWsamfs/ftp.cmd` to `/etc/opt/SUNWsamfs/rft.cmd`.

- Conversely, if you downgrade from 4.2 to 4.0, the software moves configuration files back to their pre-4.2 locations when you run the `backto(1M) 4.0` script. If you fall back from 4.2 to 4.0, you must fall back to a 4.0.62 (patch -06 or later) system. This is necessary in order for catalog conversion to occur.

Upgrading From or Reverting to a Previous Sun StorEdge QFS Shared File System Release

The 4.2 Sun StorEdge QFS shared file system uses a different version number for the shared hosts file (4 versus 3). Upgrading is automatic, but reverting to a previous release is not. If Sun StorEdge QFS shared file systems exist, run the `backto(1M) 4.0` script. This script saves the hosts file for each shared file system so that it can be converted to a version 3 prior to running 4.0. For a Sun StorEdge QFS shared file system, run the script on only the metadata server. You do not need to run it on the clients. The procedure is as follows:

1. **Run the `backto(1M) 4.0` script.**

For example:

```
# backto 4.0
```

2. **Remove the 4.2 packages.**

3. **Install the 4.0 packages.**

4. **Issue the `samd(1M) config` command.**

5. **Run the `/etc/opt/SUNWsamfs/hosts42to40shared` script on the metadata server for the shared file system.**

This script converts the hosts file for each shared file system from a version 4 to a version 3. For example:

```
# /etc/opt/SUNWsamfs/hosts42to40shared
```

6. **Issue the `samd(1M) config` command to make sure that the conversion completed.**

7. **Continue with normal system start-up activities for 4.0.**



Caution – If you create a new file system with the Sun StorEdge QFS or Sun StorEdge SAM-FS 4.2 software, and you want to revert to a 4.0 version, you must install Sun StorEdge QFS or Sun StorEdge SAM-FS 4.0.62 (patch -06 or later). If you do not install the software at that patch level or later, you might damage the new file system.

Installing Packages and Patches

The *Sun StorEdge QFS and Sun StorEdge SAM-FS Software Installation and Configuration Guide* includes information on installing the 4.2 releases. If you are installing a patch release, see the README file distributed with the patch.

The following sections contain information on installation packages.

Upgrading SAM-QFS Manager 1.0 to SAM-QFS Manager 1.1

SAM-QFS Manager 1.0 supported the Sun StorEdge QFS and Sun StorEdge SAM-FS 4.1 releases. SAM-QFS Manager 1.1 supports the Sun StorEdge QFS and Sun StorEdge SAM-FS 4.2 releases. To upgrade from SAM-QFS Manager 1.0 to SAM-QFS Manager 1.1, run the `samqfsmgr_setup(1M)` command. The *Sun StorEdge QFS and Sun StorEdge SAM-FS Software Installation and Configuration Guide* includes instructions for using this command.

The `samqfsmgr_setup(1M)` command removes all the packages that pertain to the previous release and installs the new versions of the packages. If tracing was enabled in 1.0, you can reenale tracing in 1.1 by following the instructions in the *Sun StorEdge QFS and Sun StorEdge SAM-FS Software Installation and Configuration Guide*.

Required Solaris OS Patches

Sun Microsystems provides patches for the Sun products described in this section. Refer to the following SunSolve™ website for a list of recommended patches:

<http://sunsolve.Sun.COM>

All testing was done with the patches at the following revision levels:

- The Sun StorEdge QFS and Sun StorEdge SAM-FS software for Solaris 8 OS installations requires Solaris 8 OS 07/01 if using the Sun StorEdge QFS shared file system feature.
- The Sun StorEdge SAM-FS software needs the 108528-02 kernel update patch for hot swappable hardware support installed when running with Solaris 8 OS.
- The Sun StorEdge SAM-FS software needs the 104172-24 Solstice DiskSuite™ 4.1 product patch installed when running with Solstice DiskSuite 4.1.
- The Sun StorEdge SAM-FS software needs the 106627-11 Solstice DiskSuite 4.2 product patch installed when running with Solstice DiskSuite 4.2.
- The Sun StorEdge SAM-FS software needs the 111095-06 SunOS™ 5.8: `fctl/fp/fcp/usoc` driver patch installed when running with Fibre Channel tape drives.
- The Sun StorEdge SAM-FS software needs the 112244-02 SunOS 5.8: Hardware/FCODE: SBus Dual Fibre Channel Host Adapter patch installed when the X6757A SBus Fibre Channel HBA is used to access either tape drives or libraries.

Known Problems

The following sections contain information on known software problems.

SAM-QFS Manager Limitations

The Sun StorEdge QFS and Sun StorEdge SAM-FS 4.2 releases include the SAM-QFS Manager 1.1. SAM-QFS Manager 1.1 does not interoperate with all Sun StorEdge QFS and Sun StorEdge SAM-FS features. Specifically, SAM-QFS Manager does not support the following features:

- Sun Cluster software.
- Sun SAM-Remote software.
- Optical media.
- Fibre Channel bridge cards. You cannot use SAM-QFS Manager to configure a Sun StorEdge L25 or Sun StorEdge L100 tape library that contains a Fibre Channel bridge card (SCSI-to-FC bridge, SG-XFC420CARD-MOD).
- Sun StorEdge QFS shared file systems. You cannot configure a Sun StorEdge QFS shared file system, but the SAM-QFS Manager displays information for existing Sun StorEdge QFS shared file systems. Depending on how you have your environment configured, you might have to configure a new server in SAM-QFS Manager if you failover a Sun StorEdge QFS shared file system.

The Sun StorEdge QFS and Sun StorEdge SAM-FS command line interface allows you to configure and monitor the features that SAM-QFS Manager does not support.

- In localized environments, SAM-QFS Manager limits input text to ASCII text only.

SAM-QFS Manager Problems

The following known problems exist in SAM-QFS Manager:

- If you are using Internet Explorer 6.0, click the login button to log in. A known problem exists regarding pressing the Enter key after typing the password when logging in.
- If you use the Add button on the Sun StorEdge SAM-FS and Sun StorEdge QFS Servers Page to add a host, enter either the hostname or the IP address. Do not add the same host using both the hostname and the IP address.
- Do not close the pop-up window by clicking the X button in the upper left corner of the wizard screen in Internet Explorer or by clicking the hyphen (-) button in Netscape™ or Mozilla™. Always click on the Cancel button to exit.
- If the wizard button is disabled, click on the other Tab in the application and click on the Tab for the action you want to perform. The wizard button should then be enabled.
- The wizards lose user input values if you navigate between the Steps tab and the Help tab inside a wizard. Likewise, wizards also lose input values if you navigate between Step and Link on the wizard left hand side.
- Each archiving file system on a Sun StorEdge SAM-FS server has a default archive copy that archives all files that are not explicitly members of an archive policy. If an `archiver.cmd(4)` file exists on the server, there must be a volume serial name (VSN) association for each file system's default archive copy.

When you create a file system through the web browser, and an `archiver.cmd(4)` file already exists, SAM-QFS Manager automatically creates a VSN association to an available or valid media type for the default archive copy.

If an `archiver.cmd(4)` file does not exist on the server when you create a file system, the system does not explicit create the VSN association and the default archiving behavior is retained. In this situation, you can create an archive policy from the Archive Management tab and apply the policy to the file system. This action creates an `archiver.cmd` file and creates the necessary VSN association for the file system's default archive copy.

To change these default copy definitions, you can manually edit the `archiver.cmd(4)` at a later time.

- The following messages sometimes appear if you try to bring up the SAM-QFS Manager in a browser:

- Connect to *hostname.domain:6789* failed (connection refused)
- The connection was refused when attempting to contact *hostname.domain:6789*

The system generates these messages under the following conditions:

- You typed in wrong URL (wrong host name, domain, port, and so on).
- The web server is not running at the host name specified.
- The Java™ Virtual Machine running the web server has crashed due to some unexpected reason. When this happens, the `/var/log/webconsole/console_debug_log` file at the host running the web server (as specified by *hostname*) contains lines similar to those in [CODE EXAMPLE 1](#).

CODE EXAMPLE 1 Messages

```
#
# The exception above was detected in native code outside the VM
#
# Java VM: Java HotSpot(TM) Server VM (1.4.1_03-b02 mixed mode)
#
# An error report file has been saved as
/tmp/hs_err_pid24360.log.
# Please refer to the file for further information.
#
```

To remedy this, become superuser on the host that was supposed to run the web server (as specified in *hostname*) and issue the following command:

```
# /usr/sbin/smcwebserver restart
```

- Disable all software that blocks internet pop-up windows. Make sure that you disable all the software that blocks pop-up windows while you are using SAM-QFS Manager. Failure to do so causes unpredictable and unexpected results.
- If you upgrade your Sun StorEdge QFS and Sun StorEdge SAM-FS software from a 4.0 release and you use SAM-QFS Manager to make configuration changes, the software creates new versions of the `mcf`, `archiver.cmd`, and other configuration files. If you had comments in your existing files, they are removed in the new files that result. SAM-QFS Manager writes configuration file backup copies to `/etc/opt/SUNWsamfs/.cfg_back`. It retains the most recent 25 versions of each configuration file.
- If you use the Archive Management Tab in SAM-QFS Manager to rename and save an existing archive set (legacy archive policy), the `archiver.cmd` file content could be substantially different from what you had prior to the save.

Segmented File Problems

Segmented files are not supported on Sun StorEdge QFS shared file systems.

stage(1) -n Command Problems

Sun StorEdge QFS shared file system clients do not support the `stage(1) -n` command. The entire file is staged back to the disk cache.

StorADE Interoperability Problems

If you use StorADE to collect diagnostic information in Sun StorEdge SAM-FS environments, be aware that either you or the Sun StorEdge SAM-FS software can down a device. StorADE initiates an alarm for downed devices regardless of whether a user or the software downed the device.

Tivoli SANergy File Sharing Problems

The following problems can arise when using SANergy:

- System panics can occur under the following conditions:
 - When uninstalling SANergy while using a fused mountpoint.
 - When stopping SANergy services while SANergy is in use.
- Read operations on files marked with `stage(1) -n` staging attribute, which suppresses staging, can sometimes hang.
- When writing from a SANergy client, the software does not honor the `segment(1)` file attribute.
- Read operations on files marked with `release(1) -p`, which specifies partial staging, sometimes fail.
- An `ftruncate(3C)` operation might not properly extend a file when issued from a SANergy client.
- An `mmap(2)` system call, if issued over SANergy when using the LAN option, sometimes aborts.

Localization Problems

In localized environments, be aware of the following product limitations:

- Sun StorEdge QFS and Sun StorEdge SAM-FS do not support message displays in more than one language.
- Configuration files do not accept nonASCII names or descriptions.

Bugs

[TABLE 1](#) shows the bugs that are known to exist in the Sun StorEdge QFS and Sun StorEdge SAM-FS software.

TABLE 1 Known Bugs

Bug Number	Description
4940647	Tape drive does not go idle after request to <code>tplabel</code> to create a duplicate VSN
5005005	Clients can't stale indirect blocks without keeping a private list
5020624	Keep inodes that are not free off the free list
5041417	Stale inode in hash chain prevents use of file
5047813	NULL pointer panic in <code>sam_acl_access()</code>
5048469	Shared QFS: involuntary metadata server change: test aborted with ENOCSI error
5051435	Most messages from GNU-based commands are in English
5069056	Email notification only supports English messages
5070615	Faults Summary Description contents are not localized
5072978	Unmount needs to wait until all append lease times have expired
5075455	Operation failures must be handled properly
5076616	Failing to create a new archive policy is unintelligible
5078818	Cannot log in to SAM-QFS Manager under Japanese or Chinese after install
5083883	Tape waiting in drive forever on position request
5087614	Shared QFS: tests aborted: write error: ELNRNG
5091549	Unable to see devices for metadata in New File System wizard
5092561	<code>getfacl</code> changes soft link permissions to 770 if they link to ACL secured files/folders
5092567	Shared QFS: forced panics: <code>samfsck</code> ALERT
5094279	Sun StorEdge QFS shared file system data corruption during a voluntary metadata server change
5098109	Data compare errors during continuous changing of metadata server

TABLE 1 Known Bugs (Continued)

Bug Number	Description
5101891	Building on NFS-exported shared client hangs
5103931	MSG array full : shared QFS clients cannot access file system
5101348	File system is not mounted on metadata client, pending mount wedges sam-fsd

Release Documentation

The Sun StorEdge QFS and Sun StorEdge SAM-FS 4.2 documentation is available on the web at the following URLs:

- <http://docs.sun.com>
- http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage_Software

TABLE 2 shows the complete release 4.2 documentation set for these products.

TABLE 2 Sun StorEdge QFS and Sun StorEdge SAM-FS 4.2 Documentation

Title	Part Number
<i>Sun SAM-Remote Administration Guide</i>	816-2094-11
<i>Sun QFS, Sun SAM-FS, and Sun SAM-QFS Disaster Recovery Guide</i>	816-2540-10
<i>Sun StorEdge QFS and Sun StorEdge SAM-FS File System Administration Guide</i>	817-7721-10
<i>Sun StorEdge QFS and Sun StorEdge SAM-FS Software Installation and Configuration Guide</i>	817-7722-10
<i>Sun StorEdge SAM-FS Storage and Archive Management Guide</i>	817-4093-10
<i>Sun StorEdge QFS and Sun StorEdge SAM-FS 4.2 Release Notes</i>	817-7724-10

You can obtain hard copy manuals from the following website:

<http://www.iuniverse.com>

Note – The README file included in the software package contains a list of publications and shows the Sun documentation websites.

The *Sun QFS, Sun SAM-FS, and Sun SAM-QFS Disaster Recovery Guide* that is available for the 4.2 release contains outdated information in certain sections. For example, the section called “Restoring a Volume Overflow File Using Information From an Archiver Log” is known to be outdated. For a revised version of that manual, see your Sun support staff.

Service Contact Information

To contact Sun technical support, go to the following web site:

<http://www.sun.com/service/contacting>

For installation and configuration services, please contact Sun Global Customer Service at 1-800-USA4SUN or contact your local Sun sales representative.