



# Sun StorEdge™ 5210 and 5310 NAS Appliance and Gateway System Release Notes

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# Sun StorEdge 5210 and 5310 NAS Appliance and Gateway System Release Notes

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These release notes contain information for the Sun StorEdge™ 5210 and 5310 NAS Appliance and Gateway system software version 4.11 as well as subsequent qualifications to the release. The software is backward compatible with previous versions of Sun StorEdge 5210 and 5310 NAS Appliance software.

When installing the Sun StorEdge 5310 Cluster, use these release notes with the *Sun StorEdge 5310 NAS Appliance and Gateway System Getting Started Guide*, 819-3237-10.

These release notes contain the following sections:

- “System Requirements” on page 2
- “Software Updates” on page 3
- “New Features” on page 3
- “Resolved Issues” on page 6
- “Known Issues” on page 8
- “Addenda to the Documentation” on page 14
- “Release Documentation” on page 24
- “Service Contact Information” on page 24
- “Third-Party License Agreement” on page 25

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**Important** – The Web Administrator supports only a single login at a time. A best practice would thus be to have only one person administering the system at a time to avoid command conflicts. In a cluster configuration, you must log in to each server separately to manage that server.

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# System Requirements

The Sun StorEdge 5210 and 5310 NAS Appliance system ships with the Web Administrator software already installed. You do not need to install any software to manage the Sun StorEdge 5210 and 5310 NAS Appliance.

To access the Web Administrator management interface, you must have a network-attached computer running one of the following browsers. You must use a Java™ technology-enabled browser with Java Plug-In 1.3.1 (minimum version).

- Internet Explorer
- Mozilla™
- Netscape Navigator™

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**Note** – To download the latest Java Plug-in software, go to <http://java.com>.

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## ▼ To Determine NAS OS Software and Build Versions

Perform one of the following procedures.

- Access the Web Administrator navigation panel and select System Operations → Update Software.
- Type `version`, on the command-line interface (CLI), and, for example, build 18 will display:

```
4.11 M0 (build 18)
```

## ▼ To Determine Firmware Revision Levels

Use the `raidctl profile` command to determine and record the current firmware revision level of each RAID controller unit, expansion unit, controller NVSRAM, and drive.

See the *Sun StorEdge 5310 NAS Appliance and Gateway System Administration Guide* for details.

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# Software Updates

Please upgrade your system by downloading the latest version of NAS software from <http://sunsolve.sun.com>. Select the Patchfinder link, and then enter the patch number that is appropriate for your system.

- 118216 Software for the Sun StorEdge 5210 Appliance
- 119351 Software for the Sun StorEdge 5310 Appliance

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**Note** – If you are upgrading a Sun StorEdge 5210 NAS Appliance to software version 4.11 from a release prior to version 4.05, FCO 257 is required. Contact Sun Service to get FCO 257 applied prior to upgrading your software. Any Sun StorEdge 5210 NAS Appliance with software version 4.05 (or greater) does not need the FCO applied.

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## Software Downgrades

If you need to downgrade the NAS software version to a previous version, contact Sun<sup>SM</sup> Services for advice before attempting to perform the downgrade.

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## New Features

The following new enhancements are provided with release 4.11:

- The Audit Trail feature now provides a set of auditable file operations which manipulate write-once, read-many (WORM) files on compliance-enabled volumes.
- The Real-time Anti Virus Scan feature allows the Sun StorEdge 5000 series NAS products to be configured as clients of Symantec Antivirus Scan Engine running on Windows.
- The Compliance Archiving Software is available in a stringent form (referred to as "mandatory enforcement") and in a less stringent form (referred to as "advisory enforcement"). The Compliance Archiving Software with an advisory enforcement feature is offered as a solution for customers with less stringent compliance requirements than the strict compliance definition. It also provides an interim solution to test compliance features while maintaining the ability to undo actions, delete files, and delete volumes. The Compliance Archiving Software with an

advisory enforcement feature will also be supported on Gateway systems with the restriction that the Gateway systems cannot be upgraded to Compliance Archiving Software with a mandatory enforcement feature.

- The iSCSI target on the Sun StorEdge 5310 Appliance and Gateway system currently supports the iSCSI initiator for Microsoft Exchange clients. All other iSCSI initiators are not supported.
- The CIFS authenticated IPC feature provides the Sun StorEdge 5000 series NAS products the ability to use authenticated inter process communications (IPC) with a Microsoft Windows compatible domain controller (DC). This is provided as a security option to the existing anonymous IPC support.
- The Sun StorEdge 5310 NAS Gateway system provides Network File System (NFS) and Common Internet File System (CIFS) file services for the following systems:
  - Sun StorEdge 9970, 9980, 9985, and 9990 systems
  - Sun StorEdge 6920 system, version 2.0.5
  - Sun StorEdge 6130 array. See “Connecting the Gateway System to the Sun StorEdge 6130 Array” on page 17 for installation instructions.
- The Sun StorEdge 5310 NAS Gateway system is qualified with the following Fibre Channel (FC) switches:
  - Brocade SilkWorm 3250, 3850, 3900, 4100, 200E, 24000, and 48000
  - Sun StorEdge 2 Gb 8, 16, and 64 port
  - McData Intrepid 6064, 6164, and Sphereon 4500
  - Qlogic 5200 and 5602
- The Sun StorEdge 5310 NAS Appliance and Gateway system are qualified with the following FC tape libraries when connected to an unused FC port on the Sun StorEdge 5310 NAS server. Disks and tape libraries cannot be attached to the same FC port.
  - Sun StorEdge L180/500/700
  - Sun StorEdge L25/100
  - Sun StorEdge LTO 3 drives
  - Sun StorEdge LTO 2 drives
  - Sun StorEdge SDLT 320 drives
  - StorageTek 9940B and 9840C drives

If all FC ports are in use for disk storage, you can add a FC switch to the configuration to consolidate disk connectivity to two FC ports. This will free up the remaining FC ports for exclusive FC tape use.

Tape units can operate in both cluster and gateway configurations, but are available only to the NAS server to which they are connected. There is no clustering support for tape units. Tape units always function as if they are connected to a single NAS server.

- The Sun StorEdge 5310 NAS Appliance is qualified with mixed expansion units. The firmware revision levels listed in TABLE 1 are required for each component.

**TABLE 1** Required Array Firmware Levels

Component	File Name
RAID controller	SNAP_288X_06120910.dlp
RAID controller NVSRAM	N2882-612843-503.dlp
Fibre Channel expansion unit (EU)	esm9631.s3r
SATA expansion unit (EU)	esm9722.dl

See the *Sun StorEdge 5310 NAS Appliance and Gateway System Administration Guide* for information about how to upgrade controller units, expansion units, and drives to the latest firmware revision level.

Mixed Serial Advanced Technology Attachment (SATA) and Fibre Channel expansion unit (EU) configurations are now supported with the following stipulations.

- Full EUs must consist of all Fibre Channel drives or all SATA drives. Mixing of drive types within an EU is not supported.
- The controller tray can contain Fibre Channel drives even if the EUs contain SATA drives. The controller tray cannot contain SATA drives.
- A unique hot-spare must be available for both SATA and Fibre Channel in the same capacity as used in the array.
- LUNs cannot include both SATA and Fibre Channel drives.
- Expansion trays connected to RAID controllers must be at the same firmware level as the controllers. For example, if you add an expansion tray of SATA drives at firmware level 1.2 to a NAS server with RAID controllers at firmware level 1.0, you must upgrade the entire system to revision level 1.2.
- The Sun StorEdge 5310 NAS Appliance is qualified with 300 GB Fibre Channel (FC) drives. The minimum drive firmware level for the 300 GB FC drive is 055A. If you are adding these drives to an existing controller unit, firmware on the array controller will need to be updated. (See the *Sun StorEdge 5310 NAS Appliance and Gateway System Administration Guide*.)

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## Resolved Issues

The following issues have been resolved with this release.

- A new LUN created from cluster heads displays with owner as “Unowned.” (6287381)  
**Workaround:** Assign LUN ownership using the Web Administrator GUI or Telnet/CLI.
- The LDAP search has been modified such that user information in a Microsoft Windows Active Directory Server (ADS) will not be deleted when the NAS autohome feature is used. (6310891)
- The timestamps on intermediate directories will be restored during an NDMP recover operation. (6259093)

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## Resolved Issues From Previous Releases

- When a Sun StorEdge 6920 system is used as storage for the Sun StorEdge 5310 Gateway system, LUN and volume information will now display properly in the Web Administrator. (6318244)
- A backup and restore of a directory of hard links should now work correctly. Previously the file system became read-only in certain circumstances. (6324643)
- After a LUN failover was initiated from one head to another in a cluster system, occasionally a LUN would not fail back correctly resulting in incorrect head ownership and I/O failure. All LUNs will now fail back to ownership by the correct head. (6327065)
- The system can now process detached LUNs. In the previous release, the system would enter a panic state when processing detached LUNs. (6328165)
- The system now allows you to create multiple LUNs. In the previous release, the server crashed during attempts to create multiple LUNs. (6305831)
- ISO8859 code pages with extended (8-bit) ASCII characters now display properly. (6299983)
- It is now possible to correctly mount a `/vol* .chkpnt` volume at the root level. Mounting a checkpoint volume using the following command will no longer cause a `pwd` command malfunction. (5100110)

```
mount -F nfs se5k:/vol01.chkpnt /z/vlcp
```

- The Simple Network Management Protocol (SNMP) attribute `system.sysDescr.0` is now set correctly. (5062965)
- All checkpoints now list the Backup option. (5079000)
- The Environmental Monitoring Unit (EMU) boards in the Sun StorEdge 5210 NAS Appliance expansion unit are now properly instrumented and monitored. (5092547)
- The network attached storage (NAS) head no longer sends false battery errors under any circumstances. (5101253)
- The File Transfer Protocol (FTP) module in the NAS operating system now loads automatically at startup but remains disabled by default. (5106379)
- The graphical user interface (GUI) now has no limit to the number of external expansion units it will display. (6184256)
- The console now displays all file volumes, even if more than 50 were created. (6180031)
- Create and Delete bonding (port aggregate) occasionally caused an unresponsive system; this has been fixed. (5108956/5109029)
- Large Network Data Management Protocol (NDMP) backup will not fill up `/dvol` with NDMP job files. (6252667)
- SNMP attribute `se5210RaidBBUStatus` is set to "normal." (5064730)
- On a Common Storage Module (CSM) redundant array of independent disks (RAID) controller hardware failure, pulling out the controller with active I/O no longer causes volumes to go Read-Only. (6215728)
- Occasional disk or Fibre Channel errors while running I/Os no longer cause some volumes to be marked Read-Only. (6213003/6214237)
- A RAID volume will now automatically start rebuilding on an Expansion Unit Fibre expansion unit during use of existing hot-spares. (6221965)
- NDMP Direct Access Restore (DAR) recovery will work with Backup Type set to "tar." (6259024)
- Web Administrator will indicate read-only volumes if there is a LUN failure. (6222888)
- There are no longer inconsistencies between setting the time zone from the Telnet Menu/CLI and setting it from the Web Administrator. (6234042)
- In-band RAID management is now supported as of release 4.11. Therefore the help topics are now valid. (6215325)
- Old exports should no longer appear when there are no associated volumes. (6197943)
- When a cluster is in failover mode and, if a volume is created from the Alone head on a logical unit number (LUN) that was originally owned by the Quiet head, applications accessing that volume should no longer get an EACCESS error during the cluster recovery process. (6236671)

- If you add a new tray, you can assign ownership of an unowned LUN with the Web Administrator. (6227823)
- When a mirrored volume is promoted using the Web Administrator, a status message is now displayed on the GUI. (6233969)
- The cluster should not lose time and get out of sync when under extreme load. (6235662)

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## Known Issues

The following issues are not resolved at this time.

- The Web Administrator interface might go blank if left open and idle for more than 15 minutes. This can happen if any of the following screens are left idle:
  - File volume
  - Replication
  - iSCSI

Any other screen you then go to will also be blank. (6356459)

**Workaround:** Close the Web Administrator and browser. Normal operations should resume after you restart the Web Administrator.

- When an NDMP 3-way recover is performed with Sun Enterprise Backup Software version 7.2, the recover process might hang after all of the data is successfully restored to the NAS. If the message “EBADF Bad file descriptor” is posted to the `ndmp.log` file, it means that the recovery is complete but the Sun Enterprise Backup Software recovery process is hung. (6348765)

**Workaround:** Cancel the recovery from the Sun Enterprise Backup Software to proceed.

- SCSI errors might occur during writing to direct-attached SCSI LTO3 tape drives.

**Workaround:** Use the on-board Fibre Channel / SCSI bridge on the robot to connect to a Fibre Channel port on the network attached storage (NAS). (6347059)

- Retained files can be removed on Compliance Lite volumes by non-administrator windows domain users. (6361605)

- When both Symantec Anti-Virus Scan Engine (SAVSE) and Symantec Anti-Virus Corporate Edition (SAVESE) are installed, or when SAVSE is installed along with any other anti-virus product that captures virus infections at the file system, the file system-level protection can interfere with normal operation of the SAVSE product, causing the SAVESE product to issue an internal error message. (6351326)

**Workaround:** Either disable file system real-time protection or otherwise provide for exemption from file system-level protection for any temporary files used by SAVSE.

- On a newly purchased systems, or when you add a new controller or expansion unit, some LUNs may be offline. (6337658)

**Workaround:** This may be caused by duplicate SSIDs on the EUs. To bring the LUNs online, do the following.

1. **Turn off all the storage arrays.**
  2. **Turn on the controller array.**
  3. **Wait for the array to complete power up.**
  4. **Power on each drive module, waiting for each to complete power up before powering the next.**
- When LUN creation requires several minutes to complete, the Web Administrator might provide ambiguous information. (6273163/6273171/6276198)

**Workaround:** Close the Web Administrator and browser. After restarting the Web Administrator the information provided should be correct.

- There is no current method provided by the Web Administrator to bring volumes shown as offline in the screen RAID → Manage RAID online. (6331263)

**Workaround:** Call SUN service.

- The alternate path is not available after a restore for a LUN whose primary path is set after a Fibre Channel cable pull. (6309701)

**Workaround:** After physical changes to the back-end configuration, a user-initiated rescan is required. Using the Web Administrator, go to Volume Operations → Create File Volumes and click Scan for New Disks.

- Upgrading CRM firmware using In-Band RAID Management (IBRM) might cause all LUNs on the Sun StorEdge 6130 array to failover to a single RAID controller. (6283300)

**Workaround:** Place the \*LUNS\* back on the \*primary\* path by using the Web Administrator.

- If the Sun StorEdge 5210 or 5310 NAS Appliance is shut down in a method other than the Web Administrator, or if the Web Administrator loses contact with the Sun StorEdge 5310 NAS Appliance, the browser may stop working. (6209231)

**Workaround:** Close all instances of the Web Administrator and web browsers. After the system reboots, reopen a web browser and relaunch the Java browser interface.

- The Notification Email URL field shows the hostname URL. You might not be able to connect to the Web Administrator by clicking this URL. (6217684)

**Workaround:** If the Domain Naming System (DNS) does not resolve the hostname, use the IP address to connect to the Sun StorEdge 5210 or 5310 NAS Appliance. Ensure that the host name defined in the Sun StorEdge 5210 or 5310 NAS Appliance is registered in a name server (for example, DNS or Network Information System (NIS)).

- High Availability and Port aggregation bond IP address may not restore properly after you delete a bond. (6212483)

**Workaround:** Select a different IP address for the bond.

- Poor RX/TX optical signal strength may result in degraded performance. (6207069)

**Workaround:** If there are no other critical hardware errors and you see significant performance degradation, this degradation could be related to Fibre Channel link errors. Contact Sun Service for assistance. (See “Service Contact Information” on page 24.)

- When you choose Configure NFS → Setup Hosts → Add User, the window contents don't refresh, and the system appears to stop working because of many entries in the NIS/NIS+ mappings. (5054655)

Wait for the system to finish processing and repaint the screen. Do not reboot your system.

- The Apply button becomes unusable when you attempt to create a LUN with more than six SATA drives from the Manage Raid option of the Web Administrator. (6277449)

**Workaround:** When reconfiguring SATA drives using the Web Administration tools, be sure to not go over the 2.0 Terabyte LUN maximum size limit of the RAID controller.

- Attempts to log in to a system with an offline LUN using the Web Administrator results in an error of “Login rejected.” Attempting to delete a volume from an offline LUN results in the server not responding. (6282749)

**Workaround:** This can occur when an offline LUN caused by a double fault is followed by a deletion of a file system from that LUN. A reboot is required.

# Cluster-Specific Issues (Sun StorEdge 5310 Cluster Only)

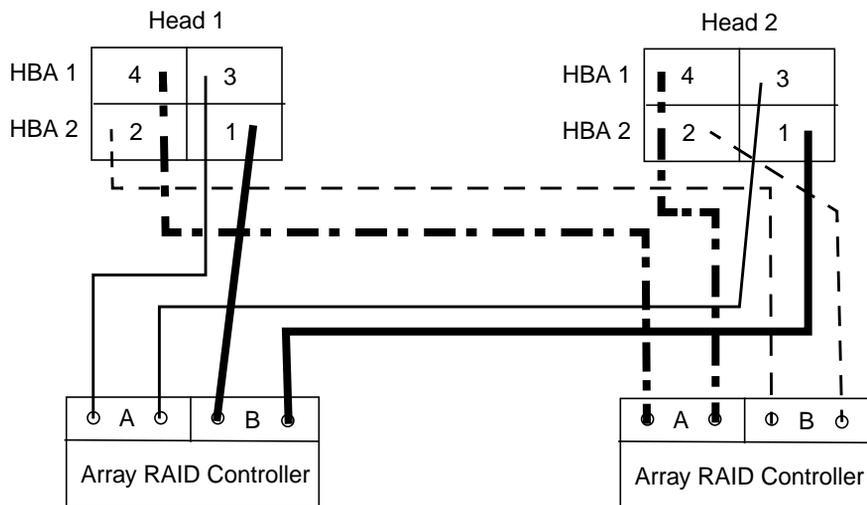
The following cluster-specific issues are not resolved at this time.

- The Alone head could become stuck in the transition state while the Quiet head is in the Quiet state. (6240366)

**Workaround:** Perform another recover from the Alone head to ensure that your clusters are in Normal mode before doing any upgrades.

- In a cluster system using In-Band RAID Management (IBRM), it is important that the HBA ports on head 2 link to the same RAID Controller as the ports on head 1 using the same sequence. The setup needs to be configured identically.

For example, if HBA port 2 on Head 1 is connected to Controller A, then HBA port 2 on Head 2 must be connected to Controller A on the same array controller. See FIGURE 1 for an example.



**FIGURE 1** Relationship of HBA Ports to RAID Controllers

- Manual movement of LUNs between heads results in a zero capacity reading. This occurs during initial cluster setup or when you add new trays. (6239025)

**Workaround:** Run a manual disk scan from either the Web Administrator or the Telnet Menu/CLI and the head will refresh the LUN capacity.

- In a cluster configuration, if the Quiet head experienced system problems during recovery, some of its volumes may fail to mount on the Alone head. (6214772)

**Workaround:** Using the Telnet Menu / CLI, type the following command:

```
mount -f /volume-name
```

- In a cluster configuration, before doing a recovery, check the partner head using the LCD to see if the head is in Quiet mode. Then do the recovery from the Web Administrator or Telnet Menu of the Alone head. (6229943)

If physical access to the system is not available, you should Telnet to the cluster system. You will be logged into the Alone head. From there you can either check the log to ensure that the Quiet head has finished booting, or ping the Quiet head's heartbeat. By default the heartbeat IP is 10.10.10.1 for head 1 and 10.10.10.2 for head 2.

- In a cluster configuration, a head should only modify file permissions on file systems owned by that head and not those owned by the partner head. (6262339, 6222886)
- Attempting to log in to the Web Administrator fails with a long delay and the message "Login rejected." (6278471)

**Workaround:** Close all the browser instances, then restart the Web Administrator. This appears to occur with Mozilla variants of web browsers and not Internet Explorer.

## File Replicator-Specific Issues

The following replicator-specific issues are not resolved at this time.

- If you don't have a valid mirroring license, attempts at mirroring might result in invalid messages. (6332950)
- During creation of a new mirror, if the target/mirror system does not have enough space and partitions, then the source/master system continuously retries until enough space and partitions are available. (6197388)

**Workaround:** You can break the mirror. Then recreate the mirror after enough space and partitions are available on the target system.

- If there is a system failure (such as a power failure) within 10 seconds of the start of a change role process, both systems may be set as the TARGET and there will be no MASTER, causing loss of the mirror. (6198655)

**Workaround:** Contact Sun Technical Support for help in re-establishing your mirror.

- If you do a Change Role operation while there is heavy I/O activity on the master volume, the master might time out, and you might lose CIFS access to the volume. (6248243)

**Workaround:** Do a manual remount of the file volume from the CLI. For example, if the volume name is `volx`, type the following:

```
nas-5310> umount /volx
nas-5310> mount /volx
```

- The RESYNC option is not available in the Web Administrator.

**Workaround:** This option is available via the Telnet menu. (6198789)

- During mirroring with heavy I/O activity, or during mirroring with cluster systems, you might see the following messages in the logs of the target/mirror server: (6176236)

```
nmir: deseq_recv: The mirror log appears to be full
```

**Workaround:** These messages are for informational purposes and the mirrors will continue with the normal operation. These messages can be safely ignored.

## Gateway-Specific Issues (Sun StorEdge 5310 Gateway System Only)

The following gateway-specific issues are not resolved at this time.

- Performing a firmware upgrade on a Sun StorEdge 6130 backend to a gateway cluster may cause a controller array to reboot and go quiet. (6339825)  
**Workaround:** Perform a recovery operation.
- A Gateway system does not support heterogeneous systems attached to the head. Only one storage system per Sun StorEdge 5310 Gateway system configuration, single head or cluster, is supported. You may not attach multiple storage systems. (6315936)
- In a Gateway-clustered system, each head must have two Fibre Channel connections to a SAN storage unit. One Fibre Channel connection is insufficient for proper High Availability functionality.
- After you remap a LUN from other SAN hosts to the NAS Gateway system, the LUN may appear to be inaccessible. (6272080)

**Workaround:** Run the CLI `disk disk-name` command. If the owner of the LUN is listed as “noDPMGR,” then the disk has residual data.

Run the following CLI command to clear the data and make the LUN usable.

```
disk disk_name,partition-number zap
```



---

**Caution** – The `zap` command reformats the LUN. The disk table will be deleted.

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## Addenda to the Documentation

This section includes information that is additional to or overrides information in the documentation. It contains the following topics.

- “iSCSI LUN Performance” on page 14
- “Cluster Power On Procedure” on page 15
- “Mounting File Systems” on page 15
- “Management GUI Fault Tolerance vs. High Availability” on page 15
- “Drive Letter Assignments to File Systems” on page 15
- “Adding Drives to the Sun StorEdge 5210 and 5310 NAS Appliance” on page 16
- “Compliance Feature” on page 16
- “Upgrade to 4.10 or Higher Requires Resetting the Timezone” on page 16
- “Connecting the Gateway System to the Sun StorEdge 6130 Array” on page 17
- “Making the Sun StorEdge 6130 Array SAN Storage Available” on page 20
- “Reintroduction of a LUN Requires a Reboot” on page 22
- “Offline LUNs Cannot Be Deleted” on page 22
- “Do Not Manually Mount /CVOL” on page 22
- “File Replication Using Clusters” on page 22
- “Exporting a File Volume” on page 23
- “MIB Files” on page 23
- “NAS System Log Messages” on page 23

### iSCSI LUN Performance

iSCSI LUNs will provide optimal performance if the volumes they reside on are used exclusively for iSCSI LUNs. If these volumes also contain Common Internet File System (CIFS) shares or Network File System (NFS) mounts, the performance of the iSCSI LUNs might not be optimal (depending on the I/O traffic of each protocol).

## Cluster Power On Procedure

The cluster power-on procedure in the *Sun StorEdge 5310 NAS Appliance and Gateway System Getting Started Guide* instructs you to power on server H1 first. To determine the H1 server, look for the software serial number (ending in -H1) on the label that is affixed to the back panel of the NAS server. If the label is not located at the back of the server, check the sheet metal on left side of the NAS server.

## Mounting File Systems

After multiple continuous reboots, one or more file systems may become unmounted. To mount the file systems, issue the following command: (6306480)

```
mount -f volume-name
```

## Management GUI Fault Tolerance vs. High Availability

The Sun StorEdge 5310 NAS Appliance Version 4.5 documentation set does not reflect the Web Administrator GUI change from Fault Tolerance to High Availability. Therefore, when a step instructs you to select Fault Tolerance, select High Availability instead. For example, to initiate a recovery from failover, select High Availability → Recover. (6301656)

## Drive Letter Assignments to File Systems

During file system creation, the NAS will automatically assign a drive letter to file systems accessible by way of SMB/CIFS. It is possible to run out of drive letter. (6315946)

This message is for informational purposes only. The file system will be created but, to assign it a drive letter, you must reassign a drive letter that is currently used by another file system.

# Adding Drives to the Sun StorEdge 5210 and 5310 NAS Appliance

The Sun StorEdge NAS Appliance supports hot-plugging of drives. However, to add or remove expansion units, you must shut down the system.

## Compliance Feature

The following information applies to the Sun StorEdge 5310 Appliance and Cluster configurations.

- The compliance feature of worming a file through Microsoft Windows software is turned off by default. (6227484)

To turn the Windows trigger on, use the following CLI command:

```
fsctl compliance wte on
```

- When a compliance license expires or is removed, the system will maintain compliance rules, but no new compliance volumes can be created. (6229562)

## Upgrade to 4.10 or Higher Requires Resetting the Timezone

When upgrading to a release that is 4.10 or higher, from a release earlier than 4.10, you will be asked to re-enter timezone information, even though it was previously entered. This is due to a changed implementation that offers additional timezone locations.

# Connecting the Gateway System to the Sun StorEdge 6130 Array

This section provides instructions for connecting and configuring the Sun StorEdge 5310 NAS Gateway system to the Sun StorEdge 6130 array. The procedure assumes that you have already done the following:

- Installed and configured the gateway system as described in the *Sun StorEdge 5310 NAS Appliance and Gateway System Getting Started Guide*.
- Installed and configured the array as described in the *Sun StorEdge 6130 Array Getting Started Guide* (part number 819-0032-*nn*).

## Cabling the Gateway System to the Sun StorEdge 6130 Array

You can connect the Gateway system directly to the Sun StorEdge 6130 array or through a single or dual Fibre Channel switches. A minimum of one port must be available on the NAS server and the 6130 array.

- Refer to the *Sun StorEdge 5310 NAS Appliance and Gateway System Getting Started Guide* for information about the NAS server ports and general installation instructions.
- Refer to the *Sun StorEdge 6130 Array Getting Started Guide* for information about the array ports and general installation instructions.

## Required Software and Firmware

The Sun StorEdge 5310 NAS Gateway system requires software version 4.10 (minimum) for gateway support.

Sun StorEdge 6130 array requires the following software and firmware listed in TABLE 2.

**TABLE 2** Required Sun StorEdge 6130 Array Software and Firmware

Software	Version (minimum)	Patch ID
Sun StorEdge 6130 array management software	1.3	118164-06
Controller CRM-F firmware	06.12.09.10	117856-18
Array firmware installer		118185-14

## Upgrading the Sun StorEdge 5310 NAS Gateway System

1. If your Gateway system does not have software version 4.10 (minimum), download the latest version from <http://sunsolve.sun.com>.
2. Install the update as described in the `install.txt` file provided with the patch.

## Upgrading the Sun StorEdge 6130 Array Management Software

If the Sun StorEdge 6130 array is currently at version 1.2, upgrade the management software to version 1.3 before installing the patches.

If the Sun StorEdge 6130 array is currently at version 1.3, install the patches as described in “Upgrading the Sun StorEdge 6130 Array Firmware” on page 19.

To upgrade the management software:

1. From the Sun StorEdge 6130 array management interface, log in to the Sun Storage Automated Diagnostic Environment and clear all existing alarms.
2. Log in to the management host as `root`.
3. Go to <http://sunsolve.sun.com> and download the latest Sun StorEdge 6130 host software package for Solaris from to any working directory on the management host.
4. Unzip the distribution file and untar the file.
5. Enter the following command:

```
./upgrade -n
```

The `-n` option specifies a non-interactive upgrade. After asking whether you want to upgrade software or firmware, the script will complete the upgrade without pausing for questions.

When the installation is complete, a confirmation is displayed followed by the date and time that the upgrade finished.

You can now install the patches as described in the next section.

## Upgrading the Sun StorEdge 6130 Array Firmware

The Sun StorEdge 6130 array management software requires version 1.3 firmware before you can install the required patches.

To upgrade the firmware for the Sun StorEdge 6130 array:

1. **Download the required patches (see TABLE 2) from <http://sunsolve.sun.com/>.**
2. **Stop all I/O to the disk drives.**
3. **Log in to the management host as `root`.**
4. **Change to the directory to which you downloaded the software.**
5. **Install each patch by following the instructions in the patch `README` file.**
6. **Verify that the latest patches are installed:**
  - a. **Open a supported browser.**
  - b. **Enter the IP address of the management host using this format:**  
`https://host-IP:6789`
  - c. **Log in to the management software.**
  - d. **Click Sun StorEdge 6130 Configuration Service.**  
The Array Summary page is displayed.
  - e. **Verify that the Firmware Version column displays 06.12.09.10 (or greater).**

## Verifying the Array

To verify that the array is seen by the Sun StorEdge 6130 host software, use automatic discovery or manual registration.

### ▼ To Automatically Verify the Array

If the array is on the same subnet as the management host, you can automatically verify the array.

1. **Open a supported browser.**
2. **Enter the IP address of the management host using this format:**  
`https://host-IP:6789`
3. **Log in to the management software.**

**4. Click Sun StorEdge 6130 Configuration Service.**

The Array Summary page is displayed.

**5. Click Auto Discover to display arrays that are on the same subnet as the management host.**

---

**Note** – It takes approximately 2 minutes for the software to discover each array.

---

**6. Verify that the array is listed on the Array Summary page.**

▼ **To Manually Register the Array**

If the array is not on the same subnet as the management host, you must manually register the array.

**1. Open a supported browser.**

**2. Enter the IP address of the management host using this format:**

**https://host-IP:6789**

**3. Log in to management software.**

**4. Click Sun StorEdge 6130 Configuration Service.**

The Array Summary page is displayed.

**5. Click Register Array.**

The Array Registration page is displayed.

**6. Enter the IP address of the controller and click OK.**

**7. Verify that the array is listed on the Array Summary page.**

## Making the Sun StorEdge 6130 Array SAN Storage Available

To make the Sun StorEdge 6130 SAN storage available to the NAS Gateway system, do the following:

1. Create an initiator on the Sun StorEdge 6130 array.
2. Define a new volume on the Sun StorEdge 6130 array.
3. Define a NAS volume on the NAS server.

## ▼ To Create an Initiator

1. **Log in to the Sun StorEdge 6130 Configuration Service software, and click Physical Storage → Initiators.**

The Initiator Summary page is displayed.

2. **Click New.**

The New Initiator Summary page is displayed.

3. **Enter a name for the new initiator, using a maximum of 30 characters.**

4. **Select an existing World Wide Name (WWN), or enter a new one.**

5. **Select the host for the new initiator.**

6. **Select the host type for the initiator.**

7. **Click OK.**

The Initiator Summary page displays the initiator name, host name, host type, and WWN of the new initiator.

## ▼ To Define a Sun StorEdge 6130 Volume

1. **In the Sun StorEdge 6130 Configuration Service interface, click Logical Storage > Volumes.**

The Volume Summary page is displayed.

2. **Click New.**

The New Volume wizard is displayed.

3. **Enter a name and capacity for the volume.**

4. **Select the virtual disk you want to use for this volume.**

5. **Map the volume to the Sun StorEdge 5310 NAS Gateway host.**

The new volume is displayed on the Volume Summary page.

## ▼ To Define a NAS 5310 Volume

1. **From a client of the NAS server, log in to the Web Administrator.**

2. **Create a NAS volume on the Sun StorEdge 6130 volume and format it:**

- a. **Open the File Volume Operations menu.**

- b. **Select Create File Volumes.**

c. **Click Scan New Disks.**

The newly created 6130 LUN is displayed on the left side of the center pane.

d. **Name the volume, enter the required parameters, and click Apply.**

See the *Sun StorEdge 5310 NAS Appliance and Gateway System Administration Guide* for information about the required parameters.

## Reintroduction of a LUN Requires a Reboot

A reboot is required when a LUN is deleted and then reintroduced to the NAS using a method other than In-Band RAID Management (6281673).

A server reboot is not required for the gateway system. You can unmap and remap the LUN as described in the *Sun StorEdge 5310 NAS Appliance and Gateway System Administration Guide*.

## Offline LUNs Cannot Be Deleted

LUNs or volumes that are offline cannot be deleted. A LUN must be brought online before it or its volumes can be deleted (6282821).

## Do Not Manually Mount /CVOL

The /cvol file system should not be manually shared or mounted. Do not make modifications to /cvol using any method other than the Web Administrator or Telnet/CLI. (6280955)

---

**Note** – Sun Support Engineers are authorized to perform a manual mount.

---

## File Replication Using Clusters

Do not perform mirror operations such as Change Role when a cluster is in a degraded state. Please refer to the *Sun StorEdge 5310 NAS Appliance and Gateway System Administration Guide*, 819-3238-10, for information on best practices (6291398,6218561,6233839,6234948).

## Exporting a File Volume

You can export a file volume only to a set of hosts with root permission (like Sun Solaris or UNIX) by adding the hosts to the “trusted group” using the Set Up Hosts window. Another way of doing this is to add the set of hosts to a host group and then export the required file volume against this group using the “with Map Root User set to Root User” option (6222556).

## MIB Files

The Management Information Base (MIB) files are installed with the image in the boot-directory/wwww/data/mib directory; for example, /cvol/nfl/wwww/data/mib. The MIB files are available via Web Admin in the mib sub-directory, for example; `http://hostname/mib`, where *hostname* is the appropriate system hostname or IP address.

The MIB files can also be found in the release software download from <http://sunsolve.sun.com>.

## NAS System Log Messages

If your system log contains error messages stating “Unowned SFS2” volumes, call Technical Support for assistance. (6186842)

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## Release Documentation

The following documentation is posted on the documentation Web site at:

[http://www.sun.com/hwdocs/Network\\_Storage\\_Solutions/nas](http://www.sun.com/hwdocs/Network_Storage_Solutions/nas).

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<b>Title</b>	<b>Part Number</b>
<i>Sun StorEdge 5310 NAS Gateway System Poster</i>	819-3240-10
<i>Sun StorEdge 5310 NAS Appliance and Gateway System Getting Started Guide</i>	819-3237-10
<i>Sun StorEdge 5310 NAS Appliance and Gateway System Administration Guide</i>	819-3238-10
<i>Sun StorEdge 5310 NAS Appliance Safety and Compliance Guide</i>	819-0881-10
<i>Sun StorEdge 5300 RAID Expansion Unit and Sun StorEdge 5300 Expansion Unit Safety and Compliance Guide</i>	819-0882-10

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## Service Contact Information

If you need help installing or using this product, call 1-800-USA-4SUN, or go to:

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

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