



Sun StorageTek™ NAS OS Software Release Notes

Release 4.20

Sun Microsystems, Inc.
www.sun.com

Part No. 819-6652-10
August 2006, Revision A

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Sun StorageTek NAS OS Software Release Notes, Release 4.20

These release notes contain information for the Sun StorageTek™ NAS OS, release 4.20. The software is backward-compatible with previous models of the Sun StorEdge™ 5210 NAS Appliance, Sun StorEdge 5310 NAS family of products, and the Sun StorageTek 5320 NAS family of products.

These release notes contain the following sections:

- [“New Features” on page 2](#)
- [“System Requirements” on page 4](#)
- [“Software Updates and Downgrades” on page 5](#)
- [“Resolved Issues” on page 6](#)
- [“Resolved Issues From Previous Releases” on page 7](#)
- [“Known Issues” on page 9](#)
- [“Addenda to the Documentation” on page 20](#)
- [“Release Documentation” on page 36](#)
- [“Service Contact Information” on page 36](#)

Note – There is no means to upgrade a Sun StorEdge 5310 NAS Appliance to a Sun StorageTek 5320 NAS Appliance. At a later date an upgrade package and support services will be available to allow the upgrade of a Sun StorEdge 5310 NAS Appliance to a Sun StorageTek 5320 NAS Appliance.

New Features

The Sun StorageTek NAS operating system (OS), release 4.20, provides the following new features:

- Support for the RoHS-compliant version of the Sun StorageTek 5320 NAS Appliance and Gateway System
- Support for the Sun StorageTek 5320 Controller Unit and Expansion Unit

Note – Interconnection of Sun StorEdge 5300 Controller and Expansion Enclosures with Sun StorageTek 5320 Controller and Expansion Units is not supported.

- Support for 256 checkpoints (increased from 16)
- Improvements in mirroring and compliance interoperability to enable the promotion of mirrored-compliant file volumes
- Additional iSCSI support:
 - Support for up to four simultaneous connections per session (that is, between each client initiator and a single iSCSI LUN), for load balancing and high availability
 - Enable Data Digest for Microsoft iSCSI initiators. Not recommended for Solaris iSCSI initiators.
 - Error Recovery levels 1 and 2 for Microsoft iSCSI initiators only
 - Failover support of the Sun StorageTek NAS family of products for Solaris iSCSI initiators
 - Support for the following iSCSI initiators:
 - Microsoft iSCSI Software Initiator
 - Sun Solaris 10, Update 2, iSCSI Initiator
 - iSCSI replication/promotion of volumes with iSCSI LUNs
 - iSCSI support for the Microsoft applications:
 - SQL Server database
 - Microsoft Exchange
- Support for up to three optional dual-port gigabit copper or Optical Network Interface Cards (two when an optional SCSI or Fibre Channel (FC) host bus adapter (HBA) is selected) on the Sun StorageTek 5320 NAS Appliance and Gateway System
- Added support for optional dual-port 2 gigabit FC HBA for tape backup on the Sun StorageTek 5320 NAS Appliance and Gateway System
- Support for Computer Associates CA eTrust AntiVirus scan engine

- Support for RAID sets larger than 2 terabytes
- Support for NT LAN Manager (NTLM) version 2
- Enhanced Gateway support:
 - Support for up to four heterogeneous back-end arrays (increased from one)
 - Support for up to 256 LUNs (increased from 64 LUNs)
 - Support for the Sun StorageTek 6140 Array
- Added support for Korean EUC-KR file and directory names for NFS clients
- Multi-user support in the Web Admin interface
- Federal Rehabilitation Act Section 508 compliance for in-band RAID management (IBRM)

Note – With the prior 4.12 release of the Sun StorageTek NAS OS, Sun Microsystems, Inc. chose to re-brand the 5000 NAS Family software with the Sun StorageTek brand to reflect our commitment to the storage market. Sun StorageTek NAS OS, release 4.20 along with the StorageTek File Replicator and StorageTek Compliance Archiving Software options provide support for the following:

- Sun StorageTek 5320 NAS Appliance
- Sun StorageTek 5320 NAS Cluster Appliance
- Sun StorageTek 5320 NAS Gateway System
- Sun StorageTek 5320 NAS Cluster Gateway System
- Sun StorEdge 5310 NAS Appliance
- Sun StorEdge 5310 NAS Cluster Appliance
- Sun StorEdge 5310 NAS Gateway System
- Sun StorEdge 5310 NAS Cluster Gateway System
- Sun StorEdge 5210 NAS Appliance

For simplicity, all future releases of the Sun StorageTek NAS OS will refer to the above hardware systems by using the StorageTek brand.

System Requirements

The Sun StorageTek NAS OS is pre-installed on all supported platforms. You do not need to install any software to manage the Sun StorageTek 5320 NAS Appliance or Sun StorageTek 5320 NAS Gateway System.

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 1.4.0 (minimum version).

- Internet Explorer
- Mozilla™
- Netscape Navigator™

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

▼ To Determine Sun StorageTek NAS OS Software 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. The version number, such as 4.20 in the following example, is displayed.

```
hostname> version  
StorageTek  Model 5320C NAS   S/N 1234567 Version 4.20 M0 (Build 20)
```

▼ To Determine Firmware Revision Levels

Use the `raidctl get type=lsi target=profile ctrl=0..N` command to determine and record the current firmware revision level of each RAID controller unit, expansion unit, controller NVSRAM, and drive.

For more information, see:

- *Sun StorEdge 5310 NAS Appliance and Gateway System Administration Guide*, 819-3238-11
- *Sun StorageTek 5320 NAS Appliance and Gateway System Administration Guide*, 819-6388-10

Software Updates and Downgrades

Upgrade your system by downloading the latest release of Sun StorageTek NAS OS software from <http://sunsolve.sun.com>. This requires a valid service contract. 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
- 119352 Software for the Sun StorageTek 5320 Appliance

Note – If you are upgrading a Sun StorEdge 5210 NAS Appliance to software release 4.20 from a release prior to release 4.05, Field Change Order (FCO) 257 is required. Contact SunSM Service to get FCO 257 applied prior to upgrading your software. Any Sun StorEdge 5210 NAS Appliance with software release 4.05 (or greater) does not need the FCO applied.

Downgrading to an earlier release of the Sun StorageTek NAS OS other than what is loaded on your system, as indicated on the Shutdown the Server Screen of the Web Administrator GUI, is not supported. If required, contact Sun Service. When the software is upgraded, the previous release remains on the system, so you can reboot to the previous release.

Resolved Issues

The following issues have been resolved with this release. Change Request numbers are in parentheses.

- Attempts to create a MIRRORING Link with a system which has no valid file replication license fails with a message stating the system is not licensed for mirroring. (6388364 / 6332950)
- High Availability (HA) bond creation and deletion now works properly by allowing the partner head to synchronize during the process. (6406749 / 6409899)
- It is now possible to create a LUN with more than six Serial Advanced Technology Attachment (SATA) drives from the Manage Raid option of the Web Administrator GUI. Creation of multiple volumes per volume group is now supported. (6277449)
- It is now possible to log into a system with an offline LUN using the Web Administrator GUI. (6282749)
- The Web Administrator GUI should no longer hang or display empty pages while the Sun StorEdge NAS Appliance is accessible. (6209231 / 6419639)
- The Cancel and ESC options have been enabled in the internet small computer system Interface (iSCSI) Configuration Menu “Configure iSCSI LUN in the CLI/Telnet Menu.” (6362767)
- Input of duplicate IP addresses is no longer permitted when creating a High Availability (HA) bond between 2 NIC ports. An attempt to enter identical IP addresses results in an error message. (6399042)
- The raidctl profile now only reports the event “Battery Status: Near Expiration” when it is a valid condition. (6387411)
- The Sun StorageTek 5320 NAS Appliance head fan identification and numbering are now consistent between the Web Administrator GUI, event email notification, and physical fan numbering on the head. (6393245)

TABLE 1 Sun StorageTek 5320 NAS Appliance Server Fan Identification

Physical label on Fan	syslog/remote syslog	GUI
FT0/FM0	0	1
FT0/FM1	1	2
FT0/FM2	2	3
FT1/FM0	3	4
FT1/FM1	4	5
FT1/FM2	5	6

- On a Sun StorageTek 5320 NAS Appliance system, email notifications due to a fan fault will now provide accurate information, including the appropriate course of action. (6388065)
- A rebooting controller will no longer log erroneous messages indicating that the controller temperature sensor is in an unknown state. (6388993)
- High Availability (HA) bonding of more than seven ports will now failover successfully. (6411374)

Resolved Issues From Previous Releases

Change Request numbers are in parentheses.

- The Web Administrator interface will not go blank if left open and idle for more than 15 minutes. (6356459)
- Retained files can no longer be removed on Advisory Compliance volumes by Microsoft Windows non-administrator domain users. (6361605)
- During mirroring with heavy I/O activity, or during mirroring with cluster systems, you will no longer find the following messages filling up the logs of the target/mirror server in a short period of time. (6176236)

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

- A new LUN created from cluster heads displays the proper owner. (6287381)
- The Lightweight Directory Access Protocol (LDAP) search has been modified such that user information in a Microsoft Windows Active Directory Server (ADS) will not be deleted when the Sun StorageTek 5320 NAS Appliance autohome feature is used. (6310891)
- The timestamps on intermediate directories will be restored during a Network Data Management Protocol (NDMP) recover operation. (6259093)
- When a Sun StorEdge 6920 system is used as storage for the Sun StorEdge 5310 Gateway system, logical unit number (LUN) and volume information will now display properly in the Web Administrator. (6318244)
- 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 containing hard links now works 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 5310 and 5320 systems now allow 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. (5101253)
- The File Transfer Protocol (FTP) module in the Sun StorageTek NAS OS software 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)
- The Create and Delete port bonding features (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)
- RAID volumes on Fibre Expansion Units will now automatically rebuild using available 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 (IBRM) 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)

Known Issues

Important – The Web Administrator supports multiple logins at a time. However, multiple logins from both the Web Administrator and CLI/telnet interfaces is not supported. In a cluster configuration, you must log in to each server separately to manage that server.

The following issues are not resolved at this time. Change Request numbers are in parentheses.

- If a primary DNS server goes down, and a secondary DNS server is configured, the Sun StorageTek 5320 NAS system might not switch to the secondary DNS server. (6445911)

Workaround: If access to the primary DNS is lost, reconfigure the primary DNS server with the address of the secondary DNS server.

- Adding NFS exports from the System Manager panel of the Web Administrator GUI fails. When the task is completed, viewing the exports from UNIX Configuration → Configure NFS → Configure Exports shows that the export has not been added. The export has actually been created, but it does not appear in the GUI. (6438697)

Workaround: Do not use the System Manager panel of the Web Administrator GUI to add NFS exports. Use the UNIX Configuration → Configure NFS → Configure Exports panel or the CLI/Telnet Menu to configure NFS exports.

- When a volume that is bounded by a volume on either side with no free space is deleted, another volume of the exact same size cannot be created from the Web Administrator GUI. (6445486)

Workaround: This is due to a rounding error. Create the volume by using the CLI/Telnet Menu.

- Volumes with one or more attached segments might still appear in the Web Administrator GUI after being deleted. (6439670)

Workaround: Log out of the Web Administrator GUI. Restart the Web Administrator GUI and the volumes should be displayed properly.

- The Add Quota window of the Web Administrator GUI will overwrite any existing quota settings without providing a warning. (6438298)

Workaround: Ensure that you want to change the quota settings and then verify the new settings before submitting the update.

- Creating two LUNs with volumes in secession by using the Web Administrator GUI creates both LUNs and volumes, but doesn't populate the Create File Volume screen and the View File Volume screen with the volume data from the second LUN. However, the Edit Volume Properties, Delete File Volumes, and Attach Segments screens do contain the data from both volumes as do the NAS console screens. (6425260)

Workaround: Perform a Scan for New Disks to populate the screens with the complete data.

- Files copied, deleted, or renamed in a CIFS shared NAS directory are not updated until manually refreshed (F5 key). For example, a file delete operation appears to fail because the file remains in the directory listing until it is refreshed. (6432492)

Workaround: Manually refresh the view on the windows client.

- On rare occasions after a LUN is successfully created using IBRM, the NAS OS can't get the LUN initialization status from the RAID controller. This causes the new LUN to not show up in the GUI RAID management screen. (6435497)

Workaround: Use Telnet to manage the LUN and create FSs after the LUN is created, or reboot the head.

- In-band RAID management (IBRM) does not prevent the deletion of a LUN in a Volume Group while that Volume Group is being rebuilt. (6443672)

Workaround: Do not delete LUNs in a Volume Group while that Volume group is being rebuilt.

- Moving files using drag and drop can cause the Microsoft Windows Explorer to hang for a few minutes if the directory has a Korean name from a Windows XP client. Both the NAS and Microsoft Windows client are in the Workgroup mode. (6441365)

Workaround: Wait a few minutes for the move to complete.

- When configuring multiple NIC ports using the Telnet menu, entering the same IP address for more than one port does not result in an error. (6436496)

Workaround: Do not assign multiple ports using the same IP address. For error checking functionality, use the Web Administrator GUI. This provides an error message if more than one port is configured with the same IP address.

- If the TCP/IP host address and the TCP/IP gateway address are mistakenly typed with the same address, it is not possible to fix the error using the Web Administrator GUI or the CLI/Telnet Menu. You will continue to get duplicate IP address errors. (6441168)

Workaround: Correct the IP address settings with the Administrator GUI and then reboot the system.

- Scheduled checkpoints might not be taken at their appointed time. A delay of up to 1.5 hours can occur. (6445966)

Workaround: The checkpoint manager creates scheduled checkpoints only at the top of the hour, however the problem is that the hours are calculated in GMT. So as long as the local time zone has a round time offset from GMT everything will work as expected. In the case the local timezone offset is not on the hour, the checkpoint will be created at the top of the next hour.

- Backup does not span across tapes using EBS 7.3 and the LSI Logic SCSI adapter. The backup appears to be working but fails once the end of the first tape has been reached. (6429505)

Workaround: Use an FC adapter.

- When the HBA FC cable is removed and reinserted during I/O activity, some I/O requests might be interrupted and not complete. This causes access to the file systems on the corresponding LUN to suspend and fail. (6426939)

Workaround: Re-insert all FC cables and reboot the NAS head.

- After configuring a Korean password with the Web Administrator GUI, any Korean password having the same character length is accepted. ASCII passwords and Korean passwords of different lengths are rejected. (6441879)

Workaround: Make sure the client is properly configured to send a foreign language character set.

- The Sun StorageTek NAS operating system (OS) online help does not work from the Web Administrator GUI on Solaris clients. (6428038)

Workaround: Older JREs on Solaris have issues displaying Java Help. Use one of the following JRE versions: 1.4.2_12, 1.5.0_07, or 1.6.

- NFS exports containing extended characters (UTF-8) can't be mounted or viewed from EUC-KR clients. (6443034)

Workaround: NFS clients using EUC-KR character sets can only export at the volume level. Volume names are currently restricted to ASCII.

- The CPU utilization reaches 100% when trying to run the `raidctl get` command using an rsh connection. (6376034)

Workaround: Run the `raidctl get` command on the local system. The command will save its output to a file. Then send the file over a network using FTP, email, or some other method.

- High Availability → Set LUN Path → Auto Assign LUN Paths will not work on new LUNs. (6397065)

Workaround: Set LUN paths manually. Alternatively, initialize a new LUN by creating a file volume.

- The In-Band RAID Management (IBRM) GUI screen may display phantom tray instances with ID 0. (6396234 / 6398799)

Workaround: The system will work correctly and this may be ignored. To fix the system, perform a recovery process.

- When configuring a bond in "Networking Configuration → Configure Network Adapters." IPs can only be added to the bottom of the list. That is, if there is a blank IP field at the top of the list you cannot enter an IP using the Web Administrator GUI. (6401617)

Workaround: You must delete all the IPs and recreate the list from the top field. Another option is to use the CLI.

- SCSI errors might occur during writing to direct-attached SCSI LTO3 tape drives. (6347059)

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).

- On 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: Contact Sun Service.

- 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.

- 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 36.](#))

- 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)

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

Cluster-Specific Issues

The following cluster-specific issues are not resolved at this time. Change Request numbers are in parentheses.

- If both Fibre Channel cables are pulled on head 2, it's possible that a volume will not be mounted after restoring the cables. (6435436)

Workaround: Manually mount the volume.

- If both Fibre Channel (FC) cables are pulled on one head, and then a recovery option is initiated from the other head, the system could go to the NORMAL state instead of the QUIET/ALONE state. The LUNs on the pulled Fibre Channels are also not available. (6436683)

Workaround: Force a failover by powering off the head; or, try re-connecting the FC cables and then do a disk scan.

- When a cluster is initially setup using the configuration wizard by enabling failover on one head, failover may not be enabled on the partner head. (6387567)

Workaround: Enable failover on the partner head by logging into the partner head using the Web Administrator GUI.

- Upgrading Array Firmware of cluster with dual Head and dual controllers may fail with the "No-Reboot" method. (6375669)

Workaround: Copy the Array Firmware, non-volatile static random access memory (NVSRAM), and Just a Bunch of Disks (JBOD) code to the Sun StorageTek 5320 NAS Appliance head. Manually load the NVSRAM and JBOD code (not the Array Firmware code) using the "No-reboot" instructions. Then reboot the Sun StorageTek 5320 NAS Appliance head. Please refer to the system log to verify that the firmware upgrade succeeded.

- Installing new NICs will cause existing PA bonds to change roles which cannot then be deleted. (6407988)

Workaround: Remove existing PA bonds before installing new NICs. After the NIC installation is completed, and the system has rebooted, create new PA bonds.

If the bond was already created before installing the NICs go to the CLIs Host Name & Network menu and edit the IP addresses of the NICs. Then on the CLI on either of heads: (considering the bond is called bond1) perform the following.

```
hostname> unset ifenslave.*
hostname> unset bond1.*
hostname> savevars
```

- Using the LCD or the reboot command to reboot one head of a cluster will also cause the other head to reboot. (6389192)

Workaround: Use the Web Administrator GUI or the CLI/Telnet Menu to reboot a single head only.

- 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.

- 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:

```
hostname> 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)

Workaround: If physical access to the system is not available, use Telnet to connect 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.

Sun StorageTek File Replicator-Specific Issues

The following replicator-specific issues are not resolved at this time. Change Request numbers are in parentheses.

- When entering an IP address in a Network Card configuration, you are not prohibited from entering a zero ("0") in the first segment of the IP address. This would result in an invalid address. (6424098)

Workaround: Do not enter a zero ("0") in the first segment. Make sure you have entered a valid IP address.

- After a mirror breaks, promoting a volume following a rename twice, the promoting operation works as if you were adding the mirror and not promoting it. (6433113)
- Mirrored volumes might not be displayed in the View Mirror Statistics panel of the Web Administrator GUI after a refresh. (6438307)

Workaround: In the Navigator Tree on the left side of the GUI, select another node to change what is displayed. Then return to the previous node display. The volumes should now be properly displayed. If not, you should completely close your GUI and browser and then restart the Web Administrator GUI.

- If the NAS head contains more than 52 volumes, the additional volumes will not be displayed in the Add Mirror menu of the CLI/Telnet. Therefore it is not possible to create mirrors of those volumes from the Telnet interface. (6441717)

Workaround: Use the Web Administrator GUI to create the desired mirrors.

- When you use file replication with clustering, a change role on the master cluster followed by a cluster failover results in a mirror loss. The cluster believes that a change role is still occurring. (6428902)

Workaround: Unset the `mirror.changerole` parameter in the CLI. It should then be possible to establish mirroring.

- After renaming a volume, performing various operations such as change role or break/promote from the target fails. (6437373 / 6437381)

Workaround: After renaming the volume, unmount the volume then remount the volume.

- It is not possible to mirror volumes of size exactly equal to 1024 MB or 1 GB as stated in the documentation. The minimum "raw" size of a mirrored volume is 1046 MB. (6440799)

Workaround: None at this time.

- Volumes that have greater than 90% utilization cannot be mirrored. The documentation only states that the minimum buffer space that should be defined is 100 MB. In addition to the 100 MB minimum requirement, the mirror buffer cannot be larger than 50% of the available free space. (6440868)

Workaround: None at this time.

- An attempt to promote a volume created with multiple segments in a mirror after the mirror is broken fails. (6387400 / 6437373 / 6437381)

Workaround: This problem can be avoided by unmounting and remounting the volume after renaming or attaching segments. The volume can be replicated after it has been remounted. Alternatively, the head can be rebooted instead of unmounting/remounting the volume. The target system (mirror) is not affected and does not need to be rebooted.

- 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:

```
hostname> umount /volx  
hostname> mount /volx
```

- The RESYNC option is not available in the Web Administrator. (6198789)

Workaround: This option is available via the Telnet menu.

Antivirus-Specific Issues

The following antivirus-specific issues are not resolved at this time. Change Request numbers are in parentheses.

- If a system is configured to use two scan engines, and one of them is stopped, the other scan engine also stops. An “access denied” message is displayed. (6433675)

Workaround: Configure the Sun StorageTek 5320 NAS system not to use a scan engine before you stop it.

- The AntiVirus configuration list accepts duplicate names if they have case (upper or lower) differences. (6436698)

Workaround: The AntiVirus configuration list is case sensitive. Use the proper case.

- A zip file containing a virus is scanned but not quarantined when scanned by the Computer Associates engine. The virus is detected by the Symantec scan engine. (6433062)

Workaround: Computer Associates has a patch (`arclib.dll`) which fixed this issue for Computer Associates eTrust Anti Virus and an autodownload for Computer Associates Integrated Threat Management. Make sure all upgrades and patches from Computer Associates have been installed.

- When enabling anti-virus protection for the first time, existing client connections to Common Internet File System (CIFS) mapped shares will be exempt from scanning and are not protected. (6417994)

Workaround: Before enabling Anti-Virus protection, make sure there are no client connections to CIFS-mapped shares, or reboot the system after enabling anti-virus protection to force all client connections to reconnect.

- When the Symantec Anti-Virus Scan Engine detects that a file might contain a virus and it cannot clean the file, the file will be quarantined. As part of the quarantine process, if the scan engine provides log information pertaining to its inspection of the file, the file is over-written with this log information and thus the original file data is lost. This can happen in cases where the file is not actually infected; if the scan engine detects that the containing message is malformed, or if it reaches or exceeds one of its configuration parameters while scanning the file. (6418443)

Workaround: Configure the anti-virus scan engine to allow access to all malformed containers, and allow access to files when a processing limit is met (or exceeded). Note that files actually infected with viruses will still be overwritten.

iSCSI-Specific Issues

The following iSCSI-specific issues are not resolved at this time. The numbers in the parentheses indicate the Change Request.

- Under heavy I/O load with the Solaris iSCSI initiator, you might experience time-outs and/or receive protocol error messages such as the one given below. (6439416 / 6428783).

```
May 19 17:05:56 interopv20-1 iscsi: [ID 498442 kern.warning] WARNING: iscsi
session(184) protocol error - received unknown itt:0x2dfe5 - protocol error
```

Workaround:

- If only error messages are received, ignore them.
- If error messages and the host I/O processing fails, perform the following recovery procedure:
 1. **Umount the affected file systems.**
 2. **Issue the `fsck` command against the affected file system.**
 3. **Remount the file system.**
 4. **Restart the application accessing the file system.**
- An iSCSI login might result in a rejection due to too many connections. An iSCSI session only supports 4 connections to the NAS at a time. This includes sessions that have not yet timed out. (6444187)

Workaround: Wait approximately a minute for old sessions to time out.

- The initiator IQN Name may be incorrect for Head2 after adding access list members by using the Administration GUI on Head1. If several changes are made at once, the access list might not get updated completely on the second head. (6426391)

Workaround: Make another change to the access list members and save. This will force the list to update head 2 as well.

- Execution of an I/O operation with DataDigest Enabled results in DataDigest errors from Solaris clients. This is due to the zero copy implementation of the Solaris iSCSI initiator. (6446747)

Workaround: Do not use Data Digest with Solaris clients. If Data Digest is needed, use an iSCSI HBA implementation.

- iSCSI with the Storage Automated Diagnostic Environment is not currently supported by the Sun Solaris 10, Update 2, iSCSI Initiator. (6440385)

Workaround: None at this time.

Addenda to the Documentation

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

- [“Changes to Back-End Configurations Require a User Initiated Rescan” on page 21](#)
- [“Never Attempt to Create More Than One Bond Per NIC Pair” on page 21](#)
- [“A Heavy Load During a Head Recovery Can Require the Recovery Process to be Repeated” on page 21](#)
- [“Remapping a LUN From a SAN Host for Use in a NAS Gateway System Requires Manual Intervention if the LUN Contains Residual Data” on page 21](#)
- [“Firmware Upgrades on a Gateway System Backend Storage Might Require a Recovery Operation on the Gateway Storage” on page 22](#)
- [“Gateway Systems Support a Maximum of Four Heterogeneous Storage Systems” on page 22](#)
- [“Connections for HA Functionality on Cluster Gateway Systems” on page 22](#)
- [“Cabling on IBRM Cluster Systems” on page 22](#)
- [“Assigning LUN Paths for Gateway Cluster Systems” on page 23](#)
- [“Adding Storage to the Sun StorEdge 5310 NAS Appliance and Sun StorageTek 5320 NAS Appliance” on page 24](#)
- [“iSCSI LUN Performance” on page 27](#)
- [“Cluster Power-On Procedure” on page 27](#)
- [“Mounting File Systems” on page 27](#)
- [“Management GUI Fault Tolerance vs. High Availability” on page 27](#)
- [“Drive Letter Assignments to File Systems” on page 28](#)
- [“Compliance Feature” on page 28](#)
- [“Upgrade to 4.10 or Higher Requires Resetting the Timezone” on page 28](#)
- [“Connecting the Gateway System to the Sun StorEdge 6130 Array” on page 29](#)
- [“Making the Sun StorEdge 6130 Array SAN Storage Available” on page 33](#)
- [“Reintroduction of a LUN Requires a Reboot” on page 34](#)
- [“Offline LUNs Cannot Be Deleted” on page 34](#)
- [“Do Not Manually Mount /CVOL” on page 34](#)
- [“File Replication Using Clusters” on page 35](#)
- [“Exporting a File Volume” on page 35](#)
- [“MIB Files” on page 35](#)

- [“NAS System Log Messages” on page 35](#)

Changes to Back-End Configurations Require a User Initiated Rescan

After physical changes to the back-end configuration, a user-initiated rescan is required. This could be the result of restoring a LUN's primary path due to a physical path failure. Without the rescan the alternate path would not be available. Use the Web Administrator to go to Volume Operations → Create File Volumes and click Scan for New Disks. (6309701)

Never Attempt to Create More Than One Bond Per NIC Pair

Due to timing issues, it may be possible to create multiple bonds with the same NICs and Internet Protocols. (6383186)

A Heavy Load During a Head Recovery Can Require the Recovery Process to be Repeated

Under an extremely heavy processing load during a head recovery, there is a possibility that some LUNs might not be fully restored. Repeat the head recovery process and check for the LUN to be returned to the appropriate head.

The head recovery process can be initiated from the Web Administration GUI or Telnet menu. This process can be repeated as many times as needed while the heads are in any failover state. (6402960)

Remapping a LUN From a SAN Host for Use in a NAS Gateway System Requires Manual Intervention if the LUN Contains Residual Data

If after you remap a LUN from other SAN hosts to the NAS Gateway system, the LUN might appear to be inaccessible. If the owner of the LUN is listed as no DPMGR, then the disk has residual data. Run the following CLI `disk` command to

clear the data and make the LUN usable. This requires human intervention to ensure a configuration error has not been made and you are not accidentally deleting important data. (6272080)

```
hostname> disk disk-name,partition-number zap
```



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

Firmware Upgrades on a Gateway System Backend Storage Might Require a Recovery Operation on the Gateway Storage

Performing a firmware upgrade on a Sun StorEdge 6130 backend to a Gateway cluster may cause a controller array to reboot and go quiet. Perform a recovery operation to restore the array. (6339825)

Gateway Systems Support a Maximum of Four Heterogeneous Storage Systems

Up to four heterogeneous storage systems attached per Gateway system configuration, single head or cluster, are now supported. (6315936)

Connections for HA Functionality on Cluster Gateway Systems

In a NAS Cluster Gateway System, each head must have two Fibre Channel connections to a SAN storage unit. One Fibre Channel connection is insufficient for proper High Availability (HA) functionality.

Cabling on IBRM Cluster Systems

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.

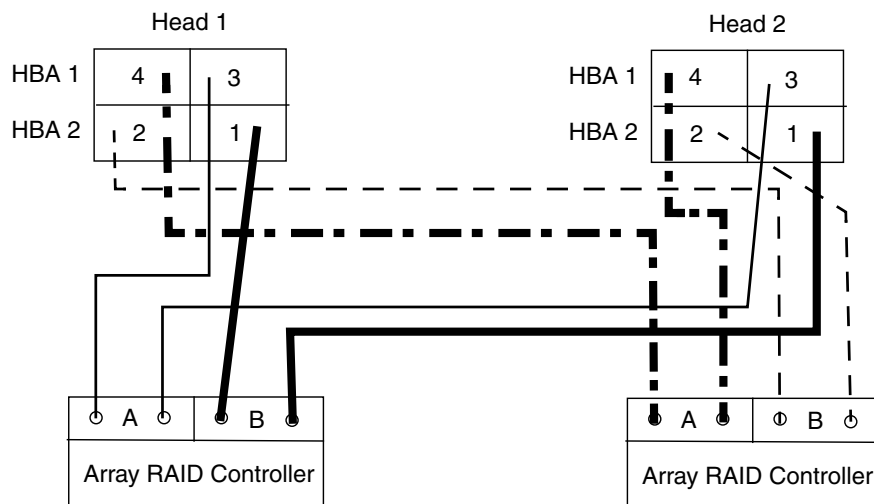


FIGURE 1 Relationship of HBA Ports to RAID Controllers

Assigning LUN Paths for Gateway Cluster Systems

When you assign a LUN to each server in a gateway cluster configuration, you must manually scan the disk on both servers to pick up the new LUNs. You can scan for new disks using Web Admin in one of two ways:

- Right-click System Manager in the navigation pane and choose Scan for New Disks
- Go to File Volume Operations → Create File Volumes in the navigation panel and click Scan for New Disks on the Create File Volumes panel

Adding Storage to the Sun StorEdge 5310 NAS Appliance and Sun StorageTek 5320 NAS Appliance

This procedure describes how to add a new Sun StorEdge 5300 EU Expansion Enclosure to an existing Sun StorEdge 5310 NAS Appliance or Sun StorageTek 5320 NAS Appliance without shutting down the system.

Adding an Expansion Enclosure

The Sun StorEdge 5310 NAS Appliance must be at release 4.11 or the Sun StorageTek 5320 NAS Appliance must be at release 4.20 before you start the upgrade. If not, download and install the latest release of the Sun StorageTek NAS OS from <http://sunsolve.sun.com>.

If you are not familiar with how to access the Console Administrator, refer to Appendix A of the *Sun StorEdge 5310 NAS Appliance and Gateway System Administration Guide* or the *Sun StorageTek 5320 NAS Appliance and Gateway System Administration Guide*.

▼ To Prepare for the Upgrade

- **Disable Sysmon.**
 - a. Use Telnet to connect to the Sun StorEdge 5310 NAS Appliance or Sun StorageTek 5320 NAS Appliance.
 - b. At the CLI, type:

```
hostname> set sysmon.test.enable yes
hostname> set raidmon.test.enable yes
```

▼ To Install the Expansion Enclosure

1. **Install the new expansion enclosure in an available slot in the cabinet.**

Refer to the *Sun StorEdge 5310 NAS Appliance and Gateway System Getting Started Guide* or the *Sun StorageTek 5320 NAS Appliance and Gateway System Getting Started Guide* for rackmount installation procedures.

2. **Set the new expansion enclosure to a unique ID.**

Refer to the *Sun StorEdge 5310 NAS Appliance and Gateway System Getting Started Guide* or the *Sun StorageTek 5320 NAS Appliance and Gateway System Getting Started Guide* for information about setting the tray ID.

3. **Connect the power cable to the new expansion enclosure.**

4. **Power on the new expansion enclosure.**

▼ To Connect the Cables

Connect the new expansion enclosure to the existing RAID controller enclosure one data cable path at a time.

1. **Connect data cable from port 2, Channel A, of the last enclosure to port 1, Channel A of new expansion enclosure.**
2. **Remove data cable from port 2, Channel B, of the last enclosure and connect to port 2, Channel B, of the new expansion enclosure.**
3. **Connect data cable from port 2, Channel B, of the last enclosure and connect to port 1, Channel B, of the new expansion enclosure.**

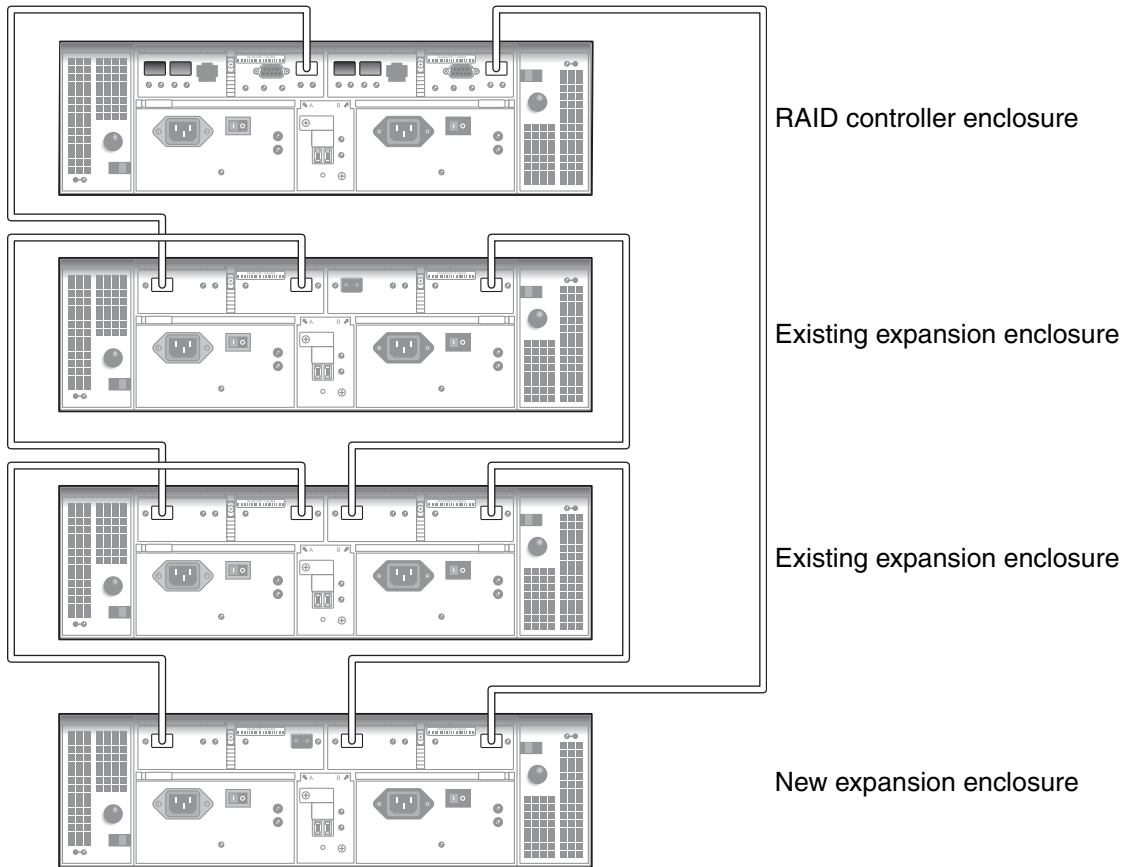


FIGURE 2 Cable Connections for a New Expansion Enclosure

▼ To Scan the Expansion Enclosure and Drives

1. At the main menu, select **D. Disks and Volumes**.
2. Type **9** to scan for the new disk drives (and LUNs).
3. Verify that the new expansion enclosure, drives, and LUNs are detected.
4. Enable **Sysmon** by entering the following commands.

```
hostname> unset sysmon.test.enable yes
hostname> unset raidmon.test.enable yes
```


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 Sun StorageTek 5310 NAS Appliance server. If the label is not located at the back of the server, check the sheet metal on left side of the Sun StorageTek 5310 NAS Appliance 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)

```
hostname> 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.

Compliance Feature

The following information applies to the Sun StorageTek Compliance Archiving software.

- 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:

```
hostname> 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 Sun StorageTek 5310 NAS Appliance 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 release 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

▼ To Upgrade the Sun StorEdge 5310 NAS Gateway System

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

▼ To Upgrade the Sun StorEdge 6130 Array Management Software

If the Sun StorEdge 6130 Array Management Software is currently at release 1.2, upgrade the management software to release 1.3 before installing the patches.

If the Sun StorEdge 6130 Array Management Software is currently at release 1.3, install the patches as described in [“To Upgrade the Sun StorEdge 6130 Array Firmware” on page 31](#).

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.

▼ To Upgrade the Sun StorEdge 6130 Array Firmware

The Sun StorEdge 6130 array management software requires release 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. 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/www/data/mib directory; for example, /cvol/nf1/www/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)

Release Documentation

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

http://www.sun.com/hwdocs/Network_Storage_Solutions/nas

Title	Part Number
<i>Sun StorageTek 5320 NAS Appliance Setup [poster]</i>	819-4385- <i>nn</i>
<i>Sun StorageTek 5320 NAS Gateway System Setup [poster]</i>	819-4286- <i>nn</i>
<i>Sun StorageTek 5320 NAS Appliance and Gateway System Getting Started Guide</i>	819-4283- <i>nn</i>
<i>Sun StorageTek NAS OS Administration Guide</i>	819-4284- <i>nn</i>
<i>Sun StorageTek 5320 NAS Appliance and Gateway System Storage Regulatory and Safety Compliance Manual</i>	819-7315- <i>nn</i>
<i>Sun StorageTek 5320 NAS Array Regulatory and Safety Compliance Manual</i>	819-6048- <i>nn</i>
<i>Setting Up the Sun StorEdge 5310 NAS Appliance [poster]</i>	819-1168- <i>nn</i>
<i>Sun StorEdge 5310 NAS Gateway System Poster</i>	819-3240- <i>nn</i>
<i>Sun StorEdge 5310 NAS Appliance and Gateway System Getting Started Guide</i>	819-3237- <i>nn</i>
<i>Sun StorEdge 5310 NAS Appliance and Gateway System Administration Guide</i>	819-3238- <i>nn</i>
<i>Sun StorEdge 5310 NAS Appliance Safety and Compliance Guide</i>	819-0881- <i>nn</i>
<i>Sun StorEdge 5210 NAS Appliance Administration Guide</i>	819-5376- <i>nn</i>
<i>Sun StorEdge 5210 NAS Hardware Installation, Configuration, and User Guide</i>	817-6660- <i>nn</i>
<i>Sun StorEdge 5210 Expansion Unit Safety, Regulatory, and Compliance Manual</i>	817-7515- <i>nn</i>
<i>Sun StorEdge 5300 RAID Expansion Unit and Sun StorEdge 5300 Expansion Unit Safety and Compliance Guide</i>	819-0882- <i>nn</i>

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/>