Sun StorEdge™ 3900 and 6900 Series 2.2 Release Notes

Storage Service Processor Version 2.3.4

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Sun StorEdge 3900 and 6900 Series 2.2 Release Notes

The Sun StorEdge™ 3900 and 6900 series storage systems are complete preconfigured storage solutions. The Sun StorEdge 3900 and 6900 series systems support direct-attach storage (DAS) and storage area network (SAN) environments.

This document is organized as follows:

Features in This Release

This release of the Sun StorEdge 3900 and 6900 series includes an update to the software image on the Storage Service Processor to version 2.3.4.

The Sun StorEdge 3910 and 3960 systems are midrange high-performance systems. The Sun StorEdge 6910 and 6960 systems are midrange storage consolidation systems.

Features of Sun StorEdge 3900 and 6900 series systems include:

■ Modular storage elements that can be incrementally expanded in a predefined footprint.

■ Sun tested, preconfigured storage system optimized for the Solaris™ operating environment.

■ Supports single or clustered Sun Enterprise™ and Sun Fire™ servers.

■ Dynamically scales to more than 29 terabytes in a single system.

■ Logical unit number (LUN) segmenting or carving for storage consolidation.

■ LUN security access (masking) for the storage consolidation models.

■ Fibre Channel interface.

■ A high degree of data availability in a unit that reduces cost of ownership.

■ Enterprise Storage Manager monitoring and support.

Product Changes

The software revision in this release of the product includes:

- Updates Storage service processor with new Array FW patch 115180-07 which contains new array controller FW 3.1.5 and new Disk firmware.

TABLE 1 summarizes Sun StorEdge 3900 and 6900 series features supported with each release of the Storage Service Processor software release. Each version of the Storage Service Processor software is available on CD. Upgrade CDs are also available to upgrade a Sun StorEdge 3900 or 6900 series from one software version to the next. For example, you can upgrade your system from version 2.0.2 to version 2.0.3, from 2.0.3 to version 2.1.1, and from version 2.1.1 to version 2.3.1.

TABLE 1   Features Supported by Storage Service Processor Versions

Features	Version 2.0.2 (Feb 2002)	Version 2.0.3 (May 2002)	Version 2.1.1 (Jun 2002)	Version 2.3.1 (Mar 2003)	Version 2.3.2 (Aug 2003)	Version 2.3.3 (Apl 2004)	Version 2.3.4 (Dec 2004)
Multinode cluster support for Sun StorEdge 3900 and 6900 series			✓	✓	✓	✓	✓
Multiple host support for Sun StorEdge 6900 series			✓	✓	✓	✓	✓
Sun StorEdge T3+ array LUN slicing and masking support (Sun StorEdge 3900 series only)			✓	✓	✓	✓	✓
36-Gbyte and 72-Gbyte disk drive capacities	✓	✓	✓	✓	✓	✓	✓
Increased disk drive capacity (181-Gbyte drives)		✓	✓	✓	✓	✓	✓
Sun StorEdge T3+ array firmware version 2.0.1	✓						
Sun StorEdge T3+ array firmware version 2.1 (fabric support)		✓	✓	✓	✓	✓	✓
Sun StorEdge T3+ array firmware version 3.1						✓	✓
Sun StorEdge T3+ 3.1 disk scrubber feature						✓	✓

Features	Version 2.0.2 (Feb 2002)	Version 2.0.3 (May 2002)	Version 2.1.1 (Jun 2002)	Version 2.3.1 (Mar 2003)	Version 2.3.2 (Aug 2003)	Version 2.3.3 (Apl 2004)	Version 2.3.4 (Dec 2004)
TABLE 1 Features Supported by Storage Service Processor Versions *(Continued)*							
Sun StorEdge T3+ 3.1 ONDG feature						✓	✓
Sun StorEdge T3+ array RAID configuration with no hot spare				✓	✓	✓	✓
Switch firmware version 3.04.62 (FC-switch FLASH 30462)	✓	✓	✓	✓	✓	✓	✓
Sun StorEdge network Fibre Channel Switch-8 and Switch-16 (1-Gbit) switch firmware version 40238 (2-Gbit/FC-SW compatible)				✓	✓	✓	✓
Sun StorEdge network Fibre Channel Switch-8 and Switch-16 (1-Gbit) switch firmware version 40242 (2-Gbit/FC-SW compatible)						✓	✓
Sun StorEdge network 2 Gbit Fibre Channel switch-16 support on front-end switches on the 3900 series only with switch firmware revision v1.3.60 or v1.5.07				✓	✓	✓	✓
Sun StorEdge network 2 Gbit Fibre Channel switch-16 support on front-end switches on the 3900 series only with switch firmware revision 2.0.0.05						✓	✓
Virtualization engine firmware version 8.014	✓						

Features	Version 2.0.2 (Feb 2002)	Version 2.0.3 (May 2002)	Version 2.1.1 (Jun 2002)	Version 2.3.1 (Mar 2003)	Version 2.3.2 (Aug 2003)	Version 2.3.3 (Apl 2004)	Version 2.3.4 (Dec 2004)
Virtualization engine firmware version 8.017 supporting: • Improved performance (8K–12K) • Failback without halting I/Os		✓	✓				
Virtualization engine firmware 8.019 supporting: • Improved SVE check condition handling for Window 2000 reboot • Corrected MH10 < STATUS return value • Corrected SCSI reservation issue				✓	✓		
Virtualization engine firmware 8.020 supporting: • Corrected Inq page 0x83 fail to return correct data cause errhalt reboot					✓	✓	✓
• Sun StorEdge SAN Foundation software 4.3 support						✓	✓
• Sun StorEdge SAN Foundation software 4.4 support						✓	✓
Sun StorEdge Remote Response ready		✓	✓	✓	✓	✓	✓
Improved security for Sun StorEdge Remote Response		✓	✓	✓	✓	✓	✓
Sun StorEdge SAN 3.2 support		✓	✓	✓	✓	✓	✓
Sun StorEdge SAN 4.0 support			✓	✓	✓	✓	✓
Sun StorEdge SAN 4.1 support				✓	✓	✓	✓

TABLE 1 Features Supported by Storage Service Processor Versions *(Continued)*

Features	Version 2.0.2 (Feb 2002)	Version 2.0.3 (May 2002)	Version 2.1.1 (Jun 2002)	Version 2.3.1 (Mar 2003)	Version 2.3.2 (Aug 2003)	Version 2.3.3 (Apl 2004)	Version 2.3.4 (Dec 2004)
Sun StorEdge SAN 4.2 support				✓	✓	✓	✓
Sun Cluster 3.0 support		✓	✓	✓	✓	✓	✓
Switchless configurations			✓	✓	✓	✓	✓
Internationalization support in all `SUNWsecfg` command line interface commands				✓	✓	✓	✓
Storage Automated Diagnostic Environment 2.0 (`SUNWstade`)	✓	✓	✓				
Storage Automated Diagnostic Environment 2.2 (`SUNWstads`)				✓	✓	✓	✓
Solaris 8 Operating System host support (Solaris 8 07/01, Solaris 8 10/01, or Solaris 8 02/02 required)	✓	✓	✓	✓	✓	✓	✓
Solaris 9 Operating System host support			✓	✓	✓	✓	✓
Multiplatform support for Windows 2000, NT, HP, IBM, and LINUX			✓	✓	✓	✓	✓

System Requirements

This section includes information on how to perform a full image install or an upgrade of the Storage Service Processor.

Note – To install version 2.3.4, version 2.3.3 must reside on the Storage Service Processor. Versions 2.3.3 and 2.3.4 tar updates are available from SunService℠ from the Service Partner Exchange web page:

```
https://spe.sun.com/spx/control/Login
```

If your site requires a reinstallation of the Storage Service Processor you can do this by doing a full installation of version 2.3.1, then upgrade to 2.3.2, then upgrade to 2.3.3 and upgrade to 2.3.4. See the "Full Installation of Version 2.3.1" on page 7 and "Upgrade to 2.3.1" procedures.

▼ To Install the Full 2.3.1 Version

1. **Read the complete** `SP_Image_CD_README.txt` **file.**

2. **Use the instructions printed on the CD insert, part number 818-0582-10.**

Full Installation of Version 2.3.1

Ensure that you have a fully operational Storage Service Processor (Netra™ X1 or SunFire V100 system) in the Sun StorEdge 3900 or 6900 series system. It is necessary to be connected through the console of the Storage Service Processor and logged in as the root user. Be sure that the user `cmdadm` is not logged into the Storage Service Processor being installed, because this causes the upgrade to fail.

Note – If you connect to the console of the Storage Service Processor to perform the installation, all reboots and messages can be seen during the installation.

The restoration of an entire Storage Service Processor version results in a single flat file system residing on a single partition. The Solaris JumpStart™ software mount point is the intended partition for staging the installation of the Storage Service Processor image.

- On a Netra X1 Storage Service Processor the Solaris JumpStart software is mounted on `/dev/dsk/c0t0d0s7`.
- On a Sun Fire V100 Storage Service Processor the Solaris JumpStart software is mounted on`/dev/dsk/c0t2d0s7`.

General information about the full image installation includes:

- The Storage Service Processor must be completely configured and complete a reboot for the functionality of the new image to take effect. If the install process is terminated prior to the reboot, you must initiate the process again from the beginning.
- One purpose of the Storage Service Processor Full Image CD is to provide the ability to change the version of the Storage Service Processor to any other desired version with minimum time.
- It is essential that the CD be accessible on the Storage Service Processor LAN if the Storage Service Processor you are working with does not have a CD ROM drive (Netra X1). Refer to the CD insert for installation information.
- In the case where an upgrade is desirable but an upgrade CD is not available, the Storage Service Processor Full Image CD can accommodate the upgrade. This method however does not take into account any previous configuration information.
- If necessary, make a backup copy of the following files from the Storage Service Processor before performing the installation:
  - `/etc/shadow`
  - `/etc/passwd`
  - `/etc/inet/hosts`
  - `/etc/ethers`
  - `/etc/nsswitch.conf`
  - `/etc/groups`

The following notes apply to all full version installations:

- The installation does not affect the present operating level of the Storage Service Processor until it is rebooted.
- The installation is performed on Partition 7 in the Solaris JumpStart software file system. This also becomes the "interim" boot partition.
- The steps to affect the revision levels of the individual components in the solution system to match the revision of the Storage Service Processor Image must be done manually. Follow the upgrade or downgrade instructions for those components.
- Any custom modification must be inserted manually following installation.

▼ To Install the 2.3.4 Upgrade

- **The Upgrade path to image 2.3.4 is 2.3.1 to 2.3.2 then 2.3.2 to 2.3.3 and 2.3.3 to 2.3.4.**

Upgrading to Version 2.3.2

In order to perform this upgrade, it is necessary to be connected via the console of the Storage Service Processor and logged in as the root user. Be sure that the user cmdadm is not logged into the Storage Service Processor being upgraded because this causes the upgrade to fail.

Note – You must read the complete README_Upgrade.txt file before performing an upgrade of the Storage Service Processor.

For information on what has changed in the 2.3.2 build, refer to the /export/README.txt file on the tar image. The upgrade assumes the Storage Service Processor has the 2.3.1 Storage Service Processor version installed. To verify this, log on to the Storage Service Processor and type:

```
msp0# cat /etc/motd
```

The response should indicate that the revision of the Storage Service Processor version is 2.3.1. If any other response is displayed, do not perform this upgrade.

Other notes about the upgrade process are:

- Once the upgrade is performed the upgrade information will reside in the /export/README.txt file.
- It is necessary for the Storage Service Processor to complete a reboot for the new functionality to take effect. If the upgrade process is terminated prior to the reboot the system must be restored to the previous version and the upgrade restarted.
- You must be logged into the Storage Service Processor as root through the console port to perform this installation. You must also verify that no one is logged in as the cmdadm user as this causes the upgrade to fail.
- During the upgrade, a log file named /var/tmp/2.3.2-upgrade.log is created.
- The upgrade script makes a backup copy of /etc/shadow, /etc/passwd, /etc/inet/hosts, /etc/ethers, /etc/nsswitch.conf, and /etc/groups. A backup for each of these files is saved in the original directory and is named *filename*.2.3.2.upgrade.bak where *filename* is the original name of the file, including extension if applicable. These backup files may be used to restore site-specific configuration information.
- Do not leave the upgrade script unattended because it requires constant user interaction.

Upgrading to Version 2.3.3

- To upgrade to Version 2.3.3, use the contents of "Upgrading to Version 2.3.2" on page 9 except substitute 2.3.2 for 2.3.1 and 2.3.3 for 2.3.2.

Upgrading to Version 2.3.4

- To upgrade to Version 2.3.4, use the contents of "Upgrading to Version 2.3.3" on page 10 except substitute 2.3.3 for 2.3.2 and 2.3.4 for 2.3.3.

Known Issues and Bugs

This section contains the known issues and bugs associated with the Sun StorEdge 3900 and 6900 series 2.2 release.

Known Issues

There are no known issues with the Sun StorEdge 3900 and 6900 series 2.2 release.

Bugs

The following is a list of the priority 1, 2, and 3 bugs associated with Sun StorEdge 3900 and 6900 series 2.2 systems. The Bug ID number is followed by the priority and severity of the bugs in parentheses.

- **Bug 4827927 (P1/S3):** Upgrading existing system from 8.017 Evaluation no. 1 to versions 8.018, 8.019, or 8.020 on their existing production system. After upgrade, the virtualization engine `sliczones` disappear, causing loss of data access.

  Workaround: Use the workaround procedure given in Bug 4658578.

- **Bug 4810681 (P1/S3):** The Sun StorEdge T3+ array disk download firmware version A538 is showing failures.

  Workaround: Suspend Storage Automated Diagnostic Environment monitoring of the Sun StorEdge T3+ array that is being upgraded. After the firmware upgrade is complete, restart monitoring the Storage Automated Diagnostic Environment.

- **Bug 5107602 (P1/S3):** Removing or adding volumes across pools fails if more than 5 volumes per pool, or ten total are done at the same time. Also, removing or adding 9 volumes, at the same time, in one pool fails.

Workaround: Don't remove more than 4 volumes at the same time.

- **Bug 4671617 (P2/S2):** The virtualization engine daemon cannot be restarted because of a residual status (semaphore with ID 0) that is left behind after a termination sequence. This occurs when using the sdushutdown(1) command to initiate the termination sequence. The following is an example of the message that displays on the service processor when this occurs:

```
host# Error initializing semaphore for error logging
    semget: File exists
The semaphore already exists and/or the SLIC daemon 'slicd' is
already running
```

Workaround: Remove the shared memory semaphores using the cmd ipcrm as defined in the *Sun StorEdge 3900 and 6900 Series 2.0 Troubleshooting Guide* in Chapter 9, "Restarting the slicd Daemon."

- **Bug 4674107 (P2/S2):** Creation of 16 disk pools per virtualization engine pair fails.

    Workaround: Limit the number of disk pool pairs to 15 per virtualization engine pair.

- **Bug 4818820 (P2/S2):** The Sun StorEdge Traffic Manager software (mpxio) autofailback does not work correctly.

    Workaround: Run the luxadm failover manually.

- **Bug 4699810 (P2/S2):** In Hewlett-Packard HP-UX 11.0, the driver using the volume set addressing method cannot see beyond LUN 7.

    Workaround: Use the HP-UX volume manager to slice the VLUN 0-7 into multiple volumes to achieve the same result.

- **Bug 4756368 (P2/S2):** When using the Sun StorEdge network 2 Gbit Fibre Channel switches, the new VLUNs in a Sun StorEdge 6900 series are not seen by the hosts.

    Workaround: A link reset through luxadm -e forcelip recovers or upgrades the Sun StorEdge network 2-Gbit Fibre Channel switch to a firmware of v1.5.0 or greater.

- **Bugs 4666764 (P2/S3), 4633323 (P3/S3), and 4666199 (P3/S3)**: Upgrading virtualization engine firmware using the sdnld command can result in the firmware download not completing successfully.

    Workaround: Use the instructions in the *Sun StorEdge 3900 and 6900 Series 2.0 Reference and Service Manual* to upgrade the firmware of the virtualization engine.

- **Bug 4785757 (P2/S3):** The Sun StorEdge T3+ array LUN permissions and world wide number groups disappear after the array is issued a `reset -y` command.

  Workaround: To recover from this problem disable the master controller from a `telnet`(1) session, allow the failover to occur, then reenable the controller. This causes the permissions and the group to reappear. A reset is required to fail the Sun StorEdge T3+ array back. You must also reset the host for it to fully recover its proper data paths.

- **Bug 4648206 (P2/S5):** The FP port cannot be shut down.

  Workaround: Disable the VERITAS Dynamic Multi-Pathing (VxDMP) volume manager.

- **Bug 4698596 P3/S3):** The virtualization engine error is halted when the number of initiators exceed 32.

  Workaround: Do not allow more than 32 initiators to log onto the virtualization engine.

- **Bug 4696353 (P3/S4):** The `slicd`(1M) command spawns defunct processes.

  Workaround: Stop and restart `slicd` using the `/etc/rc2.d/S98slicd` command.

- **Bug 4821351 (P3/S4):** The monitor devices function of the Storage Automated Diagnostic Environment does not list the Sun StorEdge 3900 and 6900 series devices after the `config_solution`(1M) command has been executed.

  Workaround: After running the `config_solution` command, run the `ras_install`(1M) command, and then rerun the `config_solution` command.

Security Notes

- Sun does not set a root password on the Sun StorEdge 3900 and 6900 series.

- You can log in as root only at the console port of the Storage Service Processor. A generic service login has been provided with this version of the software to accommodate logging in through a `telnet`(1) session. The new login is: `cmdadm`, instead of root. The password for the `cmdadm` login is `sun1`. Do not alter this password or remote access will be affected. If necessary, you can `su`(1M) to `root` once you have logged on to the Storage Service Processor.

- On the Sun StorEdge 6900 series systems, the virtualization engine can cause a device naming problem when you are using earlier versions of VERITAS VxVM. Because of this, the only supported versions of VERITAS are VxVM version 3.2 (with patch level 1, which includes patches 111909-04 or greater) and VxVM 3.5 (with patch 112392-04 or greater).

Storage Service Processor 2.3.4 Fixes

This section provides updates on issues and bugs documented in previous release notes that have been resolved.

- **Bug 5109621:** Updated Revision checking matrix per T3 FW patch 115180-07.
- **Bug 5015938:** SA2.2 does not have updated battery fixes for new firmware states.

Storage Service Processor 2.3.3 Fixes

Refer to the release documentation associated with the Storage Automated Diagnostic Environment and the Solaris Operating System for a list of other resolved issues and bugs.

The following is a list of bugs that have been resolved since the Sun StorEdge 3900 and 6900 series 2.0 release. The Bug ID number is followed by the priority and severity of the bugs in parentheses.

- **Bug 4903626 (P2/S2):** The `showt3` and `savet3config` commands fail if `vol verify` is enabled with the Sun StorEdge T3 array.
- **Bug 4944335 (P4/S4):** There is no capability to turn off the disk scrubber via the `modifyt3params` command with a failed disk.
- **Bug 4910770 (P4/S4):** The wrong info message is displayed while deleting the WWN from a T3 group.
- **Bug 4879419 (P4/S4)**: The `modifyswitch` command output needs to list the 2-Gbit compatible firmware.
- **Bug 4938883 (P3/S4):** The `modifyt3config -b 64k` command fails on Sun StorEdge T3 arrays with 2.x.x firmware.
- **Bug 4938112 (P3/S4):** Updated firmware switch revision file the latest patch.
- **Bug 4938079 (P3/S3):** Need to add support for the Sun StorEdge T3+ array with 3.1 firmware to SUNWsecfg tools.
- **Bug 4936849 (P3/S3):** Need to add support for the Sun StorEdge T3+ array with 3.1 firmware to the SUNWstads GUI.
- **Bug 4879921 (P3/S3):** The `setswitchflash` command goes into an infinite loop if issuing the `saveswitch` command returns an error.
- **Bug 4943655 (P2/S3)**: The `ondg sys` parameter can not be modified using the `runsecfg/modifyt3param`.
- **Bug 4943629 (P2/S3):** The disk scrubber cannot be turned on or off by issuing the `runsecfg/modifyt3param` command.

- **Bug 4907748 (P2/S3):** SANbox (1.02.20) fails to convert a TL_Port to a G_Port when the port state is offline.
- **Bug 4876130 (P4/S4):** Modification to the SUNWsecfg menu to have consistent title options.
- **Bug 5036055 (P4/S4):** The delfromt3group command prints the information number instead of the infomation message.

Storage Service Processor 2.3.2 Fixes

- **Bug 4878805 (P1/S1):** The SCCLI command causes the Sun StorEdge 6900 LUNs to disappear from the fabric.
- **Bug 4935931 (P3/S3):** Modify Sun StorEdge T3 array System Parameters menu does not allow the user to leave values unchanged.
- **Bug 4887640 (P3/S4):** Unavailable options should not appear in the SUNWstads 3900/6900 interface.
- **Bug 4818046 (P4/S4):** The debug/http code shows up in 2.2.00.03 on the first page of config 3900/6900 in the SUNWstads 3900/6900 interface.
- **Bug 4841721 (P4/S4):** In the SUNWstads 3900/6900 interface, adding a component to the VE zone can fail.
- **Bug 4865734 (P3/S3):** The setupswitch or modifyswitch commands do not use the domain ID in the hex for setting up the zone members
- **Bug 4811325 (P4/S4):** Downgrading firmware from version 1.4.2.3-0 back to 1.3.60.00 fails with the SUNWsecfg setswitchflash command.
- **Bug 4863881 (P1/S2):** SANbox2 network configuration commands fail when network parameters are set to 0.0.0.0.
- **Bug 4866322 (P2/S3):** The testapp command does not change the port type to G on a Sun StorEdge Network 8-port FC switch.
- **Bug 4785757 (P2/S3):** The Sun StorEdge T3+ array 2.1.X software LUN permissions/Hwwn groups disappear after issuing a reset -y command.
- **Bug 4821351 (P3/S4):** SUNWstads Monitor Devices doesn't list Sun StorEdge 3900 or 6900 devices. Issuing the config_solution command does not help.

Release Documentation

The documentation for Sun StorEdge 3900 and 6900 series systems is provided online. There are also online man(1) pages for all configuration utilities.

Note – All documentation listed in this section is also valid for the Sun StorEdge 3900 and 6900 Series 2.2.

▼ To Retrieve All the Documentation

1. **Open a browser window.**

2. **Type the following URL:**

   ```
   http://docs.sun.com
   ```

3. **Type** 3900 **or** 6900 **in the search string field and click the box next to the Search book titles only option.**

   You can also search for the documents by part number, using the following list.

Part Number	Title
816-5252-11	*Sun StorEdge 3900 and 6900 Series 2.0 Installation Guide*
816-5253-11	*Sun StorEdge 3900 and 6900 Series 2.0 Reference and Service Manual*
816-5256-11	*Sun StorEdge 3900 and 6900 Series 2.0 Site Prep Guide*
816-5257-11	*Sun StorEdge 3900 and 6900 Series 2.0 Regulatory and Compliance Guide*
816-6757-12	*Sun StorEdge 3900 and 6900 Series 2.0 Start Here*
818-0582-10	*Network Storage Service Processor Full Image CD Version 2.3.3*
818-0584-10	*Network Storage Service Processor Image Upgrade 2.3.3*
817-0194-10	*Storage Automated Diagnostic Environment 2.2 System Edition Release Notes*
817-0823-10	*Storage Automated Diagnostic Environment 2.2 Device Edition Release Notes*
817-0192-10	*Storage Automated Diagnostic Environment 2.2 System Edition*
817-0822-10	*Storage Automated Diagnostic Environment 2.2 User's Guide*

4. **Click Go to initiate the search.**

   The search result displays related book titles as live links.

5. **Click one of the book title links.**

6. **Click the Download PDF link.**

   Book titles and related links to PDF files are displayed.

7. **Click the link for the PDF file you want to download.**

   If your Netscape browser is set to display PDF, when you click on the link a PDF version of the file displays in the browser.

Tip – You can download the PDF files to your home directory by placing your cursor over the file you want to download, pressing and holding down the Shift key, and then clicking the left mouse button.

Sun StorEdge 3900 and 6900 Series documents are also available at:

```
http://www.sun.com/products-n-solutions/hardware/docs/
Network_Storage_Solutions/
```

Service Contact Information

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

```
http://www.sun.com/service/contacting/index.html
```