Sun StorEdge™ 3900 and 6900 Series 2.3 Release Notes

Storage Service Processor Version 2.3.6

Sun Microsystems, Inc.
www.sun.com

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Sun StorEdge 3900 and 6900 Series 2.3.6 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

No new features were added during this revision of the Sun StorEdge 3900 and 6900 series storage systems.

Product Changes

The software revision in this release of the product:

- Updates the Storage Service Processor with new array firmware patch 116930-04, which contains new array controller firmware 3.2.3 and new disk firmware.

TABLE 1 summarizes Sun StorEdge 3900 and 6900 series features supported with each 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	Ver. 2.0.2 (Feb 2002)	Ver. 2.0.3 (May 2002)	Ver. 2.1.1 (Jun 2002)	Ver. 2.3.1 (Mar 2003)	Ver. 2.3.2 (Aug 2003)	Ver. 2.3.3 (Apr 2004)	Ver. 2.3.4 (Dec 2004)	Ver. 2.3.5 (Aug 2005)	Ver. 2.3.6 (Jan 2006)
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						✓	✓	✓	✓

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

Features	Ver. 2.0.2 (Feb 2002)	Ver. 2.0.3 (May 2002)	Ver. 2.1.1 (Jun 2002)	Ver. 2.3.1 (Mar 2003)	Ver. 2.3.2 (Aug 2003)	Ver. 2.3.3 (Apr 2004)	Ver. 2.3.4 (Dec 2004)	Ver. 2.3.5 (Aug 2005)	Ver. 2.3.6 (Jan 2006)
Sun StorEdge T3+ 3.1 disk scrubber feature						✓	✓	✓	✓
Sun StorEdge T3+ 3.1 ONDG feature						✓	✓	✓	✓
Sun StorEdge T3+ array RAID configuration with no hot spare				✓	✓	✓	✓	✓	✓
Sun StorEdge T3+ array firmware version 3.2.2								✓	✓
Sun StorEdge T3+ array firmware version 3.2.3									✓
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)						✓	✓	✓	✓

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

Features	Ver. 2.0.2 (Feb 2002)	Ver. 2.0.3 (May 2002)	Ver. 2.1.1 (Jun 2002)	Ver. 2.3.1 (Mar 2003)	Ver. 2.3.2 (Aug 2003)	Ver. 2.3.3 (Apr 2004)	Ver. 2.3.4 (Dec 2004)	Ver. 2.3.5 (Aug 2005)	Ver. 2.3.6 (Jan 2006)
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	✓								
Virtualization engine firmware version 8.017 supporting: • Improved performance (8K–12K) • Failback without halting I/Os		✓	✓						

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

Features	Ver. 2.0.2 (Feb 2002)	Ver. 2.0.3 (May 2002)	Ver. 2.1.1 (Jun 2002)	Ver. 2.3.1 (Mar 2003)	Ver. 2.3.2 (Aug 2003)	Ver. 2.3.3 (Apr 2004)	Ver. 2.3.4 (Dec 2004)	Ver. 2.3.5 (Aug 2005)	Ver. 2.3.6 (Jan 2006)
Virtualization engine firmware 8.019 supporting: • Improved SVE check condition handling for Windows 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			✓	✓	✓	✓	✓	✓	✓

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

Features	Ver. 2.0.2 (Feb 2002)	Ver. 2.0.3 (May 2002)	Ver. 2.1.1 (Jun 2002)	Ver. 2.3.1 (Mar 2003)	Ver. 2.3.2 (Aug 2003)	Ver. 2.3.3 (Apr 2004)	Ver. 2.3.4 (Dec 2004)	Ver. 2.3.5 (Aug 2005)	Ver. 2.3.6 (Jan 2006)
Sun StorEdge SAN 4.1 support				✓	✓	✓	✓	✓	✓
Sun StorEdge SAN 4.2 support				✓	✓	✓	✓	✓	✓
Sun StorEdge SAN 4.4.6 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)	✓	✓	✓	✓	✓	✓	✓	✓	✓

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

Features	Ver. 2.0.2 (Feb 2002)	Ver. 2.0.3 (May 2002)	Ver. 2.1.1 (Jun 2002)	Ver. 2.3.1 (Mar 2003)	Ver. 2.3.2 (Aug 2003)	Ver. 2.3.3 (Apr 2004)	Ver. 2.3.4 (Dec 2004)	Ver. 2.3.5 (Aug 2005)	Ver. 2.3.6 (Jan 2006)
Solaris 9 Operating System host support			✓	✓	✓	✓	✓	✓	✓
Solaris 10 (SPARC) OS data host support									✓
Multiplatform support for Windows 2000, NT, HP, IBM, and LINUX			✓	✓	✓	✓	✓	✓	✓

System Requirements

For information about the Sun StorEdge 3900 and 6900 series hardware and software platform installation requirements, refer to the *Sun StorEdge 3900 and 6900 Series 2.0 Installation Guide.*

For information on the software packages and patches required to update to this release, refer to "Installing the Storage Service Processor Upgrade" on page 7.

Installing the Storage Service Processor Upgrade

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

Note – To install version 2.3.6, version 2.3.5 must reside on the Storage Service Processor. Versions 2.3.4 and 2.3.5 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, first perform a full installation of version 2.3.1, then upgrade to 2.3.2, then 2.3.3, then 2.3.4, 2.3.5, and, finally, upgrade to 2.3.6. See "Full Installation of Version 2.3.1" on page 8 and "To Install the 2.3.6 Upgrade" on page 10.

▼ 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.

Note – 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`.

The following is general information about the full image installation.

- The Storage Service Processor must be completely configured and rebooted for the functionality of the new image to take effect. If the installation 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.
- If 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 that cause 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 2.3.6 Upgrade

- **The Upgrade path to image 2.3.5 is 2.3.1 to 2.3.2, then 2.3.2 to 2.3.3, then 2.3.3 to 2.3.4, then 2.3.4 to 2.3.5, and 2.3.5 to 2.3.6.**

  The upgrade path to image 2.3.6 assumes that the Storage Service Processor has the 2.3.5 Storage Service Processor image revision installed. To verify this, log on to the Storage Service Processor and type: **`cat /etc/motd`**. The response should indicate that the revision is 2.3.5. If the revision reflects anything else, *do not perform this upgrade*. Instead, follow the upgrade path described above.

Upgrading to Version 2.3.*x*

To perform this upgrade, you must be connected via the console of the Storage Service Processor and logged in as the root user.

Note – 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.

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.
- The upgrade script produces a log file named `/var/tmp/2.3.x-upgrade.log`.
- 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.x.upgrade.bak` where *filename* is the original name of the file, including extension, if applicable. These backup files can be used to restore site-specific configuration information.
- The upgrade script cannot be left unattended because it requires constant user interaction.

- Once the Storage Service Processor upgrade is complete, it is mandatory to upgrade the T3+ controller firmware. For more information, see the *Sun StorEdge T3+ Array Release Notes, Version 3.2.3 Controller Firmware*.
- Changing the host name and/or its IP address in the `/etc/hosts` file after installation will cause the 3900/6900 series devices to not be monitored by the Storage Automated Diagnostic Environment. To solve this problem, you can activate the host changes after rebooting the system by running the following commands:

```
# /opt/SUNWstade/bin/config_solution
# /opt/SUNWstade/bin/ras_install
# /opt/SUNWstade/bin/config_solution
```

Known Issues and Bugs

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

Known Issues

There are no known issues with the Sun StorEdge 3900 and 6900 series 2.3.6 release.

Bugs

The following is a list of the priority 1, 2, and 3 bugs associated with Sun StorEdge 3900 and 6900 series 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` disappears, 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 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 `ipcrm` command 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 pool pairs per virtualization engine 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` command 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` command recovers or upgrades the Sun StorEdge network 2-Gbit Fibre Channel switch to a firmware of version 1.5.0 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 (WWN) 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, and then re-enable 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 exceeds 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).

Release Documentation

TABLE 2 lists the documentation for the Sun StorEdge 3900 and 6900 series systems. The suffix *nn* in a part number indicates that you should use the most current version. This documentation is available online at:

- `http://www.sun.com/products-n-solutions/hardware/docs/Network_Storage_Solutions/Solutions_Products/Sun_StorEdge_3900_6900_2.0/index.html`
- `http://www.sun.com/products-n-solutions/hardware/docs/Network_Storage_Solutions/Solutions_Products/Sun_StorEdge_3900_6900_2.2/index.html`

TABLE 2 Sun StorEdge 3900 and 6900 Series Systems Documentation

Application	Title	Part Number
Site preparation	*Sun StorEdge 3900 and 6900 Series 2.0 Site Preparation Guide*	816-5256-*nn*
	Sun StorEdge 3900 and 6900 Series 2.0 Start Here	816-6757-*nn*
Safety requirements	*Sun StorEdge 3900 and 6900 Series 2.0 Regulatory and Compliance Guide*	816-5257-*nn*
System installation procedures	*Sun StorEdge 3900 and 6900 Series 2.0 Installation Guide*	816-5252-*nn*
Management software installation	*Sun StorEdge 6000 Family Host Installation Software Guide*	817-1739-*nn*
Overview, service, reference, and CLI administration	*Sun StorEdge 3900 and 6900 Series 2.0 Reference and Service Manual*	816-5253-*nn*
Troubleshooting and diagnostics	*Storage Automated Diagnostic Environment 2.2 User's Guide - System Edition*	817-0192-*nn*
	Storage Automated Diagnostic Environment 2.2 User's Guide - Device Edition	817-0822-*nn*
	Network Storage Service Processor Image Upgrade 2.3.5	818-1422-*nn*

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`