



Sun StorEdge[™] 3310 SCSI Array Release Notes

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Sun StorEdge™ 3310 SCSI Array Release Notes

Read these release notes before attempting to install or use the Sun StorEdge 3310 SCSI array. This document provides important, late-breaking news and other required information, in the following sections:

- “New Feature as of 12/3/2002”
- “New Features as of 11/4/2002” on page 2
- “Printed User Manuals” on page 2
- “Supported Platforms and Software” on page 3
- “Supported Connection Methods” on page 4
- “Supported Host Adapters” on page 4
- “Supported Cabinets” on page 5
- “Supported Disk Drives” on page 5
- “Supported Cables” on page 6
- “Supported RAID Levels” on page 6
- “Bootability” on page 7
- “Required Patches” on page 7
- “Environmental Specifications Update” on page 8
- “Known Hardware Issues” on page 9
- “Known Firmware Issues” on page 9
- “Known Software Issues” on page 12
- “Corrected Battery Dating Information” on page 15
- “Controller Firmware Upgrades” on page 16

New Feature as of 12/3/2002

73 gigabyte 10 kilobyte disk drives have been qualified to work with this array. See “Supported Disk Drives” on page 5 for the part numbers of supported disk drives.

New Features as of 11/4/2002

The Sun StorEdge 3310 SCSI array software is now supported in the Microsoft Windows NT Server 4.0 and Windows 2000 Server operating systems as well as in the Solaris™ 8 and 9 environments. The user documentation has been updated to describe installation and use on the Windows platforms. Bug fixes are also included in both the software and documentation.

The updated software and documents are on the Sun StorEdge 3310 Array Software and Documentation CD-ROMs that began shipping with the array on November 4, 2002.

Customers who received the Solaris-only version of the software with previously-purchased Sun StorEdge 3310 SCSI arrays can download the updated software from Sun's download center at:

- www.sun.com/downloads.

This document supplements the following updated user manuals:

Title	Part Number
<i>Sun StorEdge 3310 SCSI Array Installation, Operation, and Service Manual</i>	816-7290-11
<i>Sun StorEdge 3310 SCSI Array RAID Firmware 3.25 Guide</i>	816-7296-11
<i>Sun StorEdge 3310 SCSI Array Configuration Service 1.0 User's Guide</i>	816-7298-11
<i>Sun StorEdge 3310 SCSI Array Diagnostic Reporter 1.0 User's Guide</i>	816-7722-11
<i>Sun StorEdge 3310 SCSI Array CLI Version 1.0 1.0 User's Guide</i>	816-7297-11

The updated documentation can be downloaded from either of the following locations:

- http://www.sun.com/products-n-solutions/hardware/docs/Network_Storage_Solutions/Workgroup/3310/
- <http://docs.sun.com>

Printed User Manuals

You can order printed copies of the Sun StorEdge 3310 SCSI array manuals at:

- <http://corppub.iuniverse.com/marketplace/sun>

Supported Platforms and Software

The supported operating environments are:

- Solaris 8 and 9 operating environments
- Sun Linux 5.0 (on the Sun LX50 server)
- Red Hat Linux 7.3
- Microsoft Windows NT Server 4.0 and Windows 2000 Server operating systems

Note – Connection to a server running Sun Linux Version 5.0 and Red Hat Linux 7.3 is supported by the array and the array firmware. The array-management software (Configuration Service Diagnostic Reporter, and CLI) is not supported on Linux for this release.

The supported Sun hardware platforms are:

- Netra™ 20 server
- Netra 120 server
- Netra t 1400/1405 server
- Sun LX50™ server
- Sun Enterprise™ 220R server
- Sun Enterprise 250 server
- Sun Enterprise 420R server
- Sun Enterprise 450 server
- Sun Fire™ 280R server
- Sun Fire V120 server
- Sun Fire V480 server
- Sun Fire V880 server
- Sun Blade™ 1000 workstation
- Sun Blade 2000 workstation

The supported software includes:

- Sun StorEdge 3310 SCSI Array Configuration Service 1.0
- Sun StorEdge 3310 SCSI Array Diagnostic Reporter 1.0
- Sun StorEdge 3310 SCSI Array CLI 1.0
- Sun Cluster™ 3.0 software
- Solstice DiskSuite 4.2.1 or greater (for the Solaris 8 operating environment)
- Solaris Volume Manager for Solaris 9 (for the Solaris 9 operating environment)
- VERITAS Volume Manager 3.2

Supported Connection Methods

The Sun StorEdge 3310 array can be connected to a host in one of the following ways:

- By means of a single-ended SCSI controller embedded in one of the supported hosts

See “Supported Platforms and Software” on page 3.

- By means of a supported host adapter

See “Supported Host Adapters,” which follows.

Supported Host Adapters

The supported host adapters are shown in the following table.

Operating Environment	Host Adapter	Part Number
Solaris operating environment	Sun StorEdge PCI Dual Ultra3 SCSI host adapter	X6758A
Windows 2000/NT and Linux operating environments	Adaptec SCSI Card 39160 (Dual Ultra 160 SCSI PCI host adapter)	Adaptec 39160—not available from Sun



Caution – If you are using the Sun StorEdge PCI Dual Ultra3 SCSI host adapter, make sure to download and install the adapter’s driver in the host where the adapter is installed. (See the *Sun StorEdge PCI Dual Ultra3 SCSI Host Adapter Release Notes*, part number 816-2157-XX for the download procedure.) Without the driver, any array connected to the adapter will not be visible to the host, since this driver is not included in the Solaris operating environment.

Supported Cabinets

The Sun StorEdge 72" Expansion Cabinet is qualified for use with the Sun StorEdge 3310 SCSI array. The Sun StorEdge 72" Expansion Cabinet has power connections for up to eight Sun StorEdge 3310 SCSI arrays.

Supported Disk Drives

The following table gives descriptions and part numbers for the disk drives supported with the Sun StorEdge 3310 SCSI Array.

Description	Part Number
36 GB 10KB RPM	XTA-3310-36GB-10K
73 GB 10KB RPM	XTA-3310-73GB-10K

Note – In an array shipped with less than 12 drives, each empty slot in the array contains an air management sled to correctly handle the air flow and heat. Each drive slot requires either a disk drive or an air management sled.

Supported Cables

The following table lists the supported SCSI cables. Cables may be ordered using the marketing part numbers in TABLE 1.

Note – The manufacturing part numbers supplied in the third column of the table can be checked against the manufacturing part numbers stamped on other cables that you might have in stock to confirm that they are supported.

Cable Type and Length	Marketing Part Number	Manufacturing Part Number
VHDCI/VHDCI 0.8 m	X1136A	530-2982-01
VHDCI/VHDCI 1.2 m	X1137A	530-2983-01
VHDCI/VHDCI 2 m	X1138A	530-2538-01
VHDCI/VHDCI 4 m	X3830B	530-2984-01
VHDCI/VHDCI 10 m	X3831B	530-2985-01

Note – When you attach the provided SCSI bus cables to the Sun StorEdge 3310 SCSI array or expansion unit, it is important to tighten the cable jack screws with six full clockwise turns prior to powering up the array, to ensure proper operation.

Supported RAID Levels

Some of the Sun StorEdge 3310 SCSI array documentation provides a partial listing of RAID levels. The complete list of RAID levels supported by the array's software is RAID 0, 1, 0+1, 1+0, 3, 5, 3+0, and 5+0.

If you create a RAID 1 logical drive with more than two hard drives, RAID 0+1 will be created automatically. RAID 3+0 and 5+0 are available as standard logical volume configurations set up through the firmware menus.

Note – The NRAID option in the firmware application, which is mentioned in some of the documentation, is no longer used and is not recommended.

Bootability

For embedded controllers, booting from the array requires no special procedures.

To boot a host through a Sun StorEdge PCI Dual Ultra3 SCSI host bus adapter, follow the procedures in the “Bootability” chapter in the *Sun StorEdge PCI Dual Ultra3 SCSI Host Adapter Installation Guide*, part number 816-2156-11 or later version. An online copy of the installation guide is available from the web site:

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

Required Patches

- The Solaris 8 or Solaris 9 Recommended Patch Cluster is required to use Sun StorEdge Configuration Service and Diagnostic Reporter software.
- Firmware patch #13722-01 is required to fix Bug ID 4717055 (described on page 11) if you have a controller firmware version lower than version 3.25o.

If you have firmware version 3.25n, you need to upgrade to the 3.25o firmware (patch 113722-01). To determine your current controller firmware version, use one of the following methods:

- In the firmware application, select the “view system information” command and the “view the Firmware Version” field.
- In the Sun StorEdge Configuration Service program, highlight any component of the desired Sun StorEdge 3310 SCSI array, click on the View menu and the View Controller command, then check the “FW Rev” check box.

To Download and Install the Patches

1. **Go to** <http://sunsolve.Sun.COM>.
2. **Download the Solaris recommended patch cluster for the version of the operating environment that is running on the server.**
 - a. **Click on “Patch Portal”.**
 - b. **Under “Browse and Download Patches”, click “Recommended Patch Clusters”.**

- c. Under “Recommended Solaris Patch Clusters and J2SE Clusters”, highlight the appropriate item in the list:
 - 9 (21.3M)
 - 8 (71.3M)
 - d. Follow the prompts to download the cluster.
 - e. Follow the README to install the cluster.
3. Download the remaining required patch if needed.
- a. Click on “Patch Portal.”
 - b. Click on “PatchPro Interactive” and “PatchPro Expert.”
 - c. Select the “Network Storage Products” link under “Select a Patch Analysis Page.”
 - d. Select “3310” under “Disk Arrays.”
 - e. Follow the prompts to download the patch.
 - f. Follow the README to install the patch.

Environmental Specifications Update

Incorrectly listed in the *Sun StorEdge 3310 SCSI Array Installation, Operation, and Service Manual*, the environmental specifications should read as follows:

	Operating	Non-Operating
Temperature		
Standalone	5° to 40°C	-40°C to 65° C
Rack	5° to 35°C	-40°C to 65° C
Humidity		
Standalone, Rack	10% to 90% RH, 27C max wet bulb (non-condensing)	93% RH, 38C max wet bulb temperature (non-condensing)

Known Hardware Issues

Some RAID controllers may exhibit intermittent LED operation

On early shipments of RAID controllers (shipped either in Sun StorEdge 3310 SCSI arrays or as FRUs), some status LEDs might display incorrect status, and some battery LEDs might display solid amber, indicating failure when no failure exists. This is a visual defect only. If you encounter this event, please make a service call (1-800-USA-4SUN) or call your local Service Representative.

This defect will only occur in some RAID controller modules with 1004 (or lower) as the last four digits of the serial number displayed on the controller faceplate in the Sun StorEdge 3310 SCSI arrays, in FRU 370-5403-01 modules, or in XTA-2310-Ctrl-512M options.

To check all controller module serial numbers, use Sun StorEdge 3310 Configuration Service which displays the SN# (serial number) for each controller in the main window. You can also use the firmware application to check just the primary controller serial numbers through the View System Information command.

Known Firmware Issues

Host Channels switch to Async/Narrow Bug ID: 4733395

In the firmware application under “view and edit SCSI channels,” a mapped host channel sometimes will show the current sync clock as “Async/Narrow” and correctly identify the change in speed. The host adapter driver is designed to downgrade the negotiation rate on certain errors (predominantly parity errors). There is little or no performance change.

Refer to Bug ID 4722610 for more information on driver status.

No method for upgrading disk firmware in standalone JBOD. Bug ID: 4734078

For instructions on how to download firmware to disk drives in a JBOD directly attached to a host, refer to the README in the patch directory which contains the firmware.

A second method is available through the Sun StorEdge 3310 SCSI Configuration Service program. Refer to Appendix B, “Managing JBODs,” in the *Sun StorEdge 3310 SCSI Configuration Service User Guide*.

Under heavy load, the character interface fails to respond correctly. Bug ID: 4714227

While running heavy I/O to several LUNs on different logical drives and scrolling through a menu that is long, such as a long, multiple LUN mapping menu, occasionally the menu will “escape” back one or two menus. This problem only occurs under heavy I/O and occasionally when accessing the unit using `telnet(1)` over long distances.

Write cache not automatically disabled when battery is offline. Bug ID: 4702532

Write cache is not automatically disabled when battery is offline due to battery failure or a disconnected battery. The current design allows the user to enable or disable the write-back cache capabilities of the RAID controller. To ensure data integrity, you may choose to disable Write Back cache option and switch to the Write Through cache option. The risk of data loss is remote.

Enabling secondary RS-232 port causes serial communication failure. Bug ID 4764506

When you enable RS-232 communication for the secondary controller, the firmware menu will continue to show the status as disabled. If you reset the controller, this option will be enabled, and the serial interface will display garbled characters and will not function. Restore to factory defaults using the Sun StorEdge 3310 SCSI Configuration Service program or the Sun StorEdge 3310 SCSI CLI to regain serial interface functionality.

SAF-TE status incorrectly returns “No Device Inserted” status for disk. Bug ID: 4722568

In a dual bus configuration example, the below SAF-TE window displays “No Device Inserted” for six drives which are actually inserted into slots.

Product ID	StorEdge 3310 A	Drive Slot 1	No Device Inserted
Revision Level	A000	Drive Slot 2	No Device Inserted
Unique ID	3132333435362020	Drive Slot 3	No Device Inserted
		Drive Slot 4	No Device Inserted
Cooling Fan 0	Operational	Drive Slot 5	No Device Inserted
Cooling Fan 1	Operational	Drive Slot 6	SCSI ID 0
Power Supply 0	Operational and On	Drive Slot 7	SCSI ID 1
Power Supply 1	Operational and On	Drive Slot 8	SCSI ID 2
Temp Sensor 0	89	Drive Slot 9	SCSI ID 3
Temp Sensor 1	86	Drive Slot 10	SCSI ID 4
Temp Sensor 2	82	Drive Slot 11	SCSI ID 5
Temp Sensor 3	77		
Temp Sensor 4	82		
Temp Sensor 5	84		
Temp Sensor 6	82		
Temp Alert	Normal		
Speaker Status	Off or No Speaker		
Drive Slot 0	No Device Inserted		

FIGURE 1 Example of SAF-TE Device Status Window in a Dual Bus Configuration

The SAF-TE protocol only recognizes the drives in one bus and therefore only recognizes one bus (half the drives) if you have a dual bus configuration.

To check that you have all slots filled in a dual bus configuration, refer to the SCSI drive status table (via the firmware application) and check the column labeled “Chl ID.”

Running heavy I/O & scsi-resets to VxVM volumes on SE3310 LUNs may cause data loss. (Bug ID 4717055)

In rare cases, where an extremely heavy I/O load striped with VERITAS Volume Manager over a large number of Sun StorEdge 3310 SCSI Array LUNs, a SCSI bus reset occurring in the middle of a write operation to a given block could cause a subsequent read of the same block to return incorrect data. This problem has been solved by patch 113722-01. Please refer to “Required Patches” on page 7 for information on how to access and apply the patch.

If your Sun StorEdge 3310 controller is running the 3.25o firmware, you will not encounter this problem (bug 4717055), and do not need patch 113722-01.

If you have firmware version 3.25n, you need to upgrade to the 3.25o firmware (patch 113722-01).

To determine your current controller firmware version, use one of the following methods:

- In the firmware application, select the “view system information” command and “view the Firmware Version”.
- In the Sun StorEdge Configuration Service program, highlight any component of the desired Sun StorEdge 3310 SCSI array, click on the “View” menu and the “View Controller” command, then check the “FW Rev” check box.

Copy-back functionality does not work for Raid 1. (Bug ID 4760864)

In the event that a drive fails in a Raid 1 configuration, the RAID 1 logical drive will be rebuilt to an allocated hot spare drive. When the failed disk is replaced, the data on the spare is not copied back to the newly replaced disk.

Known Software Issues

Out-of-band firmware download is not supported in SCCS.

Controller, SAF-TE, and drive firmware cannot be upgraded through out-of-band management. For this release, you can use the in-band SCSI host connection and the CLI software to download firmware.

Aborting a parity check gives misleading and incorrect message in SSCS. Bug ID: 4736110

If a user aborts a parity check, the following message is incorrect:

```
Logical Drive 0, Parity Check Failed. Non-recoverable error.  
Likely drive failure or a non-recoverable error on stripe. Run  
parity check on the logical drive. Contact technical support.
```

The user does not need to contact technical support. There is no risk of data corruption as a result of this action which typically is caused by a manual abort (interruption) to the parity check operation.

Sun StorEdge Diagnostic Reporter stops working

If you stop receiving email messages from Diagnostic Reporter, Diagnostic Reporter may no longer be working and may need to be stopped and restarted.

There are three conditions when Sun StorEdge Diagnostic Reporter stops working and does not report its condition:

- If the Configuration Service Agent dies or is stopped and restarted, Diagnostic Reporter stops working.

Workaround: Stop and restart the Diagnostic Reporter Agent. Use `/etc/init.d/ssdgrptd stop` and `/etc/init.d/ssdgrptd start`.

- If the Diagnostic Reporter Config Tool UI (User Interface) is running and the Diagnostic Reporter Daemon is stopped and restarted, a condition may occur whereby the Diagnostic Reporter Config Tool UI can no longer communicate with the daemon.

Workaround: Stop and restart the Diagnostic Reporter Config Tool UI. Use `/etc/init.d/ssdgrptd stop` and `/etc/init.d/ssdgrptd start`.

- If the Configuration Service Agent dies or is stopped, Diagnostic Reporter Config Tool UI does not detect it, stops sending email messages, and continues to show that the Diagnostic Reporter Agent is still connected by displaying a *green* status.

Workaround: After the Configuration Service Agent is restarted, stop and restart the Diagnostic Reporter Config Tool UI using `/etc/init.d/ssdgrptd stop` and `/etc/init.d/ssdgrptd start`.

SSCS does not support Logical Volumes yet.

Bug ID: 4737347

Logical volumes are currently supported through the firmware application menu only. To create and use logical volumes, refer to Chapter 4, “Viewing and Editing Logical Volumes,” in the *Sun StorEdge 3310 SCSI RAID Firmware User’s Guide*.

Firmware and sccli/sscs sometimes report inconsistent drive information. Bug ID 4754591

For the same event, sometimes the CLI event messages report the wrong channel. For example, the firmware event log might correctly show:

```
[21A1] LG:0 Logical Drive NOTICE:CHL:2 ID:0 Starting Clone
```

But the sccli might show:

```
[21A1] Event Index 11 : "LD-ID 6EEA0D52 on StorEdge Unit (SN 29) : NOTICE: CHL 1 ID 0 Starting Clone"
```

Aborting Parity Check results in “Parity Regeneration Failed” message. Bug ID 4726561

When the user manually aborts a parity check, this message appears.

SSCS: no method for identifying disk drives. Bug ID 4743721

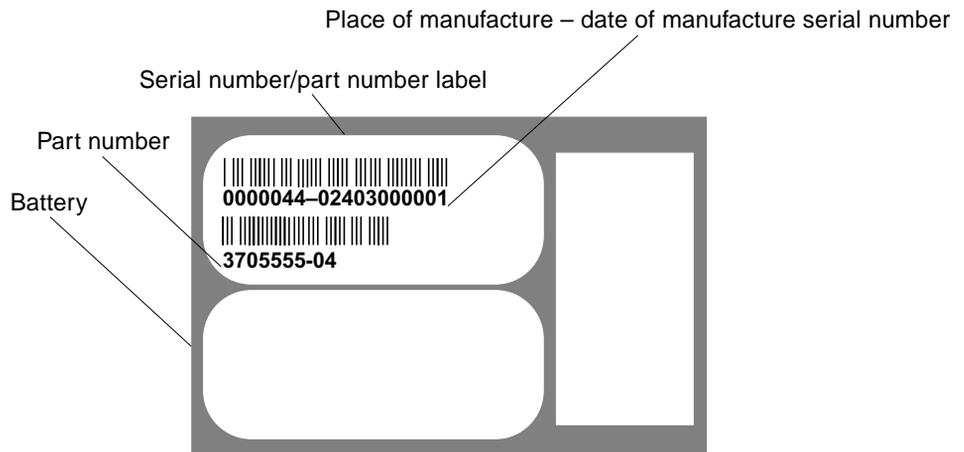
The Sun StorEdge Configuration Service program currently cannot identify disk drive status by flashing disk drive LEDs on the array. To perform this operation, you can use the firmware application and select “view and edit scsi drives” command (then select the desired disk drive, press Return, and select the “Identifying scsi drive” command which offers three modes for flashing the drive LEDs).

Installation of SCCS does not require reboot.

The Solaris installation procedure in the *Sun StorEdge 3310 SCSI Configuration User Guide* tells the user to reboot the host to start the agent (daemon) after the installation is complete. Rebooting the host is unnecessary unless editing system files such as `sd.conf` require it.

Corrected Battery Dating Information

The user documentation incorrectly indicates that the battery expiration date is specified on the battery label. The battery label referred to is the serial number/part number label, whose placement on the battery is shown in the following figure. The date on that label is actually the date of manufacture. See the example in the following illustration and the text below for how to find and read the date of manufacture. If a battery does not have a serial number/part number label, the manufacture date for the battery is August 2002.



As shown in the previous figure, the serial number/part number label on the battery has two bar codes. Below the upper bar code is a seven-digit Sun-supplied place of manufacture, followed by a dash (-) followed by a four-digit code that indicates the date of manufacture, followed by a six-digit supplier-assigned serial number.

The first two digits of the date of manufacture indicate the year (for example, 02 = 2002), and the second two digits indicate the week (for example, 40 = the 40th week) of the year.

The number below the lower bar code is the part number (for example, 370555-04).

Note – A battery should be changed every two years if the unit is operated continuously at an ambient temperature of 25 degrees Celsius (77 degrees Fahrenheit) and yearly if the unit is operated continuously at an ambient temperature of 35 degrees Celsius (95 degrees Fahrenheit) or higher. The shelf life for a replacement battery is three years.

Controller Firmware Upgrades

Hot RAID controller firmware upgrades are not recommended on systems running with heavy I/O. It is highly recommended that you stop all I/O to a Sun StorEdge 3310 SCSI array before upgrading RAID controller firmware.

For the required controller firmware patches, refer to “Required Patches” on page 7.