

Sun StorEdge[™] 6120 Array Release Notes

Release 1.2.4

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Sun StorEdge 6120 Array 1.2 Release Notes

These release notes provide the latest information about the Sun StorEdge™ 6120 array. The information could affect the installation and operation of the array. Be sure to read this document before you begin the array installation or read other array documentation.

This document applies to Release 1.2, Release 1.2.1, Release 1.2.2, Release 1.2.3 and Release 1.2.4. The Release Notes consists of the following sections:

- "Release 1.2.4 Changes" on page 2
- "Release 1.2.3 Changes" on page 2
- "Release 1.2.2 Changes" on page 2
- "Release 1.2.1 Features" on page 3
- "Release 1.2 Features" on page 3
- "System Requirements" on page 4
- "Required Software Packages and Patches" on page 4
- "Known Issues and Bugs" on page 9
- "Release Documentation" on page 14
- "Sun StorEdge 6120 Array Terminology" on page 15
- "Service Contact Information" on page 16

Release 1.2.4 Changes

Release 1.2.4 consists of updates in the form of fixed bugs that were found in release 1.2.3. For information about obtaining and installing the patches, go to the following sections:

"Required Software Packages and Patches" on page 4

Release 1.2.3 Changes

Release 1.2.3 consists of updates to the array firmware and several general performance improvement patches. For information about obtaining and installing the patches, go to the following sections:

"Required Software Packages and Patches" on page 4

Release 1.2.2 Changes

Release 1.2.2 consists of updates to the array firmware and provides guidelines for replacing array batteries. For information about obtaining and installing the firmware patch and replacing array batteries, go to the following sections:

- "Battery Replacement" on page 2
- "Required Software Packages and Patches" on page 4

Battery Replacement

Sun array batteries should be replaced every four years or if they fail the array's automatic battery tests. Battery tests periodically check for battery health, hold time, temperature, and refresh cycles. Battery tests resulting in failure generate an error message to the syslog file.

Release 1.2.1 Features

Release 1.2.1 adds localized online help for the Sun StorEdge Configuration Service software on external Solaris hosts to manage the Sun StorEdge 6120 arrays.

Release 1.2 Features

Release 1.2 adds the following features:

- "Array Hot Spares" on page 3
- "Disk Scrubber" on page 3
- "Fast Volume Initialization" on page 4
- "Backend Fault Isolation Task (BEFIT)" on page 4

This section provides a brief description of these features. For additional information, see the product documentation.

Array Hot Spares

The array hot spare feature enables you to designate disks as hot standbys to substitute for failed drives. You can configure hot spares to be global for the array or to be dedicated to a specific pool.

Disk Scrubber

The disk scrubber feature continuously reviews volumes for consistency. As a result, you will see the disk LEDs flash green regardless of I/O. The disk scrubber feature is enabled by default.

Caution – Do not disable the disk scrubber. Disabling the disk scrubber may lead to latent disk block errors which could cause multiple disk failures and lose of data.

Fast Volume Initialization

The fast volume initialization feature modifies the Sun StorEdge 6120 and 6020 array RAID set initialization method to allow access to volumes much faster than previous firmware releases.

For example, on a 2x6 12-volume configuration, fast volume initialization improves RAID set initialization time as much as 90%.

Backend Fault Isolation Task (BEFIT)

The BEFIT feature, also known as online loop diagnostic mode, maintains the availability of backend drives at all times by detecting, isolating, and correcting faulty Field Replaceable Units (FRUs).

System Requirements

Sun StorEdge 6120 array hardware and software platform requirements, and other supported software, are detailed in the Sun StorEdge 6120 Array Installation Guide.

For information on the required software packages and patches for management and data host software, refer to the next section.

Required Software Packages and Patches

This section documents the software packages and patches for management and data host software that are required for this release.

The tasks *must* be completed in the following order:

- 1. Install management host software packages, if needed.
- 2. Install data host patches, if needed.
- 3. Install management host software patches.

Management Host Software Packages

You can manage the Sun StorEdge 6120 array with one of the following software packages installed on a host with an Ethernet connection to the array.

- Software packages for Solaris hosts
 - Sun StorEdge 6000 Family Host Installation Software

This package can be used on a Solaris host and includes the Configuration Service software, the Storage Automated Diagnostic Environment (Device Edition) software, and the remote configuration CLI (sscs).

Refer to the Sun StorEdge 6000 Family Host Installation Software Guide for additional information.

- Software packages for hosts other than Solaris
 - Traffic Manager
 - Remote CLI client (thin-scripting client)
- VERITAS array support library

This is needed if you require VERITAS Volume Manager support with the array.

▼ To Install the Software StorEdge 6000 Family Host Installation Software

1. Go to:

http://www.sun.com/download

- 2. In the Browse By Category window, click the Search tab.
- 3. In the Search window, enter 6000.
- 4. Click Sun StorEdge 6000 Family Host Installation Software 2.3.

The "download" listing links you to downloads for all platforms.

- 5. Click Download.
- 6. Provide the user name and password to log in.

The license agreement is displayed.

- 7. Click Accept to accept the license agreement, and then click Continue.
- 8. To download files, click the file names that are appropriate for your operating system.
- 9. Run the installation script (install.sh) as described in the Sun StorEdge 6000 Family Host Installation Software Guide.

Software Patches

TABLE 1 lists the minimum required level software patches that are necessary for the array.

TABLE 1 Software Patches

Platform	Patch Number/Source	Patch Description
Solaris 9 operating system, first release or	http://www.sunsolve.sun.com	Sun StorEdge SAN Foundation 4.2 or later software:
later		For patch and product information, refer to the Sun StorEdge SAN Foundation 4.n
Solaris 8 04/01 or		Installation Guide at
later		http://www.sun.com/storage/san
	112392-05 or later	VERITAS VxVM 3.5 general patch*
	http://www.sunsolve.sun.com	
Microsoft Windows	Microsoft	Microsoft Windows NT Service Pack, SP 6A
NT operating systems	http://www.sunsolve.sun.com	Sun StorEdge Traffic Manager 3.0 NT
Microsoft Windows 2000 Server and Advanced Server	Microsoft	Microsoft Windows 2000 Service Pack, SP 3
	http://www.sunsolve.sun.com	Sun Stor Edge Traffic Manager $3.n$ Windows 2000
IBM AIX 4.3.3	IBM	ML 10
	http://www.sunsolve.sun.com	Sun StorEdge Traffic Manager $3.n$ AIX
IBM AIX 5.1 32 and 64 bit	IBM	ML 03
	http://www.sunsolve.sun.com	Sun Stor Edge Traffic Manager $3.n$ AIX
HP-UX 11.00 and 11.i	Hewlett-Packard	Patch set, September 2002
	http://www.sunsolve.sun.com	Sun Stor Edge Traffic Manager $3.n~\mathrm{HP\text{-}UX}$
Red Hat Linux 7.2 (single-path support only)	Red Hat Linux	Version 2.4.7-10

^{*} Required only for systems running VERITAS Volume Manager with the array.

▼ To Install the Data Host Software Patches

- 1. Determine the required data host software patches from the list in TABLE 1.
- 2. Go to:

http://www.sunsolve.sun.com.

3. Navigate to Patchfinder.

- 4. Download the required patches.
- 5. Use the patchadd(1M) command in a CLI session to install the data host software patches.

Refer to the README files for more patch information.

Before Upgrading Array Firmware

Before beginning the 3.1.x array firmware upgrade procedure, you must first scrub the disk drives. If the disk scrub identifies any problems, must fix those problems before upgrading. After your disk drives are clean, you can install 3.1.x firmware. The firmware enables the disk scrubbing feature by default, automatically ensuring the integrity of your data See "Disk Scrubber" on page 3 for more information about this new feature.

If desired, run a backup before beginning the procedure.

Note – Before beginning a disk drive firmware upgrade, quiesce all I/Os to all the volumes that are connected to the array being updated.

To scrub the disk drives before installing 3.1.x firmware, follow these steps from the array command line:

1. Obtain a list of volumes with the vol list command.

6120:/: vol list

2. Perform a vol verify command on each existing volume in the configuration to ensure volume integrity.

6120:/:<#> vol verify volume-name fix rate n

In this command, *n* is the verification rate, a number from 1 to 8. The default rate is 1, which has the minimum performance impact on the data host.

Note – Within a high-availability (HA) configuration, the vol verify command can be run on only one volume at a time.

The vol verify operation can take up to several hours to run, depending on system activity and the verification rate selected.

Management Host Software Patches

The following lists the management software patches needed to meet the baseline requirements for Releases 1.2.3, 1.2.2, 1.2.1, and 1.2.

Release 1.2.3

115179-11 - Firmware patch 3.1.4

116655-02 - Localization patch for Control Software for the Storage Service Processor

Release 1.2.2

115179-06 - Firmware Patch 3.1.3

114708-02 - 72 gigabit 10k drive firmware patch

114709-02 – 146 gigabit 10k drive firmware patch

Release 1.2.1

115179-04 – Firmware patch 3.1.2

116655-01 - Localization patch for Control Software on external hosts

Release 1.2

114950-04 - Management Software - Configuration Service application and storage profiles. Install if the Configuration Service application is installed on the management host.

116141-01 - WBEM patches for Solaris 8 needed by 114950-0.

114961-03 - Management Software - CLI Client

115179-01 - Firmware patch 3.1

114590-18 - Storage Automated Diagnostic Environment support patch (host only. Install if Storage Automated Diagnostic Environment software version 2.2 is installed on the management host.)

▼ To Install the Management Host Patches

Note – Before beginning the array firmware upgrade procedures, see "Before Upgrading Array Firmware" on page 7.

- 1. Determine the required management software patches.
- 2. Go to http://www.sunsolve.sun.com.
- 3. Click the Patchfinder link.
- 4. Download the required patches.
- 5. Use the patchadd(1M) command in a CLI session to install the management software patches.

Refer to the README files for more patch information.

Known Issues and Bugs

The following sections provide information about known issues and bugs filed against this product release:

- "Known Issues" on page 9
- "Bugs" on page 11

Known Issues

This section includes known issues and guidelines about this product that are not categorized by a Sun bug ID number. This section contains the following topics:

- "Changing the Segment Size of an Existing Pool That is in Use Causes Loss of Data" on page 10
- "Managing Sun StorEdge 6120 Arrays" on page 10
- "Netscape Version 4.79" on page 10
- "Older Browser Versions" on page 10
- "Array Health Status" on page 11

Changing the Segment Size of an Existing Pool That is in Use Causes Loss of Data

Changing the segment size of an existing pool that is in use removes the existing pool from the volume, and the data is lost. Therefore, you should not change the segment size of a pool that is in use.

Managing Sun StorEdge 6120 Arrays

You can manage Sun StorEdge 6120 arrays through the management host that runs the Sun StorEdge Configuration Service software. This facility, once installed and configured, enables you to administer arrays using either a browser-based graphical user interface (GUI) for Solaris or a native-host thin-scripting command-line interface (CLI) client for supported operating systems. Unlike the Sun StorEdge 6320 system management interface, this software must be loaded on a host that has an Ethernet connection to the arrays being managed.



Caution – Because the Sun StorEdge Configuration Service software retains the array state and configuration service, do not use the array Telnet interface while an array is being managed by the Sun StorEdge Configuration Service.

If you add an array under Sun StorEdge Configuration Service management that had been managed previously with the Telnet interface, you must record and delete all existing LUN access control settings, such as initiator groups and LUN masking settings. After you have done so, you can register the array in the Sun StorEdge Configuration Service tool, reconfigure the storage pools and initiator groups, and set permissions.

Wherever possible, use the sscs CLI or the GUI. However, some features may require that trained personnel access the array a using the array command line available through a serial connection.

Netscape Version 4.79

If you double-click the top bar of the Netscape™ Version 4.79 window or resize the window, there can be a loss of context on the screen. If this happens, bring up the window menu and select Reload.

Older Browser Versions

If you are managing Sun StorEdge 6120 arrays using an older generation (HTTP 1.0-based) Web browser such as Netscape 4.x or earlier, you could experience time-out conditions from the browser when creating large configurations. In large configurations, older browsers need more time to calculate capacities and can time out before those calculations are complete. In this case, you might need to reload the browser page to continue working with the system.

If time-outs become an issue, update your browser to a version that supports HTTP 1.1 (Netscape 6 or higher).

Array Health Status

When you use the Sun StorEdge Configuration Service software to change network settings, the window incorrectly displays the array health status as "Error." If you change array network configurations, you must coordinate the new array network settings with physical network connections. Update the array settings in the Sun StorEdge Configuration Service software, apply the settings, and then change the physical network connection to the correct gateway subnet.

Updating FRU Versions

After adding a field-replaceable unit (FRU), you must verify that the FRU version is supported and matches other components. (In the array CLI, enter the ver command to display the current version of controller firmware on an array. Enter the lpc version command to display the firmware version of the interconnect card.) Update any FRUs you add with the latest patches. See "Management Host Software Patches" on page 8.

Bugs

This section contains a list of bugs for this release:

- "General Bugs" on page 11
- "Localized Help Bugs" on page 13
- "Release Documentation" on page 14

General Bugs

CLI Command fru list Returns Hardware Revision Level

Bug 4942013 - The CLI command fru list returns the hardware revision level instead of the software revision level of the interconnect card (loop card) in the Revision output field.

Workaround - To determine the software revision level of the interconnect card (loop card), enter the lpc version command.

BEFIT Task Failure

Bug 4902352 - When Loop 1 is in split mode, the controller must be able to access the disk drive that belongs to the other controller domain. If the mirrored path to that disk drive fails, the disk access will fail.

Workaround - Trained service personnel can use the sys loopl_split off diagnostic command to heal the loop. Refer to the *Sun StorEdge 6020 and 6120 Arrays System Manual*. Loopcard Boot Message

Bug 4845755 - While booting the system in a master and alternate loopcard environment, you might see the following message:

Unable to obtain mid-plane serial number

Workaround - Ignore this message. It has no bearing on the operation of your system

"Unfixable Error" Message Displays During Boot

Bug 4939758 - During booting, an "unfixable error" message is displayed, as shown in the following example:

```
Initializing loop 2 to accept SCSI commands...
Mounting root volume...
Checking local file system...
Unfixable error: 0x2120 in block 0x2510 file id=0x13 path=
/Oct14.OLD
Verify volume fails on uld1, error code = 0X2120
The File System in uld1 is BAD
```

Workaround - Ignore this message.

LED Command

Bug 4801209 - The led diagnostics command, which issues commands to array controller LEDs, works only for the first array in an array high-availability (HA) configuration. For example, the following command correctly turns off the amber, blue, and green LEDs on the first array's controller:

```
led -e 1 -f controller -l busy
```

However, using the same command for the second array does not change the second array's controllers LEDs in an HA configuration:

led -e 2 -f controller -l busy

Adding a Volume Takes Too Long

Bug 4905278 - Adding a volume can take longer when volume initialization is taking place.

Enable Command

Bug 4845863 - If the enable array command fails to enable a drive in an array Telnet CLI session, an error message is not displayed on the console; however, an error message is recorded in the array syslog file.

Workaround - If you are using the enable command to enable a drive, check the syslog file to make sure the command executed correctly.

Localized Help Bugs

Localized Help PDF Unavailable

Bug 4863940 - In the localized versions of the Sun StorEdge Configuration Service software, the link "Help in Adobe Acrobat PDF Format" to the file help.pdf is unavailable.

Localized Help Search Facility

Bug 4842713 - The localized online help search function does not work correctly. The search fails when a keyword is non-ASCII. If the keyword is in English, the search results are displayed in English, and the corresponding contents are localized.

Localized Help Index

Bug 4866283 - The localized online help index does not work properly. For example, in Japanese and the Simplified Chinese environment, unnecessary English characters are displayed on the Index tab.

Release Documentation

TABLE 6 lists the documentation for the Sun StorEdge 6120 and related products. 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/Midrange/6120/index.html
- http://www.sun.com/documentation
- http://www.docs.sun.com

 TABLE 2
 Sun StorEdge 6120 Array and Related Documentation

Application	Title	Part Number
Site preparation	Sun StorEdge 6120 Array Site Preparation Guide	817-0960- <i>nn</i>
Safety requirements	Sun StorEdge 6120 Array Regulatory and Safety Compliance Manual	817-0961- <i>nn</i>
Array install procedures	Sun StorEdge 6120 Array Installation Guide	817-0199- <i>nn</i>
Management software installation	Sun StorEdge 6000 Family Host Installation Software Guide	817-1739-nn
Overview, service, reference, and CLI administration	Sun StorEdge 6020 and 6120 Arrays System Manual	817-0200- <i>nn</i>
Management and configuration help (on	Sun StorEdge Configuration Service online help	n/a
Solaris host)	Sun StorEdge SSCS (1M) man page	n/a
Troubleshooting and diagnostics	Storage Automated Diagnostic Environment 2.n User's Guide, Device Edition	817-0822-nn
	Storage Automated Diagnostic Environment 2.n Release Notes, Device Edition	817-0823- <i>nn</i>
SAN Foundation	Sun StorEdge SAN Foundation 4.n Release Notes	817-1246- <i>nn</i>
	Sun StorEdge SAN Foundation 4.n Installation Guide	817-1244- <i>nn</i>

TABLE 2 Sun StorEdge 6120 Array and Related Documentation (Continued)

Application	Title	Part Number
Multipathing support	Sun StorEdge Traffic Manager Software Release Notes	817-0385- <i>nn</i>
Cabinet information	Sun StorEdge Expansion Cabinet Installation and Service Manual	805-3067- <i>nn</i>
Sun Rack information	Sun Rack Installation Guide	816-6386-nn

Sun StorEdge 6120 Array Terminology

The Storage Networking Industry Association (SNIA) is developing a standard set of terminology. When it has been adopted by all storage manufacturers, this terminology standard will make it easier for customers to understand terms used by different vendors.

Sun Microsystems is adopting the SNIA terms now. The first storage product to use the new SNIA terminology is the Sun StorEdge 6000 family product line.

TABLE 3 shows array Telnet terms and the corresponding terms used in the Sun StorEdge Configuration Service software.

 TABLE 3
 Sun StorEdge 6120 Array Terminology

Sun StorEdge 6120 Array CLI Terminology	Sun StorEdge Configuration Service Terminology	
Volume	Storage pool	
Slice	Volume	
LUN	Volume	
Administrative domain	Storage array	
Partner group	High-availability (HA) configuration	
Array	Tray	
Enclosure	Tray	
Expansion unit	Expansion unit	

Service Contact Information

If you need help installing or using this product, go to:

http://www.sun.com/service/contacting