Sun StorEdge™ 6120 Array Release Notes

Version 3.0.5 Firmware and Sun StorEdge
Configuration Service Software Version 2.1

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Sun StorEdge 6120 Array Release Notes

These release notes provide information about the Sun StorEdge™ 6120 array that was not included in the array documentation, but could affect the installation and operation of the array. Be sure to read this document before you begin the array installation. Topics are divided into the following sections:

Features in This Release

The Sun StorEdge 6120 array provides the following features and functionality:

- Storage policies for simplified storage provisioning to specific application workloads
- Highly scalable: Scale from 504 Gbytes to 12.2 Tbytes of storage capacity in a high-availability (HA) configuration.
- Highly flexible: Supports drive depopulation and expansion trays
- High-density chassis (3RU, 18-inch deep) accommodates up to 14 1-inch drives:
    - 36 Gbyte, 15,000 rpm
    - 73 Gbyte, 10,000 rpm
    - 146 Gbyte, 10,000 rpm
- Supports the Solaris™ operating system, Microsoft Windows NT, Microsoft Windows 2000, Red Hat Linux, HP-UX, and IBM AIX host platforms

- Sun StorEdge Configuration Service for the Sun StorEdge 6000 family. CIM-compliant management software for array configuration and central administration
- Sun StorEdge 6120 array version 3.0.5 firmware
- Online controller firmware upgrades for HA configurations
- Fibre Channel architecture front to back with a 2 Gbit-to-host Fibre Channel operation
- multivolume and volume masking functionality support up to 64 volumes
- Five block sizes: 4 Kbyte, 8 Kbyte, 16 Kbyte, 32 Kbyte, or 64 Kbyte

Product Changes

The following updates have been added to this product that were not included in the product documentation:

- "Array Configuration Changes" on page 2
- "Thin-Scripting Client" on page 5

Array Configuration Changes

Sun StorEdge Configuration Service software supports adding and removing expansion units (that is, trays that do not contain controller cards) on existing array configurations using graphical-user-interface (GUI) wizards. This software supports the following array configuration changes:

- Adding expansion units to an existing array 2x2 or 2x4 HA configuration
- Removing expansion units from an existing array 2x4 or 2x6 HA configuration

Figure 1 illustrates the HA configurations and the corresponding tray number in the Sun StorEdge Configuration Service software.

Top of cabinet

Alternate master controller unit - Tray 1

Master controller unit - Tray 0

Bottom of cabinet
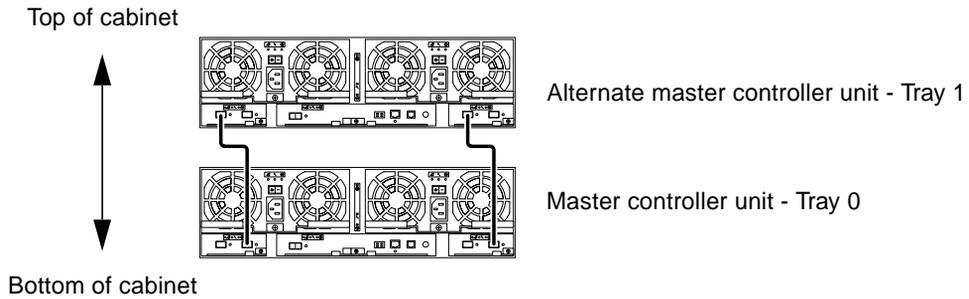
FIGURE 1   2x2 HA Configuration and Corresponding Tray Numbers

Top of cabinet

Expansion unit - Tray 3

Alternate master controller unit - Tray 2

Expansion unit - Tray 1

Master controller unit - Tray 0

Bottom of cabinet
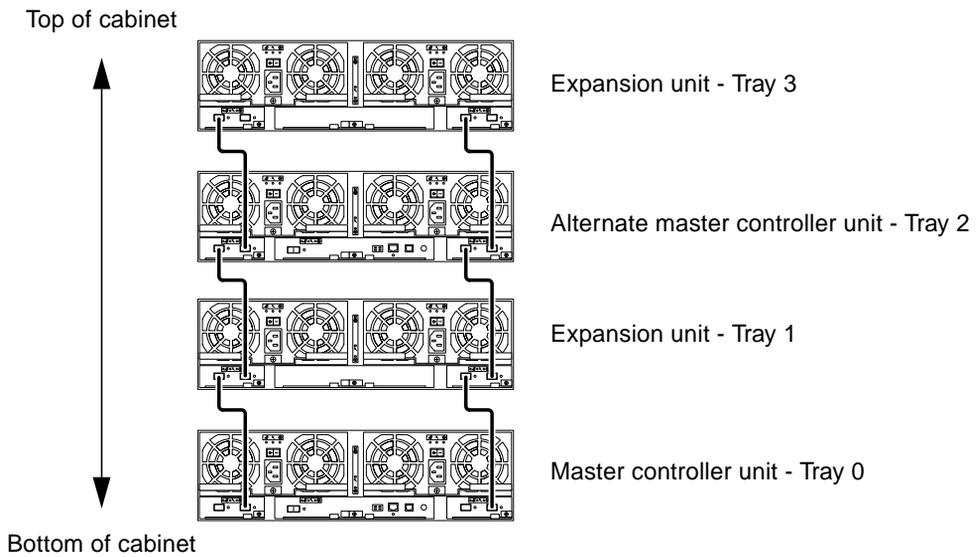
FIGURE 2   2x4 HA Configuration and Corresponding Tray Numbers
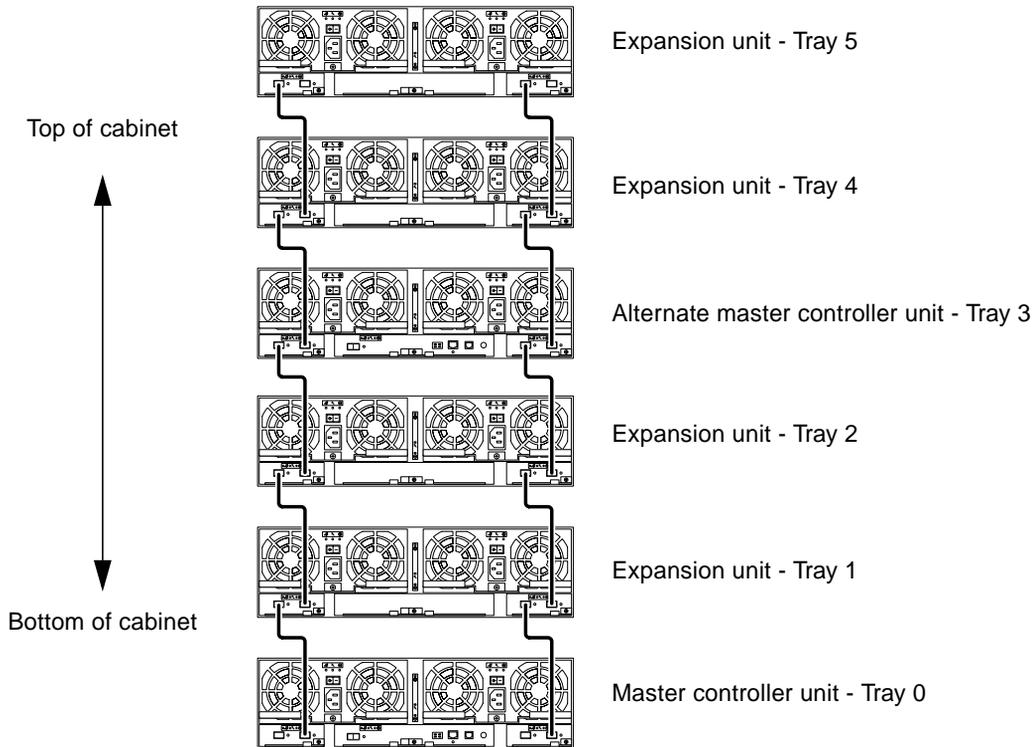
FIGURE 3   2x6 HA Configuration and Corresponding Tray Numbers

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Note – When using the management software to change the array configuration, make sure that the master controller unit is identified as Tray 0 when you begin. If there has been a failover operation to the alternate master controller unit, the alternate master controller unit assumes the master controller unit status. When this happens, the master controller unit tray number updates to the tray number of the alternate master controller unit. To change back to the original configuration and tray numbering, you must reset the array controller.

▼ To View the Add or Remove Expansion Online Help

1. **Click the online help in the Sun StorEdge Configuration Service browser**

2. **Navigate to Administering Your System→Array Details and Tray Reconfiguration**

3. **Select "To Add an Expansion Unit to an Array" or "To Remove an Expansion Unit from an Array" for instructions.**

Thin-Scripting Client

A thin-scripting client is available for hosts running the Solaris operating system and other supported host platforms. The thin-scripting client provides a command-line interface (CLI) that enables access to Sun StorEdge 6120 array storage configuration and management facilities. The client is available for download from:

`http://www.sun.com/`

There are two ways to navigate to the site with the thin-scripting client files. You can use either method.

▼ To Retrieve the Client from the Sun Download Center

1. **From the** `http://www.sun.com` **home page, click on Downloads.**

2. **Under the Download Center—Browse downloading by Category, Click on System Administration.**

3. **Under Storage Management, click on Sun StorEdge 6120 Fibre Channel array Products.**

4. **Log in with customer user name and password.**

5. **Download the files for your operating system. For example, the files for the Linux operating system would be:**
   - `linux_se6x20.tar`
   - `linux_README.txt`

   The README file contains the installation instructions for the client.

▼ To Retrieve the Client from the Sun Storage Site

1. **From the** `http://www.sun.com` **home page, click on Product & Services.**

2. **Under Product & Services, click on Storage.**

3. **Under Hardware Storage, click on Midrange Storage.**

4. **Under Midrange Storage, click on Sun StorEdge 6000 Family.**

5. **Under Sun StorEdge 6000 Family, click on Sun StorEdge 6100 Arrays.**

6. **Under Sun StorEdge 6100 Arrays, click on Sun StorEdge 6120 Array.**

7. **Under Software Download, click on Sun StorEdge 6000 Family Storage Products.**

8. **Log in with customer user name and password.**

9. **Download the files for your operating system. For example, the files for the Linux operating system would be:**

   - `linux_se6x20.tar`
   - `linux_README.txt`

   The README file contains the installation instructions for the client.

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*. This section contains a list of additional software patches and packages required for this product release.

Packages

You must install the following packages on the Sun StorEdge 6120 array management host or any network host connected to the array:

- Sun StorEdge 6000 Family Host Installation Software (also available on the product CD)
- VERITAS Array Support Library, required only for VERITAS Volume Manger support with the array

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Note – You must install the packages before you install the patches.

▼ To Download Packages

1. **In a web browser, go to:**

   `http://www.sun.com/download`

2. **Under Browse All Products, click View All.**

3. **Click the Sun StorEdge 6120 array name.**

4. **Follow the instructions on the site to download the required packages.**

▼ To Install the Packages

● **Use the** `pkgadd` **command to install the Sun StorEdge 6120 array packages.**

Refer to the package README file for detailed instructions.

Patches

TABLE 1 lists the minimum level patches necessary for the array that you must install on the data host.

TABLE 1   Patches

Platform	Patch Number	Patch Description
Solaris 9 operating system, first release or later	SFK 6.2.6 or later	Sun StorEdge SAN Foundation software patch
	112392-04 or later	VERITAS VxVM 3.5 general patch*
	113698-02	VERITAS VxVM 3.5 supplemental general patch*
		• VERITAS VxVM patches must be installed in the order listed.
		• If you install a later version of patch of 112392, such as the -05 revision, the supplemental patch (113698-02) is not required.
Solaris 8 operating system, Update 4 or later	SFK 6.2.6 or later	Sun StorEdge SAN Foundation software patch
	112392-04 or later	VERITAS VxVM 3.5 general patch*
	113698-02	VERITAS VxVM 3.5 supplemental general patch*
		• VERITAS VxVM patches must be installed in the order listed.
		• If you install a later version of patch of 112392, such as the -05 revision, the supplemental patch (113698-02) is not required.
Microsoft Windows NT operating systems	Available from Microsoft	Microsoft Windows NT Service Pack, SP 6A
		Sun StorEdge Traffic Manager 3.0 NT
Microsoft Windows 2000 Server and Advanced Server	Available from Microsoft	Microsoft Windows 2000 Service Pack, SP 3
		Sun StorEdge Traffic Manager 3.0 Win2K
IBM AIX 4.3.3	Available from IBM	ML 10
		Sun StorEdge Traffic Manager 3.0 AIX

TABLE 1   Patches *(Continued)*

Platform	Patch Number	Patch Description
IBM AIX 5.1 32 and 64 bit	Available from IBM	ML 03
		Sun StorEdge Traffic Manager 3.0 AIX
HP-UX 11.00 and 11.i	Available from Hewlett-Packard	Patch set, September 2002
		Sun StorEdge Traffic Manager 3.0 HP-UX
Red Hat Linux 7.2 (single-path support only)	Available from Red Hat Linux	Version 2.4.7-10

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

▼ To Download the Patches

1. **Go to** `http://www.sunsolve.sun.com`**.**

2. **Download the patches listed in** TABLE 1**.**

   You can access these patches by navigating the links Patch Pro → Network Storage Products.

▼ To Install the Patches

Note – Install the packages before you install the patches.

● **Use the** `patchadd` **command to install the patches in** TABLE 1**.**

   Refer to the patch 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 12

Known Issues

Known issues about this product that are not categorized by Sun bug ID number are included here. This section contains the following topics:

- "Sun StorEdge Configuration Service Issues" on page 9
- "Documentation Issue" on page 10
- "Multiplatform Issue" on page 11

Sun StorEdge Configuration Service Issues

- You can manage Sun StorEdge 6120 arrays through the management host running the Sun StorEdge Configuration Service software. This facility, once installed and configured, enables administration of arrays using either a browser-based graphical user interface (GUI) or a native host, thin scripting client. Unlike the Sun StorEdge 6320 system management interface, this software must be loaded on a host that has an Ethernet connection to the array(s) 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.

- If you are administering the array from a management host that uses older generation (HTTP 1.0-based) web browsers (Netscape™ 4.*x* or earlier), you could experience timeout conditions from the browser when configuring large array systems. In large configurations, more time is needed to calculate capacities, and older browsers time-out before those calculations are complete. In these cases, reload the browser page to continue working with the system.

  If this becomes an issue, update your browser to a version that supports HTTP 1.1 (Netscape 6 or higher). This issue affects browser-based administration only and does not affect the Sun StorEdge Configuration Service command-line administration when used with the thin-scripting client.

- If you are running the Sun StorEdge Configuration Service GUI in Netscape 4.*x* or earlier web browser, a Netscape issue can cause the screen to lose context when you resize the window. If this occurs, right click the mouse button and select Refresh.

■ When using the Sun StorEdge Configurations Services administration to change network settings, the screen incorrectly displays the array health status as "Error." If you change array network configurations, you must coordinate the new array network settings with network physical connections. To do this, first update the array settings in the configuration services software, and after applying the settings, change the physical network connection to the correct subnet where the gateway is accessed.

Documentation Issue

■ Several commands were added to the Sun StorEdge Configuration Service that were not listed in the documentation. These include:

  ■ **Listing the Array Status**

    This command displays the status information about arrays. The `sscs list arraypower` command-line syntax is shown below.

    ```
    # sscs list -a array-name arraypower
    ```

    TABLE 2 describes the arguments associated with the `list arraypower` subcommand.

    TABLE 2   `sscs list arraypower` Command-Line Arguments

Argument	Description
`-a,--array` *array-name*	Specifies an *array-name* up to 40 characters long.

  ■ **Modifying Power for an Array**

    This command modifies power for an individual array. The `sscs modify arraypower` command-line syntax is shown below.

    ```
    # sscs modify -a array-name arraypower { off | restart | rad }
    ```

TABLE 3 describes the arguments associated with the `modify arraypower` subcommand.

TABLE 3   `sscs modify arraypower` Command-Line Arguments

Argument	Description
`-a,--array` *array-name*	Specifies an *array-name* up to 40 characters long.
`arraypower` *value*	Where *value* can be either `off` (shutdown the array), `restart` (restart the array), or `rad` (restore the array default values).

- **Modifying Tray**

  This command is used to disable, enable, or unconfigure a controller. The `sscs modify tray` command-line syntax is shown below.

  ```
  # sscs modify -a array-name -d tray-name
  ```

  TABLE 4 describes the arguments associated with the `modify tray` subcommand.

TABLE 4   `sscs modify tray` Command-Line Arguments

Argument	Description
`-a,--array` *array-name*	Specifies an *array-name* up to 40 characters long.
`-u, --unconfigure` *tray-name*	Unconfigures a tray.
`-d, --disable` *tray-name*	Disables a tray.
`-e, --enable` *tray-name*	Enables a tray.

Multiplatform Issue

- Qlogic host bus adapters (HBAs) require host-specific Flash code. Due to different host platform behaviors with Fibre Channel devices, a Sun supported Qlogic HBA could require a Flash image update on the HBA, which is dependent on the type of platform. TABLE 5 lists the Flash image required for each supported platform.

TABLE 5   Qlogic Flash Images by Platform

Platform	Flash Image	HBA Device Driver
qlc + Win 2K	Qlogic x86 Flash Image	Sun supported driver
qlc + Win NT	Qlogic x86 Flash Image	Sun supported driver
qlc + Solaris SPARC host	Sun supplied Qlogic HBA	n/a
qlc + Linux	Qlogic x86 Flash Image	Red Hat 7.2

Should a Flash update be required for your given operating system, contact your Sun authorized service representative for details on obtaining the Flash update image. See "Service Contact Information" on page 24.

Bugs

This section contains a list of bugs that are organized by category, and then by the priority and severity within each category. This section is broken into the following categories:

- "VERITAS Bugs" on page 12
- "Sun StorEdge SAN Foundation Software Bugs" on page 13
- "Multiplatform Bugs" on page 13
- "Sun StorEdge Configuration Service Bugs" on page 14
- "Sun StorEdge 6120 Array Bugs" on page 16

VERITAS Bug

- **Bug 4800446 (P3/S4)** vxinstall fails occasionally to partition some volumes. On rare occasions, the vxinstall command in Volume Manager 3.5 fails in its attempt to partition a Sun StorEdge 6120 array volume.

  Workaround: Run a subsequent vxinstall command to partition the missing volumes.

  An alternate workaround is to run the following Volume Manager command:

  ```
  # /etc/vx/bin/vxdisksetup -i cxtxdx
  ```

  This command partitions just the specified device.

Sun StorEdge SAN Foundation Software Bugs

- **Bug 4820203 (P3/S3)** Extended boot time delay and configure failures can occur with a large number of configured volumes. In some cases, VERITAS volumes can become disabled due to some LUNs being inaccessible by the Volume Manager script while mounting volumes in the startup script. This can occur when one of the paths to an array volume is in standby mode.

  Workaround: Add a sleep delay of 8 seconds per LUN at the beginning of the `/etc/rcS.d/S85vxvm-startup2` script. Rebooting the system successfully works around the problem.

- **Bug 4816283 (P3/S3)** The `fc_topology auto` mode on the Sun StorEdge 6120 arrays can get out of sync with Fibre Channel switch settings.

  Workaround: On Sun StorEdge 6120 arrays, do not use the `sys fc_topology auto` setting. Set the array `fc_topology` to `loop` for arrays that are connected directly to hosts, or to `fabric_p2p` mode for array-to-switch connections.

- **Bug 4844391 (P4/S3) and 4841099 (P4/S4)** When performing a DR Attach operation or a hot-plug operation on a host connected directly to a Sun StorEdge 6120 array, the host fails to configure the array if the array `fc_topology` mode is set to `auto`.

  Workaround: For Sun StorEdge 6120 arrays in direct host-attach configurations, use the `sys fc_topology loop` command to change the mode to `loop`.

Multiplatform Bugs

This section is organized as follows:

Microsoft Windows NT and Microsoft Windows 2000 Platforms

- **Bug 4816964 (P4/S2)** The Microsoft Windows 2000 multipathing management GUI currently allows users to disable all paths to a given HBA. Although the GUI warns the user that disabling all paths to all HBAs is an unsupported operation, there are cases where the underlying drivers proceed with the users request and all paths are disabled. Loss of all paths to a given storage device can result in an unstable operating system environment. The Windows 2000 system hangs in cases where both paths to a given Sun StorEdge 6120 array have been disabled.

  Workaround: Never disable all paths to both HBAs connected to a Sun StorEdge 6120 array. To remove an array from a configuration, use the Windows Install Wizard to disable the connected HBA first.

- **Bug 4811507 (P4/S3)** If a Sun StorEdge Traffic Manager multipathing graphical user interface (GUI) is started during a failover, the GUI does not display information on failover devices. This occurs in Microsoft Windows NT 4.0 operating environments during a failover, even when the devices are active and functioning properly.

  Workaround: To see an accurate view of all devices on the system, restart the multipathing GUI after failover has completed, and the failover devices display properly.

IBM AIX Platforms

- **Bug 4815527 (P1/S2) and Bug 4743016 (4/2)** On AIX systems where the `cfgmgr` utility is used to add Sun storage devices to a configuration, the AIX host system can hang. This problem has been isolated by Sun to an AIX host problem, and this issue has been reported to IBM under tracking ID PMR 04186-004. Further information on this issue will be posted as it becomes available.

- **Bug 4814660 (P2/S3)** There is a known issue with the multipathing driver management GUI under IBM AIX 5.1 where the disk device name does not display properly. This problem appears to be specific to this platform environment.

  Workaround: A fix is in progress. For more information, contact your Sun Authorized Service Representative (see "Service Contact Information" on page 24).

Sun StorEdge SAM-FS Software Bug

- **Bug 4838778 (P2/S1)** If you experience a double-path failure while using Sun StorEdge SAM-FS software, a host panic could occur. Because this problem occurs only with a double-path failure, resolve any single path failure as quickly as possible to ensure a fully redundant configuration.

Sun StorEdge Configuration Service Bugs

- **Bug 4863467 (P2/S2)** When using the Sun StorEdge Configuration Service wizards to add or remove expansion trays in a storage array, the wizard directs you to physically remove or add the required expansion trays. At this point, recable and power on the newly configured storage array, allowing enough time for the storage array to completely boot *before* clicking the Next button in the wizard. If you proceed to the next screen before the newly configured storage array boots completely, the wizard can time out due to its inability to communicate with the storage array. If a timeout occurs, this might indicate that the storage array was not ready to communicate over Ethernet.

Workaround: If the wizard times out before the array fully boots, click the Retry button in the wizard to re-attempt communication with the array. If the wizard is unable to communicate with the storage array, and you do not initiate a retry, eventually the wizard will log off. If the wizard logs off during a tray addition procedure, and if storage pools existed in the original configuration, those pools will not be placed online automatically by the wizard. You must manually place the storage pools online using the Sun StorEdge Configuration Service tool *after* the array has booted completely.

- **Bug 4818658 (P3/S2)** Initiators in `initgroup` can sometimes detect a volume where specific access permission has not been allowed. Although an unauthorized initiator may be able to detect these volumes, data access permission to the volume is not allowed unless that initiator has been given specific access to the volume.

  Workaround: A fix is in progress. For assistance with this issue, contact your Sun Authorized Service representative (see "Service Contact Information" on page 24).

- **Bug 4854361 (P3/S2)** When using the Sun StorEdge Configuration Service to perform a duplicate tray operation (for example, creating storage pools on more than one tray at a time), it is possible that the duplication operation will affect only the first tray, but not the remaining trays. No error message or failed job message is displayed.

  Workaround: Continue to use the duplication operation for each remaining tray.

- **Bug 4825610 (P3/S3)** Volumes in multiple volume groups can allow unintended host permission. Configuration of a given volume into multiple volume groups, followed by granting access by an initiator group to the same two volume groups, can result in the wrong type of access being granted. In some cases, the access can be accidentally removed entirely. This situation only occurs if the same initiator group is granted access to two volume groups that have the same volume.

  Workaround: To avoid this situation, before adding a volume to a volume group, make sure that the volume does not already belong to another volume group.

- **Bug 4657035 (P3/S4)** When a Sun StorEdge 6120 array is administered using the configuration service user interface, and when no storage pools are configured on the array, the array controller can be disabled. Sun factory configurations have configured storage pools, and this problem occurs only if there are no storage pools on the array and you perform other administrative tasks.

  Workaround: To avoid this problem, make sure that there is at least one storage pool configured on each Sun StorEdge 6120 array configured in a storage array system. You can also re-enable the array controller using the Sun StorEdge Configuration Service `sscs modify --enable -a array 00 tray 0` command. Or you can start a Telnet session with the array and use the `enable` command to re-enable the array controller.

- **Bug 4863940 (P5/S5)** In the localized versions of the Sun StorEdge Configuration Service software, the link "Help in Adobe Acrobat PDF Format" to the `help.pdf` file is not available.

Workaround: Refer to the online help by individual section title. The `help.pdf` file is a consolidated version of all online help files in PDF format.

- **Request for Enhancement (RFE) 4804942** In array environments using the Sun StorEdge Configuration Service, issued commands are queued for processing at the application server level on the array management host. If a system error occurs (such as a reboot of the management host), the application server does not retain the state of the internal queue.

  Workaround: In these cases, reissue commands to initiate GUI operations.

Sun StorEdge 6120 Array Bugs

- **Bug 4862463 (P1/S1)** Reconstruction of data from a standby drive to a replaced drive is performed at a high reconstruction rate, regardless of the global reconstruction rate setting on the array. This behavior results in increased host I/O latency during the copy-back operation from the standby drive as the array conducts this operation in the shortest amount of time. After the copy-back operation has completed, array response to host I/Os resumes to normal performance levels. Reconstruction of data on the array to the standby disk (after the initial drive failure is detected) does respond correctly to the reconstruction rate tunables configured on the array.

  Workaround: Schedule a drive replacement procedure during an array maintenance period to avoid impacting array performance during normal operations.

- **Bug 4840853 (P1/S3)** The `boot -w` command or the equivalent of this operation in the Sun StorEdge Configuration Service software can cause array errors that abort the operation. You can perform a boot -w operation in several ways, including use of the:

  - "Remove an Expansion Tray" procedure in the Sun StorEdge Configuration Service user interface (UI),
  - "Restore Array Defaults" feature in the CLI, and
  - "Restore Array Defaults" button on the GUI.

  The management software is not able to detect a failure of the underlying `boot -w` operation during any of the procedures above. If such a failure occurs, the management software is not able to contact the array to perform any follow-up operations, because the management software no longer knows the correct array password.

  Workaround: If this type of failure occurs while you are performing a tray removal procedure using the Sun StorEdge Configuration Service software, do the following:

1. **Log out of the management software application.**

2. **Log in to the Storage Automated Diagnostic Environment.**

3. **Go to the Administration→Services→Configure Devices page.**

4. **Unconfigure the array on which the error occurred.**

5. **Reconfigure the array on which the error occurred.**

6. **Open the management software application and retry the procedure.**

   This procedure reminds the management software application of the array password, which enables the application to complete the procedure.

   If you are invoking the `boot -w` command on the array through a Telnet CLI session and this issue occurs, disconnect from the current Telnet session. Start a new Telnet session, halt all host I/O activity to the array, and use the `reset` command to reboot the array. Refer to the *Sun StorEdge 6020 and 6120 Arrays System Manual* for more information about this command.

Note – Before you begin any tray removal procedure using the Sun StorEdge Configuration Service software, you can minimize the chances of this issue occurring by rebooting the storage array before performing the tray removal procedure.

- **Bug 4827533 (P2/S3)** Power-on self-test (POST) and built-in self-test (BIST) do not light the amber LED when a hardware problem is detected. During the process of booting an array controller, if either the POST or BIST firmware detects a fatal problem with the hardware, the system prevents the faulty controller from going online. If this occurs, the amber LED on the controller card (normally used to indicate the hardware is faulty) does not light.

  Workaround: Allow enough time for the newly inserted controller card to boot, and verify that the controller card is healthy by checking its status using the Sun Storage Configuration Service software or `fru stat` command. If a controller does not come online, it could be that the inserted controller card is bad and needs to be replaced.

- **Bug 4812670 (P2/S4)** Controller failure might cause only one blue LED to light. In cases of a controller failure, both the blue Ready-to-Replace LED and amber LED should be illuminated. However, in some cases, only the blue LED is lit.

  Workaround: If a blue LED is illuminated on a controller card FRU, consider this notification of a controller card failure, as well as the status indicating that the controller is ready to be replaced. If this happens, replace the controller card as soon as possible. To confirm a failed controller card status, verify the status using either the Sun StorEdge Configuration Service interface or by using a direct Telnet login to the array.

- **Bug 4808119 (P3/S1)** In some cases, when a disabled alternate master controller is reenabled from the master controller (using the Telnet `enable u`*x* command), before the alternate master controller has completed booting, it can be disabled by

the array master controller. Because the enabled controller has not completed the boot cycle and has not begun accepting I/Os, the system state remains the same with one controller online and the other disabled.

Workaround: To determine if this event has occurred after enabling an alternate master controller, use the array `sys stat` command to determine the state of the alternate master controller.

```
6120:/:<44>sys stat
Unit    State       Role     Partner
-----   ---------   ------   -------
1       ONLINE      Master
2       DISABLED    Slave
```

If the output of the `sys stat` command appears as shown in this example, the alternate master controller has been disabled. A second `enable u2` command will bring the alternate master controller online. This issue has occurred only occasionally on initial commands to enable a disabled controller. Subsequent `enable` commands are successful.

- **Bug 4821680 (P3/S2)** If loop 2 on the array is disabled while you are attempting to add or remove a volume, this operation can take an extended period of time to complete (approximately 15 minutes).

  Workaround: Resolve the condition that caused the back-end loop to be disabled before proceeding with additional volume changes.

- **Bug 4825088 (P3/S3)** In order for the loopback test on the array to work properly, a Fibre Channel device must first be attached to the loop.

  Workaround: Use the `sim_diag` command to diagnose host loop issues. This command must be used only by Sun authorized service providers. Before running this command, make sure that a Fibre Channel device is connected to the array and that the array `sys fc_topology` setting is set to `loop` mode. For more information on these array commands and settings, refer to the *Sun StorEdge 6020 and 6120 Arrays System Manual*.

- **Bug 4827709 (P3/S3)** If you physically remove a drive from a Sun StorEdge 6120 array and then insert the drive back into the array, the drive status is reported as `missing` until volume reconstruction of the drive has completed. This occurs only when you have a standby drive in the array configuration.

  Workaround: Wait until volume reconstruction has completed before verifying the drive state.

- **Bug 4831459 (P3/S3)** If the master interconnect card in a master controller unit (`u1l1`) fails, you cannot enable a disabled controller in the array.

Workaround: Replace the interconnect card first, then use the `fru stat` command to verify system health. If the controller card system health is reported and failed, replace the controller card.

- **Bug 4835912 (P3/S3)** When changing or updating the date on an array, the battery refresh cycle time does not get recalculated. As a result, the next battery refresh cycle does not get scheduled correctly.

  Workaround: If you change the date on an array, use the `refresh -i` command in the array Telnet CLI to recalculate the battery refresh cycle. For more information about this command, refer to the *Sun StorEdge 6020 and 6120 System Manual*.

- **Bug 4857818 (P3/S3)** If you use the `volslice` command to create fractional volumes (for example, 1.2 Gbyte instead of 1.0 Gbyte), the slice that is created does not include the given fraction.

  Workaround: Either avoid using fractions and use whole numbers when setting the slice size parameter, or convert the Gbyte value to an Mbyte value (x1024) and specify the slice size in Mbytes.

- **Bug 4754382 (P3/S4)** On some Sun StorEdge 6120 array configurations using a non-GMT time zone setting, the timestamp used by the alternate master controller unit may not match the timestamp of the master controller unit in the `syslog` files.

  Workaround: This issue is currently under investigation. Aside from unsynchronized timestamps in a given array's `syslog` file, there are no known side effects resulting from this issue.

- **Bug 4830120 (P3/S4)** With all PCUs charging, cache mode stays in `writebehind` when set to `auto`. Sun StorEdge 6120 arrays that have experienced a power loss and have depleted batteries that flush cached data to disk will, upon restoration of AC power, start charging internal batteries. When this occurs, those arrays might incorrectly leave the cache state in `writebehind` mode, even when the cache mode is set to `auto`. This can create a level of risk if a second power failure occurs before the batteries have been adequately recharged.

  Workaround: If a power failure occurs, manually set the cache mode to `writethrough` on each array until battery recharging has completed.

- **Bug 4835423 (P3/S4)** If you download controller firmware and use the `boot -i` command to reboot the array, the firmware does not always download correctly.

  Workaround: Use the Telnet `ep download` command instead of the `boot -i` command to upgrade the controller firmware. For more information about the `ep download` command, refer to the *Sun StorEdge 6020 and 6120 Arrays System Manual*.

- **Bug 4845863 (P3/S4)** If the `enable` command fails to enable a drive in an array Telnet CLI session, an error message does not display 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.

■ **Bug 4661583 (P3/S5)** Generic Telnet CLI interactive commands sometimes do not wait for your response. For example, if you run the `rm` command from a `telnet` (1) command line, it prompts you as follows:

```
Do you want to remove? (Y/N) [n]:
```

In some cases, this command behaves as if you had pressed the carriage Return key twice, causing the command to accept the default response of `n`.

Workaround: Invoke the command again, It should work properly the second time.

■ **Bug 4794710 (P3/S5)** Due to known issues with the offline diagnostics (`ofdg`) facility on Sun StorEdge 6120 arrays, inconsistent results are sometimes reported.

Workaround: Confirm results obtained from the output of the array `ofdg` command. Obtain other supporting evidence, such as corresponding `syslog` messages, or `fru stat` command output, or contact your Sun service representative (see "Service Contact Information" on page 24).

■ **Bug 4820919 (P3/S5)** The LUN permission field `WWN Perm` displays incorrectly. When using the array Telnet interface, the WWN permission field does not display the actual LUN permission state. In some cases, this field actually reflects the group perm field status as opposed to the actual LUN permission field status.

Workaround: Even though the reflected permission data is incorrect, the actual LUN permissions are active and work properly. This problem does not occur through the Sun StorEdge Configuration Service interface.

■ **Bug 4823048 (P3/S5)** Reboots of interconnect (loop) cards can incorrectly indicate that the reboot process failed. This indication is the result of an internal timeout threshold that is reached before the rebooted interconnect cards come back online.

Workaround: Verify the status of an interconnect card after a reboot using the `lpc version` command. If the interconnect card has not recovered from a reboot, the version number will not display in the command output. If the version number displays correctly, the reboot has completed and the interconnect card is online and is in operation.

■ **Bug 4746269 (P4/S1)** On rare occasions, a Sun StorEdge 6120 array might hang in the boot cycle during the network route initialization stage. This occurs only during boot cycles when the array is not yet online accepting I/Os, so no host data I/Os are affected.

Workaround: Power cycle the hung array.

- **Bug 4801209 (P4/S3)** The `led` command, which issues commands to array controller LEDs, works only for the first array in an array HA configuration. For example, the following command will correctly turn 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 as follows will not change the second array's controllers LEDs in an HA configuration:

```
led -e 2 -f controller -l busy
```

Workaround: A fix for this issue is in progress.

- **Bug 4810779 (P4/S3)** Warning messages during an array boot in the `syslog` file incorrectly imply a failover and faulty FRU. A Sun StorEdge 6120 array with no FRU failures or loop problems displays the following types of messages in the `syslog` during a boot sequence:

```
Jan 30 12:03:02 ISR1[1]: W: u2d01 SVD_PATH_FAILOVER: path_id = 0
   Jan 30 12:03:02 ISR1[1]: W: u2d02 SVD_PATH_FAILOVER: path_id = 0
   Jan 30 12:03:02 ISR1[1]: W: u2d04 SVD_PATH_FAILOVER: path_id = 0
   Jan 30 12:03:02 ISR1[1]: W: u2d05 SVD_PATH_FAILOVER: path_id = 0
   Jan 30 12:03:02 ISR1[1]: W: u2d07 SVD_PATH_FAILOVER: path_id = 0
   Jan 30 12:03:02 ISR1[1]: W: u2d08 SVD_PATH_FAILOVER: path_id = 0
   Jan 30 12:03:02 ISR1[1]: W: u2d10 SVD_PATH_FAILOVER: path_id = 0
   Jan 30 12:03:02 ISR1[1]: W: u2d11 SVD_PATH_FAILOVER: path_id = 0
   Jan 30 12:03:02 ISR1[1]: W: u2d13 SVD_PATH_FAILOVER: path_id = 0
   Jan 30 12:03:03 ISR1[1]: W: u2d14 SVD_PATH_FAILOVER: path_id = 0
```

These types of warnings are generated as a result of the back-end split loop configuration process that automatically occurs as the array configures itself during boot for optimal performance.

Workaround: You can ignore these messages in a `syslog` file as they occur during a boot cycle. Note that the number of messages logged depends on the size of the configuration. The more trays present in the system configuration result in more drives on the loops being reconfigured and more `syslog` entries at boot time.

- **Bug 4818842 (P4/S5)** The Telnet `sys list` command displays an incorrect value for array memory. The `sys list` command currently displays a value of 128 Mbytes for `sys memsize`. The correct value for `sys memsize` is 256 Mbytes.

Workaround: A fix is in progress.

Release Documentation

TABLE 6 lists the documentation for the Sun StorEdge 6120 array and related products. This documentation is available online at:

- `http://www.sun.com/documentation`
- `http://www.docs.sun.com`

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.

TABLE 6   Sun StorEdge 6120 Array and Related Documentation

Application	Title	Part Number
Installation and documentation reference	*Sun StorEdge 6120 Array Start Here*	817-0198
Late-breaking information	*Sun StorEdge 6120 Array Release Notes*	817-0201
Preparation	*Sun StorEdge 6120 Array Site Preparation Guide*	817-0960
Safety requirements	*Sun StorEdge 6120 Array Regulatory and Safety Compliance Manual*	817-0961
Install procedures	*Sun StorEdge 6120 Array Installation Guide*	817-0199
	Sun StorEdge 6000 Family Host Installation Software Guide	817-1739
Overview, service, reference, and CLI administration	*Sun StorEdge 6020 and 6120 Arrays System Manual*	817-0200
Array management and configuration	*Sun StorEdge Configuration Service online help*	n/a
	Sun StorEdge Configuration Service SSCS (1M) man page	n/a
Troubleshooting and diagnostics	*Storage Automated Diagnostic Environment 2.2 User's Guide, Device Edition*	817-0822

TABLE 6   Sun StorEdge 6120 Array and Related Documentation *(Continued)*

Application	Title	Part Number
	Storage Automated Diagnostic Environment 2.2 Release Notes, Device Edition	817-0823
SAN Foundation	*Sun StorEdge SAN Foundation 4.2 Release Notes*	817-1246
Multipathing support	*Sun StorEdge Traffic Manager Software Release Notes*	817-0385
Cabinet information	*Sun StorEdge Expansion Cabinet Installation and Service Manual*	805-3067

Sun StorEdge 6120 Array Terminology

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

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

TABLE 7 shows a comparison (mapping) of the array Telnet terms to the terms used by the Sun StorEdge Configuration Service management software.

TABLE 7   Sun StorEdge 6120 Terminology

Array Telnet CLI Terminology	Sun StorEdge Configuration Service Software Terminology
Volume	Storage Pool
Slice	Volume
LUN	Volume
Administrative Domain	Storage Array
Partner Group	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`