Sun StorageTek™ 2500 Series Array Release Notes

Release 1.0

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Sun StorageTek 2500 Series Array Release Notes, Release 1.0

This document contains important release information about the Sun StorageTek™ 2500 Series Array or information that was not available at the time the product documentation was published. Read this document so that you are aware of issues or requirements that can affect the installation and operation of the Sun StorageTek 2500 Array.

These release notes cover the Sun StorageTek 2500 Series Array, Release 1.0 and Release 6.17.52 firmware, and related hardware issues. For information on management software requirements, operations, and issues, see the *Sun StorageTek Common Array Manager Software Release Notes, Release 5.1.2* or higher.

The release notes consist of the following sections:

- "Features in This Release" on page 1
- "System Requirements" on page 5
- "Installing Firmware" on page 8
- "Known Issues" on page 9
- "Release Documentation" on page 18
- "Service Contact Information" on page 19
- "Third-Party Web Sites" on page 19

Features in This Release

This section describes the main features of the Sun StorageTek 2500 Array, including the following:

- "Sun StorageTek 2500 Array Features" on page 2

- "2500 Series Array Ship Kit Contents" on page 3
- "Management Software" on page 4
- "Release Firmware" on page 4

Sun StorageTek 2500 Array Features

The Sun StorageTek 2540 Array, the Sun StorageTek 2501 Expansion Module, and upcoming models are a family of storage products.

The Sun StorageTek 2540 Array contains disk drives for storing data and controllers that provide the interface between a management and/or data host and the disk drives. The Sun StorageTek 2540 Array provides a Fibre Channel connection from the data host to the controller.

The Sun StorageTek 2501 Expansion Module provides additional storage. You can attach the drive expansion tray to the Sun StorageTek 2540 Array.

Sun StorageTek 2540 Array

This Fibre Channel (FC) controller tray provides the following capabilities:

- Two data host connectors per controller that support a fiber-optic interface with 1, 2, or 4 Gb/s data host connection speed
- One drive expansion tray Serial Attached SCSI (SAS) connector per controller with 3 Gb/s drive expansion tray connection speed
- 512-MB cache per controller or 1 GB mirrored cache
- Maximum connection of 36 disk drives (one controller tray and two drive expansion trays)
- Dual redundant controllers
- SAS disk drives

Auto Service Request Feature

Auto Service Request (ASR) is a new feature of the array management software that monitors the array system health and performance and automatically notifies the Sun Technical Support Center when critical events occur. Critical alarms generate an automatic Service Request case. The notifications enable Sun Service to respond faster and more accurately to critical on-site issues.

You enable the Auto Service Request capability by using a Sun StorageTek Common Array Manager software feature, Sun Connection, to register devices to participate in the ASR service. *Refer to the Sun StorageTek Common Array Manager Release Notes, Release 5.1.2* or higher, for more information.

Premium Features

Premium features require licenses which must be ordered separately. The following premium features are available for 2500 Series Arrays:

- 4 storage domains
- 8 storage domains
- 16 storage domains
- Data Snapshot (4 per volume and 128 per array)

Note – Storage domain licenses are required to map initiators on data hosts to volumes.

2500 Series Array Ship Kit Contents

The Sun StorageTek 2500 Series Array controller and expansion trays are shipped separately. The following is a list of the contents in the tray ship kits.

Sun StorageTek 2540 Array Controller Kit

Ship kit for the 2540 controller tray:

- AC power cords
- One pair left and right end caps (plastic bezels)
- Four 4 Gbps FC SFPs (2 per FC Controller module)
- Two 6-meter RJ45 -RJ45 Ethernet cables (one per controller module)
- One RJ45-DIN9 cable
- One RJ45-DB9 adapter
- Sun StorageTek Common Array Manager Software CD, including firmware updates
- *Sun StorageTek Common Array Manager Software Installation Guide* (on the software CD)
- *Common Array Manager sscs CLI Quick Reference Card*

- *Sun StorageTek 2500 Series Array Hardware Installation Guide* (Hardcopy)
- *Accessing Documentation* guide

Sun StorageTek 2501 Array Expansion Kit

Ship kit for each 2501 expansion tray:

- AC power cords
- Two copper SAS cables (one per I/O module)
- One pair left and right end caps (plastic bezels)
- *Accessing Documentation* guide

Management Software

The Sun StorageTek Common Array Manager software (5.1.2 and above) provides you with an easy-to-use interface to configure, manage, and monitor Sun StorageTek storage systems, including the Sun StorageTek 2500 Series Array. You can also use the Common Array Manager software to diagnose problems, view events, and monitor the health of your array. Each release of the Common Array Manager provides the latest firmware updates for all the arrays it supports and provides the means to upload the firmware to them.

The Common Array Manager is the only supported management software for the 2500 Series Array. Refer to the Release Notes and other Sun StorageTek Common Array Manager documentation described in "Release Documentation" on page 18.

Release Firmware

Release 1.0 of the Sun StorageTek 2540 Array supports firmware release 6.17.52.10.

TABLE 1 lists the firmware files for Release 1.0. Updates to the firmware are included with releases of the Sun StorageTek Common Array Manager software or patches. For a listing of the firmware files in subsequent releases, refer to the Sun StorageTek Common Array Manager Release Notes or patch notes.

After you install the CAM software, these files will be located in:

- Solaris: `/var/sadm/swimages/2540`
- Windows: <system drive>:\Program Files\Sun\Common Array Manager\Component\SunStorageTekArrayFirmware\
- Linux: /opt/sun/cam/share/fw/

TABLE 1 2540 Array and Disk Firmware for Release 1.0

Type	Version
CRM-F	06.17.52.10
CRM-F-NVSRAM	N1932-617843-002
CRM-F-NVSRAM-S	N1932-617843-903
DISK/ST330055SSUN300G	0791
DISK/ST314655SSUN146G	0791
DISK/ST373455SSUN72G	0791
IOM	0166

These firmware types are defined as follows:

- `CRM-F/` contains controller firmware
- `CRM-F-NVSRAM/` contains controller non-volatile system random access memory (NVSRAM) firmware
- `CRM-F-NVSRAM-S/` contains NVSRAM firmware for a Simplex configuration or single controller option
- `IOM/` contains the input/output module (IOM) firmware
- `DISK/` contains disk drive firmware

System Requirements

The software and hardware products that have been tested and qualified to work with the Sun StorageTek 2500 Series Array are described in the following sections:

- "Disk Drives and Tray Capacity" on page 6
- "Data Host Requirements" on page 6

Disk Drives and Tray Capacity

TABLE 2 lists the size, speed, and tray capacity for the supported Serial Attached SCSI (SAS) disk drives in the Sun StorageTek 2500 Series Array.

TABLE 2 Supported Disk Drives

Drive	Description
ST373455SSUN72G - rev 0791	72-GB 15,000-RPM SAS drives (3 Gbps); 876 GB per tray
ST314655SSUN146G - rev 0791	146-GB 15,000-RPM SAS drives (3 Gbps); 1752 GB per tray
ST330055SSUN300G - rev 0791	300-GB 15,000-RPM SAS drives (3 Gbps); 3600 GB per tray

Data Host Requirements

This section provides the data host requirements of the 2500 Series Array at the time this document was produced. These requirements can change; for complete up-to-date compatibility requirements, contact your Sun sales or support representative.

Note – The 2540 Array supports Fibre Channel-only connections to the data host. The information in this section applies only to data hosts with Fibre Channel connections.

TABLE 3 lists the supported host Operating Systems (OSs) and multipathing availability. HBAs must be ordered separately, from Sun or their respective manufacturers. Sun HBAs can be ordered from the following site: `/www.sun.com/storagetek/storage_networking/hba/`

You must install data host multipathing software on each data host that communicates with the Sun StorageTek 2540 Array. Follow the instructions in the *Sun StorageTek 2500 Series Array Hardware Installation Guide* to download and install the software from the Sun Download Center.

You can download HBA drivers and other host software from the Sun Download Center, `http://www.sun.com/software/download/`. Download operating system updates from the web site of the operating system company.

TABLE 3 Supported Data Host Platforms for 2540 Arrays

Host OS	Multipathing Support	Cluster Support
Solaris 9	SAN 4.4.12 and higher	Sun Cluster 3.1
Solaris 10 SPARC	included in OS	Sun Cluster versions SC 3.1, SC 3.2 (2, 3, or 4 nodes)
Solaris 10 x64	included in OS	Sun Cluster versions SC 3.1, SC 3.2 (2 or 3 nodes)
Windows 2003	MPIO	Microsoft Cluster Server
Linux Red Hat 3.0, 4.0; SUSE 8.0, 9.0	RDAC	Linux Cluster

Note – The patches listed in Table 4 are required for Solaris.

TABLE 4 Required Solaris Patches for Data Host Platforms

Solaris Version	Required Patch
Solaris 9	SAN 4.4.12 113039 patch
Solaris 10 SPARC	Update 3 125018 patch
Solaris 10 x64	125019 patch

Using the InterOp Tool to Find Supported HBAs

Sun provides an online tool to get the latest information about supported hosts, HBAs, switches, and drivers.

https://extranet.stortek.com/interop/interop

Installing Firmware

The array installation procedures are described in the *Sun StorageTek 2500 Series Array Hardware Installation Guide, Release 1.0* (part number 820-0015-10) that came with your array. Host Management upgrades are described in the *Sun StorageTek Common Array Manager 5.1.2 Release Notes*. This section describes release-specific steps for firmware upgrades that you must perform.

Upgrading Array Firmware

If you have a previous release of the 2500 Series Array firmware installed, the Common Array Manager upgrade software will detect it and provide a means to upgrade to the new firmware versions required for this release. The upgrade software is included on the Sun StorageTek 2500 Series Array CD, or in the package you obtain from the Sun Download Center:
`http://www.sun.com/software/download/`

▼ To Upgrade the Firmware on the Array

Upgrade the firmware on the array using the Common Array Manager interface after the software is installed and the array registered with the software.

You can upgrade the firmware on the 2540 Array without stopping I/O. For firmware for expansion modules, disk drives, and IOMs, it is recommended that a maintenance period of low activity be scheduled in order to execute the upgrade process.

1. **On the Java Web Console page, click Sun StorageTek Common Array Manager.**
2. **Go to the Storage System Summary page and select the arrays to be upgraded.**
3. **Click the Upgrade Firmware button.**
4. **Follow the prompts.**

Known Issues

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

- "Hardware and Firmware Issues" on page 9
- "Documentation Issues" on page 16
- "Operational Information" on page 17

If a recommended workaround is available for a bug, it follows the bug description.

Hardware and Firmware Issues

This section describes general issues related to the Sun StorageTek 2500 Series Array hardware and firmware.

Veritas ASL Is Not Supported in This Release

Bug 6497666 – Release 1.0 does not support Veritas ASL.

Tray and Host Board Incorrectly Identified

Bugs 6544481 and 6496643 - The wrong tray type, SS3600, for 2500 Series Arrays and a host board type of 1, unknown, displays in the management software. The can be especially confusing on the new array information screen that displays when a new array is registered in the management software.

Workaround – Refer to the packing list shipped with the array if you need to check the tray type.

Redistributing Volume Ownership May Produce Error if Array is Busy

Bug 6541677 - Using the Service Advisor function to redistribute volume ownership may produces an error if the array has heavy data input/output.

Workaround – Schedule a maintenance period of low activity in order to redistribute volume ownership.

Sharp Edges and Corners on Array

Bugs 6540408, 6538961, 6538960 - Watch out for sharp corners and edges on:

- The Controller Module (corners)
- Power Modules (corners)
- Tray edges (chassis ears edges)

Workaround – Handle the array carefully to avoid the sharp corners and edges.

Upgrading IOM Firmware May Fail During Heavy I/0

Bug 6507700 – IOM firmware upgrades may fail when the array is servicing a heavy amount of host IO.

Workaround – No IOM upgrades are scheduled at this time. If one occurs, schedule a maintenance period of low activity in order to execute the upgrade process.

If the upgrade fails, reset the controllers before updating the IOM firmware again.

Upgrading IOM Firmware Can Result In Failback Failure

Bug 6509762 - After a firmware upgrade to an Input-Output Module (IOM), the array will display a Check Condition - Microcode Changed message on all hosts.

After a firmware upgrade, an automatic failback was generated. When the switch port connecting the data host was enabled, the auto failback failed, indicating that it did not process the MICROCODE_CHANGED message.

Workaround – No IOM upgrades are scheduled at this time. If one occurs, there are two workarounds:

1) Perform a manual failover. The issue will not happen.

2) After updating the IOM firmware, manually forcing a failover and failback of all effected LUNs on any mapped Solaris host will clear out the condition.

Failover May Generate False Error Messages

Bug 6509331 – In Solaris, under heavy data traffic, host-initiated failover may generate error messages in /var/adm/messages even though the failover is successful.

Workaround – In the CLI, use the Solaris `luxadm` command to verify that the failover was successful.

1. **View the controller:**

```
$ luxadm di /dev/rdsk/c9t600A0B8000245D4C0000310A458A852Bd0s2
DEVICE PROPERTIES for disk:
/dev/rdsk/c9t600A0B8000245D4C0000310A458A852Bd0s2
  Vendor:               SUN
  Product ID:           LCSM100_F
  Revision:             0617
  Serial Num:           1T60325953
  Unformatted capacity: 3072.000 MBytes
  Write Cache:          Enabled
  Read Cache:           Enabled
    Minimum prefetch:   0x3
    Maximum prefetch:   0x3
  Device Type:          Disk device
  Path(s):

  /dev/rdsk/c9t600A0B8000245D4C0000310A458A852Bd0s2
  /devices/scsi_vhci/ssd@g600a0b8000245d4c0000310a458a852b:c,raw
   Controller
/devices/ssm@0,0/pci@18,600000/SUNW,qlc@1/fp@0,0
    Device Address              202400a0b8245db7,5
    Host controller port WWN    210000e08b883b2e
    Class                       secondary
    State                       STANDBY
   Controller
/devices/ssm@0,0/pci@18,600000/SUNW,qlc@1,1/fp@0,0
    Device Address              202500a0b8245db7,5
    Host controller port WWN    210100e08ba83b2e
    Class                       primary
    State                       ONLINE
```

Note that the primary controller is online.

2. **Issue the failover command.**

An error meesage is generated indicating failure.

```
$ luxadm failover secondary
/dev/rdsk/c9t600A0B8000245D4C0000310A458A852Bd0s2
 Error: Unable to perform failover, standby path unavailable
```

3. **Verify the path characteristics**

```
$ luxadm di /dev/rdsk/c9t600A0B8000245D4C0000310A458A852Bd0s2
DEVICE PROPERTIES for disk:
/dev/rdsk/c9t600A0B8000245D4C0000310A458A852Bd0s2
  Vendor:               SUN
  Product ID:           LCSM100_F
  Revision:             0617
  Serial Num:           1T60326060
  Unformatted capacity: 3072.000 MBytes
  Write Cache:          Enabled
  Read Cache:           Enabled
    Minimum prefetch:   0x3
    Maximum prefetch:   0x3
  Device Type:          Disk device
  Path(s):

  /dev/rdsk/c9t600A0B8000245D4C0000310A458A852Bd0s2
  /devices/scsi_vhci/ssd@g600a0b8000245d4c0000310a458a852b:c,raw
   Controller
/devices/ssm@0,0/pci@18,600000/SUNW,qlc@1/fp@0,0
    Device Address              202400a0b8245db7,5
    Host controller port WWN    210000e08b883b2e
    Class                       secondary
    State                       ONLINE
   Controller
/devices/ssm@0,0/pci@18,600000/SUNW,qlc@1,1/fp@0,0
    Device Address              202500a0b8245db7,5
    Host controller port WWN    210100e08ba83b2e
    Class                       primary
    State                       STANDBY
```

Note that the secondary controller is now online, indicating that the failover occurred.

Pushing Drive Housing Too Far Unseats Drive

Bug 6514411 – Inserting a disk drive into a tray by pushing on its housing until it is all the way in causes the drive to stop without being fully inserted and with the drive handle protruding.

Workaround – The correct way to insert a disk drive into the tray is as follows:

1. Push the disk drive into the chassis by slowly pushing against the drive housing until the drive handle engages with the chassis.
2. When the handle starts to move itself downwards, push the disk drive handle down. This will crank the disk drive the rest of the way into the chassis.

When the drive is completely installed, the drive and handle will be flush with the other drives.

Caution – Do not insert a disk drive into a tray by pushing on its housing until it is all the way in. This can cause the handle to be stuck in the "up" position so it is unable to close.

If the drive handle is stuck because the front lock tab is engaged in the tray's frame, carefully use a flat-bladed screwdriver to temporarily increase the gap between the tray frame and the drive and remove the drive.

On x86 Platform, `luxadm probe` *Command Displays Entries of UTM (Management) LUNs*

Bug 6482519 – The `luxadm probe` command displays UTM LUNs on x86 platforms. The UTM (Management) LUN is a reserved space, normally hidden, where the specific configuration settings for your array are stored.

Replacing a Battery in a Controller Results in a Failed Battery Event

Bug 6502673 – A battery replaced in a controller reports a failed battery event, while it is recharging. After the battery is fully recharged, this alarm will go away.

Battery Events Do Not Identify the Battery's Controller Location

Bug 6503171 – Battery event messages do not specify which of the two controllers the referenced battery is in.

For battery events, the array only reports the tray where it occurs, not the slot.

Workaround – For non-critical events, collect the support data and find the corresponding event in the MEL log. For critical events, the third amber LED lights on the front of the controller with the failed battery.

A Bad SFP May Not Generate a Fault Indicator

Bug 6514739 – If a bad SFP is inserted in the FC port of a 2540 array, there may not an indication in the fault list that it is bad.

Certain failure modes of an SFP may not be detected by the array firmware immediately upon insertion and the management software could report the link state as optimal.

However, when you initiate I/O on the channel with the damaged SFP, it will be reported as failed.

Workaround – Check the fault LED and link LED for link failure. Check the event log for a failure event at the time of the SFP insertion and when you initiate I/O.

Over-temp Condition Results In PCU Failure Events and LED Fails to Light

Bug 6514846 and **6514877**– Over-temperature condition results in Power Fan CRU failed alarms. The front overtemp LED fails to light but the front panel amber LED does come on.

The controller firmware is set to report a temperature warning when any temperature sensor reaches 62 degrees. A temperature critical condition is reported at 67 degrees.

The power supply firmware will report the power supply as "failed" when it internally detects that the ambient temperature has reached 55 degrees. The controller firmware will report that failure status from the power supply, even though it is the temperature is below its usual threshold.

Workaround – Perform the following:

1. **Check the temperature in the environment where the array is located and adjust to a cooler setting if necessary.**
2. **If the environmental temperature is adequate but the event log indicates a temperature in the Power/Fan CRU of 55 degrees or greater and if the problem persists for greater than 24 hours, contact support.**

Blue LED Does Not Clear After Replacing Failed Drive

Bug 6545973 – Blue LED does not clear after replacing failed drive.

When a drive fails, LEDs display a solid light for the amber fault LED and blue LED that indicates that the drive can be replaced. Once the drive is replaced with a new or different drive, the amber fault LED clears on the drive enclosure, but the blue LED remains lit. The array enclosure fault LED behaves as expected.

Workaround – Use Sun StorageTek Common Array Manager software to revive the newly installed drive. The blue LED will clear. Note restrictions on reviving drives in the Common Array Manager online help.

Insufficient Reserve Space Fails Resnap

Bug 6523608 – Refreshing a snapshot does not update to the filesystem if there is insufficient reserve space, yet a message displays indicating success. The array's event log says the resnap completed successfully.

Workaround – In the snapshot feature of the management software, configure snapshots to fail if sufficient reserve space is not available.

Array Does Not Timeout and Clear Pending Firmware Download Session of Previous Failure

Bug 6523624 – If a firmware upgrade to an expansion module fails, the array may not clear the failed session automatically.

Workaround – After 20 minutes, retry the upgrade. If the upgrade fails again, power cycle the array to clear the failure.

Increased Common Array Manager Response Time

Bug – A busy array can increase CAM response time.

Service Advisor Does Not Verify Disk is Ready to be Removed

Bug 6537131 – When the management software lists a disk as failed and the Service Advisor procedure for replacing drives is followed, the step to verify that the disk is ready to remove may not list the failed disk.

Workaround – Use an alternative menu option, Array Troubleshooting and Recovery, to view the status of the disk.

Documentation Issues

This section describes known issues and bugs related to the online help, the command-line interface `sscs` man page, or any other Sun StorageTek 2500 Series Array release documentation.

2530 Array References in Documentation are Premature

The *Sun StorageTek 2500 Array Hardware Installation Guide* has references to the Sun StorageTek 2500 Array, which features SAS hardware and configuration. Ignore the references as the product is not yet released.

Additional Help for Lost Communications With Array

Bug 6541767 – Additional instructions are needed if the management software loses communication with the array.

Workaround – If the management software loses communication with the array, perform basic networking troubleshooting to reestablish the connection:

- Check the Ethernet cables on array and management workstation
- Ping the array from the workstation.
- Make sure that any switch between array and host has auto-negotiate on.
- Check the alarm page or Service Advisor in the management software and reselect the array.

Need to Off-line Controller During Battery Replacement

Bug 6537150 - The Service Advisor procedures for the 1500 Series Arrays lack an instruction to place the controller offline before removing and replacing a controller battery. The controller must be pulled to replaced the battery.

Workaround – Place the controller offline before removing the controller and replacing the battery.

Add Expansion Modules with Array Power On.

The *Sun StorageTek 2500 Series Array Hardware Installation Guide,* Part No. 820-0015-xx, states in Chapter 2:

"Expansion trays must be added with the power to the array and I/O data transfer turned off."

This is incorrect. It is best to add an expansion tray to a running array instead of one that is powered off. Limiting I/O traffic is recommended for the duration of the reconfiguration.

Default IP Address Netmasks

The *Sun StorageTek 2500 Array Hardware Installation Guide* gives the default IP addresses right up front (Configuring IP Address of the Array Controllers), but does not include the netmask. The netmask for these defaults is 255.255.255.0

Flathead Screwdriver Required

Bug 6515249 – In Chapter 2 of the *Sun StorageTek 2500 Array Hardware Installation Guide* the list of tools needed for the array installation in a rack does not list a flathead screwdriver, which is required if you need to loosen the rail extension screws.

Operational Information

This section provides useful operational information not documented elsewhere.

License Required for Storage Domains

The 2500 Series array includes two storage domains. You must purchase a premium license to use additional storage domains.

When Performing an Array Import, Do Not Modify Configuration

Configure management objects while an `import array` job is running might interfere with the import. Be sure that everyone who uses the destination array does not configure any objects (including volumes, initiators, mappings, etc.) while the import is in progress.

Using a Volume Before It Is Fully Initialized

When you create a volume and label it, you can start using the volume before it is fully initialized.

Controller Tray Battery Information

During bootup, the battery light might flash for an extended period. The battery charger performs a series of battery qualification tests before starting a battery charge cycle. This series of tests occurs at subsystem power-up. The tests are automatically reinitialized approximately every 25 hours by a timer.

Each controller tray contains a user-replaceable lithium ion battery pack for cache backup in case of power loss. The on-board battery is capable of holding a 2-gigabyte cache for three days (72 hours). The service life of the battery pack is two years, at the end of which the battery pack must be replaced (it is field-replaceable).

Release Documentation

Following is a list of documents related to the Sun StorageTek 2500 Series Array. For any document number with *nn* as a version suffix, use the most current version available.

You can search for this documentation online at:
`http://www.sun.com/documentation`

Application	Title	Part Number
Site planning information	*Sun StorageTek 2500 Series Array Site Preparation Guide*	820-0024-*nn*
Regulatory and safety information	*Sun StorageTek 2500 Series Array Regulatory and Safety Compliance Manual*	820-0025-*nn*
Array hardware installation instructions	*Sun StorageTek 2500 Series Array Hardware Installation Guide*	820-0015-*nn*
Hardware conceptual Information	*Sun StorageTek 2500 Series Array Hardware User Guide*	820-0023-*nn*
Release-specific information for the Sun StorageTek Common Array Manager	*Sun StorageTek Common Array Manager Release Notes*	820-2128-*nn*
Management software installation and basic configuration information	*Sun StorageTek Common Array Manager Software Installation Guide*	820-0015-*nn*
Quick-reference information for the Common Array Manager CLI	*Sun StorageTek Common Array Manager CLI Quick Reference Card*	820-0029-*nn*

Application	Title	Part Number
Instructions for installing the Sun StorEdge Expansion cabinet	*Sun StorEdge Expansion Cabinet Installation and Service Manual*	805-3067-*nn*
Instructions for installing the Sun Rack 900/1000 cabinets	*Sun Rack Installation Guide*	816-6386-*nn*
Instructions for installing the Sun Fire cabinet	*Sun Fire Cabinet Installation and Reference Manual*	806-2942-*nn*

In addition, the Sun StorageTek 2500 Series Array includes the following online documentation:

- Sun StorageTek Common Array Manager online help

  Contains system overview and configuration information.

- Service Advisor

  Provides guided FRU replacement procedures with system feedback. You can access Service Advisor from the Sun StorageTek Common Array Manager software.

- sscs man page commands for the CLI

  Provides help on man page commands available on a management host or on a remote CLI client.

Service Contact Information

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

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

Third-Party Web Sites

Sun is not responsible for the availability of third-party web sites mentioned in this document. Sun does not endorse and is not responsible or liable for any content, advertising, products, or other materials that are available on or through such sites or resources. Sun will not be responsible or liable for any actual or alleged damage or loss caused by or in connection with the use of or reliance on any such content, goods, or services that are available on or through such sites or resources.