



# Sun StorEdge™ SAN Foundation Software 4.3 Release Notes

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Including Sun StorEdge Traffic Manager for the  
Solaris Operating System

Sun Microsystems, Inc.  
[www.sun.com](http://www.sun.com)

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# Contents

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**Contents**    **iii**

**Tables**    **v**

**Sun StorEdge SAN Foundation Software 4.3 Release Notes**    **1**

Product Changes    2

System and Software Requirements    3

    Supported Hardware    3

        Storage Devices    4

        Server Configurations    7

Operating Environment and Firmware Guidelines    9

    Operating Environments Supported    9

    Host Bus Adapter FCode Requirements    10

    Storage Device Firmware Levels    11

    Switch Firmware Requirements    13

Sun StorEdge Traffic Manager Software    14

    Using the Software with Volume Manager Software    14

    Configuring Alternate Pathing (AP)    14

    Traffic Manager Boot Support for the Sun Fire V480 and V880 Servers    14

Known Issues	15
Features Not Supported for SG-XPCI1FC-JF2 and SG-XPCI2FC-JF2 Host Bus Adapters	15
Sun StorEdge SAN Foundation Software and VERITAS Volume Manager	15
Sun Fire 3800 Servers and the Sun StorEdge SAN Foundation Software	16
Driver and Utilities Bugs	16
Array Firmware Bugs	21
Known Issues with Supported Switches	22
Disk and HBA Bugs	24
Miscellaneous Bugs	26
Documentation Updates or Errata	29
Release Documentation	30
Contacting Sun Technical Support	30

# Tables

---

TABLE 1	Sun StorEdge SAN Foundation Software Supported Hardware Matrix	4
TABLE 2	Sun StorEdge SAN Foundation Software Server Compatibility Matrix	8
TABLE 3	Sun StorEdge SAN Foundation Software Operating Environment Compatibility Matrix	9
TABLE 4	Sun StorEdge SAN Foundation Software HBA FCode Matrix	10
TABLE 5	Sun StorEdge SAN Foundation Software Storage Device Firmware Matrix	11
TABLE 6	Sun StorEdge SAN Foundation Software Switch Firmware Matrix	13



# Sun StorEdge SAN Foundation Software 4.3 Release Notes

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The *Sun StorEdge SAN 4.3 Foundation Software 4.3 Release Notes* describes important, late-breaking information about the software. These notes also include information about the Sun StorEdge™ Traffic Manager software package (SUNWmdiu, for the Solaris™ operating environment) bundled with the software.

These notes describe the following topics:

- “Product Changes” on page 2
- “System and Software Requirements” on page 3
- “Known Issues” on page 15
- “Release Documentation” on page 30
- “Contacting Sun Technical Support” on page 30

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# Product Changes

The primary differences between the Sun StorEdge™ SAN Foundation Software 4.2 and 4.3 releases are as follows:

- Sun StorEdge Traffic Manager boot support feature

Ability for high-availability failover protection on boot devices including the internal FC-AL loops of the Sun Fire V480 and V880 servers. See the *Sun StorEdge Traffic Manager Installation and Configuration Guide*, part number 817-3674, for installation and configuration procedures.

- Fabric boot support for X6799A, X6727A, X6757A, and X6748A host bus adapters (HBAs)

Additional Fabric boot support for these 1 Gbit HBA devices (in addition to the support of 2 Gbit HBAs continued from previous release version 4.2). No additional configuration is required once you have applied the version 4.3 patches and new HBA boot firmware (FCode) revision levels to the appropriate cards. See “Host Bus Adapter FCode Requirements” on page 10.

- Enhanced Fabric tape support for X6799A, X6727A, X6757A, and X6748A HBAs

Additional Fabric tape support includes enhanced FCP-2 Error recovery for 1 Gbit HBA devices (in addition to the support of 2 Gbit HBAs continued from previous release version 4.2). No additional configuration is required one you have applied the version 4.3 patches.

- LUN Reset support for Sun storage arrays

Helps provide faster and less disruptive error recovery for Sun arrays that support this type of recovery.

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# System and Software Requirements

The Sun StorEdge SAN Foundation 4.3 software supports various servers, adapters, and storage devices. This section contains the following topics:

- “Supported Hardware” on page 3
- “Operating Environment and Firmware Guidelines” on page 9
- “Sun StorEdge Traffic Manager Software” on page 14

## Supported Hardware

This section contains the following topics on hardware supported in the Sun StorEdge SAN Foundation software release 4.3:

- “Storage Devices” on page 4
- “Server Configurations” on page 7

## Storage Devices

The switches and drivers in the SAN Foundation software function with the following fabric-capable storage devices:

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**Note** – The SG-XPCI1FC-JF2 and SG-XPCI2FC-JF2 host bus adapters do not support Fibre Channel tape drives such as the Sun StorEdge 9840C FC tape drive and Sun StorEdge LTO GEN 2 FC tape drive for the L180, L700, L5500 and L6000 tape libraries.

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- Sun StorEdge T3 and T3+ arrays
- Sun StorEdge 3510 arrays
- Sun StorEdge 39x0 series
- Sun StorEdge 6120 and 6320 arrays
- Sun StorEdge 69x0 series
- Sun StorEdge 99x0 series
- Sun StorEdge 9840B FC tape drive for the L180, L700, L5500 and L6000 tape libraries
- Sun StorEdge 9940B FC tape drive
- Sun StorEdge 9840C FC tape drive for the L180, L700, L5500 and L6000 tape libraries
- Sun StorEdge LTO GEN 2 FC tape drive for the L180, L700, L5500 and L6000 tape libraries

The Sun StorEdge SAN Foundation software obsoletes some older hardware, such as the Sun StorEdge A3500 and A5x00 storage, as well as some Fibre Channel tape drives. Hardware components and the part numbers on the Sun price list that the switch supports are listed in TABLE 1. Check with your service representative for updates to this list.

**TABLE 1** Sun StorEdge SAN Foundation Software Supported Hardware Matrix

Model, Part Number or System Code	Description
T3AES and T3AWG	Sun StorEdge T3 arrays
T3BES, T3BWG	Sun StorEdge T3+ arrays
3510	Sun StorEdge 3510FC arrays
3910, 3960	Sun StorEdge 39x0 storage series
6120, 6320	Sun StorEdge 6120 and 6320 arrays
6910, 6960	Sun StorEdge 69x0 storage series
9910, 9960, 9970, 9980	Sun StorEdge 99x0 storage series
SG-XTAP9840BFC-DRV	Sun StorEdge 9840B tape drive for the Sun StorEdge L180/L700 tape libraries

**TABLE 1** Sun StorEdge SAN Foundation Software Supported Hardware Matrix *(Continued)*

Model, Part Number or System Code	Description
SG-XL5500-9840BFC	Sun StorEdge 9840B tape drive for the Sun StorEdge L5500/L6000 tape libraries
SG-XL5500-9940BFCI	Sun StorEdge 9940B tape drive
SG-XL5500-9940CFCI	Sun StorEdge 9840C FC tape drive for the L180, L700, L5500 and L6000 tape libraries
SG-XTAPLTO2FC-DRV	Sun StorEdge LTO GEN II FC tape drive for the L180, L700, L5500 and L6000 tape libraries
X6746A	Sun StorEdge Network 1 Gbit 8 port switch
SG-XSW16-32P	Sun StorEdge Network 1 Gbit 16 port switch
SG-XSWBRO3200	Sun StorEdge Network Brocade SilkWorm 2 Gbit 3200 switch
SG-XSWBRO3800	Sun StorEdge Network Brocade SilkWorm 2 Gbit 3800 switch
SG-XSWBRO3900	Sun StorEdge Network Brocade SilkWorm 2 Gbit 3900 switch
SG-XSWBRO12000-32P SG-XSWBRO12000-64P	Sun StorEdge Network Brocade SilkWorm 2 Gbit 12000 switch
SG-XSWMD4300-12P	Sun StorEdge Network 2 Gbit McDATA Sphereon 4300 switch
SG-XSWMD4500-8P	Sun StorEdge Network 2 Gbit McDATA Sphereon 4500 switch
SG-XSWMD6064-32P	Sun StorEdge Network 2 Gbit McDATA 6064 Intrepid switch
SG-XSWM6140-64P	Sun StorEdge Network 2 Gbit McDATA 6164 Intrepid switch
SG-XSW8-2GB	Sun StorEdge Network 2 Gbit 8 port switch
SG-XSW16-2GB	Sun StorEdge Network 2 Gbit 16 port switch
SG-XSW64-BASE	Sun StorEdge Network 2 Gbit 64 port switch
SG-XPCI1FC-JF2, SG-XPCI2FC-JF2	2 Gbit PCI Single Port Fibre Channel Host Bus Adapter, 2 Gbit PCI Dual Port Fibre Channel Host Bus Adapter*
X6799A	Sun StorEdge PCI Single Fibre Channel Network Adapter
X6727A	Sun StorEdge PCI Dual Fibre Channel Network Adapter
X6748A	Sun StorEdge CPCI Dual Fibre Channel Network Adapter
X6757A	Sun StorEdge SBus Dual Fibre Channel Host Bus adapter
SG-XPCI1FC-QF2 (formerly X6767A)	Sun StorEdge 2 Gbit FC PCI Single Channel Network Adapter
SG-XPCI2FC-QF2 (formerly X6768A)	Sun StorEdge 2 Gbit FC PCI Dual Channel Network Adapter
XSFP-SW-2Gb	Short-wave SFP

**TABLE 1** Sun StorEdge SAN Foundation Software Supported Hardware Matrix *(Continued)*

Model, Part Number or System Code	Description
XSFP-LW-2Gb	Long-wave SFP (up to 10 km with no modifications to the switch) <sup>†</sup>
X973A	Two-meter fiber-optic cable (SC-SC)
X9715A	Five-meter fiber-optic cable (SC-SC)
X978A	15-meter fiber-optic cable (SC-SC)
X9720A	SC-SC cable coupler
X9721A	0.4 meter fiber cable (LC-SC)
X9722A	two-meter fiber cable (LC-SC)
X9723A	five-meter fiber cable (LC-SC)
X9724A	15-meter fiber cable (LC-SC)
X9732a	two-meter fiber cable (LC-LC)
X9733a	five-meter fiber cable (LC-LC)
X9734a	15-meter fiber cable (LC-LC)

\* These HBAs do not support connections to Fibre Channel tape drives such as the Sun StorEdge 9840C FC tape drive and Sun StorEdge LTO GEN II FC tape drive for the L180, L700, L5500 and L6000 tape libraries

<sup>†</sup> Use long-wave SFPs and fibre cables to cascade more than 500 meters in 1-Gbit mode or 300 meters in 2-Gbit mode.

# Server Configurations

TABLE 2 outlines which servers, bus types, HBAs, physical connections and software patches and packages are required for the SAN Foundation software.

**TABLE 2** Sun StorEdge SAN Foundation Software Server Compatibility Matrix

Server	Bus Architecture	HBA's	Physical Connection	Required Sun Software Packages and Patches
Sun Enterprise 3x00 through 6x00, and 10000 servers	SBus	X6757A	1-Gbit FC	Sun StorEdge SAN Foundation Software 4.3 or later with the following unbundled packages: SUNWsan SUNWcfpl SUNWcfplx SUNWcfclr SUNWcfcl SUNWcfclx SUNWfchbr SUNWfchba SUNWfchbx SUNWfcsn SUNWfcsmx SUNWmdiu SUNWjfca SUNWjfcax SUNWjfcau SUNWjfcax found at the Download Center: <a href="http://www.sun.com/storage">http://www.sun.com/storage</a> To find all required patches: <a href="http://sunsolve.Sun.COM/">http://sunsolve.Sun.COM/</a> → Patches → PatchPro: • → Network Storage Products and • → Solaris Recommended Patch Cluster Describe your system, then click Generate Patch List.
	PCI	X6799A X6727A	1-Gbit FC	
	PCI	X6767A X6768A SG-XPCI1FC-JF2 SG-XPCI2FC-JF2	2-Gbit FC	
Sun Fire 3800 server	cPCI	X6748A	1-Gbit FC	
Sun Fire 4800 through 6800 server	cPCI	X6748A	1-Gbit FC	
	PCI	X6799A X6727A	1-Gbit FC	
		X6767A X6768A SG-XPCI1FC-JF2 SG-XPCI2FC-JF2	2-Gbit FC	
<ul style="list-style-type: none"> <li>• SunBlade 1000 and 2000 servers</li> <li>• Sun Enterprise 250, 450, 220, 420 servers</li> <li>• Sun Fire V210, V240, V250, 280R, V440, 480, V880, V1280, 15000 and 12000 servers</li> <li>• Sun Netra 1125 and 140X servers</li> <li>• Sun Ultra 60 and 80 servers</li> </ul>	PCI	X6799A X6727A	1-Gbit FC	
		X6767A X6768A SG-XPCI2FC-JF2 SG-XPCI2FC-JF2	2-Gbit FC	

# Operating Environment and Firmware Guidelines

This section outlines operating environments and host configurations for the SAN Foundation software.

- “Operating Environments Supported” on page 9
- “Host Bus Adapter FCode Requirements” on page 10
- “Storage Device Firmware Levels” on page 11
- “Switch Firmware Requirements” on page 13

## Operating Environments Supported

TABLE 3 lists which SAN versions run on various Solaris™ operating environments.

**TABLE 3** Sun StorEdge SAN Foundation Software Operating Environment Compatibility Matrix

Operating Environment	Version	Notes
Sun Solaris 2.6		Not supported
Sun Solaris 7		Not supported
Sun Solaris 8	Update 04/01 or later	Supported
Sun Solaris 9	All	Supported

All Solaris hosts in a zone must be running the Solaris 8 04/01 (also known as update 4) or later operating environment with all appropriate patches installed.

You can download the patches from the following web site:

<http://sunsolve.Sun.COM/>

## Host Bus Adapter FCode Requirements

TABLE 4 lists the FCode versions required for various HBAs and I/O boards. Use the patch IDs below to ensure fabric boot support with a switch port set to F-port.

You can obtain the FCode revision level by using the following command:

```
# luxadm fcode_download -p
```

**TABLE 4** Sun StorEdge SAN Foundation Software HBA FCode Matrix

FW-Code Levels for HBAs and I/O Boards	Version	Minimum Patch Revision Level
X6757A, Sun StorEdge SBus Dual Fibre Channel Host Bus Adapter	1.14.00	112244-03 or higher
X6799A, Sun StorEdge PCI Single Fibre Channel Network Adapter	1.14.02 or higher	111853-02 or higher
X6727A, Sun StorEdge PCI Dual Fibre Channel Network Adapter+	1.14.02 or higher	111853-02 or higher
X6767A, Sun StorEdge 2G FC PCI Single Channel Network Adapter	1.14.01 or higher	114873-01 or higher
X6768A, Sun StorEdge 2G FC PCI Dual Channel Network Adapter	1.14.01 or higher	114874-01 or higher
X6748A, Sun StorEdge cPCI Dual Fibre Channel Network Adapter	1.14.02 or higher	111853-02 or higher
SG-XPCI1FC-JF2, 2 Gbit PCI Single Port Fibre Channel Host Bus Adapter	1.1	116423-01 or higher
SG-XPCI2FC-JF2, 2 Gbit PCI Dual Port Fibre Channel Host Bus Adapter	1.1	116423-01 or higher

## Storage Device Firmware Levels

TABLE 5 lists firmware levels requirements for supported storage devices.

**TABLE 5** Sun StorEdge SAN Foundation Software Storage Device Firmware Matrix

Storage Devices	Firmware Version	Notes
Sun StorEdge T3 array	1.18.02 or later controller firmware	Requires translated loop (TL) switch mode, not supported using McDATA switches.
Sun StorEdge T3+ array	2.01.04 or later controller firmware	Requires fabric switch mode
Sun StorEdge 3510FC arrays	3.27P or later	Requires fabric (F) or fabric loop (FL).
Sun StorEdge 39x0 array	2.01.04 or later controller firmware	Requires fabric switch mode and Service Processor software revision level 2.3.2 or higher.
Sun StorEdge 6120 arrays and 6320 systems	3.0.6 or later	Requires fabric (F) or fabric loop (FL) and Sun StorEdge 6320 Service Processor patch revision level 1.1.1 or higher.
Sun StorEdge 69x0 array	Vicom firmware 8.020 or later	Requires fabric switch mode, Service processor 2.3.2 or later.
Sun StorEdge 9910/9960 arrays	01-19-06-00/00 or later	Requires loop or fabric mode.
Sun StorEdge 9970/9980 arrays	21-04-32-00/00 or later	Requires loop or fabric mode.
Sun StorEdge 9840B tape drive	1.30.322 or later	
Sun StorEdge 9840C tape drive	1.33.509 or later	
Sun StorEdge 9940B tape drive	1.32.421 or later	Requires Sun StorEdge L700, L5500 or L6000 tape libraries.
Sun StorEdge LTO Gen II tape drive	327H or later	

**TABLE 5** Sun StorEdge SAN Foundation Software Storage Device Firmware Matrix *(Continued)*

Storage Devices	Firmware Version	Notes
Sun StorEdge L180/L700 tape libraries	3.05.03 or later	Supported with TL or FL ports. Support for the 1 Gb robot interface card is TL or FL; support for the 2 Gb interface card is F
Sun StorEdge L5500 tape libraries	LMU=1.9.23 LCU=4.01.02 ACSLs=6.1.1 or later	
Sun StorEdge L6000 tape libraries	LMU=2.5.08 LCU=4.5.10 ACSLs=6.1.1 or later	

## Switch Firmware Requirements

TABLE 6 lists the firmware versions required for various switches.

**TABLE 6** Sun StorEdge SAN Foundation Software Switch Firmware Matrix

FW-Code Levels for Switches	Switch Management Software	Firmware Version
Sun StorEdge Network 1 Gbit SANbox1 (8 and 16 port switches)	QLogic SANbox Manager 2.00.16*	4.02.42 or later
Sun StorEdge Network 2 Gbit SANbox2 (8, 16, and 64 port switches)	Qlogic SANbox Manager 2.00.16	2.0.0.50 or later
Sun StorEdge Network 1 Gbit Brocade 2400/2800	Brocade Fabric Manager 4.1	2.6.1b or later
Sun StorEdge Network 2 Gbit Brocade SilkWorm 3200/3800	Brocade Fabric Manager 4.1	3.1.1b or later
Sun StorEdge Network 2 Gbit Brocade SilkWorm 3900/12000	Brocade Fabric Manager 4.1	4.1.1a or later
Sun StorEdge Network 2 Gbit McDATA Sphereon 4300	No EFCM support	5.05.00 or later
Sun StorEdge Network 2 Gbit McDATA Sphereon 4500	McDATA EFCM 7.01.00	5.01.00 or later
Sun StorEdge Network 2 Gbit McDATA Intrepid 6064 Director	McDATA EFCM 7.01.00	5.01.00 or later
Sun StorEdge Network 2 Gbit McDATA Intrepid 6140 Director	McDATA EFCM 7.01.00	5.01.00 or later

\* A fabric consisting of both 1 Gbit and 2 Gbit Sun StorEdge Network switches should be managed by the SANbox Manager 2.00.16 software (the entry switch for management has to be a 2 Gbit switch). A fabric consisting only of 1 Gbit Sun StorEdge Network switches should be managed by SANbox Manager 1.05.14 software. See the switch documentation for more information.

# Sun StorEdge Traffic Manager Software

The Sun StorEdge Traffic Manager software supports the following:

- “Using the Software with Volume Manager Software” on page 14
- “Configuring Alternate Pathing (AP)” on page 14
- “Traffic Manager Boot Support for the Sun Fire V480 and V880 Servers” on page 14

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**Note** – See the *Sun StorEdge Traffic Manager Installation and Configuration Guide* for more information about this software.

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## Using the Software with Volume Manager Software

- Solstice Disk Suite™ and Solaris Volume Manager

The Sun StorEdge Traffic Manager (STMS) software is supported when you also use the Sun Solstice Disk Suite and Solaris Volume Manager software.

- VERITAS Volume Manager Version 3.2 and Higher

STMS is supported when you also use the VERITAS Volume Manager 3.2 and higher versions.

You must explicitly disable STMS on a per-port basis with VERITAS Volume Manager versions that do not work with STMS paths.

## Configuring Alternate Pathing (AP)

To run STMS and Alternate Pathing simultaneously in a Solaris 8 environment, disable STMS on a per-port basis and utilize AP for control of the STMS-disabled devices. You might choose this option for multipathing capabilities for devices that are supported by AP but not supported by STMS.

## Traffic Manager Boot Support for the Sun Fire V480 and V880 Servers

Traffic Manager is now supported on boot devices including the internal FC-AL loops of the Sun Fire V480 and V880 Servers.

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## Known Issues

The following topics describe software issues and bugs associated with the Sun StorEdge SAN Foundation software.

- “Features Not Supported for SG-XPCI1FC-JF2 and SG-XPCI2FC-JF2 Host Bus Adapters” on page 15
- “Sun StorEdge SAN Foundation Software and VERITAS Volume Manager” on page 15
- “Sun Fire 3800 Servers and the Sun StorEdge SAN Foundation Software” on page 16
- “Driver and Utilities Bugs” on page 16
- “Array Firmware Bugs” on page 21
- “Known Issues with Supported Switches” on page 22
- “Disk and HBA Bugs” on page 24
- “Miscellaneous Bugs” on page 26
- “Documentation Updates or Errata” on page 29

## Features Not Supported for SG-XPCI1FC-JF2 and SG-XPCI2FC-JF2 Host Bus Adapters

The SG-XPCI1FC-JF2 and SG-XPCI2FC-JF2 HBAs do not support IP over Fibre Channel (IPFC).

## Sun StorEdge SAN Foundation Software and VERITAS Volume Manager

The VERITAS Volume Manager software does not support the following features:

- Root (boot disk) devices with long device names; see “4830088” on page 27
- Fabric boot devices enabled by using the Sun StorEdge Traffic Manager software; see “4909641” on page 28

You can use the other features of this volume manager software with the Sun StorEdge SAN Foundation software. You cannot encapsulate root devices with long format device names.

# Sun Fire 3800 Servers and the Sun StorEdge SAN Foundation Software

Sun Fire™ 3800 servers with Sun StorEdge cPCI Dual Fibre Channel (X6748A) HBAs installed and running the Sun StorEdge SAN Foundation software can access data in storage area networks. However, this platform does not support booting from a fabric.

## Driver and Utilities Bugs

### ■ 4928397

The Solaris host in a SAN with McDATA Corp. switches appears to be frozen and I/O operations stop when interswitch link (ISL) cables are disconnected and reconnected repeatedly and regularly over a long period of time (for example, three hours). The probability of this condition occurring is low.

#### Workaround

Do not disconnect and reconnect ISL cables repeatedly.

### ■ 4810591

If you attempt to unconfigure the last available path to a device in a multipath configuration by using the `cfgadm -c unconfigure` command, I/O operations will fail, resulting in errors. The unconfigure operation also fails.

#### Workaround

Do not attempt to unconfigure the last available path to a device in a multipath configuration.

### ■ 4896447

This bug applies to directly-attached storage devices such as the Sun StorEdge T3 arrays. During times of heavy I/O operations, if a cable to the device is removed and reinserted, the path to the device remains offline even though it is connected.

#### Workaround

Use the `luxadm(1M)` command to force a login operation to the device, which places the device online. First obtain the physical path to the device.

```
# luxadm display logical-device-pathname
.
.
.
# luxadm -e forcelp device-physical-pathname
```

■ **4932988**

During heavy I/O operations while using IP over Fibre Channel (IPFC) on supported Sun HBAs, a situation might exist where the following message occurs:

NFS server 222.222.222.223 not responding still trying

This error can occur when an NFS file system is running on an `fcip` interface and Loop Initialization Primitive operations (LIPs) were generated at regular intervals (every five minutes)

**Workaround**

The SAN fabric must stabilize (that is, no LIPs must be occurring). The system will recover on its own after that. The probability of this condition occurring is low.

■ **4631419**

When a LUN (slice) is removed from the Sun StorEdge T3 array without unconfiguring it on the host and the same slice number is added back, a new Sun StorEdge Traffic Manager `mpxio` device is created. The original device node is in offline state and the new one is in online state.

**Workaround**

1. **Unconfigure the associated target device by using the `cfgadm -c unconfigure` command.**
2. **Remove the LUN from the target device by using the `volslice remove` command.**
3. **Create the new LUN by using the `volslice create` command.**
4. **Configure the target from the Solaris host.**

■ **4934649**

If you execute a `luxadm fcode_download -p` command on a host that does not contain any SG-XPCI1FC-JF2 and SG-XPCI2FC-JF2 HBAs, an error message is displayed, instead of a message displaying text such as `zero JNI HBAs present`.

**Workaround**

None.

#### ■ 4854112

Messages might be received indicating receive buffer errors. For example:

```
Apr 25 09:18:48 yttrium jfca: [ID 773387 kern.notice] jfcal: AllocTcb: Out of
Link Service receive buffers
Apr 25 09:18:48 yttrium jfca: [ID 231277 kern.notice] jfcal: FcEmldEngError:
FcEmldEngUnsolTcbInit: AllocTcb (UnsolTcb) failed
Apr 25 09:18:48 yttrium jfca: [ID 882632 kern.notice] jfcal:
FcEmldEngError:FcEmldEngSetLinkUp: Failed initializing receive buffers
Apr 25 09:18:48 yttrium jfca: [ID 773387 kern.notice] jfcal: AllocTcb: Out of
Link Service receive buffers
Apr 25 09:18:48 yttrium jfca: [ID 733479 kern.notice] jfcal: FcEmldEngError:
HandleUnsolReq: Failed allocating UnsolTcb
Apr 25 09:18:58 yttrium jfca: [ID 773387 kern.notice] jfcal: AllocTcb: Out of
Link Service receive buffers
Apr 25 09:18:58 yttrium jfca: [ID 231277 kern.notice] jfcal: FcEmldEngError:
FcEmldEngUnsolTcbInit: AllocTcb (UnsolTcb) failed
Apr 25 09:18:58 yttrium jfca: [ID 882632 kern.notice] jfcal: FcEmldEngError:
FcEmldEngSetLinkUp: Failed initializing receive buffers
```

The probability of this condition occurring is low.

#### **Workaround**

None. Messages are informational only.

#### ■ 4783080

After rebooting the host, if a LUN is added to a switch zone based on WorldWide Names (WWNs), the LUN does not display when using the `cfgadm -la -o` command.

#### **Workaround**

Execute the `cfgadm configure -c` command on the controller number after the WWN has been added to the zone and the zone has been activated.

#### ■ 4919982

The Sun X6799A, X6727A, X6757A, and X6748A HBAs do not initialize properly with a switch when the switch port is set to the default Gx or GL type port.

#### **Workaround**

Set the port on the switch to G port type by using the switch CLI or management software GUI.

#### ■ 4938249

If a user adds a Sun StorEdge 3510FC array to the fabric that is attached to the boot controller, but does not have LUN 0 of the array configured for this host, the `stmsboot -d` command fails. In this case, the host cannot see LUN 0 of this device and the Sun StorEdge Traffic Manager `stmsboot` disable procedure will fail.

#### Workaround

Configure LUN 0 on the Sun StorEdge 3510FC array before disabling the `stmsboot` feature.

#### ■ 4937614

A host boot error occurs if the user is attempts to disable the previously-enabled Sun StorEdge Traffic Manager software by using the `stmsboot -d` command. If a login failure then occurs on the fabric attached to the designated boot controller HBA, the `stmsboot` command does not retrieve all the required data.

#### Workaround

This procedure restores the system to an `stmsboot`-enabled state.

### 1. Shut down your system to return to the `ok` prompt.

```
# shutdown -i 0
.
.
.
ok
```

### 2. Update the boot-device nvram variable at the `ok` prompt to point to the correct boot device.

```
ok setenv boot-device boot-device-name
```

You can obtain the boot device name by using the `probe-fcal-all` command.

### 3. Boot from an alternate boot device with appropriate patches.

### 4. Mount the original boot device on `/mnt`.

Use the `format` command to see a list of devices seen by the system.

**5. Copy saved system files to their original location.**

```
# cp /var/tmp/system.sav /etc/system
# cp /var/tmp/vfstab.sav /etc/vfstab
# cp /var/tmp/dumpadm /etc/dumpadm.conf
```

**6. Edit the file `/kernel/drv/fp.conf` to add an entry to enable STMS on the boot controller port.**

See the *Sun StorEdge Traffic Manager Installation and Configuration Guide* for information about enabling the software on a port.

**7. Perform a reconfiguration reboot.**

```
# touch /reconfigure
# shutdown -g0 -y -i6
```

■ **4914337**

A panic occurs if only one path to the storage is configured and you are using the Sun StorEdge Traffic Manager software. Eventually the system exhausts the available task threads and a new task thread creation results in a NULL pointer, the access to which results in a panic.

**Workaround**

Do not use the Sun StorEdge Traffic Manager software when using in single device path configurations in a Sun Cluster environment.

## Array Firmware Bugs

### ■ 4737352

When using the Sun StorEdge Traffic Manager software for Solaris, the Sun StorEdge T3 array does not register its Fibre Channel Layer 4 mapping layer (FC-4) type on Sun StorEdge McDATA 64-port or 32-port switch. The switch will not be able to recognize the array as a fabric device. This condition might also affect Sun StorEdge 6000 Family systems and arrays.

#### **Workaround**

For Solaris environments only, use the `cfgadm(1M)` to configure the storage device:

```
# cfgadm -c configure -f device-name
```

No workaround exists for the Sun StorEdge Traffic Manager software for other platforms using the HP-UX, IBM AIX, Microsoft Windows, or Linux operating systems.

## Known Issues with Supported Switches

### ■ 4854365

A Sun StorEdge 6910 storage array containing SG-XPCI1FC-JF2 and SG-XPCI2FC-JF2 HBAs connected to a Sun StorEdge McDATA Sphereon 4500 switch did not recover from multiple cable faults. The switch reports an Invalid Attachment status for the connected port.

#### **Workaround**

In this configuration, use X6799A, X6727A, X6767A, or X6768 HBAs.

### ■ 4846819 SANbox2 and SANbox1: Switch Loses FC-4 Type of the Connected Device

Sun switches lose the FC-4 type of the device connected to it. Subsequent attempts to recover by using `cfgadm` and `luxadm` commands issued from the host might freeze or hang at the command prompt.

#### **Workaround**

Reset the switch port.

### ■ 4901318

The director or switch icon in the EFCM Lite 7.1 switch management software changes from green to grey after downloading firmware to the Sun StorEdge Network 2 Gbit McDATA Sphereon 4500 or 6064 Intrepid switch switches. A grey icon indicates that communication between the switch and software is lost.

#### **Workaround**

Use the McDATA Corp. SANpilot software to download firmware updates to these switches.

■ **4926090**

This bug is related to the diagnostic loopback port test on a port for 2 Gbit switches. On ports other than 0 and 1, the tests do not run.

**Workaround**

Use ports 0 and 1 for diagnostic loopback tests. Also, run a port online test (instead of port diagnostics test), that will exercise the switch. (Note that the Sun StorEdge T3 does not support the ECHO command, however.)

■ **4901550**

When downloading firmware to a switch by using the SANBox switch management software, the update fails if the switch and host downloading the software are on different subnets.

**Workaround**

Change to the same subnet as the switch to download the firmware. Or, use telnet to connect to the switch and download the firmware.

■ **4753552**

After a reset or power cycle, several Sun StorEdge Network Brocade SilkWorm 2 Gbit 3800 switch ports fail to complete initialization and remain configured as G type ports. As a result, the host loses access to the storage connected to these ports.

**Workaround**

Disable, then enable the affected ports.

# Disk and HBA Bugs

## ■ 4920914

Certain Sun 72 Gb disk drives do not support Sun StorEdge Traffic Manager without an upgrade in firmware. The model numbers for these drives are listed in the table below and show the appropriate patch and resulting firmware upgrade necessary for proper support. Using Sun StorEdge Traffic Manager without these firmware upgrades can result in improper identification of these model disks and the inability to identify these disks uniquely.

### Workaround

Contact Sun Services to install the following patches and drive firmware (available at [www.sunsolve.com](http://www.sunsolve.com)):

Sun 72 Gbyte Disk Model	Patch Number	Firmware Revision
MAN3735F	116513-01	1004 firmware
MAP3735F	116514-01	1201 firmware

## ■ 4894952

Fabric boot on Sun SG-XPCI1FC-JF2 and SG-XPCI2FC-JF2 HBAs connected to Sun StorEdge Network 2 Gbit McDATA Sphereon 45000 switch fails with the error Cannot open boot device if the port is configured as a Gx port type.

### Workaround

Change the port type from Gx to G.

## ■ 4926714

When connected to the Sun StorEdge Network Brocade SilkWorm 2 Gbit 3900 switch, the Sun StorEdge PCI Dual Fibre Channel Network Adapter+ (X6727A) fails to boot from the fabric boot device.

### Workaround

Set the switch port to 1 Gbit in this configuration.

#### ■ 4923200

Certain HBAs show an incorrect WorldWide Name (WWN) when you use the `prtconf(1M)` utility with the `-pv` options or the Open Boot Prompt (`ok`) `.properties` option. The WWN appears incorrectly to based in its host's host ID number (shown by using the `hostid(1M)` command).

#### **Workaround**

Use the `luxadm(1M)` command as follows to display the correct WWN:

```
# luxadm -e dump_map /dev/fc/fpn
```

Where *n* is the number of the HBA (for example, 0, 1, 2, and so on).

Also consider the following:

- If the HBA is not used for booting through its connected disk array, no action is needed.
- If the HBA is used for booting through its direct-attached storage in a Fibre Channel-Arbitrated Loop (FC-AL) topology, no action is needed.
- If the HBA is used for booting from its connected disk array through a switch port, use the switch port number instead of the HBA WWN when configuring the HBA in a zone.

# Miscellaneous Bugs

## ■ 4756368

When creating new virtual LUNS (vluns) from a host connected to a Sun StorEdge 69xx array through the Sun StorEdge Network 2 Gbit SANBox switches, the host cannot detect the new vluns.

### Workaround

Perform one of the following.

- Execute a `luxadm` command to reset the link to the Sun StorEdge 69xx devices:

```
# luxadm -e forcelp device-physical-pathname
```

- Download the firmware revision 1.5.07 available for the switch from the [sunsolve.sun.com](http://sunsolve.sun.com) web site and download it to the switch

## ■ 4926717

When a Sun StorEdge 3510FC array is installed in a mixed 1 Gbit and 2 Gbit switch fabric, during failover and failback operations, the array might not log back into the switch during failback. The host loses access to the storage array.

### Workaround

Manually reset the switch port attached to the storage array by using the switch management software UI or CLI, or unplug and reconnect in the cable to the same failing switch port.

## ■ 4888608

The ses driver fails to attach to LUN 0 on the array as the result of an incorrect response from the RAID array.

### Workaround

Create a small LUN 0 device and do not include it as part of LUN filtering.

#### ■ 4818871

When the `luxadm display` command is run on a system where the Sun StorEdge Traffic Manager software and fabric boot feature are enabled, the error message `Error: Invalid pathname - /devices/scsi_vhci` message is seen for all disks that share the same target WWN as that of the fabric boot device.

These messages are seen when some paths to the devices are Sun StorEdge Traffic Manager (STMS) disabled and other paths are Sun StorEdge Traffic Manager enabled.

#### **Workaround**

These messages are harmless and can be ignored. Information about paths might be missing. Either enable or disable the Traffic Manager software on all paths. By default, devices connected to the boot controller path are disabled. If you choose to enable the Traffic Manager software on boot controller path, see the enable procedures in the *Sun StorEdge Traffic Manager Installation and Configuration Guide*, part number 817-3674.

#### ■ 4830088

The VERITAS Volume Manager version 3.5 cannot encapsulate a root device if the the device has a long format device name, for example `/dev/dsk/c5t2B000060220041D7d0s0`. The `vxinstall` utility fails with an error such as:

```
The device containing your root file system,  
/dev/dsk/c5t2B000060220041D7d0s0,  
does not appear to be a standard disk device. As a result, we cannot  
tell which disk is your boot disk. For example, if the root file  
system is on an ODS meta device disk, then encapsulation is very  
likely to corrupt your system.
```

#### **Workaround**

None. With the Sun StorEdge SAN Foundation 4.3 software installed and Traffic Manager, do not encapsulate your root device by using the VERITAS Volume Manager software. You can use the other features of this volume manager software.

■ **4909641**

The VERITAS Volume Manager version 3.5 cannot encapsulate a root device if the device is a fabric boot device as configured by using the Sun StorEdge Traffic Manager software.

**Workaround**

None. With the Sun StorEdge SAN Foundation 4.3 and Traffic Manager software installed, do not encapsulate your root device by using the VERITAS Volume Manager software. You can use the other features of this volume manager software.

■ **4944376**

The Sun StorEdge Traffic Manager software for the Solaris operating environment and Sun StorEdge SAN Foundation 4.3 software does not support the Power Management feature in Solaris 8 and 9 environments. On some platforms, Power Management is enabled by default.

**Workaround**

Disable the Power Management feature (if enabled) on the systems where the Sun StorEdge Traffic Manager software is installed.

You can use the `dtpower(1M)` user interface or perform the following steps if the Power Management feature is enabled:

1. **Log in to the system as superuser.**
2. **Open the `/etc/power.conf` file in a text editor such as `vi(1M)`.**
3. **Change the `autopm` setting as follows:**

```
change this line:
autopm default
to
autopm disable
```

4. **Save and exit the file.**
5. **Type the `pmconfig(1M)` command in a terminal window for changes to take effect.**

# Documentation Updates or Errata

## ■ 4936180

The following Sun StorEdge SAN Foundation Software 4.2 documentation describe patch 111853-02 and 112244-03 as a required patch with firmware level 1.14:

- *Sun StorEdge SAN Foundation Software 4.2 Release Notes* (part number 817-1246-11)
- *Sun StorEdge Traffic Manager Software Release Notes* (part number 817-0385-11)

For the version 4.2 software, the actual required patch number is 111853-01 and 112244-03 and the firmware revision level is 1.13.

## ■ 4736881

In the *SANbox2-16 Fibre Channel Switch Installer's/User's Manual*, publication number 875-3263-01 Rev. A, Section 4, Diagnostics/Troubleshooting, page 4-7, Recovering a Switch, step 5, the password described is incorrect. The correct password is prom.

### **Workaround**

An updated version of this document fixes this problem.

## ● In a web browser, navigate to:

<http://www.qlogic.com/support/sunresource.asp>

The updated document is located under this link name:

SANbox2-16 Fibre Channel Switch Installer's/User's Manual, Publication No. 875-3263-02, Rev. A

The actual document that displays in this link is Publication No. 875-3363-02 A. See Chapter 5, Recovering A Switch for the correct information.

#### ■ 4807406

The Sun StorEdge SBus Dual Fibre Channel Host Adapter Installation Guide (part number 816-2489-12), which describes the different methods to boot from an HBA, does not include a step to disable the Sun StorEdge Traffic Manager software as part of the Dump and Restore method.

#### **Workaround**

The *Sun StorEdge SAN Foundation Software 4.3 Configuration Guide* (part number 817-3672) correctly describes this step as part of the Dump and Restore method of disk booting. The Sun StorEdge Traffic Manager software must be disabled either globally or on a physical port basis before trying to boot from an HBA using this method.

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## Release Documentation

See the *Sun StorEdge SAN Foundation Software 4.3 Guide to Documentation* for other SAN Foundation Software documents.

This document is available at:

<http://docs.sun.com>

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## Contacting Sun Technical Support

If you have technical questions about this product that are not answered in this document, go to:

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