Sun Storage 6180 Array Release Notes

Release 6.6

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Contents

Sun Storage 6180 Array Release Notes

This document contains important release information about the Sun Storage 6180 Array running Sun StorageTek™ Common Array Manager (CAM), Release 6.6. Read this document so that you are aware of issues or requirements that can affect the installation and operation of the array.

The release notes consist of the following sections:

For Information About CAM

See the Sun StorageTek Common Array Manager software documentation and release notes for the CAM 6.6 release at:

http://docs.sun.com/app/docs/prod/stor.arrmgr

For Related Patch Information

Look for the latest patches pertaining to your environment at:

http://sunsolve.sun.com/show.do?target=patchpage

1. **In the Search box in the masthead, enter 6180.**

2. **Filter Results By: Downloads > Patches.**

   Patches related to the array are listed.

What's In This Firmware Release

Array controller firmware version 7.60.18.13 includes expanded disk drive support, including support for encryption-capable drives (see TABLE 1 for a list of supported drives).

The firmware is provided with Sun StorageTek Common Array Manager (CAM) v. 6.6.0, available for download at:

http://www.sun.com/storage/management_software/resource_management/cam

Click the "Buy Now" button to download the latest CAM software.

For more information about bug fixes, see the *Sun StorageTek Common Array Manager Release Notes, v6.6.0.*

Product Overview

The Sun Storage 6180 Array is a high-performance, enterprise-class, full 8 Gigabit per second (Gb/s) I/O Fibre Channel solution (with backend loop speeds of 2 or 4 Gb/s) that combines outstanding performance with the highest reliability, availability, flexibility, and manageability.

The Sun Storage 6180 Array is modular, rackmountable, and scalable from a single dual-controller tray (1x1) configuration to a maximum configuration of 1x7 with six additional CSM200 expansion trays behind one controller tray.

System Requirements

The software and hardware products that have been tested and qualified to work with the Sun Storage 6180 Array are described in the following sections. The Sun Storage 6180 Array requires Sun StorageTek Common Array Manager, v6.6 (or higher) software.

- "Firmware Requirements" on page 3
- "Disk Drives and Tray Capacity" on page 4
- "Data Host Requirements" on page 6

Firmware Requirements

The Sun Storage 6180 Array requires firmware version 07.60.x.x. This firmware version (or higher) is installed on the array controllers prior to shipment and is delivered with Sun StorageTek Common Array Manager (CAM) v6.6.

To download the latest controller firmware, go to:

http://www.sun.com/storage/management_software/resource_management/cam

Click the "Buy Now" button to download the latest CAM software.

Array Expansion Module Support

The CSM200 is the only expansion tray model supported by the Sun Storage 6180 Array. Refer to "Installing Firmware for Additional Expansion Modules" in the *Sun StorageTek Common Array Manager Release Notes, v.6.6.0* or higher, for more information on the procedure to upgrade trays without data.

Caution – To add trays with data already on them, contact your service representative for assistance to avoid data loss.

Disk Drives and Tray Capacity

TABLE 1 lists the size, spindle speed, type, interface speed, and tray capacity for supported Fibre Channel (FC) and Serial Advanced Technology Attachment (SATA) disk drives for the Sun Storage 6180 Array. Additional legacy drives might also be supported with this product.

Note – All disk drives supported in the Sun StorageTek 6140 Array are supported in the Sun Storage 6180 Array.

The following list of supported disk drives replaces the listing in the *Sun Storage 6180 Array Hardware Installation Guide*.

TABLE 1   Supported Disk Drives

Drive	Description
FC, 73G15K	73-Gbyte 15,000-RPM FC drives (4 Gbits/sec); 1168 Gbytes per tray
FC, 146G10K	146-Gbyte 10,000-RPM FC drives (4 Gbits/sec); 2336 Gbytes per tray
FC, 146G15K	146-Gbyte 15,000-RPM FC drives (4 Gbits/sec); 2336 Gbytes per tray
FC, 300G10K	300-Gbyte 10,000-RPM FC drives (4 Gbits/sec): 4800 Gbytes per tray
FC, 300G15K	300-Gbyte 15,000-RPM FC drives (4 Gbits/sec); 4800 Gbytes per tray
FC, 400G10K	400-Gbyte 10,000-RPM FC drives (4 Gbits/sec): 6400 Gbytes per tray

TABLE 1   Supported Disk Drives *(Continued)*

Drive	Description
FC, 450G15K	450-Gbyte 15,000-RPM FC drives (4 Gbits/sec); 7200 Gbytes per tray
SATA-2, 500G7.2K	500-Gbyte 7,200-RPM SATA drives (3 Gbits/sec); 8000 Gbytes per tray
FC, 600GB15K, Encryption Capable	600-Gbyte 15,000-RPM FC drives Encryption Capable (4 Gbits/sec); 9600 Gbytes per tray
SATA-2, 750G7.2K	750-Gbyte 7,200-RPM SATA drives (3 Gbits/sec); 12000 Gbytes per tray
SATA-2, 1T7.2K	1-Tbyte 7,200-RPM SATA drives (3 Gbits/sec); 16000 Gbytes per tray
SATA-2, 2TB7.2K	2-Tbyte 7,200-RPM SATA drives (3 Gbits/sec); 32000 Gbytes per tray

Data Host Requirements

This section describes supported data host software, HBAs, and switches.

- "Multipathing Software" on page 6
- "Supported Host Bus Adaptors (HBAs)" on page 9
- "Supported Enterprise Software" on page 15
- "Supported FC and Multilayer Switches" on page 16

Multipathing Software

This section provides a summary of the data host requirements for the Sun Storage 6180 Array. It lists the current multipathing software and supported host bus adapters (HBAs) by operating system.

You must install multipathing software on each data host that communicates with the Sun Storage 6180 Array.

For Solaris™ Operating System (OS) 9 data hosts, the multipathing software is part of the Sun StorageTek SAN Foundation software. Solaris OS 10 includes the multipathing software. For data hosts running supported versions of Solaris prior to Solaris OS 10, follow the instructions in the *Hardware Installation Guide for Sun Storage 6180 Array* to download and install the software from the Sun Download Center.

Note – Single path data connections are not recommended. For more information, see "Single Path Data Connections" on page 18.

TABLE 2 lists supported multipathing software by operating system.

TABLE 2   Multipathing Software

OS	Multipathing Software	Minimum Version	Latest Version	Host Type Setting	Notes
Solaris 9 SPARC	STMS/MPxIO (see "Special Instructions to Enable Multipath Failover for Solaris OS 9 Data Hosts" on page 8)	SFK 4.4.13	SFK 4.4.14	Solaris with MPxIO	
Solaris 10	STMS/MPxIO	Update 6 or Update 5 with patch 140919-04 (SPARC), 140920-04 (x64/x86)	Kernel Jumbo Patch (KJP)	Solaris with MPxIO	
Solaris 9,10 with DMP	Symantec Veritas Dynamic Multi-Pathing (DMP)	5.0MP3	5.0MP3	Solaris with DMP	
Windows 2003 Non-clustered	MPIO	01.03.0302.0215	01.03.0302.0215 (MPIO)	Windows 2003 Non-clustered	
Windows MSCS Cluster	MPIO	01.03.0302.0215	01.03.0302.0215 (MPIO)	Windows Server 2003 Clustered	You must use MPIO for 7.10 and above
Windows 2003 Non-clustered with DMP	DMP	5.0MP3	5.1	Windows Server 2003 Non-clustered (with Veritas DMP)	Pending vendor qualification, see Symantec's HCL
Windows 2003 Clustered with DMP	DMP	5.0MP3	5.1	Windows Server 2003 clustered (with Veritas DMP)	Pending vendor qualification, see Symantec's HCL
Windows 2008	MPIO	01.03.0302.0215	01.03.0302.0215	Windows Server 2003	
AIX 6.1	Cambex DPF	6.1.0.63	6.1.0.63	AIX	
AIX 5.3, 6.1 with DMP	DMP	5.0	5.0MP3	AIX with DMP	Pending vendor qualification, see Symantec's HCL

TABLE 2   Multipathing Software *(Continued)*

OS	Multipathing Software	Minimum Version	Latest Version	Host Type Setting	Notes
Red Hat 4 SuSE 9/SuSE 10	RDAC/MPP	09.09.B02.0214	09.09.B02.0214	Linux	
Red Hat 5 SuSE 10 SP1 (and above)	RDAC/MPP	09.03.0C00.0042	09.09.0C02.0214	Linux	
Red Hat 5 (and above)	RDAC	09.03.0C00.0042	09.09.0C02.0214	Linux	
Red Hat SuSE with DMP	DMP	5.0MP3	5.0MP3	Linux with DMP	Pending vendor qualification, see Symantec's HCL
HPUX	Veritas DMP	5.0MP3	5.0MP3	HP-UX	Pending vendor qualification, see Symantec's HCL

Note – The multipathing driver for the IBM AIX platform is Veritas DMP, bundled in Veritas Storage Foundation 5.0 for Sun Storage 6180 Array. Download the Array Support Library (ASL) from http://support.veritas.com/.

Special Instructions to Enable Multipath Failover for Solaris OS 9 Data Hosts

1. **Install patch 113039-25.**

2. **Add the following entry to the** `/kernel/drv/ssd.conf` **file. This command sets the "not ready retries" count to 36.**

   ```
   ssd-config-list= "SUN SUN_6180", disk_to_modify;
   disk_to_modify=1,0x00004,0,0,36,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
   ```

3. **Save the** `.conf` **file.**

4. **Reboot the system.**

Supported Host Bus Adaptors (HBAs)

TABLE 3, TABLE 4, and TABLE 5 list supported HBAs and other data host platform elements by operating system.

HBAs must be ordered separately from Sun or its respective manufacturers. Sun HBAs can be ordered from:

http://www.sun.com/storagetek/storage_networking/hba/

You can download HBA drivers and other host software from the Sun Download Center at:

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

Download operating system updates from the web site of the operating system company.

You must install the multipathing software before you install any OS patches.

TABLE 3 Supported HBAs for Solaris Data Host Platforms

Operating System	Minimum OS Patches	Sun 2-Gbit HBAs	Sun 4-Gbit HBAs	Sun 8-Gb HBAs
Solaris 9*	122300-46 or higher	SG-XPCI1FC-QL2 (6767A) SG-XPCI2FC-QF2-Z (6768A) SG-XPCI1FC-EM2 SG-XPCI2FC-EM2	SG-XPCI1FC-QF4 SG-XPCI2FC-QF4 SG-XPCI2FC-EM4-Z SG-XPCI1FC-EM4-Z	N/A
Solaris 10 SPARC	Update 6 or Update 5 with patch 140919-04	SG-XPCI1FC-QL2 (6767A) SG-XPCI2FC-QF2-Z (6768A) SG-XPCI1FC-EM2 SG-XPCI2FC-EM2	SG-XPCIE1FC-QF4 SG-XPCIE2FC-QF4 SG-XPCIE1FC-EM4 SG-XPCIE2FC-EM4 SG-XPCI1FC-QF4 SG-XPCI2FC-QF4 SG-XPCI1FC-EM4 SG-XPCI2FC-EM4 SG-XPCIE2FCGBE-Q-Z SG-XPCIE2FCGBE-E-Z	SG-XPCIE1FC-QF8-Z SG-XPCIE2FC-QF8-Z SG-XPCIE1FC-EM8-Z SG-XPCIE2FC-EM8-Z
Solaris 10 x64/x86	Update 6 or Update 5 with patch 140920-04	SG-XPCI1FC-QL2 (6767A) SG-XPCI2FC-QF2-Z (6768A) SG-XPCI1FC-EM2 SG-XPCI2FC-EM2	SG-XPCIE1FC-QF4 SG-XPCIE2FC-QF4 SG-XPCIE1FC-EM4 SG-XPCIE2FC-EM4 SG-XPCI1FC-QF4 SG-XPCI2FC-QF4 SG-XPCI1FC-EM4 SG-XPCI2FC-EM4 SG-XPCIE2FCGBE-Q-Z SG-XPCIE2FCGBE-E-Z	SG-XPCIE1FC-QF8-Z SG-XPCIE2FC-QF8-Z SG-XPCIE1FC-EM8-Z SG-XPCIE2FC-EM8-Z

* See "Compatibility with Solaris 9 OS" on page 18.

TABLE 4   Supported HBAs for Microsoft Windows Data Host Platforms

Host OS / Servers	HBAs	Sun 2-Gb HBAs	Sun 4-Gb HBAs	Sun 8-Gb HBAs
Microsoft Windows 2008 Server 32-bit / x86 (IA32) 64-bit / x64 (AMD) EM64T IA64	QLogic QLE 256x QLogic QLE 246x QLogic QLA 246x QLogic QLA 234x QLogic QLA 2310F Emulex LPe12000/LPe12002/LPe1250 Emulex Lpe11000/LPe11002/LPe1150 Emulex LP11000/LP11002/LP1150 Emulex LP9802/9802DC/982 Emulex LP952/LP9002/LP9002DC Emulex 10000/10000DC/LP1050	SG-XPCI1FC-EM2 SG-XPCI2FC-EM2 SG-XPCI1FC-QL2 SG-XPCI2FC-QF2-Z	SG-XPCIE1FC-QF4 SG-XPCIE2FC-QF4 SG-XPCIE1FC-EM4 SG-XPCIE2FC-EM4 SG-XPCI1FC-QF4 SG-XPCI2FC-QF4 SG-XPCI1FC-EM4 SG-XPCI2FC-EM4 SG-XPCIE2FCGBE-Q-Z SG-XPCIE2FCGBE-E-Z	SG-XPCIE1FC-QF8-Z SG-XPCIE2FC-QF8-Z SG-XPCIE1FC-EM8-Z SG-XPCIE2FC-EM8-Z
Microsoft Windows 2003 32-bit with SP1 R2 / x86 (IA32)	QLogic QLE 256x QLogic QLE 246x QLogic QLA 246x QLogic QLA 234x QLogic QLA 2310F Emulex LPe12000/LPe12002/LPe1250 Emulex Lpe11000/LPe11002/LPe1150 Emulex LP11000/LP11002/LP1150 Emulex LP9802/9802DC/982 Emulex LP952/LP9002/LP9002DC Emulex 10000/10000DC/LP1050	SG-XPCI1FC-EM2 SG-XPCI2FC-EM2 SG-XPCI1FC-QL2 SG-XPCI2FC-QF2-Z	SG-XPCIE1FC-QF4 SG-XPCIE2FC-QF4 SG-XPCIE1FC-EM4 SG-XPCIE2FC-EM4 SG-XPCI1FC-QF4 SG-XPCI2FC-QF4 SG-XPCI1FC-EM4 SG-XPCI2FC-EM4 SG-XPCIE2FCGBE-Q-Z SG-XPCIE2FCGBE-E-Z	SG-XPCIE1FC-QF8-Z SG-XPCIE2FC-QF8-Z SG-XPCIE1FC-EM8-Z SG-XPCIE2FC-EM8-Z

TABLE 4   Supported HBAs for Microsoft Windows Data Host Platforms *(Continued)*

Host OS / Servers	HBAs	Sun 2-Gb HBAs	Sun 4-Gb HBAs	Sun 8-Gb HBAs
Microsoft Windows 2003 64-bit with SP1 R2 / x64 (AMD) EM64T IA64	QLogic QLE 256x QLogic QLE 246x QLogic QLA 246x QLogic QLA 234x QLogic QLA 2310F Emulex LPe12000/LPe12002/LPe1250 Emulex Lpe11000/LPe11002/LPe1150 Emulex LP11000/LP11002/LP1150 Emulex LP9802/9802DC/982 Emulex LP952/LP9002/LP9002DC Emulex 10000/10000DC/LP1050	SG-XPCI1FC-EM2 SG-XPCI2FC-EM2 SG-XPCI1FC-QL2 SG-XPCI2FC-QF2-Z	SG-XPCIE1FC-QF4 SG-XPCIE2FC-QF4 SG-XPCIE1FC-EM4 SG-XPCIE2FC-EM4 SG-XPCI1FC-QF4 SG-XPCI2FC-QF4 SG-XPCI1FC-EM4 SG-XPCI2FC-EM4 SG-XPCIE2FCGBE-Q-Z SG-XPCIE2FCGBE-E-Z	SG-XPCIE1FC-QF8-Z SG-XPCIE2FC-QF8-Z SG-XPCIE1FC-EM8-Z SG-XPCIE2FC-EM8-Z

TABLE 5   Supported HBAs for Linux Data Host Platforms

Host OS / Sun Servers	HBAs	Sun 2-Gb HBAs	Sun 4-Gb HBAs	Sun 8-Gb HBAs
Linux SuSE 10.2 SuSE 11	QLogic QLE 256x QLogic QLE246x QLogic QLA 246x QLogic QLA 234x QLogic QLA 2310F Emulex LP982/LP9802/9802DC Emulex LP9002/LP9002DC/LP952 Emulex LP10000/10000DC/LP1050 Emulex LP11000/LP11002/LP1150 Emulex Lpe11000/LPe11002/LPe1150 Lpe12000/LPe12002/Lpe1250	SG-XPCI1FC-EM2 SG-XPCI2FC-EM2 SG-XPCI1FC-QL2 SG-XPCI2FC-QF2-Z	SG-XPCIE1FC-QF4 SG-XPCIE2FC-QF4 SG-XPCIE1FC-EM4 SG-XPCIE2FC-EM4 SG-XPCI1FC-QF4 SG-XPCI2FC-QF4 SG-XPCI1FC-EM4 SG-XPCI2FC-EM4 SG-XPCIE2FCGBE-Q-Z SG-XPCIE2FCGBE-E-Z	SG-XPCIE1FC-QF8-Z SG-XPCIE2FC-QF8-Z SG-XPCIE1FC-EM8-Z SG-XPCIE2FC-EM8-Z

TABLE 5 Supported HBAs for Linux Data Host Platforms *(Continued)*

Host OS / Sun Servers HBAs		Sun 2-Gb HBAs	Sun 4-Gb HBAs	Sun 8-Gb HBAs
Linux SuSE 9.0 - IA 32, 2.6 kernel / x64 EM64T x86 (IA32) IA64	QLogic QLE 256x QLogic QLE246x QLogic QLA 246x QLogic QLA 234x QLogic QLA 2310F Emulex LP982/LP9802/9802DC Emulex LP9002/LP9002DC/LP952 Emulex LP10000/10000DC/LP1050 Emulex LP11000/LP11002/LP1150 Emulex Lpe11000/LPe11002/LPe1150	SG-XPCI1FC-EM2 SG-XPCI2FC-EM2 SG-XPCI1FC-QL2 SG-XPCI2FC-QF2-Z	SG-XPCIE1FC-QF4 SG-XPCIE2FC-QF4 SG-XPCIE1FC-EM4 SG-XPCIE2FC-EM4 SG-XPCI1FC-QF4 SG-XPCI2FC-QF4 SG-XPCI1FC-EM4 SG-XPCI2FC-EM4 SG-XPCIE2FCGBE-Q-Z SG-XPCIE2FCGBE-E-Z	SG-XPCIE1FC-QF8-Z SG-XPCIE2FC-QF8-Z SG-XPCIE1FC-EM8-Z SG-XPCIE2FC-EM8-Z
RHEL 5u2 RHEL 5u3 RHEL 5u4	QLogic QLE 256x QLogic QLE 246x QLogic QLA 246x QLogic QLA 234x QLogic QLA 2310F Emulex LP982/LP9802/9802DC Emulex LP9002/LP9002DC/LP952 Emulex LP10000/10000DC/LP1050 Emulex Lpe11000/LPe11002/LPe1150 Emulex Lpe12000/LPe12002/LPe1250	SG-XPCI1FC-EM2 SG-XPCI2FC-EM2 SG-XPCI1FC-QL2 SG-XPCI2FC-QF2-Z	SG-XPCIE1FC-QF4 SG-XPCIE2FC-QF4 SG-XPCIE1FC-EM4 SG-XPCIE2FC-EM4 SG-XPCI1FC-QF4 SG-XPCI2FC-QF4 SG-XPCI1FC-EM4-Z SG-XPCI2FC-EM4-Z SG-XPCIE2FCGBE-Q-Z SG-XPCIE2FCGBE-E-Z	SG-XPCIE1FC-QF8-Z SG-XPCIE2FC-QF8-Z SG-XPCIE1FC-EM8-Z SG-XPCIE2FC-EM8-Z

TABLE 5 Supported HBAs for Linux Data Host Platforms *(Continued)*

Host OS / Sun Servers	HBAs	Sun 2-Gb HBAs	Sun 4-Gb HBAs	Sun 8-Gb HBAs
RHEL 4u7 RHEL 4.8	QLogic QLE 256x	SG-XPCI1FC-EM2	SG-XPCIE1FC-QF4	SG-XPCIE1FC-QF8-Z
	QLogic QLE 246x	SG-XPCI2FC-EM2	SG-XPCIE2FC-QF4	SG-XPCIE2FC-QF8-Z
	QLogic QLA 246x	SG-XPCI1FC-QL2	SG-XPCIE1FC-EM4	SG-XPCIE1FC-EM8-Z
	QLogic QLA 234x	SG-XPCI2FC-QF2-Z	SG-XPCIE2FC-EM4	SG-XPCIE2FC-EM8-Z
	QLogic QLA 2310F		SG-XPCI1FC-QF4	
	Emulex LP982/LP9802/9802DC		SG-XPCI2FC-QF4	
	Emulex LP9002/LP9002DC/LP952		SG-XPCI1FC-EM4-Z	
	Emulex LP10000/10000DC/LP1050		SG-XPCI2FC-EM4-Z	
	Emulex Lpe11000/LPe11002/LPe1150		SG-XPCIE2FCGBE-Q-Z	
	Emulex Lpe12000/LPe12002/ Lpe1250		SG-XPCIE2FCGBE-E-Z	

TABLE 6 Other Supported Data Host Platforms

Host OS	Host Servers	HBAs
Novell NetWare 6.5 (SP7)	x86 (IA32)	QLogic QLA 2342 QLogic QLA 2340 QLogic QLA 2310F QLogic QLA 246x
Novell NetWare 6.5 (SP3)	x86 (IA32)	QLogic QLA 2342 QLogic QLA 2340 QLogic QLA 2310F QLogic QLA 246x

TABLE 6   Other Supported Data Host Platforms *(Continued)*

HP-UX 11.31	HP RISC	HP A6795A
	IA64	HP A6826A
		HP A6684A
		HP A6685A
		HP AB378A
		HP AB379A
		HP AD300A
		HP AD355A
		AH400A (IA64)
		AH401A (IA64)
HP-UX B.11.23	HP RISC	HP A6795A
	IA64	HP A6826A
		HP A9784A
		HP AB378A
		HP AB379A
		HP AD300A
		HP AD355A
IBM AIX 5.2, 5.3, 6.1	Power	IBM 5716
		IBM 5758
		IBM 5759
		IBM 6228
		IBM 6239

Supported Enterprise Software

The enterprise software applications listed in TABLE 7 are compatible with the Solaris OS on the data host.

TABLE 7   Supported Enterprise Software

Software	Version
Legato NetWorker	7.3
Sun Cluster	3.0, 3.1
Sun StorageTek QFS software	4.0 minimum
Sun StorageTek SAM-FS software	4.0 minimum
Sun StorageTek Availability Suite	3.2 minimum
Sun StorageTek Enterprise Backup Software	7.3

TABLE 7 Supported Enterprise Software *(Continued)*

Software	Version
Solaris Volume Manager	Embedded in the Solaris 9 and 10 OSs
VERITAS Storage Foundation (VxVM/VxFS)	5.0
VERITAS Cluster Server (VCS)	5.0
VERITAS NetBackup	6.0 or higher

Supported FC and Multilayer Switches

The following FC fabric and multilayer switches are compatible for connecting data hosts and Sun Storage 6180 Array:

- Sun StorEdge™ Network 2 Gb FC Switch - 8, 16, and 64
- Brocade SilkWorm 200E/300/4100/4900/5000/5100/5300/7500/48000/DCX
- Cisco 9124/9134/9216/9216i/9222i/9506/9509/9513
- McDATA 6140/i10K/QPM 4 Gb blade for 6140
- QLogic SANBox 5602/9000

Restrictions and Known Issues

The following sections provide information about restrictions, known issues, and bugs filed against this product release. If a recommended workaround is available for a bug, it follows the bug description.

Single Path Data Connections

In a single path data connection, a group of heterogeneous servers is connected to an array through a single connection. Although this connection is technically possible, there is no redundancy, and a connection failure will result in loss of access to the array.

Caution – Because of the single point of failure, single path data connections are not recommended.

Compatibility with Solaris 9 OS

CR 6846715: If you are connecting the Sun Storage 6180 Array to a data host running Solaris 9 OS, patch 122300-46 (SunOS 5.9: Kernel Patch) or higher is required for proper Vendor ID and Product ID (VID/PID) identification for the array.

Workaround: To download the patch from SunSolve, go to:

http://sunsolve.sun.com/patchfinder

1. **In the Patch ID field, enter the first six digits of the patch ID and click Search.**

   Searching without the -*xx* patch ID suffix returns the most recent results.

2. **Select a patch ID from the list.**

   It is recommended to use the most recent patches and the most recent revision of those patches.

Hibernate Does Not Work in a Root Boot Environment for Windows Server 2003

Problem or Restriction: Windows Server 2003 only. When you configure a storage array as a boot device, the system shows a blue screen and does not respond when it is manually or automatically set to hibernate.

Workaround: If you use a storage array as a boot device for the Windows Server 2003 operating system, you cannot use the hibernation feature.

Drive Module ID of 0 (Zero) Is Restricted

Problem or Restriction: Because of the potential conflict between a drive module intentionally set to 0 (zero) and a drive module ID switch error that causes a drive module ID to be accidentally set to 0, do not set your drive module ID to 0.

Workaround: None.

Drives Cannot Be Removed During a Drive Firmware Download

Problem or Restriction: Removing and reinserting drives during the drive firmware download process might cause the drive to be shown as unavailable, failed, or missing.

Workaround: Remove the drive, and either reinsert it or reboot the controllers to recover the drive.

Additional Drive Modules Cannot Be Added During an ESM/IOM Firmware Download

Problem or Restriction: If you add a drive module by using the loop topology option during Environmental Services Monitor (ESM/IOM) firmware download, the ESM/IOM firmware download process might fail due to a disconnected loop. The drive module would come up correctly after being added to the loop.

Workaround: When adding the drive module, do not follow the loop topology option. If you add the drive module by connecting the ports to the end of the storage array without disconnecting the loop, the ESM/IOM firmware download is successful.

Drives Fail to Spin Up if Inserted While the Storage Array Reboots

Problem or Restriction: Removing the drives while a storage array is online and then waiting to reinsert the drives until the storage array is starting after a reboot might cause the drives to be marked as failed after the storage array comes back online.

Workaround: Wait until the storage array is back online before reinserting the drives. If the storage array still does not recognize the drives, reconstruct the drives by using CAM software.

Controller Panics After Removing the Last ESM/IOM

Problem or Restriction: After removing a second ESM/IOM from a storage array, the controller panics.

Workaround: After removing an ESM/IOM, wait at least 10 minutes before removing another ESM/IOM from the same storage array.

Linux Host Hangs During Reboot After New Volumes Are Added

Problem or Restriction: When a Red Hat Enterprise Linux 5.1 host has more than two new volumes mapped to it, it hangs during reboot.

Workaround: Try three possible workarounds:

- After you add the new volumes, run the hot_add utility before rebooting the host.
- Upgrade the QLogic driver with driver qla2xxx-v8.01.07.15-2 version or later. This option does not require that you run the hot_add utility.
- Perform multiple reboots of the host.

Cache Attempts to Restore the Backup Data on Foreign Devices

Problem or Restriction: Cache restore is attempted when the controller is attached to foreign drive modules, and there is data on the USB devices that the cache has not written to the drive modules.

Workaround:

⚠ **Caution –** Possible loss of data—Failure to perform this workaround could result in data loss.

Before the power is turned off to the system, quiesce the system. You should quiesce the system before the controller or the drive module is moved. This process does not back up the cache, and it does not attempt to restore the data from the USB devices to the foreign drive modules.

Linux I/O Timeout Error Occurs After Enabling a Switch Port

Problem or Restriction: Linux. An I/O timeout error occurs after you enable a switch port. This problem occurs when two or more Brocade switches are used, and both the active and the alternative paths from the host are located on one switch, and both the active path and the alternative path from the storage array are located on another switch. For the host to detect the storage array on the other switch, the switches are cascaded, and a shared zone is defined between the switches. This problem occurs on fabrics managing high I/O traffic.

Workaround: Reconfigure the switch zoning to avoid the need for cascading. Limit the zones within each switch, and do not create zones across the switches. Configure the active paths from the host and the storage array on one switch, and all of the alternative paths from the host and the storage array on the other switch.

Note – Configuring the active paths from all of the hosts on one switch will not provide optimal performance. To resolve this performance issue, alternate the hosts in terms of using active and alternative paths.
For switch 1, connect to storage array 1, and use the following arrangement: Host A_Active port, Host B_Alternative port, Host C_Active port, Host D_Alternative port.
For switch 2, connect to storage array 2, and use the following arrangement: Host A_Alternative port, Host B_Active port, Host C_Alternative port, Host D_Active port.

Controller Does Not Detect All Hardware Defects on a Newly Replaced Host Interface Card

Problem or Restriction: With power-on diagnostics, some host interface card hardware defects are not found, including problems transferring data across the PCI express bus, interrupt failures, and issues with the internal buffers in the chip.

Workaround: Verify that the host interface cable connections into the Small Form-factor Pluggable (SFP) transceivers are secure. If the problem remains, replace the host interface card.

Ancient I/O Error Reported

Problem or Restriction: An ancient I/O error is reported during a controller failure on a large configuration with more than 32 primary volumes on a single storage array.

Workaround: Configure large configurations with more than 32 primary mirrors on a single storage array, so that the metadata volume is contained in a pool that is made up of Fibre Channel drives. If Fibre Channel drives are not available, create a 1 + 1R1 SATA pool, so that it contains only the metadata volume with no other volumes on that pool.

You might be able to configure the metadata volume with other volumes on a SATA group if the pool will experience only a light I/O load. Because of the numerous variables involved, it is not possible to provide guidance on the load limits, so the risk would be assumed at the discretion of the user.

Linux Host Hangs During Reboot

Problem or Restriction: Red Hat Enterprise Linux 5.2 PowerPC (PPC) only. On rare occasions, the host hangs during reboot.

Workaround: Reset the host.

No Automatic Synchronization MEL Events on ACS and Deferred Lockdown

Problem or Restriction: Windows Server 2003 only. No Automatic Synchronization MEL events are received when the controllers go through autocode synchronization (ACS) and a deferred lockdown.

Workaround: You must verify the firmware on the controllers.

Cannot Find an Online Path After a Controller Failover

Problem or Restriction: Linux Red Hat 5 and Linux SLES 10 SP1 only. After a controller failover in an open SAN environment, a controller comes back online, but the path is not rediscovered by the multi-path proxy (MPP). After a controller comes online in a fabric connection (through a SAN switch), it is possible that a link will not

be established by the Emulex HBA driver. This behavior is seen only if the SAN switch is "default" zoned (all ports see all other ports). This condition can result in an I/O error if the other path is taken offline.

Workaround: Set all of the SAN switches to be "default" zoned.

I/O Errors Occur During a Linux System Reboot

Problem or Restriction: Linux SLES 10 SP2 only. I/O errors occur during a system reboot, and the host resets.

Workaround: None.

Volume Transfer Fails

Problem or Restriction: AIX only. When you perform a firmware download with a heavy load, the download fails because the volumes take too long to transfer to the alternate controller.

Workaround: Execute the download again. To avoid this problem, perform the firmware updates during non-peak I/O activity times.

MEL Events Occur During the Start-of-Day Sequence

Problem or Restriction: Red Hat Enterprise Linux 4.7 only. When the controller is going through the start-of-day sequence, the drive channel does not achieve link speed detection and logs a Major Event Log (MEL) event. This event recovers within a few seconds, and a second MEL event occurs. The second MEL event indicates that the link speed detection was achieved.

Workaround: None.

Unable to Load a Previous Firmware Version

Problem or Restriction: If the controllers are running firmware that uses 64-bit addressing, you cannot load firmware that uses 32-bit addressing if your storage array has these conditions:

■ 2-TB volumes

- Snapshots of any size

Recent code changes have been implemented to fix a 32-bit addressing issue by using 64-bit addressing. After you have updated to a firmware version that uses the 64-bit addressing, do not attempt to reload firmware version that uses 32-bit addressing.

Workaround: If you must replace a firmware version that uses 64-bit addressing with a firmware version that uses 32-bit addressing, contact a Sun Technical Support representative. The Technical Support representative will delete all snapshots before starting the downgrade process. Snapshots of any size will not survive the downgrade process. After the firmware that uses 32-bit addressing boots and runs, no snapshot records will be available to cause errors. After the 32-bit addressing firmware is running, you can re-create the snapshots.

Controller Registers Disabled IPV6 Addresses When Using iSNS with DHCP

Problem or Restriction: This problem occurs when Internet Protocol Version 6 (IPV6) addresses have been disabled on a Sun Storage 6180 array. If the Internet Storage Name Service (iSNS) is enabled and set to obtain configuration data automatically from the Dynamic Host Configuration Protocol (DHCP) server, the IPV6 addresses will be discovered even though they were disabled on the ports of the controllers in the Sun Storage 6180 array.

Workaround: None.

iSNS Does Not Update the iSNS Registration Data When You Change the iSCSI Host Port IP Addresses

Problem or Restriction: This problem occurs when you change the configuration for all of the ports in a storage array from using Dynamic Host Configuration Protocol (DHCP) to using static IP addresses or vice versa. If you are using Internet Storage Name Service (iSNS), the registration of the IP addresses for the ports will be lost.

Workaround: Use one of the following workarounds after you change the IP addresses:

- Disable and then enable iSNS service on the controllers.
- Reboot the controllers.

Documentation Issues

Two problems exist in the documentation:

- "Specification Discrepancies" on page 25
- "DC Power Option Illustration for Hardware Installation Guide" on page 26

Specification Discrepancies

The Sun Storage 6180 documentation set contains discrepancies for certain array specifications.

Workaround: For the following specification categories, note the correct specification values.

Capacity

- For controller trays with four host ports, up to three expansion trays can be added.
- For controller trays with eight host ports, up to six expansion trays can be added.
- The array configuration supports unlimited global hot spare drives, and each spare can be used for any disk in the array configuration.

Environment

- Controller tray AC input:

  50/60 Hz, 3.96 A max. operating @ 115 VAC, 2.06A max. operating @ 230 VAX (115 to 230 VAC range).

- Expansion tray AC input:

  50/60 Hz, 3.90 A max. operating @ 115 VAC, 2.06A max. operating @ 230 VAX (90 to 264 VAC range)

Tray Dimensions

- 5.1 in. x 17.6 in. x 22.5 in.
- 12.95 cm x 44.7 cm x 57.15 cm

Weight

The maximum weight of a fully populated controller or expansion tray is 93 pounds (42.18 kilograms).

DC Power Option Illustration for Hardware Installation Guide

The *Sun Storage 6180 Array Hardware Installation Guide* does not include an illustration of the optional DC Power connectors.

Correction—FIGURE 1 shows the location of the DC power connector and DC power switch at the back of each controller.

FIGURE 1   Sun Storage 6180 Array DC Power Option (Rear)
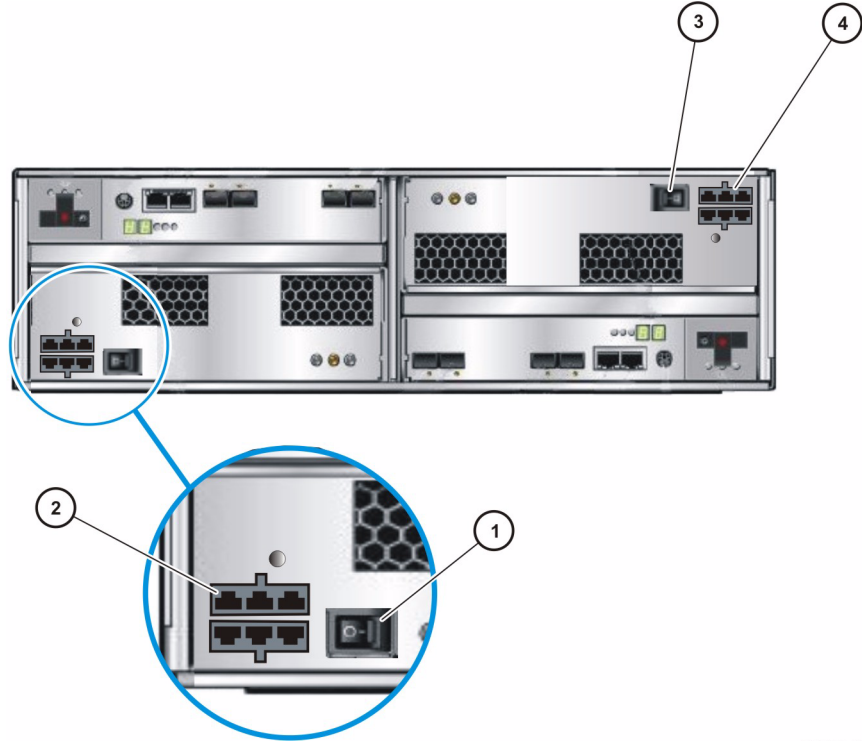
Figure Legend

Power Supply B		Power Supply A	
1	DC power switch	**3**	DC power switch
2	DC power connectors	**4**	DC power connectors

Product Documentation

Related product documentation is available at the Sun documentation web site:

http://docs.sun.com/app/docs/prod/6180.array#hic

For translated versions of the documentation, go to the http://docs.sun.com web site, select your language, and search for the product documentation.

Application	Title
Site planning information	*Sun Storage 6180 Array Site Planning Guide*
Regulatory and safety information	*Sun Storage 6180 Array Safety and Compliance Manual*
Installation overview for rack-mounted arrays	*Getting Started Guide for Sun Storage 6180 Rack Ready Arrays*
Array installation instructions	*Sun Storage 6180 Array Hardware Installation Guide*
Rack installation instructions	*Sun Rack II User's Guide*
Rail kit installation instructions	*Sun Modular Storage Rail Kit Installation Guide*
PDU installation instructions	*Sun Cabinet Power Distribution Unit (PDU) Installation Guide*
CAM software installation and initial configuration instructions	*Sun StorageTek Common Array Manager Software Installation Guide*
Command line management interface reference	*Sun StorageTek Common Array Manager CLI Guide*
Release-specific information for the Sun StorageTek Common Array Manager	*Sun StorageTek Common Array Manager Release Notes, v6.6*
Multipath failover driver installation and configuration	*Sun StorageTek MPIO Device Specific Module Installation Guide For Microsoft Windows OS*
	Sun StorageTek RDAC Multipath Failover Driver Installation Guide For Linux OS

Service Contact Information

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

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

Third-Party Web Sites

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Sun Storage 6180 Array Release Notes, part number 821-1428-10.