



# Sun Storage 6180 Array Release Notes

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Release 6.5

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

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# Sun Storage 6180 Array Release Notes

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This document contains important release information about the Sun Storage 6180 Array running Sun StorageTek™ Common Array Manager (CAM), Release 6.5. 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:

- “Product Overview” on page 2
- “System Requirements” on page 2
- “Restrictions and Known Issues” on page 15
- “Product Documentation” on page 28
- “Service Contact Information” on page 29
- “Third-Party Web Sites” on page 29

## For Information About CAM

See the Sun StorageTek Common Array Manager software documentation and release notes for the CAM 6.5 release at:

<http://docs.sun.com/app/docs/prod/stor.armgr>

## 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.

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# 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, v6.5 (or higher) software.

- “Firmware Requirements” on page 2
- “Disk Drives and Tray Capacity” on page 3
- “Data Host Requirements” on page 4

## 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) v, 6.5.

To download the latest controller firmware, go to:

[http://www.sun.com/storage/management\\_software/resource\\_management/cam](http://www.sun.com/storage/management_software/resource_management/cam)

Click the “Buy Now” button to download the latest CAM software.

# Disk Drives and Tray Capacity

TABLE 1 lists the size, speed, and tray capacity for the supported FC and SATA disk drives for Sun Storage 6180 Array.

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**Note** – This listing of supported disk drives replaces the listing in the *Sun Storage 6180 Array Hardware Installation Guide*.

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**TABLE 1** Supported Disk Drives

RPM	Drive	Description
10K	FC 146G10K	146-Gbyte 10,000-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 400G10K	400-Gbyte 10,000-RPM FC drives (4 Gbits/sec); 6400 Gbytes per tray
15K	FC 73G15K	73-Gbyte 15,000-RPM FC drives (4 Gbits/sec); 1168 Gbytes per tray
	FC 146G15K	146-Gbyte 15,000-RPM FC drives (4 Gbits/sec); 2336 Gbytes per tray
	FC 300G15K	300-Gbyte 15,000-RPM FC drives (4 Gbits/sec); 4800 Gbytes per tray
	FC 450G15K	450-Gbyte 15,000-RPM FC drives (4 Gbits/sec); 7200 Gbytes per tray
7.2K	SATA 2, 500G7.2K	500-Gbyte 7,200-RPM SATA drives (3 Gbits/sec); 8000 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

Additional legacy drives might also be supported with this product.

# Data Host Requirements

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

- [“Multipathing Software” on page 4](#)
- [“Supported Host Bus Adaptors \(HBAs\)” on page 7](#)
- [“Supported Enterprise Software” on page 14](#)
- [“Supported FC and Multilayer Switches” on page 14](#)

## 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. For data hosts running the Solaris OS, follow the instructions in the *Hardware Installation Guide for Sun Storage 6180 Array* to download and install the software from the Sun Download Center.

Solaris OS 10 includes the multipathing software.



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 “ <a href="#">Special Instructions to Enable Multipath Failover for Solaris OS 9 Data Hosts</a> ” on page 6)	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
HP-UX	Veritas DMP	5.0MP3	5.0MP3	HP-UX	Pending vendor qualification, see Symantec's HCL

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**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/>.

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## 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=1,0x00004,0,0,36,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
```
3. Save the `.conf` file.
4. Reboot the system.

## Supported Host Bus Adaptors (HBAs)

[TABLE 3](#), [TABLE 4](#), and [TABLE 5](#) lists 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/](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 16.

**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)	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		SG-XPCI2FC-QF4		
	LPe12000/LPe12002/LPe1250		SG-XPCI1FC-EM4		
	0		SG-XPCI2FC-EM4		
	Emulex		SG-XPCIE2FCGBE-Q-Z		
	0		SG-XPCIE2FCGBE-E-Z		
64-bit / x64 (AMD) EM64T IA64	Emulex				
	LP11000/LP11002/LP1150				
	Emulex LP9802/9802DC/982				
	Emulex				
	LP952/LP9002/LP9002DC				
	Emulex				
	10000/10000DC/LP1050				
	Microsoft Windows 2003	QLogic QLE 256x	SG-XPCI1FC-EM2	SG-XPCIE1FC-QF4	SG-XPCIE1FC-QF8-Z
	32-bit with SP1 R2 / x86 (IA32)	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			SG-XPCI2FC-QF4		
LPe12000/LPe12002/LPe1250			SG-XPCI1FC-EM4		
0			SG-XPCI2FC-EM4		
Emulex			SG-XPCIE2FCGBE-Q-Z		
0			SG-XPCIE2FCGBE-E-Z		
Emulex					
LP11000/LP11002/LP1150					
Emulex LP9802/9802DC/982					
Emulex					
LP952/LP9002/LP9002DC					
Emulex					
10000/10000DC/LP1050					

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

<b>Host OS / Servers</b>	<b>HBAs</b>	<b>Sun 2-Gb HBAs</b>	<b>Sun 4-Gb HBAs</b>	<b>Sun 8-Gb HBAs</b>
Microsoft Windows 2003 64-bit with SP1 R2 / x64 (AMD) EM64T IA64	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		SG-XPCI2FC-QF4	
	LPe12000/LPe12002/		SG-XPCI1FC-EM4	
	LPe1250		SG-XPCI2FC-EM4	
	Emulex		SG-XPCIE2FCGBE-Q-Z	
	Lpe11000/LPe11002/LPe1150		SG-XPCIE2FCGBE-E-Z	
	0			
	Emulex			
	LP11000/LP11002/LP1150			
	Emulex LP9802/9802DC/982			
	Emulex			
LP952/LP9002/LP9002DC				
Emulex				
10000/10000DC/LP1050				

**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	QLogic QLE 256x	SG-XPCI1FC-EM2	SG-XPCIE1FC-QF4	SG-XPCIE1FC-QF8-Z
SuSE 10.2	QLogic QLE246x	SG-XPCI2FC-EM2	SG-XPCIE2FC-QF4	SG-XPCIE2FC-QF8-Z
SuSE 11	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	
	Emulex LP10000/10000DC/LP1050		SG-XPCI2FC-EM4	
	Emulex LP11000/LP11002/LP1150		SG-XPCIE2FCGBE-Q-Z	
	Emulex Lpe11000/LPe11002/LPe1150		SG-XPCIE2FCGBE-E-Z	
	0			
	Lpe12000/LPe12002/ Lpe1250			
Linux	QLogic QLE 256x	SG-XPCI1FC-EM2	SG-XPCIE1FC-QF4	SG-XPCIE1FC-QF8-Z
SuSE 9.0 - IA 32, 2.6 kernel / x64	QLogic QLE246x	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
EM64T	QLogic QLA 2310F		SG-XPCI1FC-QF4	
x86 (IA32)	Emulex LP982/LP9802/9802DC		SG-XPCI2FC-QF4	
IA64	Emulex LP9002/LP9002DC/LP952		SG-XPCI1FC-EM4	
	Emulex LP10000/10000DC/LP1050		SG-XPCI2FC-EM4	
	Emulex LP11000/LP11002/LP1150		SG-XPCIE2FCGBE-Q-Z	
	Emulex Lpe11000/LPe11002/LPe1150		SG-XPCIE2FCGBE-E-Z	
	0			

**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 5u2	QLogic QLE 256x	SG-XPCI1FC-EM2	SG-XPCIE1FC-QF4	SG-XPCIE1FC-QF8-Z
RHEL 5u3	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		SG-XPCI2FC-QF4	
	LP982/LP9802/9802DC		SG-XPCI1FC-EM4-Z	
	Emulex		SG-XPCI2FC-EM4-Z	
	LP9002/LP9002DC/LP952		SG-XPCIE2FCGBE-Q-Z	
	Emulex		SG-XPCIE2FCGBE-E-Z	
	LP10000/10000DC/LP1050			
	Emulex			
	Lpe11000/LPe11002/LPe1150			
	Emulex			
	Lpe12000/LPe12002/LPe1250			
RHEL 4u7	QLogic QLE 256x	SG-XPCI1FC-EM2	SG-XPCIE1FC-QF4	SG-XPCIE1FC-QF8-Z
RHEL 4.8	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		SG-XPCI2FC-QF4	
	LP982/LP9802/9802DC		SG-XPCI1FC-EM4-Z	
	Emulex		SG-XPCI2FC-EM4-Z	
	LP9002/LP9002DC/LP952		SG-XPCIE2FCGBE-Q-Z	
	Emulex		SG-XPCIE2FCGBE-E-Z	
	LP10000/10000DC/LP1050			
	Emulex			
	Lpe11000/LPe11002/LPe1150			
	Emulex			
	Lpe12000/LPe12002/LPe1250			



**TABLE 6** Other Supported Data Host Platforms

<b>Host OS</b>	<b>Host Servers</b>	<b>HBAs</b>
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
HP-UX 11.31	HP RISC IA64	HP A6795A 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 IA64	HP A6795A 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
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

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# 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.

- [“Compatibility with Solaris 9 OS” on page 16](#)
- [“Hibernate Does Not Work in a Root Boot Environment for Windows Server 2003” on page 16](#)
- [“Drive Module ID of 0 \(Zero\) Is Restricted” on page 16](#)
- [“Drives Cannot Be Removed During a Drive Firmware Download” on page 17](#)
- [“Additional Drive Modules Cannot Be Added During an ESM/IOM Firmware Download” on page 17](#)
- [“Drives Fail to Spin Up if Inserted While the Storage Array Reboots” on page 17](#)
- [“Controller Panics After Removing the Last ESM/IOM” on page 17](#)
- [“Linux Host Hangs During Reboot After New Volumes Are Added” on page 18](#)
- [“Cache Attempts to Restore the Backup Data on Foreign Devices” on page 18](#)
- [“Linux I/O Timeout Error Occurs After Enabling a Switch Port” on page 18](#)
- [“Controller Does Not Detect All Hardware Defects on a Newly Replaced Host Interface Card” on page 19](#)
- [“Ancient I/O Error Reported” on page 19](#)
- [“Linux Host Hangs During Reboot” on page 20](#)
- [“No Automatic Synchronization MEL Events on ACS and Deferred Lockdown” on page 20](#)
- [“Cannot Find an Online Path After a Controller Failover” on page 20](#)
- [“I/O Errors Occur During a Linux System Reboot” on page 20](#)
- [“Volume Transfer Fails” on page 21](#)
- [“MEL Events Occur During the Start-of-Day Sequence” on page 21](#)
- [“Unable to Load a Previous Firmware Version” on page 21](#)
- [“Controller Registers Disabled IPV6 Addresses When Using iSNS with DHCP” on page 22](#)
- [“iSNS Does Not Update the iSNS Registration Data When You Change the iSCSI Host Port IP Addresses” on page 22](#)

## Compatibility with Solaris 9 OS

**CR 6846715:** If you are connecting the Sun Storage 6180 Array to a data host running Solaris 9 OS, SunSolve 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 will return the most recent results.

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

Sun recommends using 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:**



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

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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.

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**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.

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# Documentation Issues

Two problems exist in the documentation:

- [“Upgrade Procedure in Service Advisor is Incorrect” on page 23](#)
- [“DC Power Option Illustration for Hardware Installation Guide” on page 27](#)

## Upgrade Procedure in Service Advisor is Incorrect

**Bug 6886651**—The CAM Service Advisor “Converting a 6140 Controller to a 6180 Controller” procedure incorrectly states to power off the expansion trays. Powering down the expansion trays is not required.

**Correction**—The correct Service Advisor procedure is as follows:

### Converting a 6140 Controller to a 6180 Controller

To prepare for this service action, perform the following:

1. **Reserve the tray for maintenance.**
  2. **Enter a description of the service action (upgrading a controller).**
  3. **Select the estimated amount of time of the service action from the pull-down.**
  4. **Select the Reserve button.**
    - a. **Other users will be alerted that this service action is in progress when they login.**
- Observe all ESD precautions.

#### **Important Notes**

- The 6140 controllers must have firmware level 7.10 or higher to perform this upgrade. Verify the firmware level and upgrade to the correct level if necessary.
- 6180 controllers only support CSM200 trays.
- This upgrade is disruptive to the customer.
- All I/O to this configuration must be stopped before starting.
- This procedure is a controller card replacement procedure.

To Remove and Replace a Tray Controller

1. Before starting verify the "State" and "Status" of the tray CRUs to ensure that no problems exist.

Verify the "State" and "Status".

- a. The "State" should be "Enable" and the "Status" should be "OK".
  - b. If the CRUs are not "Enable" and "OK" fix any existing problems or contact your Sun Service provider or your next level of technical support.
2. If necessary, verify and upgrade the firmware level to 7.10 or higher to support this upgrade. If a firmware upgrade is done return to step 1 to verify the "State" and "Status" of the controllers.
  3. The power will need to be removed to the controller tray now. From the rear of the tray, push the power switch on both power-fan assemblies to the "Off" position.
    - a. View the power switch location illustration.
  4. Disconnect the host interface cables and expansion tray interface cables (if present) including the SFP transceivers from the first controller to be upgraded. Ensure that all cables are labeled before removing them.
  5. If controller "A" is being replaced, press the tab on the left side of the latch/handle and lift the latch/handle up at the same time to unlock the controller and pull the controller out of the tray. If controller "B" is being replaced, press the tab on the right side of the latch/handle and pull down on the latch/handle at the same time to unlock the controller and pull the controller out of the tray.
    - a. View the controller removal illustration.
  6. Unpack the new controller and save all of the packing materials to return the removed controller in. Use care when handling either the new or the removed controller.
  7. Place the removed controller in the antistatic bag.
  8. Insert the new controller until it connects with the midplane connector and push the latch/handle in to the locked position.
  9. Reconnect all host interface cables and expansion tray interface cables, including the SFP transceivers, to their original locations.
  10. Repeat steps 5 through 9 for the remaining controller to be upgraded.
  11. Power will need to be restored to the controller tray, from the rear of the tray push the power switch on both power-fan assemblies to the "On" position.
    - a. View the power switch location illustration.

12. Wait approximately 60 seconds for the controller to complete its boot process.
  - a. All Link port LEDs (which have cables inserted) should be on.
  - b. All Fault LEDs should be off.
  - c. The battery charged (solid green) or charging (flashing green) LED should be on.
  - d. View the controller LED location illustration.
13. Change the BOOTP server configuration using the two MAC address's found on the front of the new controller. Refer to your specific operating system administrators guide for detailed information on the configuration procedure.
14. The new controllers may have the incorrect network settings and may need to be updated. Refer to the Installation Guide on how to use the serial interface to change the IP addresses if necessary.
15. Release the tray from maintenance.
  - a. Select the Release button.
16. The old 6140 tray will need to be removed from the Storage Systems Summary table.
  - a. Remove the tray.
  - b. At the Storage Systems Summary table, select the box next to the name of the 6140 tray being removed. Be sure that the correct box has been selected.
  - c. Select the "Remove" button.
  - d. Before selecting the OK button in the pop-up, screen be sure that the correct box has been selected.
  - e. After the pop-up screen has closed the Storage Systems Summary screen will be updated at the top with the following message: "One or more arrays were unregistered" and it will be removed from the table.
17. The new 6180 tray will need to be registered at the Storage Systems Summary table.
  - a. Register the tray.
  - b. At the Storage Systems Summary table, select the "Register" button at the top left of the table.
  - c. After selecting the "Register" button the Register Storage System pop-up screen will appear.

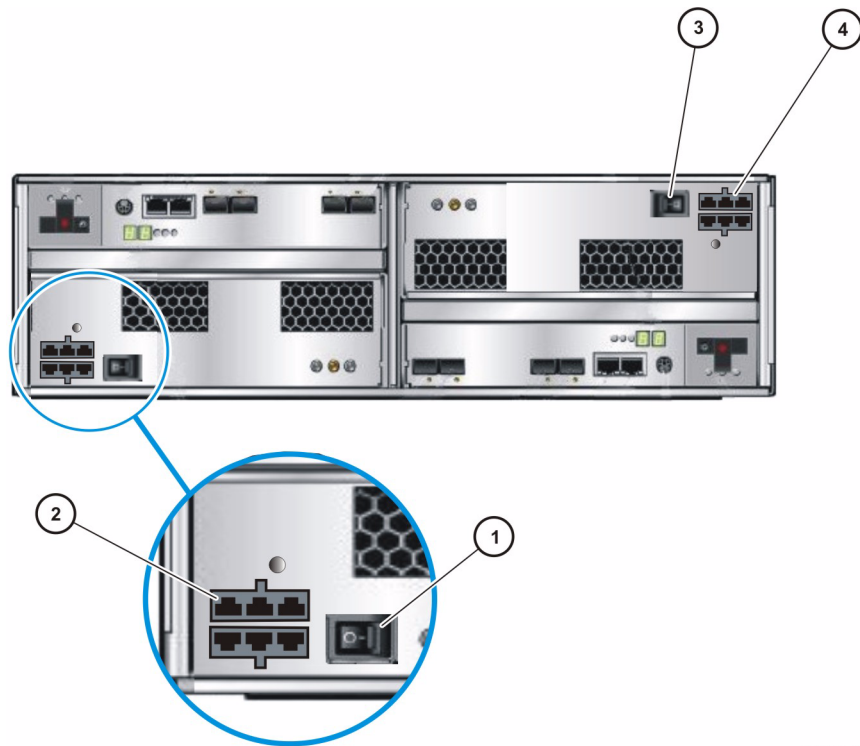
- d. At the Register Storage System screen select the discovery method and follow the steps to completion.
18. From the main navigation tree select the new array and then the Service Advisor tab in the upper right corner of the screen. From the array navigation tree under the Array Troubleshooting and Recovery tab select the Display Tray Status procedure to confirm that the State is "Enabled" and the Status is "OK" for all of the CRUs.
  - a. If the "State" is not "Enable" and the "Status" is not "OK" for all CRUs contact your Sun Service provider or your next level of technical support.
19. From the array navigation tree under the Array Troubleshooting and Recovery tab select the Resetting the Controller Battery Age procedure to reset the battery age for the new controllers.
20. From the array navigation tree under the Array Troubleshooting and Recovery tab select the Upgrade Firmware procedure to validate the revision level of the new controllers.

# 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

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# 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.

<b>Application</b>	<b>Title</b>	<b>Part Number</b>
Site planning information	<i>Sun Storage 6180 Array Site Planning Guide</i>	821-0133
Regulatory and safety information	<i>Sun Storage 6180 Array Safety and Compliance Manual</i>	821-0138
Installation overview for rack-mounted arrays	<i>Getting Started Guide for Sun Storage 6180 Rack Ready Arrays</i>	821-0134
Array installation instructions	<i>Sun Storage 6180 Array Hardware Installation Guide</i>	821-0135
Rack installation instructions	<i>Sun Rack II User's Guide</i>	820-4759
Rail kit installation instructions	<i>Sun Modular Storage Rail Kit Installation Guide</i>	820-5774
PDU installation instructions	<i>Sun Cabinet Power Distribution Unit (PDU) Installation Guide</i>	820-6200
CAM software installation and initial configuration instructions	<i>Sun StorageTek Common Array Manager Software Installation Guide</i>	820-7921
Command line management interface reference	<i>Sun StorageTek Common Array Manager CLI Guide</i>	821-0132
Release-specific information for the Sun StorageTek Common Array Manager	<i>Sun StorageTek Common Array Manager Release Notes, v6.5</i>	821-0126
Multipath failover driver installation and configuration	<i>Sun StorageTek MPIO Device Specific Module Installation Guide For Microsoft Windows OS</i>	820-4737
	<i>Sun StorageTek RDAC Multipath Failover Driver Installation Guide For Linux OS</i>	820-4738



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## Service Contact Information

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

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

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