

# Sun StorageTek 6140 Array Release Notes

Release 2.0

Sun Microsystems, Inc. www.sun.com

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## Sun StorageTek 6140 Array Release Notes

This document contains important release information about the Sun StorageTek<sup>™</sup> 6140 Array or information that was not available at the time the product documentation was published. Read this document so that you are aware of issues or requirements that can affect the installation and operation of the Sun StorageTek 6140 Array.

These Release Notes cover the software released on the Sun StorageTek 6140 Array Host Software 2.0 CD, and related hardware issues.

The Release Notes consist of the following sections:

- "Features in This Release" on page 1
- "System Requirements" on page 4
- "Installing Packages and Patches" on page 16
- "Known Issues" on page 23
- "Release Documentation" on page 42
- "Service Contact Information" on page 43
- "Third-Party Web Sites" on page 43

## Features in This Release

This section describes the main features of the Sun StorageTek 6140 Array, including the following:

- "Sun StorageTek 6140 Array Features" on page 2
- "Management Software Features" on page 2
- "Release Contents" on page 3

## Sun StorageTek 6140 Array Features

The Sun StorageTek 6140 Array is a 4-Gb/2-Gb Fibre Channel (FC) array that offers both direct attached and SAN attached storage. The Sun StorageTek 6140 Array features:

- Eight FC host interfaces (four per controller)
- 1-Gb, 2-Gb, and 4-Gb host interface speed
- Dual redundant controllers
- FC and/or Serial Advanced Technology Attachment (SATA)-2 disk drives
- support of up to 6 expansion trays with one controller tray
- Switched drive tray (contains an FC switch)
- 112 maximum drives (7 trays with up to 16 drives each)
- Sun Storage Automated Diagnostic Environment support

Note – SATA drives require Sun StorageTek 6140 Array Firmware Release 2.1.

### Management Software Features

The Sun StorageTek Configuration Service browser interface provides you with an easy-to-use interface to configure, manage, and monitor the Sun StorageTek 6140 Array. You can also use the Configuration Service browser interface to access the Storage Automated Diagnostic Environment software, which enables you to diagnose problems, view events, and monitor the health of your array.

This version of the Sun StorEdge Configuration Service software includes the following new features:

- A new navigation pane
- An Array Registration wizard
- Help pages displaying information about mappings, ports, array hardware, and LEDs, as well as an activity log.

## **Release Contents**

TABLE 1 lists the version information for the software included in this release.

Contents
Coments

Туре	Version
Sun StorageTek Configuration Service	3.01.01.00
Remote scripting CLI client	2.1
Sun Storage Automated Diagnostic Environment software (including localized versions)	2.4.60.nnn
Sun StorageTek SAN Foundation software	4.4.9
Java Web Console software	2.2.5

TABLE 2 lists the firmware files for this release.

	5
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Туре	Version	
CRM-F-NVSRAM	N399X-616843-008	
CRM-F	06.16.73.10	
IOM	9865	
DISK/HUS1014FASUN146G	2A08	
DISK/HUS1073FASUN72G	2A07	
DISK/MAT3073FSUN72G	1203	
DISK/MAT3147FSUN146G	1203	
DISK/MAT3300FSUN300G	1203	
DISK/MAU3073FCSUN72G	1003	
DISK/MAU3147FCSUN146G	1003	
DISK/ST314670FSUN146G	055A	
DISK/ST314680FSUN146G	0407	
DISK/ST373453FSUN72G	0449	
DISK/ST373454FSUN72G	042D	
DISK/ST373554FSUN72G	0409	
DISK/ST314685FSUN146G	042D	
DISK/ST314695FSUN146G	0409	

#### TABLE 2 Array and Disk Firmware (Continued)

Туре	Version	
DISK/ST330000FSUN300G	055A	
DISK/ST373207FSUN72G	055A	
DISK/ST373307FSUN72G	0407	

The firmware location on the CD (/var/sadm/swimages/120337-03) contains the following firmware files:

- CRM-F/ contains controller firmware
- CRM-F-NVSRAM/ contains controller Non-Volatile System Random Access Memory (NVSRAM)
- IOM/ contains the FC Switched Bunch of Disks (SBOD) Input/Output Module (IOM) firmware
- DISK/ contains disk drive firmware

Each of these directories contains a link, image.fw, that points to the firmware image, as well as a text file, baseline.txt, that contains the version of the firmware image.

## System Requirements

The software and hardware products that have been tested and qualified to work with the Sun StorageTek 6140 Array are described in the following sections:

- "Management Host System Requirements" on page 5
- "Supported Platforms for the Remote Scripting CLI Client" on page 5
- "Data Host Requirements" on page 5
- "Disk Drives and Tray Capacity" on page 14
- "Supported Management Hosts and Tools" on page 14
- "Supported Web Browsers" on page 15
- "Supported Languages" on page 16

## Management Host System Requirements

The management host on which the management software resides must meet the system requirements described in TABLE 3.

Host System Feature	Requirement
Platform	SPARC server or workstation
Operating system	Solaris 8 OS 4/01 Solaris 9 OS 8/03 Solaris OS 10
Disk space required	<ul> <li>550 Mbytes</li> <li>(see complete list of disk space requirements in "File Space Requirements" on page 17)</li> <li>Note: Be aware that you need 550 Mbytes more disk space than is required for your OS installation.</li> </ul>
Recommended minimum CPU	UltraSPARC 3 or better (750 Mhz)
Minimum memory (2 arrays, 2 users)	512 Mbytes
Recommended memory	1 Gbyte

 TABLE 3
 Management Host System Requirements

# Supported Platforms for the Remote Scripting CLI Client

The remote Scripting CLI client sends commands to a SPARC Solaris management host, which sends the commands to the array. TABLE 10 lists the remote platforms from which the CLI client can send commands to the SPARC Solaris management host. You can obtain the package you need from the Sun Download Center (SDLC), http://www.sun.com/software/download/, or from the Sun StorageTek 6140 Array Host Software CD.

### Data Host Requirements

TABLE 4 lists the supported host bus adapters (HBAs) for the Solaris 8, 9, and 10 Operating Systems (OSs).

**Note** – Solaris OS 10 data hosts must be updated to Solaris patch Update 3 Build 1 (SPARC: 118833-16; x86: 118855-14). Solaris 8 data hosts require Solaris patch 108974-49 or higher. Solaris 9 data hosts require Solaris patch 113277-44 or higher. These patches are not included in 6140 Array software release 2.1 and must be ordered separately.

You must install multipathing software on each data host that communicates with the Sun StorageTek 6140 Array. For Solaris OS 8 and 9 data hosts, the multipathing software is part of the Sun StorageTek SAN Foundation software. In Solaris OS 10,

multipathing is included in the OS. For data hosts running the Solaris OS, follow the instructions in the *Sun StorageTek* 6140 *Array Getting Starting Guide* to install the software from the CD.

Operating System	2-Gb HBA Driver	4-Gb HBA Driver
Solaris 8	SG-XPCI1FC-QF2 (6767A)	SG-XPCI1FC-QF4
	SG-XPCI2FC-QF2 (6768A)	SG-XPCI2FC-QF4
	SG-XPCI2FC-QF2-Z (6768A)	SG-XPCI1FC-EM4
	SG-XPCI1FC-QL2	SG-XPCI2FC-EM4
	SG-XPCI1FC-EM2	SG-XPCIE1FC-QF4
	SG-XPCI2FC-EM2	SG-XPCIE2FC-QF4
		SG-XPCIE1FC-EM4
		SG-XPCIE2FC-EM4
Solaris 9	SG-XPCIIFC-QF2 (6767A)	SG-XPCIIFC-QF4
	SG-XPCI2FC-QF2 (6768A)	SG-XPCI2FC-QF4
	SG-XPCI2FC-QF2-Z (6768A)	SG-XPCIIFC-EM4
	SG-XPCIIFC-QL2	SG-XPCI2FC-EM4
	SG-XPCIIFC-EM2	SG-XPCIEIFC-QF4
	SG-XPC12FC-EM2	SG-XPCIE2FC-QF4
		SG-XPCIE1FC-EM4
		SG-XPCIE2FC-EM4
Solaris 10 <sup>*</sup>	SG-XPCI1FC-QF2 (6767A)	SG-XPCI1FC-QF4
	SG-XPCI2FC-QF2 (6768A)	SG-XPCI2FC-QF4
	SG-XPCI2FC-QF2-Z (x6768A)	SG-XPCI1FC-EM4
	SG-XPCI1FC-QL2	SG-XPCI2FC-EM4
	SG-XPCI1FC-EM2	SG-XPCIE1FC-QF4
	SG-XPCI2FC-EM2	SG-XPCIE2FC-QF4
		SG-XPCIE1FC-EM4
		SG-XPCIE2FC-EM4

#### TABLE 4 Sun HBAs supported by Solaris OSs

Operating System	2-Gb HBA Driver	4-Gb HBA Driver
Solaris 10 x86	SG-XPCI1FC-QF2 (6767A) SG-XPCI2FC-QF2 (6768A) SG-XPCI2FC-QF2-Z (x6768A) SG-XPCI1FC-QL2 SG-XPCI1FC-EM2 SG-XPCI2FC-EM2	SG-XPCI1FC-QF4 SG-XPCI2FC-QF4 SG-XPCI1FC-EM4 SG-XPCI2FC-EM4 SG-XPCIE1FC-QF4 SG-XPCIE2FC-QF4
		SG-XPCIE1FC-EM4

 TABLE 4
 Sun HBAs supported by Solaris OSs (Continued)

\* Solaris 10 requires Sun StorageTek 6140 Array release 2.1

TABLE 5, TABLE 6, and TABLE 7 lists supported HBAs for Windows, Linux, and other data host platforms. For multipathing support on data hosts running these operating systems, you can use the Sun StorageTek RDAC Driver software or other multipathing software as listed.

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

**Note** – For data hosts using multipathing software, you must install the multipathing software before you install any OS patches.

Host OS	Patches or Service Pack	Servers	HBAs	Multipathing Software	Cluster Configurations
Windows 2000 Server and Windows 2000 Advanced Server	Service Pack 4 (SP4)	x86 (IA32)	QLogic QLA 246x Qlogic QLA 2200/2202 Qlogic QLA 2310/2340/2342 Emulex LP11000/LP11002 Emulex LP9802/9802DC/982 Emulex LP952/LP9002/LP9002DC Emulex 10000/10000DC/LP1050 Emulex LP8000 LSI 449290/409190 SysConnect SYS9843	Redundant Dual Array Controller (RDAC) Dynamic Multi- processing (DMP) 4.3	Microsoft Cluster Server
Windows 2003	SP1 R2	x64 (AMD) EM64T x86 (IA32) IA64	QLogic QLA 246x QLogic QLE 246x QLogic QLA 200 Qlogic QLA 2200/2202 Qlogic QLA 2310/2340/2342 Emulex LP11000/LP11002 Emulex LPe11000/LPe11002 Emulex LP9802/9802DC/982 Emulex LP952/LP9002/LP9002DC Emulex 10000/10000DC/LP1050 LSI 7102XP/7202XP SysConnect SYS9843 (IA32 only)	RDAC DMP 4.3	Microsoft Cluster Server

#### TABLE 5 Supported Microsoft Windows Data Host Platforms

Host OS	Sun Servers	HBAs	Multipathing Software	Cluster Configurations
Linux SuSE 8.0, 2.4 kernel	x64 EM64T x86 (IA32) IA64	LSI 44929 LSI 40919 QLogic QLA 246x QLogic QLE 246x QLogic QLA 2342 QLogic QLA 2340 QLogic QLA 2310F Emulex LP982/LP9802/9802DC Emulex LP9002/LP9002DC/LP952 Emulex LP10000/10000DC/LP1050	RDAC (MPP) DMP 4.0	Oracle Real Application Clusters (RAC) SteelEye LifeKeeper Server Clustering
Linux SuSE 9.0 - IA 32, 2.6 kernel	x64 EM64T x86 (IA32) IA64	QLogic QLA 246x QLogic QLE 246x QLogic QLA 2342 QLogic QLA 2340 QLogic QLA 2310F Emulex LP982/LP9802/9802DC Emulex LP9002/LP9002DC/LP952 Emulex LP10000/10000DC/LP1050	RDAC (MPP) DMP 4.0	Oracle RAC SteelEye LifeKeeper Server Clustering
Red Hat Linux 4.0, 2.6 kernel	x64 EM64T x86 (IA32) IA64	QLogic QLA 246x QLogic QLE 246x QLogic QLA 2342 QLogic QLA 2340 QLogic QLA 2310F Emulex LP982/LP9802/9802DC Emulex LP9002/LP9002DC/LP952 Emulex LP10000/10000DC/LP1050	RDAC (MPP) DMP 4.0	SteelEye LifeKeeper Server Clustering

#### TABLE 6 Supported Linux Data Host Platforms

Red Hatx64QLogic QLA 246xRDAC (MPP)Oracle RACLinux 3.0,EM64TQLogic QLE 246xDMP 4.0SteelEye2.4 kernelx86 (IA32)QLogic QLA 2342LifeKeeperIA64QLogic QLA 2340Server	tos s	Sun Servers HBAs		Multipathing Software	Cluster Configurations
QLogic QLA 2310F Emulex LP982/LP9802/9802DC Emulex LP9002/LP9002DC/LP952 Emulex LP10000/10000DC/LP1050 LSI 44929 LSI 40919	Hat x ux 3.0, <u>E</u> kernel x I	x64 QLog EM64T QLog x86 (IA32) QLog IA64 QLog Emul Emul Emul LSI 4 LSI 4	ic QLA 246x ic QLA 246x ic QLA 2342 ic QLA 2340 ic QLA 2310F ex LP982/LP9802/9802DC ex LP9002/LP9002DC/LP952 ex LP10000/10000DC/LP1050 4929 0919	RDAC (MPP) DMP 4.0	Oracle RAC SteelEye LifeKeeper Server Clustering

#### TABLE 6 Supported Linux Data Host Platforms (Continued)

 TABLE 7
 Other Supported Data Host Platforms

Host OS	Host Servers	HBAs	Multipathing Software	Cluster Configurations
Novell NetWare 6.0 (SP5)	x86 (IA32)	QLogic QLA 2342 QLogic QLA 2340 QLogic QLA 2310F QLogic QLA 246x QLogic QLE 246x	Netware Multi- Processing Executive (MPE)	Novell Cluster Services
Novell NetWare 6.5 (SP3)	x86 (IA32)	QLogic QLA 2342 QLogic QLA 2340 QLogic QLA 2310F QLogic QLA 246x QLogic QLE 246x	Netware MPE	Novell Cluster Services

IRIX 6.5.26, 6.5.27	MIPS	QLogic QLA 2200F QLogic QLA 2310 QLogic QLA 2340 QLogic QLA 2342	N/A	N/A
HP-UX B11.11	HP RISC	HP A6795A HP A6826A HP A6684A HP A6685A	Logical Volume Manage- ment (LVM) DMP 4.1	
HP-UX B.11.23	HP RISC IA64	HP A6795A HP A6826A	LVM DMP 4.1	
IBM AIX 5.2, 5.3	Power	IBM 5716 IBM 6228 IBM 6239	DMP 4.0 MP2	Veritas Cluster Service

 TABLE 7
 Other Supported Data Host Platforms (Continued)

**Note** — The multipathing driver for the IBM AIX platform is VERITAS DMP, bundled in VERITAS Volume Manager 3.x for the Sun StorageTek 6140 Array on AIX. Download the Array Support Library (ASL) from http://support.veritas.com/ as documented in "To Download the AIX ASL Package" on page 23.

The enterprise software applications listed in TABLE 8 are compatible with the Solaris OS on the data host.

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

Software	Version
Solstice DiskSuite	4.2.1 (in conjunction with the Solaris 8 OS)
Solaris Volume Manager	Embedded in the Solaris 9 and 10 OSs
VERITAS Volume Manager (VxVM)	3.2, 3.5, 4.0, 4.1
VERITAS File System (VxFS)	3.2, 3.5, 4.0, 4.1
VERITAS Cluster Server (VCS)	3.2, 3.5, 4.0, 4.1
VERITAS NetBackup	5.0 or higher

#### TABLE 8 Supported Enterprise Software (Continued)

The following FC fabric and multilayer switches are compatible for connecting data hosts and the Sun StorageTek 6140 Array:

- Sun StorEdge Network 2Gb FC Switch 8, 16, and 64
- SANRAD V-Switch 3000
- Brocade SilkWorm
   200E/2400/2800/3200/3250/3800/3850/3900/4100/7420/12000/24000/48000
- Cisco 9020/9120/9140/9216/9216A/9216i/9506/9509
- McData 3216/3232/4300/4400/4500/4700/6064/6140
- Qlogic
  - SANBox 3050/3602/5200/5602
  - SANBox2-8
  - SANBox2-16
  - SANBox2-64
- Computer Network Technology
  - FC 9000
  - Edge 3000

## Disk Drives and Tray Capacity

TABLE 9 lists the size, speed, and tray capacity for the supported FC and Serial Advanced Technology Attachment (SATA) disk drives in the Sun StorageTek 6140 Array.

TABLE 9Supported Disk Drives

Drive	Description
FC 73G15K	73-GB 15,000-RPM FC drives (4 Gbits/sec); 1168 GB per tray
FC 146G10K	146-GB 10,000-RPM FC drives (2 Gbits/sec); 2044 GB per tray
FC 146G15K	146-GB 15,000-RPM FC drives (4 Gbits/sec); 2336 GB per tray
FC 300G10K	300-GB 10,000-RPM FC drives (2 Gbits/sec); 4800 GB per tray
SATA 2, 500G7.2K <sup>*</sup>	500-GB 7,200-RPM SATA drives (3 Gbits/sec); 8000 GB per tray

\* SATA 2 requires Sun StorageTek 6140 Array firmware release 2.1.

## Supported Management Hosts and Tools

TABLE 10 lists which management host OSs support array management through the CLI and which can serve as SMI-S providers. All supported management host OSs support management of the array through the Sun StorageTek Configuration Service browser interface. SMI-S enables other applications to communicate with 6140 Array management software.

os	Version	CLI Management	SMI-S Provider
Solaris 8 SPARC	4/01	Yes	Yes
Solaris 9 SPARC	8/03	Yes	Yes
Solaris 10 <sup>*</sup> SPARC		Yes	Yes
Solaris 10 x86		Yes	No
Windows 2000 Server	Server (SP4) and Advanced Server (SP4)	Yes	No

 TABLE 10
 Supported Management Hosts and Tools

os	Version	CLI Management	SMI-S Provider
Windows Server 2003	Standard/Web/ Enterprise Edition	Yes	No
Red Hat Linux	3.0 4.0	Yes	No
SuSE Linux	8.0, 9.0	Yes	No
IBM AIX	5.2, 5.3	Yes	No
HP-UX	B.11.23, B.11.11	Yes	No
Novell NetWare	6.0 SP5, 6.5 SP3	No	No
IRIX	6.5.24, 6.5.26, 6.5.27	No	No

 TABLE 10
 Supported Management Hosts and Tools (Continued)

\* Solaris 10 requires Sun StorageTek 6140 Array release 2.1

## Java Support

All the supported management hosts in TABLE 10 use JRE version 1.4x and above for Java support, except Novell Netware and IRIX (which do not support Java software).

### Supported Web Browsers

The Sun StorageTek Configuration Service software supports the web browsers listed in TABLE 11.

TABLE 11	Supported	Web	Browsers
----------	-----------	-----	----------

Browser	Minimum Version
Netscape Navigator	7.0
Mozilla	1.2.1
Firefox	1.0.1
Microsoft Internet Explorer	5.0

**Note** – The software requires that you enable pop-up windows in your web browser.

## Supported Languages

Documentation for the Sun StorageTek 6140 Array is provided for the languages and locales listed in TABLE 12.

TABLE 12 Supported Languages and Locales

Locale
en
fr
ja
ko
zh
zh_TW

**Note** – Online help and man pages are available only in English.

## Installing Packages and Patches

The array installation procedures are described in the *Sun StorageTek 6140 Array Getting Starting Guide* (part number 819-5045-10) that came with your array. This section describes release-specific steps for firmware and management software patch upgrades that you must perform:

- "Before You Begin" on page 17
- "File Space Requirements" on page 17
- "Initially Installing Management Software" on page 18
- "Upgrading Array Firmware and Management Software" on page 18
- "Updating the SSD Driver for the Solaris OS" on page 21
- "Downloading the VERITAS Volume Manager ASL" on page 22

## Before You Begin

The Sun management software is distributed on the Sun StorageTek 6140 Array Host Software CD. The installation script on that CD verifies host requirements. In particular, it ensures that there are at least 550 Mbytes of disk space available before starting the installation script. Be sure to do the following before performing the upgrade:

- Read the upgrade instructions completely.
- Use the upgrade program on the Sun StorageTek 6140 Array Host Software CD or downloaded from the Sun Download Center (SDLC): http://www.sun.com/software/download/
- Perform the upgrade as root on the management host.

Should a failure occur, be sure to check the available disk space again. Then consult the system log /var/sadm/install/se6000/se6000\_Host\_SW.log for more information.

If a requirement is not met, the script informs you and then cleans up afterward, where appropriate. The script prompts you for input or fails and exits if it detects any of the following in the system:

- Pre-installed versions of the Sun Storage Automated Diagnostic Environment, sscs CLI, or Sun StorEdge SAN Foundation software
- Unsupported versions of operating systems or software
- Insufficient disk space

### File Space Requirements

The total size of the installation files is approximately 550 Mbytes when the files are extracted to a local directory. The management host software requires the following available space for successful installation:

- root 20 Mbytes
- /tmp 150 Mbytes
- /usr 40 Mbytes
- /var 90 Mbytes
- /opt 1,000 Mbytes (1.0 Gbytes)

## Initially Installing Management Software

If you are installing the array and the management software for the first time, follow the entire installation and configuration procedure described in the *Sun StorageTek* 6140 Array Getting Starting Guide.

After the initial installation and configuration, you will be able to upgrade the management software and firmware with each release.

# Upgrading Array Firmware and Management Software

If you have a previous release of the Sun StorageTek 6130 or 6140 Array management software and array firmware installed, the upgrade script will detect it and upgrade to the new software and firmware versions required for this release. If the script detects that there is no earlier version installed, it will perform a complete new installation. The upgrade scripts are included on the Sun StorageTek 6140 Array Host Software CD, or in the package you obtain from the Sun Download Center, http://www.sun.com/software/download/.

### ▼ To Upgrade the Management Host Software

**Note** – This procedure upgrades the software files (TABLE 1) on a management host on which an earlier version of the software has been installed. It is not necessary to uninstall the existing software. It also installs the firmware update bundle on the host server as a part of the management host software. To upgrade the firmware running on the array, see "To Upgrade the Firmware on the Array" on page 19.

- 1. Verify that you registered the arrays in the Sun Storage Automated Diagnostic Environment software after the previous installation.
- 2. Open the Sun Storage Automated Diagnostic Environment interface to review, acknowledge, and delete all existing alarms.

The upgrade script will not perform an upgrade on arrays that have critical or down alarms.

- 3. Use the command-line interface to log in to the management host as root.
- 4. Insert the host software CD in the local CD drive (or go to the directory where the upgrade files were downloaded).
- 5. Start up the upgrade install script by doing either of the following:

- Double-click the RunMe.bin icon
- Type the following command to launch the script:

./RunMe.bin

6. When prompted, specify the full path of the directory location in which the files are to be unpacked. This must be the same location in which the previous version was installed.

The files are unpacked in the following directory in the location you specify:

Host\_Software\_2.0.0.xx

where *xx* is the version number of the installed files.

The default location for the directory is /var/tmp/

The host upgrade installer wizard launches automatically after the files are unpacked.

- 7. Follow the steps in the wizard.
- 8. When the upgrade is complete, click Finish.
- 9. Open the Sun Storage Automated Diagnostic Environment interface to review and delete any alarms that were logged for components upgraded during the upgrade process.

If you need to unpack the files or run the upgrade installer as a single step, the commands are, respectively:

- ./HostSoftwareInstaller.bin unpacks the files
- ./setup runs the software upgrade installer wizard

Alternatively, if you want to unpack the files or complete the upgrade using the CLI, type the command with the -c option (Solaris only). For example:

./setup -c

#### ▼ To Upgrade the Firmware on the Array

**Note** – This procedure downloads the firmware binary on the management host to the array and upgrades the firmware running in the array. It is not necessary to uninstall the existing firmware. You can also upgrade firmware from the management software.

- 1. Use the command line interface to log in to the management host as root.
- 2. Change to the Host\_Software\_2.0.0.xx directory where the files are located. For example:

cd /var/tmp/Host\_Software\_2.0.0.xx

3. Start the upgrade installer by typing:

./arrayinstall

The firmware upgrade installer wizard displays.

If you wish to step through the upgrade via the CLI instead, enter the arrayinstall command with the -c option (Solaris only): ./arrayinstall -c

- 4. Follow the steps in the wizard.
- 5. When the upgrade is complete, click Finish.
- 6. Open the Sun Storage Automated Diagnostic Environment interface to review and delete any alarms that were logged for components upgraded during the upgrade process.

**Note** – The array will remain in a degraded state until all alarms are deleted.

Alternatively, you can upgrade the firmware on the array using the Configuration Service software:

- 1. On the Java Web Console page, click Sun StorageTek Configuration Service.
- 2. Go to the Array Summary page and select the arrays to be upgraded.
- 3. Click the Upgrade Firmware button.
- 4. Follow the prompts.

### ▼ To Uninstall the Array Management Software

Use the uninstall command if you need to remove all management and data host software from the host.

- 1. Log in to the management host as root.
- 2. Change to the Host\_Software\_2.0.0.xx directory where the files were unpacked. For example:

cd /var/tmp/Host\_Software\_2.0.0.xx

#### 3. Run the uninstall wizard:

./uninstall

The uninstall wizard is displayed.

Alternatively, if you want to use the CLI to uninstall the software, enter the uninstall command with the -c option (Solaris only):

./uninstall -c

- 4. Follow the steps in the wizard.
- 5. When the uninstallation is complete, click Finish.

If for any reason the uninstall fails, use the -f option to uninstall the management host software:

./uninstall -f

There is no wizard with the -f option; the option forces a complete removal of the management host software.

## Updating the SSD Driver for the Solaris OS

After installing software for the data hosts from the Sun StorageTek 6140 Host Installation Software CD, go to SunSolve (http://www.sun.com/sunsolve) and download the SSD driver for data hosts running the Solaris 8 or 9 OS.

▼ To Update the SSD Driver for the Solaris 8 OS

**Note** – Patch 108974–49 or higher requires patch 108528–29 or higher. If needed, apply patch 108528–29 or higher first.

1. Download the 108974-49 or higher patch from SunSolve.

Refer to the README file for more information on downloading patches.

2. Unpack the patch:

unzip 108974-49.zip

3. Read the README file:

108974-49/README.108974-49

- Apply the patch with the patchadd command: patchadd 108974-49
- 5. Reboot your system.

reboot -- -r

▼ To Update the SSD Driver for the Solaris 9 OS

**Note** – Patch 113277-44 or higher requires patches 112233-02 and 112834-02, which are already included in most versions of the Solaris 9 OS. If they are needed, apply patches 112233-02 and 112834-02 first.

#### 1. Download the 113277-44 or higher patch from SunSolve.

Refer to the README file for more information on downloading patches.

2. Unpack the patch:

unzip 113277-44.zip

3. Read the README file:

113277-44/README.113277-44

4. Apply the patch with the patchadd command.

patchadd 113277-44

5. Reboot your system.

reboot -- -r

## Downloading the VERITAS Volume Manager ASL

VERITAS Volume Manager provides support for the Sun StorageTek 6140 Array in the form of the Array Support Library (ASL). There are ASL software packages for the Solaris 8, 9, and 10 OSs, and for the IBM AIX 5.1 and 5.2 OSs. The ASL must be installed on the same host system as the Volume Manager software to enable it to recognize the Sun StorageTek 6140 Array trays.

Download the ASL and the accompanying README file for the Sun StorageTek 6140 Array from the Sun Download Center,

http://www.sun.com/software/download/. Download the AIX ASL from http://support.veritas.com. The AIX ASL is available only from VERITAS.

- ▼ To Download the Solaris ASL Package
  - 1. Log in as superuser on the Sun server to be connected to the array.
  - 2. Go to the Products Download page:

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

3. In the Search area, search for VERITAS.

The Products Downloads > VERITAS Volume Manager ASL link is displayed.

- 4. Click Download.
- 5. If you have not previously registered, register as follows:
  - a. Click the Register Now link at the bottom of the left column.
  - b. On the registration page, complete the required fields and click Register.

- 6. Log in:
  - a. Type your user name and password in the left column, and click Login.
  - b. On the Terms of Use page, read the license agreement, click Yes to Accept, and click Continue.
- 7. Download the compressed zip file that contains the ASL package for the Sun StorageTek 6140 array and README file.
- 8. Use the unzip command to extract the files.
- 9. Refer to the README file for instructions on installing the VERITAS Volume Manager ASL.
- ▼ To Download the AIX ASL Package
  - 1. Go to the Veritas AIX ASL page:

http://support.veritas.com/docs/279730

A page displays with the ASL installation instructions.

- 2. Read the instructions and click the Download Now button.
- 3. Follow the instructions to uncompress and install the ASL.

## **Known Issues**

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

- "Installation and Initial Configuration Issues" on page 24
- "Hardware and Firmware Issues" on page 25
- "Solaris OS 10 Issues" on page 27
- "Data Replication Issues" on page 28
- "Sun StorageTek Configuration Service Issues" on page 28
- "Command-Line Interface Issues" on page 33
- "Sun Storage Automated Diagnostic Environment Issues" on page 34
- "Documentation Issues" on page 37
- "Localization Issues" on page 40

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

## Installation and Initial Configuration Issues

This section describes known issues and bugs related to installing and initially configuring the Sun StorageTek 6140 Array.

#### Firmware Hangs With Multiple Operations on Volumes

**Bug 6258674** - You should not perform volume operations, such as volume resizing, until volume initialization is complete. The Sun StorageTek 6140 Array can hang if volume resizing operations are done before a volume is initialized.

#### Array ID Is Not Recognized Right After an "Array Reset"

**Bug 6359847** - After the sccs reset array command is run, the array ID is not recognized by the system and cannot be modified.



**Caution** – Resetting the array destroys all user data, including volumes, hosts, and initiators.

**Workaround -** After you reset the array, the name is blank. You can reset the name as follows:

1. Use the sscs command sscs list array array.no.name to provide the World Wide Name (WWN) for the unnamed array.

The output shows, among other things, the WWN for the array:

Array WWN: 60:0A:0B:80:00:16:41:A9:00:00:00:00:42:6D:94:D7

2. Use the WWN in the modify array command to reset the name. For example:

sscs modify -N array-10 -T wwn array
60:0A:0B:80:00:16:41:A9:00:00:00:00:42:6D:94:D7

In this example, the array name is reset to array-10.

DHCP/Static IP Setting Changes Fail

**Bug 6356732** - When modifying the DHCP usage of an Ethernet port on the Controllers page, if you change the DHCP selection from Enable DHCP to Specify Network Configuration without changing the IP address of the port, the change to the DHCP setting will not take effect.

**Note** – After Specify Network Configuration is selected, the IP box may stay grayed out, but the value can be changed.

**Workaround -** If you want to set the Ethernet port to a Static configuration with the same IP address the port is using under DHCP, change the IP address first to a different address, then back to the desired one. The temporary IP address should not currently be in use.

**Note** – Assigning a DHCP-leased IP address to a port as a static address is not recommended since the DHCP server still controls the IP address and might assign it to another device when the lease expires.

#### Help Button Interferes With Session

**Bug 6356119** - The first time the online help window is displayed, the application might log you out.

Workaround - Reenter the application from the main Java Web Console page.

### Hardware and Firmware Issues

This section describes general issues related to the Sun StorageTek 6140 Array hardware and firmware.

#### Cannot Boot From System With a 6768A Direct Attached HBA

**Bugs 6339202 & 6358173** - The 6768A (QLogic 2342) 2-Gb dual-port adapter cannot be used in direct attach mode, and you cannot boot from it.

**Workaround** - To use 6768A in direct attach mode, move the jumpers from pins 1 to 2. To boot using this HBA, move the 6768A jumper pins from 2 to 3 and put a switch between the host and array.

#### Raid 1 Volumes Are Deleted When the Expansion Tray Power Is Cycled

**Bug 6415976** - Volumes on expansion trays are failed by the controller when all access to the expansion tray is lost. A failed volume cannot be recovered even after power to the expansion tray is restored.

Workaround - Follow correct power up and power down procedures.

*Switch Ports Used in a Replication Link Cannot be Used for Regular Data Access* 

**Bug 6411928** - Switch ports used for the dedicated link in a remote replication are not automatically usable as regular ports when the replication link is removed.

**Workaround** - Disable and re-enable the switch port to make it usable for regular data access.

#### Errors From IOM 2A and 2B Ports

**Bug 6417872** - When Small Form-factor Plugs (SFPs) are installed into the I/O Module (IOM) 2A and 2B ports, the front amber fault LED lights and the IOM displays an "H8" error.

Workaround - Do not install SFPs into these slots; they are reserved for future use.

#### MPxIO Auto Failback Operation Fails After a Path Failover/Failback

**Bug 6352085** - A write-cache activation error causes the mpxio failback to not complete when no controller batteries are installed.

**Workaround** - Install batteries in the controller. This will be fixed in Solaris 8 and Solaris 9 patch SAN 4.4.10, and Solaris 10 patch 118833-16 (Sparc) or patch 118855-14 (x86).

#### After a Tray is Power Cycled, Mapping Takes a Long Time to Come Back

**Bug 6388627** - When an expansion tray goes down, access to the volumes and other virtual storage elements on that tray is lost.

Workaround - Restore the correct mapping, pools, and profiles.

## *Faulty Expansion Cable Causes an Event but the Front Panel Status LED Remains Green*

**Bug 6180131** - Using a faulty expansion cable causes the management software to report the array health as Degraded and causes the Sun Storage Diagnostic Environment to report the error Drive tray path redundancy lost. However, the status LED on the front of the chassis does not signal an error and remains green instead of turning amber, as expected.

#### Replacing Failed Disk Drives From Another Array

**Bug 6203836** - If a volume failure on a Sun StorageTek 6140 Array results from failed disk drives, you must be careful when introducing replacement drives that were part of a volume in use by another Sun StorageTek 6140 Array.

**Workaround** - To avoid having the array incorrectly initiate a volume migration process with the newly introduced replacement drives, perform one of the following tasks:

- Verify that the volume on the Sun StorageTek 6140 Array with the failed disk drives has not been deleted. You should leave the volume in a failed state and not delete the volume.
- Verify that the disk drives being taken from the inactive Sun StorageTek 6140 Array are not part of an active volume. If the disk drives are part of an active virtual disk, delete all volumes residing on that virtual disk before removing the disk drives.

### Solaris OS 10 Issues

The following issues are related to Solaris OS 10 incompatibilities.

#### Host Panics During Array Upgrade

**Bug 6378869** - During a live host upgrade with I/O running, the host panics and I/O fails.

**Workaround -** Do not upgrade a host with I/O running. Will be fixed in Solaris 10 patch 118833-16 (SPARC) or patch 118855-14 (x86).

#### Infinite Failover Loop on Host Due to Path Failure

**Bug 6358541** - An infinite failover loop occurs when there is a path failure on the volume of a primary array, when the volume is a part of a replication set.

**Workaround** - This will be fixed in Solaris 10 patch 118833-16 (Sparc) or patch 118855-14 (x86).

The cfgadm -c unconfigure Command Unconfigures UTM LUNs Only and Not Other 'data' LUNs

**Bug 6362850** - The cfgadm -c unconfigure command unconfigures Universal Transport Mechanism (UTM) LUNs only and not other 'data' LUNs. When this happens, you will not be able to unconfigure LUNs.

**Workaround** - Will be fixed in Solaris 10 patch 118833-16 (Sparc) or patch 118855-14 (x86).

## Data Replication Issues

This section lists issues related to data replication.

# Label/PID from Primary Array Copied to Secondary Array in Replication Set

**Bug 6406178** - When a replication set is created between a Sun StorEdge 6130 Array and a Sun StorageTek 6140 Array, the PID from the primary array is copied onto the secondary array. The format command displays the label as type CSM1, whereas luxadm displays the same label as type CSM2.

#### Secondary Volumes Are Not Recognized in a Replication Set

**Bug 6266943** - After becoming a secondary volume of a replication set, a volume that was previously recognized by a host (through the format command) is displayed as drive type unknown. This secondary volume should be designated as a read-only device.

**Workaround** - Ensure that the intended secondary volume is a new (unlabeled) volume. Do not use an existing volume.

## Sun StorageTek Configuration Service Issues

This section describes known issues and bugs related to the Sun StorageTek Configuration Service software.

#### Deleting Initiators That No Longer Appear on the SAN

**Bug 6224251** - When creating initiators on an array previously connected to a host, be aware that should this host be removed and another host attached, the pull-down menu for creating an initiator will show the WWNs for the original host, as well as the WWNs of the new host.

Workaround - Reboot the array.

#### Controller Tray ID Numbering is Unrestricted

**Bug 6418696** - Controller tray IDs can be set to any number between 0 and 99. However, they should be limited to the values of 80 through 99, with expansion trays using 0 through 79. If tray IDs are duplicated, the array will not be able to detect the drives on one of the two trays that have the same ID (which one is arbitrary).

Workaround - Ensure that any assigned tray ID value is not a duplicate.

#### Base Volume Stays Read-Only Even After Snapshot Volume Is Deleted

**Bug 6410568** - A failed base volume stays read-only even after the associated snapshot volume has been deleted. If a reserved volume exceeds threshold, the base volume fails as expected, and further writes to the volume are blocked. After the snapshot volume is deleted, the base volume should regain its read/write permissions.

#### Users See Management LUNs Under Format

**Bug 6340983** - Users can see management LUNs using format and other utilities, causing confusion when LUNs should be hidden. This is corrected by the following patches:

- Solaris 8 data hosts: patch 108974-49 or higher
- Solaris 9 data hosts: patch 113277-44 or higher

#### Patch 113277-44 Causes Errors

**Bug 6433629 -** Patch 113277-44 fixes the problem reported in Bug 6340983, but causes delays and errors when users configure or unconfigure LUNs.

#### After a Firmware Upgrade, luxadm Shows Incorrect Path Information

**Bug 6403778** - After a firmware upgrade, the luxadm display lists two secondary paths instead of one as primary.

Workaround - Use the luxadm command to reset a path to primary.

#### The Configuration Service Wizard Window Title Is Wrong

**Bug 6413513** - The window title for the Configuration Service wizard window title is displayed as "Sun StorEdge 6130"; it should be "Sun StorageTek Configuration Service."

#### Configuration Service GUI Shows Double Views

**Bug 6416083** - The Configuration Service interface shows double views when the interface times out and the user tries to change view. The timeout occurs when multiple applications are running.

Workaround - Close the browser window and reopen it.

# When the Tray ID Is Changed Through the Configuration Service GUI, a Misleading Error Notification Follows

**Bug 6416680** - When you change a tray ID using the Configuration Service software, the component appears to have been replaced with a new component.

**Workaround** - Avoid changing tray IDs. If you must change the tray ID, expect and delete the resulting alarm.

#### Service Advisor Offline Controller Failure

**Bug 6405314** - When using Service Advisor to place a controller offline, an error occurs stating that a connection cannot be opened to an alternate controller. Investigation reveals that Service Advisor has an invalid IP address for the alternate controller.

**Workaround** - Delete and reregister the alternate controller array on Service Advisor. Reset the password and retry the operation.

# Addition and Removal of Initiators From Zones in Fabric Are Not Dynamically Detected

**Bug 6329784** - When an initiator is added or removed from a zone in a fabric, the Configuration Service software does not dynamically detect the change. The WWNs of initiators newly added to the SAN are not displayed.

**Workaround:** If the WWN of a new initiator is not in the drop-down list on the New initiator page, try creating the initiator by manually entering the new WWN. This will force the page to refresh. When you create another new initiator, the WWN will be in the list.

## Modifying the "Disk Scrubbing With Redundancy Enabled" Parameter Does Not Work

**Bug 6408489** - When you use the Configuration Service software to set the "Disk Scrubbing With Redundancy Enabled" parameter from True to False while the Disk Scrubbing Enabled parameter is set to False, the page reports success but the value of Disk Scrubbing Enabled remains False. When you make this change using the CLI, the prompt returns without a message, but the disk scrubbing setting remains the same as it was.

#### Output From luxadm Gives Incorrect Paths

Bug 6400524 - The path information in the luxadm display output is not reliable.

**Workaround -** Before disconnecting cables, use the Configuration Service software to verify that LUNs are not on an active path.

# When One Path of a Device Is Removed, luxadm Fails to Display Both Paths

**Bug 5079007** - When the first path to a device is disabled, luxadm fails to display device information.

#### Volumes Associated with Bypassed Drives Are Displayed as Missing

**Bug 6371462** - The switch setting 2 Gb/s or 4 Gb/s applies to the speed of the internal FC data path to disk drives. When a 2-Gb/s drive is set to 4 Gb/s, the drive enters a status of Bypassed.

Volumes on Bypassed drives are marked as Missing and lose their pool assignment. They are displayed on a separate Ghost Volumes list, with minimal info available. Trays Shows Enabled, OK When Either I/O Module is Removed

**Bug 6416025** - The Configuration Service interface shows a tray health of OK after an I/O module (IOM) is removed from the tray. The health status reflects the state of the tray and batteries, but not of other components such as IOMs and Small Form-factor Plugs (SFPs).

**Workaround -** To monitor the health of these subcomponents, see appropriate events and alarms in the Sun Storage Automated Diagnostic Environment software.

#### Initial format Command Might Fail to Detect All Configured LUNs

**Bug 5084996** - When run for the first time from one of the hosts in a multihost configuration, the format command might fail to detect all 256 or more LUNs created on the Sun StorageTek 6140 Array.

**Workaround** - Wait a few minutes, and then execute a second format command. All volumes should now be detected.

#### Browser Refresh Causes Data Reposting

**Bug 6238963** - If you refresh a Configuration Services page using the browser Reload button, the following message is displayed:

The page you are trying to view contains POSTDATA. If you resend the data, any action the form carried out (such as search or online purchase) will be repeated. To resend the data, click OK. Otherwise, click Cancel.

If you click OK in response, error messages appear or unexpected actions occur.

**Workaround** - Do not use the browser refresh button when using any Java Web Console application, such as Configuration Service. Use the application Refresh button only.

If you do use the browser Refresh button, press the Cancel button in response to the prompt instead of the OK button.

#### Array Locking for Service Advisor Is Not Global

**Bug 6246249** - When the array is locked for a Service Advisor procedure, a reservation message displays in the Sun StorageTek Configuration Service browser interface only on the management host initiating the procedure.

**Workaround** - Using the Storage role, warn others of pending Service Advisor procedures, since they will not receive a warning when making configuration changes from a different host.

## Detection of a Large Numbers of LUNs Is Delayed With the Format Command

**Bug 5084996** - When you run the Solaris format command to detect a large number of LUNs that have just been mapped to a Solaris system from a Sun StorageTek 6140 Array, there might be some delay before the Solaris host detects and reports these newly added LUNs. This behavior typically happens only when more than 100 LUNs are simultaneously mapped to the Solaris system.

**Workaround** - Wait approximately 20 minutes after the volumes have been created for all of the LUNs to be properly detected when you issue the format command. This is fixed in version 4.4.10 (Solaris 8 and 9) of the Sun StorageTek SAN Foundation software.

### Command-Line Interface Issues

This section describes known issues and bugs related to the Sun StorageTek 6140 Array CLI.

#### Remote Scripting CLI Allows Any Command to Be Called

**Bug 6422504** - A user who knows the password and the URL syntax used by the Storage Automated Diagnostic Environment's middle tier for sscs commands could potentially run any system command.

**Workaround -** Change the default password at all the application levels (Storage Automated Diagnostic Environment middle tier and GUI tier) and change the file permissions of the password stored at the UI level, as follows:

1. Set the Storage Automated Diagnostic Environment password to unique value. Use the same password everywhere.

#### **PASSWORD=***xxxxxxx*

2. Set all the default passwords in Storage Automated Diagnostic Environment:

#### cd /opt/SUNWstade/bin

ras\_admin login\_update -1 peer -p \$PASSWORD

```
ras_admin login_update -1 srm -p $PASSWORD
```

```
ras_admin login_update -1 ras -p $PASSWORD
```

ras\_admin login\_update -1 \$PASSWORD

3. Set each password so SLM and Configuration Service can use the Storage Automated Diagnostic Environment Client API.

echo peer:\$PASSWORD > /opt/SUNWstade/DATA/IPC\_Access

chmod 600 /opt/SUNWstade/DATA/IPC\_Access

```
chown noaccess /opt/SUNWstade/DATA/IPC_Access
```

4. Set the master/slave password:

save\_password

Enter password: xxxxxxxx

Confirm password: xxxxxxx

5. Restart services.

## Sun Storage Automated Diagnostic Environment Issues

This section describes known issues and bugs related to the Sun Storage Automated Diagnostic Environment software that may affect operations of the Sun StorageTek 6140 Array. Read the release notes that came with your Sun Storage Automated Diagnostic Environment software for a complete understanding of issues and bugs.

#### Run Agent Skips a Reserved Array

**Bug 6417279** - Whenever a storage system is reserved for maintenance using the Service Advisor, the Run Agent skips the reserved system.

#### *The Service Advisor Tray Midplane Removal/Replacement Procedure Has Problems*

**Bug 6418428** - There are several problems in the tray midplane removal/replacement procedure that make it unusable. If you need to perform tray midplane removal and replacement, call Service.

#### Changing Tray ID Generates Misleading Notification

**Bug 6416680** - When someone changes a tray ID, an email is automatically issued that gives misleading information and incorrectly instructs the user to perform unnecessary remedies. In fact, no action is necessary.

#### Turn On White Locate LED Errors

**Bug 6417891** - In Service Advisor, Array Troubleshooting and Recovery, Recovery From an Overheated Power Supply fails to light the white LED and generates errors.

#### Array Stops Reporting I/O Module Data When a Controller Is Removed

**Bug 5086807** - In Sun StorageTek 6140 Array configurations using expansion trays, if one RAID controller or one of the inter-tray cables connecting the RAID controller to the expansion trays is removed, some expansion tray data fields are reported incorrectly.

This results from the loss of one monitoring path to the expansion tray. The incorrect data fields from the expansion tray can cause the Sun Storage Automated Diagnostic Environment to incorrectly report a firmware revision change on the expansion trays.

**Workaround** - Replace the missing cable or missing RAID controller to restore full and accurate status reporting of the expansion trays.

#### Storage Automated Diagnostic Environment Cannot Run When System Is Reserved for Maintenance

**Bug 6405520** - The Storage Automated Diagnostic Environment agent cannot be run when the system is reserved for maintenance.

**Workaround:** Do not use the reserve maintenance function to redistribute volumes, place a controller offline or online, or perform controller replacement procedures.

#### Removal of Storage Trays Is Not Reflected in Storage Automated Diagnostic Environment Inventory

**Bug 6421335** - When an expansion tray has been removed while the array is still active, it remains listed in the Tray Summary window.

**Workaround** - Release reservation of the array in Service Advisor before attempting to rerun the Storage Automated Diagnostic Environment agent.

#### *Even After Problems Are Repaired and Acknowledged, Alarm Summary Shows Degraded Status*

**Bug 6419046** - The Storage Automated Diagnostic Environment Alarm Summary page shows a status of Degraded on alarms that have been repaired and acknowledged.

**Workaround -** Delete the events in the Storage Automated Diagnostic Environment so the array can report an OK status.

#### Service Advisor Diagram Has Incorrect Description of LED

**Bug 6418380** - The Service Advisor in the Storage Automated Diagnostic Environment has a diagram showing RAID controller LEDs; the LED on the rear of the controller closest to the ID/Diag display is mislabeled as "Power (On or Off)". This is actually the Cache Active LED, as stated correctly in the *Sun StorageTek 6140 Array Getting Starting Guide*.

#### **Displaying Diagnostics**

**Bug 5076153** - Results of diagnostic tests are not updated during the tests on the data hosts or management hosts using Perl Version 5.8.

The following error message appears:

Error on test-name: ERR: Invalid PID:

The test results are updated when the test finishes.

**Workaround** - Run diagnostic tests from the command-line interface on the client, or simply wait for the test to reach completion.

Alternatively, use an older version of Perl.

#### Placing a Controller in the Offline State

**Bug 5096265** - When you manually place a controller offline using the Sun Storage Automated Diagnostic Environment, monitoring applications might report this offline controller as Failed. This is expected behavior. After you place the controller back online, the controller state will change to Optimal.

### **Documentation Issues**

This section describes known issues and bugs related to the online help, the command-line interface sscs man page, or any other Sun StorageTek 6140 Array release documentation.

#### RunMe Command Correction

Both the *Sun StorageTek 6140 Array Getting Starting Guide* and the *6140 Array Host Software CD* booklet state that, to unpack the contents of the compressed installation file, you must double-click the RunMe.bin icon or type the command ./RunMe. This is incorrect. If typing the command, you must execute ./RunMe.bin from the bin directory.

#### Getting Starting Guide Not on the Release CD

The final version of the 6140 Array Getting Starting Guide was not included on the CD-ROM for this release. However, a hardcopy of the Getting Starting Guide is included in the box with the array. The appropriate version of the guide is also available in PDF format on the Sun documentation web site (http://www.sun.com/documentation).

#### Domains For the 6140 Array

Page 136 of the *Sun StorageTek 6140 Array Getting Started Guide* shows a default of 8 domains for 6140 array. There are no default domains for the 6140 array. Also, page 122 mentions enabling premium features for 16 or 64 domains. Optional domains can be purchased in the following allotments:

- 6140-2GB: 4/8/16 domains
- 6140-4GB: 4/8/16/64 domains

# Array Illustration of Switch Zoning Should Display 4 Ports for Each Controller

**Bug 6407953** - The number of Fibre Channel ports shown in illustrations of controllers varies. Disregard the display showing four ports.

# Battery LED Descriptions Incorrect in Getting Starting Guide and Online Help

The descriptions for the battery LEDs in the *6140 Array Getting Starting Guide* and the Configuration Service online help are incorrect. In both places, the data for the LEDs references the power supply instead of the battery. These tables need to be updated to reflect the appropriate data for the battery LEDs.

The following table shows the corrected Battery Backup LED descriptions:

LED/Indicator	Description
Ready-to-Remove	Steady blue indicates that service action can be taken on the battery backup (that is, it can be removed or disconnected) without adverse consequences. Off indicates that the battery is engaged and should not be removed or disconnected.
Battery Fault	Steady amber indicates that the battery requires replacement. Off indicates that the battery does not require replacement.
Battery Pack Charging	Steady green indicates that the battery is fully charged. A slow blink indicates that the battery is charging. Off indicates that the battery is discharged or off.

# *Procedure in Getting Starting Guide Incorrect for Connecting to the Service Interface Menu*

**Bug 6400237** - The *6140 Array Getting Starting Guide* procedure for establishing a connection with the serial port to display the Service Interface menu needs to be updated for Solaris with the following information:

When using the tip application, it is necessary to use ~# to send a Ctrl-Break, as in the following example:

```
diag-280a / # tip -9600 /dev/term/b
connected
->
->
->
-> ~#
Press within 5 seconds: <S> for Service Interface,
<BREAK> for baud rate
Current date: 03/20/06 time: 12:18:42
Enter Password to access Service Interface (60 sec
timeout):
Service Interface Main Menu
_____
 1) Display IP Configuration
2) Change IP Configuration
 3) Reset Storage Array (SYMbol) Password
 Q) Quit Menu
   Enter Selection:
```

#### Enabling Multipathing Software Procedure in the Getting Starting Guide Needs to Be Updated for Solaris OS 10

**Bug 6400929** - The procedure for enabling multipathing software in the *6140 Array Getting Starting Guide* is valid for Solaris OSs 8 and 9. For Solaris OS 10 and above, multipathing must be enabled as follows:

1. Run # stmsboot -e to enable multipathing on all FC ports.

#### # stmsboot -e

WARNING: This operation will require a reboot.

Do you want to continue ? [y/n] (default: y)

#### Instructions On Registering Arrays Need Clarification

Bug 6414602 - Page 99 of the Getting Starting Guide should read as follows:

1. On the Array Summary page, click the Register Button to launch the Register wizard and discover arrays on the subnet.

There are two methods of registering arrays:

- 1. Auto-discovery
- 2. Manual registration

The headings on page 99 should be as follows:

- "Discovering Arrays" should be "Auto-discovering Arrays".
- "Registering an Array" should be "Manually Registering an Array".

#### Volume Snapshot Creation

**Bug 6183884** - The online help for volume snapshots indicates that creating a snapshot causes the array controller tray to suspend input/output (I/O) to the base volume during creation of a physical volume. However, this is incorrect. The I/O is not suspended in this situation.

### Localization Issues

There are no localization issues at this time.

## **Operational Information**

This section provides useful operational information not documented elsewhere.

#### License Required For Storage Domains

The 6140 array does not include default storage domains. You must purchase a premium license to be able to use the storage domain feature.

# When Performing an Array Import, Do Not Modify Management Objects

If you create management objects while an "import array" job is running, it might interfere with the import. Be sure that everyone who uses the destination array does not modify or create any objects (including volumes, initiators, mappings, and so on) while the import is in progress.

#### Using a Volume Before It Is Fully Initialized

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

#### Controller Tray Battery Information

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

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

#### Data Replication Warnings

Data replication can generate three warnings in the Sun Storage Automated Diagnostic Environment software that require no action:

RMTVOL.Link Up (0x6502)

This warning indicates a positive state change. The data replication link is operating nominally.

RMTVOL.Link Down (0x6503)

This warning indicates a negative state change. Either the data replication link is physically broken, or the round-trip time exceeds the maximum allowed delay.

RMTVOL.Node WWN Changed Failed (0x6505)

This warning indicates a significant change in the World Wide Name (WWN) of the mirrored volume and may indicate a change in configuration.

## **Release Documentation**

Following is a list of documents related to the Sun StorageTek 6140 Array. For any document number with *nn* as a version suffix, use the most current version available.

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

Application	Title	Part Number
Site planning information	Sun StorageTek 6140 Array Site Preparation Guide	819-5046-nn
Regulatory and safety information	Sun StorageTek 6140 Array Regulatory and Safety Compliance Manual	819-5047-nn
Installation and initial configuration instructions	Sun StorageTek 6140 Array Getting Starting Guide	819-5045-nn
Instructions for installing the Sun StorEdge Expansion cabinet	Sun StorEdge Expansion Cabinet Installation and Service Manual	805-3067-nn
Instructions for installing the Sun Rack 900/1000 cabinets	Sun Rack Installation Guide	816-6386-nn
Instructions for installing the Sun Fire cabinet	Sun Fire Cabinet Installation and Reference Manual	806-2942-nn
Release-specific information for the Storage Automated Diagnostic Environment	Sun Storage Automated Diagnostic Environment Enterprise Edition Release Notes	819-0432-nn
Quick-reference information for the 6140 array CLI	SSCS (1M) CLI Quick Reference Card	819-5051- <i>nn</i>

In addition, the Sun StorageTek 6140 Array includes the following online documentation:

Sun StorageTek Configuration Service online help

Contains system overview and configuration information.

Sun Storage Automated Diagnostic Environment online help

Includes system maintenance, management, and basic troubleshooting information.

Service Advisor

Provides FRU replacement procedures with system information in a section of the Sun Storage Automated Diagnostic Environment interface.

sscs man page commands

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

## Service Contact Information

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

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

## Third-Party Web Sites

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

## Cable Removal

This appendix describes how to remove a cable (Fibre Channel copper cables or optical Small Form-factor Plugs, or SFPs) from an expansion port on a controller or expansion tray.

There is a metallic adapter on the cable end for plugging the cable into the port. The adapter has a tab on the underside for releasing and pulling the cable out of the slot, but on some cables the tab is too short (especially in the confined space at the rear of a controller).

The adapter also has a latch on the top of it, that locks the cable into the port. FIGURE A-1 shows the cable end adapter with the latch being pushed forward.



FIGURE A-1 Cable End With Adapter and Latch

To remove the cable from the port, you must push the latch forward and pull the cable back at the same time. In FIGURE A-1, the left arrow shows the latch being pushed left, and the right arrow shows the cable being pulled right. If space is tight at the back of the tray, you may need to use a small flat screwdriver to push the latch forward with one hand while pulling out the cable with the other.

FIGURE A-2 shows a cable being removed from an expansion port (1A) on a controller tray.



**FIGURE A-2** Removing a cable from an expansion tray.

## **Disk Drive Insertion**

This appendix describes how to properly insert a disk drive into a controller or expansion tray.

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

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

FIGURE B-1 shows a drive being inserted into the chassis the correct way.



FIGURE B-1 Inserting a Disk Drive.

When the drive is completely installed, the drive and handle will be flush with the others, as shown in FIGURE B-2.



FIGURE B-2 Successfully Inserting the Disk Drive



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

FIGURE B-3 shows the wrong way to insert the drive.



FIGURE B-3 Incorrect Method of Inserting a Hard Drive