



# Sun StorageTek™ Common Array Manager Software Release Notes

---

Release 6.4

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

Part No. 820-7589-10  
April 24, 2009

Submit comments about this document by clicking the Feedback[+] link at: <http://docs.sun.com>

Copyright 2009 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, U.S.A. All rights reserved.

Sun Microsystems, Inc. has intellectual property rights relating to technology that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the U.S. patents listed at <http://www.sun.com/patents> and one or more additional patents or pending patent applications in the U.S. and in other countries.

This document and the product to which it pertains are distributed under licenses restricting their use, copying, distribution, and decompilation. No part of the product or of this document may be reproduced in any form by any means without prior written authorization of Sun and its licensors, if any.

Third-party software, including font technology, is copyrighted and licensed from Sun suppliers.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and in other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, AnswerBook2, docs.sun.com, Sun StorEdge, Solaris, Java, Sun StorageTek, and Solstice DiskSuite are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S., or its subsidiaries, and in other countries.

All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and in other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

Legato Networker is a registered trademark of Legato Systems Inc.

Netscape Navigator and Mozilla are trademarks or registered trademarks of Netscape Communications Corporation in the United States and other countries.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

U.S. Government Rights—Commercial use. Government users are subject to the Sun Microsystems, Inc. standard license agreement and applicable provisions of the FAR and its supplements.

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

---

Copyright 2009 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, Californie 95054, Etats-Unis. Tous droits réservés.

Sun Microsystems, Inc. a les droits de propriété intellectuels relatants à la technologie qui est décrit dans ce document. En particulier, et sans la limitation, ces droits de propriété intellectuels peuvent inclure un ou plus des brevets américains énumérés à <http://www.sun.com/patents> et un ou les brevets plus supplémentaires ou les applications de brevet en attente dans les Etats-Unis et dans les autres pays.

Ce produit ou document est protégé par un copyright et distribué avec des licences qui en restreignent l'utilisation, la copie, la distribution, et la décompilation. Aucune partie de ce produit ou document ne peut être reproduite sous aucune forme, par quelque moyen que ce soit, sans l'autorisation préalable et écrite de Sun et de ses bailleurs de licence, s'il y en a.

Le logiciel détenu par des tiers, et qui comprend la technologie relative aux polices de caractères, est protégé par un copyright et licencié par des fournisseurs de Sun.

Des parties de ce produit pourront être dérivées des systèmes Berkeley BSD licenciés par l'Université de Californie. UNIX est une marque déposée aux Etats-Unis et dans d'autres pays et licenciée exclusivement par X/Open Company, Ltd.

Sun, Sun Microsystems, le logo Sun, AnswerBook2, docs.sun.com, Sun StorEdge, Solaris, Java, Sun StorageTek, et Solstice DiskSuite sont des marques de fabrique ou des marques déposées de Sun Microsystems, Inc., ou ses filiales, aux Etats-Unis et dans d'autres pays.

Netscape Navigator et Mozilla est une marques de Netscape Communications Corporation aux Etats-Unis et dans d'autres pays.

Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits portant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

L'interface d'utilisation graphique OPEN LOOK et Sun™ a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développement du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une licence non exclusive de Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciées de Sun qui mettent en place l'interface d'utilisation graphique OPEN LOOK et qui en outre se conforment aux licences écrites de Sun.

LA DOCUMENTATION EST FOURNIE "EN L'ÉTAT" ET TOUTES AUTRES CONDITIONS, DECLARATIONS ET GARANTIES EXPRESSES OU TACITES SONT FORMELLEMENT EXCLUES, DANS LA MESURE AUTORISEE PAR LA LOI APPLICABLE, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE A LA QUALITE MARCHANDE, A L'APTITUDE A UNE UTILISATION PARTICULIERE OU A L'ABSENCE DE CONTREFAÇON.



# Contents

---

<b>Sun StorageTek Common Array Manager Software Release Notes</b>	<b>1</b>
About Sun StorageTek Common Array Manager Software	2
Features	2
Release Contents	3
Licensing Optional Premium Features	4
Documentation	6
Sun Welcomes Your Comments	6
System Requirements	7
Supported Arrays	7
Supported Platforms and Required Packages	8
Required Patches	10
Solaris Patches	10
File Space Requirements	12
About Windows Service Packs	13
Open Ports Required on Management Host	13
Supported Platforms for the Remote CLI Client	14
Supported Web Browsers	14
Best Practices for Browser Performance	15
Supported Languages	16

Installing and Upgrading CAM	17
Installation Requirements	17
Prerequisites	18
Installation Logs	20
About the Software Installation DVD	20
Installing From a Downloaded File	20
Supported Upgrades	21
CLI (Minimal) Installation	21
Performing a CLI CAM Installation	22
Uninstalling a CLI CAM Installation	23
Uninstalling a Previous CAM Version	23
New Custom Installation Options	24
Pre-install Device Plug-in Check	24
Core Software Packages	25
Solaris Sparc/X86	25
Linux	25
Windows	25
Plug-in Software Packages	25
Array Firmware Delivered with CAM	26
Firmware Patches	26
Firmware Installation Locations	27
Installing the Firmware Baseline	27
Firmware for Sun StorageTek 2500 Series Arrays	28
Third Expansion Tray (48-Drive) Cabling for 2500 Series	30
Firmware for FlexLine Arrays	31
CSM200 Requirements	34
About DACstore	34
Supported Expansion Modules	35

Upgrading Firmware for Additional Expansion Trays.	36
Upgrading Expansion Modules	36
Upgrading Firmware for Additional Expansion Modules	37
Known Issues and Operational Information	39
Array Operational Information and Issues	40
Provisioning Arrays	40
Configuration Issues	46
Documentation Issues	58
Firmware Issues	60
In-Band Array Management - Operational Information and Issues	61
About the RAID Array Proxy Agent	61
Known RAID Array Proxy Agent Limitations	62
Solaris: Checking the UTM LUNs and Start/Stop of the Proxy Agent	62
Linux: Checking The UTM LUNs and Start/Stop of the Proxy Agent	63
Windows: Checking The UTM LUNs and Start/Stop of the Proxy Agent	64
Localization Issues	68
Solaris Issues	68
Notable Updates/Fixes in this Release	70
Array Firmware Bug Fixes	70
Sun Microsystems Support	72
Third-Party Web Sites	72



# Sun StorageTek Common Array Manager Software Release Notes

---

This document contains important information about Release 6.4 of the Sun StorageTek™ Common Array Manager software, including requirements and issues that can affect installation and operation.

**Sun Storage J4000 series arrays/Sun Blade 6000 Disk Module customers:**

Please install the 6.4 patch release to upgrade your current version of CAM. It will include upgrades and enable Configuration Access (SAS Zoning) features to support your arrays.

**TABLE 1** CAM 6.4 Platform and Firmware Patches

Operating System	Platform Patch	Firmware Patch
Solaris	141574-01 Solaris SPARC/141577-01 Solaris X86	141484-01
Windows	141575-01	141485-01
Linux	141576-01	141486-01

These Release Notes include the following sections:

- [“About Sun StorageTek Common Array Manager Software” on page 2](#)
- [“Documentation” on page 6](#)
- [“System Requirements” on page 7](#)
- [“Installing and Upgrading CAM” on page 17](#)
- [“Array Firmware Delivered with CAM” on page 26](#)
- [“Known Issues and Operational Information” on page 39](#)
- [“Notable Updates/Fixes in this Release” on page 70](#)
- [“Third-Party Web Sites” on page 72](#)

---

# About Sun StorageTek Common Array Manager Software

The Sun StorageTek Common Array Manager (CAM) software provides an easy-to-use interface from which you can configure, manage, and monitor Sun StorageTek and Sun Storage arrays. CAM software includes the following:

- Browser interface
- Local command line interface
- Remote command line interface

---

**Note** – The command line interfaces (CLIs) perform the same control and monitoring functions as the browser interface. For most new users, managing the array with the browser interface is recommended because it is easier to use if you're not familiar with the CLI.

---

To obtain a general overview and detailed technical information, go to:

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

Click the “Get It” tab to obtain the latest information and version available.

## Features

- New Custom Installation Options  
See “[New Custom Installation Options](#)” on page 24
- New 7.50.xx.xx firmware for the 6140, 6540 FLX380, 6580 and 6780 arrays  
See “[Array Firmware Delivered with CAM](#)” on page 26
- New features supported in the 6580 and 6780:
  - 448 drive support for XBB2
  - 8Gb FC w/ XBB2
  - 8Gb & 4Gb Host Card Mixed
  - Mixed Drive Support (drives within a tray)
  - Mixed Tray Support (CSM100) - must be on segregated loop



- Support for 7.35.xx.xx firmware for 2500 Series arrays with the following features:
  - Third Expansion Tray (48-Drive) Cabling patch
  - RAID 6
  - 4, 8 and 16k Cache block sizes
  - >2TB LUN Support (varies with operating system)
  - Volume-Copy (optional)
  - Portable VDisks
  - Batch Volume Operations
  - Varying Cache Block size
  - IPV6 Support
  - Increased Number of Global Hot Spares
  - Mixed Drive Support
- 8K Cache Block size
- Support for in-band management for Solaris x86 and Microsoft Windows  
See [“In-Band Array Management - Operational Information and Issues”](#) on page 61.
- CLI Minimal Installation  
See [“CLI \(Minimal\) Installation”](#) on page 21.
- Data In Place Migration (DIPM) and the concept of portable vdisks

## Release Contents

[TABLE 1](#) lists the version information for the software included in this release.

**TABLE 1** Sun StorageTek CAM DVD Contents

Type	Version
Common Array Manager	6.4.0
Java WebConsole software	3.0.5
Java 2 Software Development Kit	1.5
Firmware files	See <a href="#">“Array Firmware Delivered with CAM”</a> on page 26
Remote scripting CLI client	2.1.4

# Licensing Optional Premium Features

To use optional premium features, you must purchase licenses. When you order licenses, they will be sent to you with instructions on how to activate the features. For more information, search the Help pages for these topics:

- About Licensed Features
- Adding a License
- Displaying License Information
- Managing Licenses

The following licenses for premium features are available from Sun:

**TABLE 2** Premium Feature Licenses: 06.nn.nn.nn and 07.xx.xx Controller Firmware

Premium Feature	6540 Array	6140 Array	6130 Array	2500 Arrays	FLX240 Array	FLX280 Array	FLX380 Array
Data Snapshot	X	X	X	X	X	X	X
Data Volume Copy	X	X	X	X	X	X	X
Data Replicator	X	X	X		X	X	X
4 Domains	X	X		X	X	X	X
Upgrade 4 to 8 Domains	X	X			X	X	X
8 Domains	X	X		X	X	X	X
Upgrade 8 to 16 Domains	X	X	X		X	X	X
16 Domains	X	X	X	X	X	X	X
Upgrade 16 to 64 Domains	X	X	X		X	X	X
64 Domains	X	X	X		X	X	X
Combo Data Snapshot and 8 Domains	X	X				X	X
Combo Data Snapshot, Data Volume Copy, Data Replicator, and 64 Domains	X	X	X		X	X	X
Combo Data Snapshot, Data Volume Copy	X	X	X		X	X	X
Combo Data Snapshot, Data Volume Copy, and Data Replicator	X	X	X		X	X	X

**TABLE 3** Premium Feature Licenses for 07.xx.xx Controller Firmware Only

Premium Feature	6140 Array	6540 Array	6570 Array	6580 Array
Enhanced Data Snapshot	X	X	X	X
Enhanced Data Snapshot Upgrade	X	X	X	X
Enhanced Data Replicator	X	X	X	X
Enhanced Data Replicator Upgrade	X	X	X	X
2 Domains	X	X	X	X
Upgrade 2 to 4 Domains	X	X	X	X
Upgrade 16 to 32 Domains	X	X	X	X
32 Domains	X	X	X	X
Upgrade 32 to 64 Domains	X	X	X	X
Upgrade 64 to 96 Domains	X	X	X	X
96 Domains	X	X	X	X
Upgrade 96 to 128 Domains	X	X	X	X
128 Domains	X	X	X	X
Upgrade 128 to 256 Domains		X	X	X
256 Domains		X	X	X
Upgrade 256 to 512 Domains		X	X	X
512 Domains		X	X	X

---

**Note** – Arrays should be named before licenses are added. Otherwise, when users select to reset storage configuration for an array, the name might not list on the License Summary page.

---

---

# Documentation

For hardware information, refer to the array's release notes and hardware installation guide.

You can search for Sun documentation at:

<http://www.sun.com/documentation>

Online Help and manpages are incorporated into the software. The following table lists other documentation related to CAM:

**TABLE 4** Common Array Manager Documentation

<b>Title</b>	<b>Part Number</b>
<i>Sun StorageTek Common Array Manager CLI Guide</i>	820-6662
<i>Sun StorageTek Common Array Manager Software Installation Guide</i>	820-5747
<i>Sun StorageTek 2500 Series Array Firmware Upgrade Guide</i>	820-6362
<i>Sun StorageTek 2500 Series Array Release Notes</i>	820-6247
<i>Sun Storage 6580/6780 Hardware Installation Guide</i>	820-5773
<i>Getting Started Guide for Sun Storage 6580/6780 Rack Mounted Arrays</i>	820-5772
<i>Sun StorageTek MPIO Device Specific Module Installation Guide for Microsoft Windows OS Platform</i>	820-4737
<i>Sun StorageTek RDAC Failover Driver Installation Guide for Linux OS</i>	820-4738
<i>Sun Storage 6x80 Array Release Notes for CAM 6.4</i>	820-7490

---

## Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. Submit comments about this document by clicking the Feedback[+] link at <http://docs.sun.com>. Please include the title and part number of your document with your feedback:

*Sun StorageTek Common Array Manager Release Notes*, part number 820-7589-10.

---

# System Requirements

System requirements for the Sun StorageTek Common Array Manager software are described in the following sections:

- [“Supported Arrays” on page 7](#)
- [“Supported Platforms and Required Packages” on page 8](#)
- [“File Space Requirements” on page 12](#)
- [“About Windows Service Packs” on page 13](#)
- [“Supported Platforms for the Remote CLI Client” on page 14](#)
- [“Supported Web Browsers” on page 14](#)
- [“Supported Languages” on page 16](#)

## Supported Arrays

CAM software supports the following Sun storage systems:

- Sun StorageTek Flexline 240 Array
- Sun StorageTek Flexline 280 Array
- Sun StorageTek Flexline 380 Array
- Sun StorageTek 2510 (iSCSI)
- Sun StorageTek 2530 Array (SAS)
- Sun StorageTek 2540 Array (FC)
- Sun StorEdge 6130 Array
- Sun StorageTek 6140 Array
- Sun StorageTek 6540 Array
- Sun StorageTek 6580 Array
- Sun StorageTek 6780 Array

# Supported Platforms and Required Packages

**TABLE 5** Management Host Platforms

Platform	Operating System	CPU	Minimum System Memory
SPARC server or workstation	Solaris 9 OS 8/03	UltraSPARC 3 or better (750 MHz)	1 GB
	Solaris 10 OS		
Windows Servers	Windows 2003 with Service Pack 2 Windows XP Professional with Service Pack 3* Windows 2008	1.5 GHz PC	500 MB
x64 computer	Red Hat Linux 4u6	x64	500 MB
	Red Hat Linux 5u1		
	SuSE Linux Enterprise Server 10 SP2		
	Suse Linux Enterprise Server 9 SP4		
x64 or x86 computer	Solaris 10 OS	x64 or x86	1 GB

\* Windows XP Home Edition is not supported.

[TABLE 6](#) lists Solaris packages that must be installed on your Solaris host. Installing the minimum Solaris operating system as listed in [TABLE 5](#) will install all but the last four packages. Those packages are required by Java, but are not used by the management software.

**TABLE 6** Required Solaris Packages

File	Description
SUNWtcatu	Tomcat Servlet/JSP Container
SUNWcar	Core Architecture, (Root)
SUNWcsd	Core Solaris Devices
SUNWcsl	Core Solaris, (Shared Libs)
SUNWcsr	Core Solaris, (Root)
SUNWcsu	Core Solaris, (Usr)
SUNWkvm	Core Architecture, (Kvm)
SUNWlibC	Sun Workshop Compilers Bundled libC

**TABLE 6** Required Solaris Packages

File	Description
SUNWmfrun	Motif RunTime Kit
SUNWxwice	X Window System Inter-Client Exchange (ICE) Components
SUNWxwplt	X Window System platform software
SUNWxwrtl	X Window System & Graphics Runtime Library Links in /usr/lib

[TABLE 7](#) lists Linux packages and libraries that must be installed on your Linux host. The 32-bit versions of the packages and files are required.

**TABLE 7** Required Linux Packages

File	Version
fileutils	4.0-8
gawk	3.0.4-1
glibc	2.1.2-11
ld-linux.so.2	-
libc.so.6	-
libc.so.6	(GLIBC_2.0)
libc.so.6	(GLIBC_2.1)
libc.so.6	(GLIBC_2.1.2)
libc.so.6	(GLIBC_2.1.3)
libcrypt.so.1	-
libcrypt.so.1	(GLIBC_2.0)
libdl.so.2	-
libpam.so.0	-
sh-utils	2.0-1
textutils	2.0-2
libstdc++.so.5	-
libstdc++.so.5	(CXXABI_1.2)
libstdc++.so.5	(GLIBCPP_3.2)
libstdc++.so.5	(GLIBCPP_3.2.2)

## Required Patches

For the latest patches available for your system, check SunSolve at:

<http://www.sunsolve.sun.com>

The latest patches on SunSolve can be quickly found by referencing the Support section of the Common Array Manager product page here:

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

### **Sun Storage J4000 series arrays/Sun Blade 6000 Disk Module customers:**

Please wait for the 6.4 patch release to upgrade your current version of CAM. It will include upgrades and enable Configuration Access (SAS Zoning) features to support your arrays.

**TABLE 2** CAM 6.4 Platform and Firmware Patches

Operating System	Platform Patch	Firmware Patch
Solaris	141574-01 Solaris SPARC/141577-01 Solaris X86	141484-01
Windows	141575-01	141485-01
Linux	141576-01	141486-01

## Solaris Patches

For the latest patches available for your system, check SunSolve at:

<http://www.sunsolve.sun.com>

To obtain patches, install s10u6.

The SCSI Enclosure Services Driver (SES) must be patched in order for CAM to do discovery and manage these types of arrays.



Solaris 10 data host SMP support for CAM 6.4 requires patches 137137-09 and 137138-09.

**TABLE 3** Required Solaris 10 Update 5 (11/08) SES and SMP Patches

Solaris 10 i386	Solaris 10 sparc
138881-01	138880-01
118344-14	118731-01
120901-03	119578-30
121334-04	118822-30
119255-50	118918-24
121127-02	120900-04
113000-07	121133-02
117435-02	119254-50
118844-30	119042-11
119043-11	118833-36
121264-01	119374-13
122035-05	119574-02
123840-04	121901-02
118855-36	122539-05
118919-21	120272-22
119375-13	122640-05
119575-02	123839-07
121902-02	126897-02
122532-04	125369-13
120273-24	119689-07
122641-06	125503-02
125370-06	125547-02
125504-02	126419-01
125548-02	120011-14
126420-01	125891-01
126424-03	126540-02

**TABLE 3** Required Solaris 10 Update 5 (11/08) SES and SMP Patches

Solaris 10 i386	Solaris 10 sparc
120012-14	127755-01
127756-01	127127-11
127128-11	125555-02
125556-02	138866-02
138867-02	137137-09
138884-01	
137138-09	

## File Space Requirements

**TABLE 8** CAM File Space Requirements

Operating System	Disk Space	Directory Space
Solaris 9 OS 8/03	450 MB	root – 5 MB
Solaris 10 OS		/tmp – 210 MB
		/usr – 40 MB
		/var – 155 MB
		/opt – 715 MB
Windows XP Professional Edition with SP2 Note: Windows XP Home Edition is not supported.	1225 MB on system drive	Not Applicable
Windows 2003 with SP1 or higher		Not Applicable
Windows 2008		Not Applicable
Red Hat Enterprise Linux AS Releases 4 and 5.1	450 MB	root – 5 MB
SuSE Linux 10 and 9		/tmp – 120 MB
		/usr – 155 MB
		/var – 180 MB
		/opt – 595 MB

**Note** – For Solaris and Linux, the base packages are installed in /opt, root and /usr, and runtime files are stored in /var and /tmp. Disk usage estimates for the runtime files are based on a large configuration with 50 storage arrays.

# About Windows Service Packs

---

**Caution** – Before installing CAM on Windows: Be sure a file or directory named “%SystemDrive%\Program” does not exist. This file can prevent some applications from functioning properly. If it does exist, rename the file to “%SystemDrive%\Program1.”

---

If needed, download the files from the Microsoft Download site. You must be logged in to the Windows system as an administrative user.

The array installation files and installers are provided in a compressed file on the DVD. The process unpacks the contents of the file on the host and then proceeds with the installation.

After the installation on a Windows platform, you will need to configure the Windows firewall on each host to allow an exception for port 6789.

For more information, refer to the appropriate product documentation.

## Open Ports Required on Management Host

Open the following incoming and outgoing ports for secure-by-default Solaris, Linux, and Windows platforms:

- Incoming Ports
  - TCP 6788 - console HTTP port that redirects to 6789
  - TCP 6789 - console HTTPS port
- Outgoing Ports
  - TCP 25 - SMTP used for email event notification from FMS
  - UDP 161 - SNMP used for event notification traps from FMS
  - TCP 2463 - used for RPC (remote procedure calls) with the arrays
- Proxy Agent Ports
  - Use open port 8653 only if a proxy agent is used.
- For instructions on how to open a port through the firewall using Windows, refer to the documentation/online Help for that operating system.

# Supported Platforms for the Remote CLI Client

The remote scripting CLI client sends commands to a management host, which in turn sends the commands to the array.

[TABLE 9](#) lists remote platforms from which you can run the CLI client:

**TABLE 9** Remote CLI Client Platforms

OS	Version
Solaris 9 SPARC	8/03 or higher
Solaris 10 SPARC	any
Solaris 10 x86	any
Windows Server 2003	Standard/Web/ Enterprise Edition; SP2
Windows 2008	any
Windows XP Professional Ed.	SP2
Red Hat Linux	4u6, 5u1
SuSE Linux	9, 10
IBM AIX	3.5
HP-UX	B.11.23

## Supported Web Browsers

**TABLE 10** Supported Web Browsers

Browser	Minimum Version
Firefox	2.0
Microsoft Internet Explorer	5.5 Note: Version 7 is not supported.

# Best Practices for Browser Performance

For best web browser performance while using CAM, consider the following items:

- Enable pop-up windows.
- Specify No Proxy for the Common Array Manager host, to avoid situations where your browser might hang, time out, or generate incorrect error messages. From Preferences > Advanced > Proxies (or a similar path, depending on your browser), add the Common Array Manager management host name to the “No Proxy for” section.
- Be aware that Firefox and Mozilla browsers share session information: If you log in to Common Array Manager and then open another browser instance or tab pointed to the same URL, you access it through the same user session, so there is no need to log in again. The Current Logins field in the Common Array Manager does not increment to include the new window as another login. Therefore, if you require a different user session, you must define a different profile or log in from a different machine. This does not happen with Microsoft Internet Explorer browsers, so you can also open a new session using that browser.
- Recent Firefox versions may require you to accept and add a security certificate prior bringing up the authentication page.

## *Array Registration Progress Incomplete with Firefox 3.0.1*

Using Solaris 10 and Firefox 3.0.1, the progress of array registration is not finishing in registration wizard with Firefox 3.0.1. To work around this issue, be sure to perform Step 5 below when registering an array:

- 1. Click the Registration Button.**
- 2. Enter an array IP number.**
- 3. Click Next.**
- 4. Click Finish to display the Results window.**

The progress bar is not in motion and the Closed button is active.

- 5. Click the Close button.**

# Supported Languages

The locales are installed as part CAM's installation and there is no need to download any additional software other than the CAM Software and most recent patch updates.

For Solaris, Linux and Windows, the Browser User Interface for the Sun StorageTek Common Array Manager is available in:

- English
- French
- Japanese
- Simplified Chinese

The CLI is available in:

- English

The online Help is available in:

- English
- Japanese
- Simplified Chinese

The man pages are available in:

- English
- Japanese

---

# Installing and Upgrading CAM

CAM installation procedures are described in the *Sun StorageTek Common Array Manager Software Installation Guide* (part number 820-5747). This section describes the following:

- “Installation Requirements” on page 17
- “Prerequisites” on page 18
- “Installation Logs” on page 20
- “About the Software Installation DVD” on page 20
- “Installing From a Downloaded File” on page 20
- “Supported Upgrades” on page 21
- “CLI (Minimal) Installation” on page 21
- “Performing a CLI CAM Installation” on page 22
- “Uninstalling a CLI CAM Installation” on page 23
- “Uninstalling a Previous CAM Version” on page 23
- “New Custom Installation Options” on page 24

---

**Caution** – Before installing CAM on Windows, the file or directory “%SystemDrive%\Program” should not exist. If it does exist, rename the file to “%SystemDrive%\Program1.” The existence of this file could cause certain applications to not function correctly.

---

## Installation Requirements

You can install CAM on a local management host or on a central management server.

Before installing the management software, do the following:

- Read the entire installation instructions.
- Complete the array hardware installation.
- Check the installation space requirements.

To obtain a general overview and detailed technical information, go to:

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

Click the “Get It” tab to obtain the latest information and version available.

After initial installation and configuration, you can upgrade the management software and firmware with each release.

During installation, the firmware update bundle is installed on the host server. For details about upgrading array firmware, refer to the appropriate documentation.

- To search for a document from Sun's website, go to:

<http://www.sun.com/documentation>

Type the document title, part of the title, or the document's part number in the "Search" field, and press Return.

### *Registration Page Displays Upon Initial Installation*

When you install the CAM software for the first time, upon logging into the Browser User Interface, a registration page will display. Fill out the information before continuing.

During the initial storage array registration process, CAM prompts you to register with the Auto Service Request service by displaying the Auto Service Request (ASR) Setup page. This page continues to display until you either fill out the page and click OK, or click Decline to either decline or defer ASR service registration.

---

**Note** – You must register the array with ASR before using the Test button.

---

## Prerequisites

Before you perform an installation procedure, do the following:

### **1. Locate the management software.**

The management software is distributed on the Sun StorageTek Common Array Manager Software DVD and is also available from the Sun website.

To obtain a general overview and detailed technical information, go to:

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

Click the "Get It" tab to obtain the latest information and version available.

### **2. Locate the most current patches here:**

<http://www.sunsolve.sun.com>

### **3. If supported by your array types, verify that you have license certificates for all premium features, including storage domains.**

See "Licensing Optional Premium Features" on page 4.



**4. Read the installation instructions.**

See “[Documentation](#)” on page 6.

**5. Log in as `root` (Solaris and Linux) or as a user with full administration privileges—not just local administrator privileges—(Windows) on the management host.**

**6. Note that before starting the installation script, the DVD verifies host requirements, such as the following:**

- Unsupported versions of related software such as CAM releases prior to 5.x, Storage.
- Unsupported versions of operating systems or software
- Insufficient disk space (see “[File Space Requirements](#)” on page 12)

If the host meets the requirements, the script will search for earlier versions and determine if a new installation or an upgrade/baseline installation is necessary. If the script detects that there is no earlier version installed, it will perform a completely new installation.

*Prerequisites for Solaris Zones*

- Before you install CAM in a sparse-root zone, install Lockhart 3.0.5 with its L10N (Localization) packages in the global zone.
- For Solaris 10, do not attempt to run the Lockhart setup script when logged into the local zone. The CAM installation prevents this. Either install Lockhart into a whole root zone or install/upgrade Lockhart in the global zone before installing CAM into the local zone.

For more information, contact Sun Microsystems Support Services at:

<http://www.sun.com/contact/support.jsp>

# Installation Logs

If installation failure occurs, check the available disk space.

For more information, consult the installation logs.

**TABLE 4** Installation Logs

Platform	Installation Log Location
Solaris	/var/sadm/install/se6000/se6000_Host_SW.log
Linux	/var/opt/cam
Windows 32-bit	%SystemDrive%\Program Files\Common Files\Sun Microsystems\se6000
Windows 64-bit	%SystemDrive%\Program Files (x86)\Common Files\Sun Microsystems\se6000

## About the Software Installation DVD

The Sun StorageTek Common Array Manager Installation Software DVD provides three installation-related wizards:

- GUI software installer – Enables you to use a graphical user interface wizard to install a selection of applications to support a local or remote management host.
- CLI software installers – Enables you to use a CLI script to install a selection of applications to support a local or remote management host.
- Uninstaller – Enables you to uninstall the management and remote host software from a host.

## Installing From a Downloaded File

To obtain a general overview and detailed technical information, go to:

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

Click the “Get It” tab to obtain the latest information and version available.

After initial installation and configuration, you can upgrade the management software and firmware with each release.

## Supported Upgrades

**Solaris:** Upgrades from CAM 5.1.1.2, 5.1.2.2, 5.1.3.2, and 6.x to this release are supported. You are not required to uninstall the existing CAM version before installing this release.

**Linux:** Upgrades are supported.

**Windows:** Upgrades are supported.

## CLI (Minimal) Installation

You can perform a minimal installation that enables one of two options: CLI or CLI with firmware. In both cases, this installation is approximately 10%-20% of the size of the full CAM installation since the Graphical User Interface (GUI) is not installed.

After the CLI-only Installation mode is chosen, the option will be given to make the installation on this host a proxy to another host running the full installation of CAM for the purposes of aggregating multiple proxy hosts.

---

**Note** – Minimal installation can stand alone, whereas Remote Client installation requires a fully installed image on a separate host.

---

This light-weight management solution is installed on a data host attached to the array. The data host can also serve as a management host using the CLI only installation option and provides:

- Array management and monitoring capabilities
- Local CLI
- Array configurations supported in full installation
- Optional array firmware

For complete instructions on CLI Minimal Installation, refer to the appropriate documentation at:

<http://www.sun.com/documentation>

Type the document title, part of the title, or the document's part number in the "Search" field, and press Return.

# Performing a CLI CAM Installation

For complete instructions on CLI (Minimal) Installation, refer to the appropriate documentation. See [“Documentation” on page 6](#).

**1. From the Common Array Manager Installation page, select one of these options in the Select a feature bundle list:**

- CLI with Firmware (management host software; CLI for local users, remote users, and remote management host; array firmware)
- CLI Only (management host software; CLI for local users, remote users, and remote management host)

---

**Note** – Array firmware files are not installed with the CLI Only option. Because firmware is not installed, the firmware analysis feature is not available with this installation.

---

**2. Click Next and follow the prompts by pressing 1 for Next, 3 to Cancel, or 5 to Redisplay.**

The software will notify you as it checks your system and does any or all of the following:

- Uninstalls any old features
- Installs Java 2 Standard Edition (private copy)
- Installs Sun StorageTek Configuration Service BUI
- Installs Sun StorageTek Fault Management Services
- Installs Sun StorageTek Array Firmware
- Installs Sun StorageTek Common Array Manager
- Creates uninstaller
- Finalizes the Vital Product Data Registry.

**3. Press 3 to Finish or 5 to Redisplay.**

# Uninstalling a CLI CAM Installation

1. From the host software installer, select **Uninstall**.
2. Click **Next** and follow the prompts by pressing **1** for **Next**, **3** to **Cancel**, or **5** to **Redisplay**.

The software will notify you as it checks your system and does the following:

- prepares for uninstallation
- uninstalls Java 2 Standard Edition
- uninstalls Sun StorageTek Fault Management Services
- finalizes the Vital Product Data Registry
- post-uninstallation action

The system will notify you that the un-installation has been successful.

3. Press **3** to **Finish** or **5** to **Redisplay**.

## Uninstalling a Previous CAM Version

---

**Note** – Users must stop all applications that are running a `java.exe` or `javaw.exe` before running the uninstaller.

---

1. Log in to the CLI on the management host or using the remote CLI client as documented in the *Sun StorageTek Common Array Manager Software Installation Guide* (part number 820-5747).

**Navigate to the appropriate directory for your operating system:**

For Windows, navigate to:

```
%systemdrive%\Sun\CommonArrayManager\Host_Software_6.4.0.13\bin\uninstall.bat
```

For Solaris and Linux, navigate to:

```
/var/opt/CommonArrayManager/Host_Software_6.4.0.13/bin/uninstall
```

For the Suse 9 platform, CLI uninstall requires the following rpm packages:

- `libgcj-3.3.3-43.24.x86_64.rpm`
- `gettext-0.1.14.1-30.1.x86_64.rpm`

2. To remove the current installation, enter the command `uninstall -f`

If you still have problems, enter the command `uninstall -f -s`

# New Custom Installation Options

New in CAM 6.4.0 is the ability to select specific device plug-ins for installation. Doing so significantly reduces the amount of space required for CAM installation, in that only relevant software for your configuration is installed. You will still have the option to perform a Typical (full) installation, if desired.

The following information applies only to the new Custom installation options, and is in addition to what is currently documented for CAM 6.4.0 installation. This new information applies to both the GUI and CLI installation procedures.

---

**Note** – JBOD devices are unsupported by CAM 6.4.0 unless patches have been applied to the system. See [“CAM 6.4 Platform and Firmware Patches” on page 1](#).

---

The Custom installation option allows you to select one of the following new installation types:

- **Management Host Software** - Installs the Java WebConsole and all CAM core packages. All device plug-ins can be chosen for installation.
- **Data Host Proxy Agent** - Installs the CAM core packages and allows management of devices via the CLI. *Not supported in this release.*
- **Administrator Host CLI Client** - Installs the remote CLI package only. The remote CLI is used to communicate with a host that has CAM core software installed.

## Pre-install Device Plug-in Check

When either the Management Host Software or Data Host Proxy Agent option is selected in a Custom installation, your system is scanned for existing device plug-in software during installation. Upon completion, discovered plug-in software is indicated with a selected check box. Undiscovered software is indicated with an unselected check box.

Version information is also displayed after each device type, which includes the currently installed version and the new version to be installed. If no current software exists for a device type, only the new version information will be displayed.

After the scan, you can select or de-select which software to install.

# Core Software Packages

The following core software packages are installed with the new Custom installation options.

## Solaris Sparc/X86

- SUNWstkcaml-scsi
- SUNWsefms
- SUNWstkcamlcd

## Linux

- sun-cam-scsi-
- sun-cam-fms-
- sun-cam-dev-
- sun-cam-dev-var-

## Windows

- sun-cam-scsi.msi
- SUNWsefms.msi
- SUNWstkcamlcd.msi

# Plug-in Software Packages

Plug-in software packages listed in [TABLE 11](#) are installed with the new Custom installation options.

**TABLE 11** Plugin Software Packages

	Solaris Sparc/X86	Linux	Windows
LSI Arrays	SUNWsefms-dpi-array-sym	sun-cam-dpi-array-sym-	SUNWsefms-dpi-array-sym.msi

---

# Array Firmware Delivered with CAM

In general, firmware delivered with CAM can be installed using CAM's Install Firmware Baseline feature. However, moving from one or firmware release to another may require special procedures.

- For the 6140, 6540, and FLX380 array types, upgrading from a 06.xx.xx.xx version to 07.xx.xx.xx requires a Sun Service call. Contact Sun Microsystems Support Services at <http://www.sun.com/contact/support.jsp>
- For the 25xx array types, upgrading from a 06.xx.xx.xx version to 07.xx.xx.xx requires a special utility. Consult the *2500 Array Series Firmware Upgrade Utility Guide* (part number 820-6362).
- To obtain a general overview and detailed technical information, go to:  
[http://www.sun.com/storagetek/management\\_software/resource\\_management/cam](http://www.sun.com/storagetek/management_software/resource_management/cam)  
Click the "Get It" tab to obtain the latest information and version available.
- For the latest patches available for your system, go to:  
<http://www.sunsolve.sun.com>.

---

**Note** – The SCSI Enclosure Services Driver (SES) must be patched in order for CAM to do discovery and manage arrays.

---

This section describes the following topics:

- "Firmware Patches" on page 26
- "Firmware Installation Locations" on page 27
- "Installing the Firmware Baseline" on page 27
- "Firmware for Sun StorageTek 2500 Series Arrays" on page 28
- "Firmware for FlexLine Arrays" on page 31

## Firmware Patches

For the latest patches available for your system, check SunSolve at:

<http://www.sunsolve.sun.com>

Also see "CAM 6.4 Platform and Firmware Patches" on page 1.



# Firmware Installation Locations

CAM firmware is installed in the following locations:

- Solaris: /opt/SUNWstkcam/share/fw
- Windows: <system drive>\Program Files\Sun\Common Array Manager\Component\SunStorageTekArrayFirmware\
  - Windows (64-bit) - C:\Program Files (x86)\Sun\Common Array Manager\Component\SunStorageTekArrayFirmware
  - Windows (32-bit) - C:\Program Files \Sun\Common Array Manager\Component\SunStorageTekArrayFirmware
- Linux - /opt/sun/cam/share/fw/
- Firmware files are located in the images subdirectory.
  - Controller firmware is located in images/nge.
  - SIM firmware - images/qnt/\*.fw
  - Disk drive firmware - images/disk/\*.fw

Within the directory where you installed the firmware, a README file for each array type defines the firmware baseline.

- README\_2500.txt defines the firmware baseline for the Sun StorageTek 2500 Series Arrays.
- README\_6000.txt defines the firmware baseline for the Sun StorageTek 6130, 6140, 6540, FLX240, FLX280, and FLX380 arrays.

## Installing the Firmware Baseline

For optimal performance, Sun Microsystems recommends that the firmware on all arrays be at the level of the current firmware baseline. The software prompts you when it's time to upgrade array firmware. You do *not* need to uninstall existing firmware before following this procedure.

---

**Note** – New features are not supported with non-baseline firmware.

---

1. **Be sure the array is not in a degraded state.**

If it is degraded, the upgrade will fail. If the array is degraded because it is not at the baseline, you can upgrade the array.

2. **Check to see if there are any alarms and resolve them.**

Alarms can be checked in the Java Web Console masthead or in the Alarms Summary link in the Navigation Tree on the left. Use Service Advisor to fix any alarms.

3. **Log in to the management software.**

4. **From the Java WebConsole page, click Sun StorageTek Common Array Manager.**

5. **From the Storage System Summary page, select the array for which the firmware needs to be installed/upgraded.**

6. **Click Install Firmware Baseline, and follow the prompts.**

As part of the CAM installation, the script puts the array firmware files in a directory on the management host. When you upgrade the firmware, the software analyzes the firmware installed on the array. If the firmware baseline on the host is newer, and you choose to install, the software installs the firmware baseline on the array.

## Firmware for Sun StorageTek 2500 Series Arrays

To install the new 07.35.xx.xx firmware, consult the *2500 Array Series Firmware Upgrade Utility Guide* (part number 820-6362). After the initial installation of 07.35.xx.xx, you can install future changes to the 07 firmware baseline using the normal upgrade procedures in CAM described in this document (“[Firmware Installation Locations](#)” on page 27).

---

**Note** – CAM 6.4 can run on 2500 Series Arrays with Firmware version 6.70; however, in order to upgrade to controller version 7.35, the Upgrade Utility is required.

---

For the latest patches available for your system, check SunSolve at:

<http://www.sunsolve.sun.com>

In the following tables, the paths listed in the Firmware File column is relative to the images subdirectory where firmware files are located.

**TABLE 12** Controller Information: Sun StorageTek 2500 Series Arrays

Controller	Version	Firmware File
2510	06.70.54.11	nge/RC_06705411_desperado_apollo_1532.dlp
2510_exmoor	07.35.10.10	nge/RC_07351010_exmoor_apollo_1532.dlp
2530	06.70.54.11	nge/RC_06705411_desperado_apollo_133x.dlp
2530_exmoor	07.35.10.10	nge/RC_07351010_exmoor_apollo_133x.dlp
2540	06.70.54.11	nge/RC_06705411_desperado_apollo_1932.dlp
2540_exmoor	07.35.10.10	nge/RC_07351010_exmoor_apollo_1932.dlp

**TABLE 13** NVSRAM Information: Sun StorageTek 2500 Series Arrays

NVSRAM	Version	Firmware File
2510	N1532-670843-001	nge/N1532-670843-001.dlp
2510_exmoor	N1532-735843-002	nge/N1532-735843-002.dlp
2510-Simplex	N1532-670843-901	nge/N1532-670843-901.dlp
2510_exmoor-Simplex	N1532-735843-902	nge/N1532-735843-902.dlp
2530	N133X-670843-901	nge/N133X-670843-901.dlp
2530_exmoor	N133X-735843-002	nge/N133x-0735843-002.dlp
2530-Simplex	N133X-735843-902	nge/N133x-735843-902.dlp
2530_exmoor-Simplex	N133X-735843-902	nge/N133X-735843-902.dlp
2540	N1932-670843-001	nge/N1932-670843-001.dlp
2540_exmoor	N1932-735843-002	nge/N1932-735843-002.dlp
2540-Simplex	N1932-670843-901	nge/N1932-670843-901.dlp
2540_exmoor-Simplex	N1932-735843-902	nge/N1932-735843-902.dlp

**TABLE 14** IOM Information: Sun StorageTek 2500 Series Arrays

IOM	Version	Firmware File
2500 SAS	0195	nge/esm0195.esm

**TABLE 15** Disk Drive Information: Sun StorageTek 2500 Series Arrays

Disk Drive	Version	Firmware File
HDS7250SASUN500G	AV0A	disk/D_HDS7250SASUN500G_AV0A_LCA.dlp
HUA7210SASUN1.0T	AC4A	disk/D_HUA7210SASUN1.0T_AC4A_LCA.dlp
HUA7250SBSUN500G	AC4A	disk/D_HUA7250SBSUN500G_AC4A_LCA.dlp
HUA7275SASUN750G	AC4A	disk/D_HUA7275SASUN750G_AC4A_LCA.dlp
HUS1514SBSUN146G	SA04	disk/D_HUS1514SBSUN146G_SA04_LCA.dlp
HUS1530SBSUN300G	SA04	disk/D_HUS1530SBSUN300G_SA04_LCA.dlp
HUS1573SBSUN72G	SA04	disk/D_HUS1573SBSUN72G_SA04_LCA.dlp
ST314655SSUN146G	0B92	disk/D_ST314655SSUN146G_0B92.dlp
ST330055SSUN300G	0B92	disk/D_ST330055SSUN300G_0B92.dlp
ST330056SSUN300G	0A1C	disk/D_ST330056SSUN300G_0A1C.dlp
ST31000NSSUN1.0T	SU0D	disk/D_ST31000NSSUN1.0T_SU0D_LCA.dlp
ST314656SSUN146G	0A1C	disk/D_ST314656SSUN146G_0A1C.dlp
ST32502NSSUN250G	SU0D	disk/D_ST32502NSSUN250G_SU0D_LCA.dlp
ST340008SSUN0.4T	0543	disk/D_ST340008SSUN0.4T_0543.dlp
ST345056SSUN450G	0A1C	disk/D_ST345056SSUN450G_0A1C.dlp
ST35000NSSUN500G	3AZY	disk/D_ST35000NSSUN500G_3AZY_LCA.dlp
ST35002NSSUN500G	SU0D	disk/D_ST35002NSSUN500G_SU0D_LCA.dlp
ST37502NSSUN750G	SU0D	disk/D_ST37502NSSUN750G_SU0D_LCA.dlp
ST373455SSUN72G	0B92	disk/D_ST373455SSUN72G_0B92.dlp
ST37500NSSUN750G	3AZY	disk/D_ST37500NSSUN750G_3AZY_LCA.dlp

## Third Expansion Tray (48-Drive) Cabling for 2500 Series

For the most current cabling information, see the *Sun StorageTek 2500 Series Array Release Notes*.

### 1. Go to:

<http://www.sun.com/documentation>

### 2. In the Search field, type “2500 Release Notes”

### 3. Press Return

### 4. Select the current Release Notes document.

## Firmware for FlexLine Arrays

For FLX380 arrays currently at the 06.xx.xx.xx level of firmware:

To install the new 07.10.x.xx firmware, you must contact Sun Microsystems Support Services at: <http://www.sun.com/contact/support.jsp>

---

**Note** – In previous firmware levels, the default Cache Block size was 16K. If necessary, you can change the size to 16KB size by using GUI and CLI options.

---

**TABLE 16** Controller Information: Sun StorageTek 6130, 6140, 6540, 6580, 6780, FLX240, FLX280, and FLX380 Arrays

Controller	Version	Firmware File
6130	06.60.11.10	nge/RC_06601110_chromium2_apollo_288x.dlp
6140	06.60.11.11	nge/RC_06601110_chromium2_apollo_399x.dlp
6140_aurora	07.50.08.10	nge/RC_07500810_09q1_apollo_fc_399x.dlp
6540	06.60.11.10	nge/RC_06601110_chromium2_apollo_6091.dlp
6540_aurora	07.50.08.10	nge/RC_07500810_09q1_apollo_fc_6091.dlp
6580	07.50.08.10	nge/RC_07500810_09q1_apollo_fc_7091.dlp
6780	07.50.08.10	nge/RC_07500810_09q1_apollo_fc_7091.dlp
FLX240	06.60.11.21	nge/RC_06601121_chromium2_silverado_288x.dlp
FLX280	06.60.11.21	nge/RC_06601121_chromium2_silverado_588x_06600200.dlp
FLX380	06.60.11.21	nge/RC_06601121_chromium2_silverado_6091.dlp
FLX380_aurora	07.50.08.10	nge/RC_07500810_09q1_apollo_fc_6091.dlp

**TABLE 17** NVSRAM Information: Sun StorageTek 6130, 6140, 6540, FLX240, FLX280, and FLX380 Arrays

NVSRAM	Version	Firmware File
6130	N288X-660843-003	nge/N288X-660843-003.dlp
6140	N399X-660843-003	nge/N399X-660843-003.dlp
6140_aurora	N399X-750843-002	nge/N399X-750843-002.dlp

**TABLE 17** NVSRAM Information: Sun StorageTek 6130, 6140, 6540, FLX240, FLX280, and FLX380 Arrays

NVSRAM	Version	Firmware File
6540	N6091-660843-003	nge/N6091-660843-003.dlp
6540_aurora	N6091-750843-003	nge/N6091-750843-003.dlp
6580	N7091-750843-003	nge/N7091-750843-003.dl
6780	N7091-750843-003	nge/N7091-750843-003.dlp
FLX240	N288X-660855-003	nge/N288X-660855-003.dlp
FLX280	N588X-660855-003	nge/N588X-660855-003.dlp
FLX380	N6091-660855-003	nge/N6091-660855-003.dlp
FLX380_aurora	N6091-750855-002	nge/N6091-750855-002.dlp

**TABLE 18** IOM Information: Sun StorageTek 6130, 6140, 6540, FLX240, FLX280, and FLX380 Arrays

IOM	Version	Firmware File
CSM100 FC	9681	nge/esm9681.s3r
CSM100 FC Crystal	9682	nge/esm9682.s3r
CSM100 iSATA	9728	nge/esm9728.dl
CSM200	98C4	nge/esm98C4.esm
CSM200 Aurora	98C4	nge/esm98C4.esm
FLA300	9681	nge/esm9681.s3r
FLA300 Crystal	9682	nge/esm9682.s3r
FLA200	9330	nge/esm9330.s3r
FLC200 iSATA	9728	nge/esm9728.dl
FLC200 dSATA	9566	nge/esm9566.dl

**TABLE 19** Disk Drive Information: Sun StorageTek 6130, 6140, 6540, FLX240, FLX280, and FLX380 Arrays

Disk Drive	Version	Firmware File
HDS7225SCSUN250G	0705 (LP1160-A7BA)	disk/D_HDS7225SCSUN250G_0705.dlp
HDS7240SBSUN400G	AC7A	disk/D_HDS7240SBSUN400G_AC7A.dlp
HDS7250SASUN500G	0705 (LP1160-AV0A)	disk/D_HDS7250SASUN500G_0705.dlp
HUA7210SASUN1.0T	0709 (LP1160-AC4A)	disk/D_HUA7210SASUN1.0T_0709.dlp

**TABLE 19** Disk Drive Information: Sun StorageTek 6130, 6140, 6540, FLX240, FLX280, and FLX380 Arrays

Disk Drive	Version	Firmware File
HUA7250SBSUN500G	0709 (LP1160-AC4A)	disk/D_HUA7275SASUN750G_0709.dlp
HUA7275SASUN750G	0709 (LP1153-AC4A)	disk/D_HUA7275SASUN750G_0709.dlp
HUS1014FASUN146G	2A08	disk/D_HUS1014FASUN146G_2A08.dlp
HUS1030FASUN300G	2A08	disk/D_HUS1030FASUN300G_2A08.dlp
HUS1073FASUN72G	2A08	disk/D_HUS1073FASUN72G_2A08.dlp
MAT3073FSUN72G	1403	disk/D_MAT3073FSUN72G_1403.dlp
MAT3147FSUN146G	1403	disk/D_MAT3147FSUN146G_1403.dlp
MAT3300FSUN300G	1403	disk/D_MAT3300FSUN300G_1403.dlp
MAW3073FCSUN72G	1303	disk/D_MAW3073FCSUN72G_1303.dlp
MAW3147FCSUN146G	1303	disk/D_MAW3147FCSUN146G_1303.dlp
MAW3300FCSUN300G	1303	disk/D_MAW3300FCSUN300G_1303.dlp
MAX3073FDSUN72G	0403	disk/D_MAX3073FDSUN72G_0403.dlp
MAX3147FDSUN146G	0403	disk/D_MAX3147FDSUN146G_0403.dlp
ST31000NSSUN1.0T	0705	disk/D_ST31000NSSUN1.0T_0705.dlp
ST314655FSUN146G	3092	disk/D_ST314655FSUN146G_3092.dlp
ST314670FSUN146G	091C	disk/D_ST314656FSUN146G_091C.dlp
ST314680FSUN146G	055A	disk/D_ST314680FSUN146G_055A.dlp
ST314680FSUN146G	0407	disk/D_ST314680FSUN146G_0407.dlp
ST314685FSUN146G	042D	disk/D_ST314685FSUN146G_042D.dlp
ST314695FSUN146G	0409	disk/D_ST314695FSUN146G_0409.dlp
ST32500NSSUN250G	0706 (LP1160-3AZY)	disk/D_ST32500NSSUN250G_0706.dlp
ST330000FSUN300G	055A	disk/D_ST330000FSUN300G_055A.dlp
ST330055FSUN300G	3092	disk/D_ST330055FSUN300G_3092.dlp
ST330055FSUN300G	091C	disk/D_ST330056FSUN300G_091C.dlp
ST340008FSUN0.4T	0343	disk/D_ST340008FSUN0.4T_0343.dlp
ST330055FSUN450G	091C	disk/D_ST330055FSUN450G_091C.dlp
ST35000NSSUN500G	0706 (LP1160-3AZY)	disk/D_ST35000NSSUN500G_0706.dlp

**TABLE 19** Disk Drive Information: Sun StorageTek 6130, 6140, 6540, FLX240, FLX280, and FLX380 Arrays

Disk Drive	Version	Firmware File
ST373207FSUN72G	055A	disk/D_ST373207FSUN72G_055A.dlp
ST373307FSUN72G	0407	disk/D_ST373307FSUN72G_0407.dlp
ST373453FSUN72G	0449	disk/D_ST373453FSUN72G_0449.dlp
ST373454FSUN72G	042D	disk/D_ST373454FSUN72G_042D.dlp
ST373455FSUN72G	3092	disk/D_ST373455FSUN72G_3092.dlp
ST373554FSUN72G	0409	disk/D_ST373554FSUN72G_0409.dlp
ST37500NSSUN750G	0706 (LP1160-3AZY)	disk/D_ST37500NSSUN750G_0706.dlp

## CSM200 Requirements

When you add a new CSM200 expansion module to an existing array in a production or active environment, you must cable and add the trays while the RAID controller module is powered on.

---

**Caution** – Not following correct procedures could result in loss of customer data.

---

## About DACstore

Maintained by the array firmware, DACstore stores information on each of the arrays' disk drives. Before you connect any replacement drive or additional expansion module to an existing functioning array, you should contact Sun Support at <http://www.sun.com/contact/support.jsp> to ensure the connection goes smoothly and avoid issues with the DACstore configuration and status database.



## *Arrays with Potential DACstore Issues*

- Sun StorEdge 6130 Array
- Sun StorageTek 6140 Array
- Sun StorageTek 6540 Array
- StorageTek FLX280 Array
- StorageTek FLX380 Array

If you observe any of the following, promptly contact Sun Microsystems Support Services at <http://www.sun.com/contact/support.jsp>

- Inability to apply feature licenses
- Inability to upgrade/install the baseline for array firmware
- Incorrect component details in the management tool
- Host operating system reports the wrong product identifier
- Array registration or discovery fails to complete
- Persistent or unrecoverable multipathing failover

## Supported Expansion Modules

The following tables list the supported expansion modules:

**TABLE 20** Supported Expansion Modules: 6000 Series Arrays

Array Controller	Supported Expansion Modules
Sun StorageTek 6540 Array	CSM100, CSM200, FLA200, FLC200, FLA300
Sun StorageTek 6140 Array	CSM100, CSM200, FLA200, FLC200, FLA300
Sun StorageTek 6130 Array	CSM100, CSM200, FLA200, FLC200, FLA300
Sun StorageTek 6580 Array	CSM100, CSM200, FLA200, FLC200, FLA300
Sun StorageTek 6780 Array	CSM100, CSM200, FLA200, FLC200, FLA300

**TABLE 21** Supported Expansion Module: 2500 Series Array

Array Controller	Supported Expansion Modules
Sun StorageTek 2500 Series Arrays	2501

**TABLE 22** Supported Expansion Module: Sun StorageTek FLX240, FLX280, and FLX380 Arrays

Array Controller	Supported Expansion Modules
Sun StorageTek FLX240 Array	CSM100, CSM200, FLA200, FLC200, FLA300
Sun StorageTek FLX280 Array	CSM100, CSM200, FLA200, FLC200, FLA300
Sun StorageTek FLX380 Array	CSM100, CSM200, FLA200, FLC200, FLA300

## Upgrading Firmware for Additional Expansion Trays.

- Refer to [TABLE 20](#), [TABLE 21](#), and [TABLE 22](#) for a list of the supported modules for intermixing trays.
- To add trays with data already on them, contact your service representative for assistance to avoid data loss.
- Mixing trays is not supported for the Sun StorageTek 2500 Series Arrays.

## Upgrading Expansion Modules

For 6140, 6540, and FLX380 arrays currently at the 06.xx.xx.xx level of firmware: To install the new 07.50.xx.xx firmware, you must contact Sun Microsystems Support Services at: <http://www.sun.com/contact/support.jsp>. After the initial installation, you can install future changes to the 07 firmware baseline using the procedure that follows.

---

**Note** – 07.50.xx.xx is not available for the 6130, FLX240, 280, and 2500 arrays.

---

### *Adding a New Expansion Module to an Existing Array*

1. Before cabling the newly supported expansion module, upgrade the existing controller and trays.
2. Add the expansion module.
3. Upgrade the array again.

### *Adding an Existing Expansion Tray to a New Array*

1. Install the new controller and trays.
2. Perform the firmware upgrade.
3. Add the expansion tray.
4. Upgrade the array again.

## Upgrading Firmware for Additional Expansion Modules

Follow this procedure to add trays to arrays managed by CAM:

---

**Note** – Do not cable the additional expansion tray.

---

1. **Install the Common Array Manager release following the standard installation procedure.**
  - There are separate procedures for Solaris, Windows, and Linux management hosts. The software update places a copy of the latest firmware on the management software server.
  - Tray IDs must be unique within an array. The tray ID for the CSM200 tray is automatically set to the next available ID number upon power up. All other trays must be set manually.
2. **Register the array, if needed. If not needed, skip to Step 3.**

Before discovering a Sun StorageTek FLX240, FLX280, FLX380 array using CAM and before performing any tray migration (for example, adding FLA300 expansion trays behind an existing 6130, 6140 or 6540 controller), you must upgrade the arrays and associated trays to the firmware version 6.19.25.00 or later. After you register the arrays with CAM, you can upgrade to the current firmware baseline.

## *Supported Drives for Registering CAM Arrays*

To ensure CAM registration doesn't hang or experience a drive error, use this list of supported drives which has the Sun part number labeled in the WWN:

**TABLE 5** Supported Drives with Sun Part Number in WWN

Drive	Description
ST31000NSSUN1.0T SU0B	Seagate 1.0 TB SATA 390-0414-02
ST37502NSSUN750G SU0B	Seagate 750GB SATA 390-0413-02
ST35002NSSUN500G SU0B	Seagate 500GB SATA 390-0412-02
ST32502NSSUN250G SU0B	Seagate 250GB SATA 309-0411-02, 390-0411-03
ST32500NSSUN250G 3AZQ	Seagate Galaxy 250 GB SATA 390-0354-03
ST35000NSSUN500G 3AZQ	Seagate Galaxy 500 GB SATA 390-0355-03
ST37500NSSUN750G 3AZQ	Seagate Galaxy 750 GB SATA 390-0356-03
HUA7250SBSUN500G A90A	Hitachi 500 GB SATA 390-0384-02
HUA7275SASUN750G A90A	Hitachi 750 GB SATA 390-0379-02
HUA7275SASUN750G A90A	Hitachi 750 GB SATA 390-0379-02
HUA7210SASUN1.0T A90A	Hitachi 1.0 TB SATA 390-0381-012
HDS72500SASUN500G AJ0A	Hitachi K2 500 GB SATA 390-0355-03

3. From the **Storage Summary** page or **Array Administration** page, click the **Install Firmware Baseline** button.
4. **Accept the upgrade.**
5. Use **Service Advisor** to cable the additional expansion tray and add it to the array.
6. **Upgrade the array again to update the firmware on the new tray.**

---

# Known Issues and Operational Information

The following sections provide information about known issues and recommended workarounds, as well as operational information not found elsewhere in the documentation:

- [“Array Operational Information and Issues” on page 40](#)
- [“Configuration Issues” on page 46](#)
- [“Documentation Issues” on page 58](#)
- [“Firmware Issues” on page 60](#)
- [“In-Band Array Management - Operational Information and Issues” on page 61](#)
- [“Localization Issues” on page 68](#)
- [“Solaris Issues” on page 68](#)
- [“Notable Updates/Fixes in this Release” on page 70](#)

## *CAM Should Not Be Case-Sensitive*

CAM is case-sensitive for operating systems that support mixed case. Sometimes using mixed case can prevent resources from being discovered. Another challenge is two arrays could technically have the same name (a bad idea) but use different cases in the text of the name(s).

**Workaround** –In progress. A future release of CAM will accept upper and lowercase letters.

## *Session Timeout Refreshes Main Page Rather than Window*

**Bug 6779252** –CAM 6.4.x Session Timeout is refreshed in the main page or window pane instead of the entire window.

**Workaround** –Use Browser refresh to correct.

# Array Operational Information and Issues

## Provisioning Arrays

CAM provides the ability to export an array configuration and save it to an XML file which you can import to one or more arrays. Using the array configuration file, you can provision and provide consistent configurations for your several arrays.

Some common reasons to export and import array configurations include:

- Cloning a configuration for a remote backup site.
- Resetting an array to get it back to a known state for end-of-quarter processing, data warehousing, or data migration
- Sending the exported array configuration to customer support for help in troubleshooting an issue with the array.

Exporting or importing configurations is supported for the following arrays:

- Sun StorageTek 6000 Array Family (model numbers 6130, 6140, 6540, 6580, 6780)
- Sun StorageTek 2500 Array Series (model numbers 2510, 2530, and 2540)
- Sun StorageTek FlexLine arrays (model numbers 240, 280, and 380).

### *Exporting an Array Configuration*

Use the export function to save all configuration settings to a file on your local machine. Configuration settings include volume, pool, profile, virtual disk, snapshot, volume copy, storage domain, mappings, data replication configuration, etc.

1. Click **Sun StorageTek Common Array Manager**.
2. From the navigation pane, expand the array configuration you want to save to a file.
3. Expand **Administration**, and select **Import/Export**.
4. Under **Export Device Configuration**, either accept the configuration file name supplied by CAM or enter the name you'd like to assign to the configuration file.
5. Click **Export** and specify whether you'd like to open and view the configuration file or save the file to your local machine.

## *Importing an Array Configuration*

Use the import function to reset all volume data and bring the array to a known state. You can import the array configuration file to one or more supported arrays. Since some arrays support features that others do not, when you import a configuration file to an array that has a more limited feature set, the import process discards unsupported configuration settings and returns an event that you can check later. Conversely, if you import an array configuration file to an array with a more extensive feature set, then those features will not be configured. During the import process, a job is created. You can track the progress from the Historical Jobs Summary page. Import jobs started by the CLI will also display there.

---

**Caution** – Because the entire array configuration is exported to a file, you must change settings such as the IP address and array name for the target array, unless it serves as a replacement for the array configuration being exported. When cloning an array, ensure that both the old and new array are not on the network with the same IP address at the same time.

---

*Prerequisite: It is best practice to reset the array before performing the import procedure.*

1. **Click Sun StorageTek Common Array Manager.**
2. **From the navigation pane, expand the array to which you want to import the configuration file.**
3. **Expand Administration and choose Import/Export.**
4. **Under Import Device Configuration, click Browse to locate the configuration file stored on your local machine.**
5. **Click Import.**

The array name will be “unlabeled” after the import is complete.

## *Solaris Runtime and Agent Packages Install on Wrong Architectures*

**Bug 6665774** –If you perform installation using the incorrect package, CAM will install but not run. For example, if the in-band proxy agent packages are being delivered as being architecture-dependent (SPARC and x86 for Solaris), then the SPARC package installation should not succeed on an x86 platform. The risk of this happening is low.

**Workaround** – Install the correct package. See [“Installing and Upgrading CAM” on page 17](#).

## *Array Out of Compliance Yields Errors*

When an array is out of compliance due to an invalid or missing license, a number of operations might not occur, such as:

- Standard RAID Volume creation
- Automatic Configuration
- Creation of Storage Partitons Mappings
- Hot Spare Assignments
- DSS
- DCE/DVE
- Snapshot Volume Creation

## *Cache Stop % Cannot Be Greater than Cache Start %*

**Bug 6590637** –Attempting to modify the Cache Start% and Cache Stop% parameters from the array’s Administration page so that the value assigned to Cache Stop% is greater than the value assigned to Cache Start% results in the error message “setCacheParams operation failed:43”.

**Workaround** – Use valid values. Since the Cache Stop% is the percentage of unwritten data in the cache that will stop a cache flush that is currently in progress, it must not be greater than the value for Cache Start%, which is the percentage of unwritten data in the cache that will trigger a cache flush.

## *CLI - Adding 2+ Unnamed or Unlabeled Arrays Indeterminate*

**Bug 6681173** –List devices can show multiple unlabeled entries. List storage systems can show multiple unlabeled entries, as well. The CLI user is unable to differentiate between unlabeled entries.

**Workaround** –Rename each unlabeled device to a unique Temporary Name. Use list controller to determine IP address for the Temporary Name. Then change the array name to what you want.

## *Defragmentation Jobs Do Not Display - Jobs Summary Page*

**Bug 6592811** –For small virtual disks, disk defragmentation jobs may complete too quickly for a job task to be created and listed on the Jobs Summary page. If an error does occur, the user will be notified.



**Workaround** –This should have no impact but if the status needs to be seen, you can run defragmentation jobs using the CLI: /opt/se6x20/cli/bin/sscs modify --array ArrayName --defragment vdisk 1

### *Disk Drive Failure Affects Vdisk Redundancy*

**Bug 6592877**–When a drive fails, the vdisk to which it belongs is no longer redundant. A stand-by hot-spare drive is chosen and integrated into that volume group automatically if possible.

The drive is chosen to satisfy the following conditions:

- The chosen drive must be <PRESENT, STANDBY-HOT-SPARE, OPTIMAL>.
- The chosen drive must be of the same technology (FC, SATA, etc.) as the FAILED drive.
- The chosen drive must have adequate capacity to contain the piece(s) of the volume(s) defined on that volume group in addition to all required metadata.
- The chosen drive should match the spindle speed of other drives in the volume group if possible.
- If the volume group to which the failed drive belongs had Tray-Loss Protection (TLP), it is best to choose a hot spare drive that provides TLP for the volume group.

### *Errors - General Password Mismatch*

**Bug 6590097, 6577775, 6592717, 6592703** –Using an invalid array password may result in configuration error messages.

**Workaround** – Use the correct array password.

### *Host Board Type with Controller B - Unknown Status*

**Bug 6821043** –6580 array displays “Unknown” status in Host Board Type and “controller.hostBoardStatus.3” in Host Board Status with controller B.

**Workaround** –The correct host board status can be seen on the FRU Details Page.

### *Installation Fails when User Account Control is On- Windows 2008*

**Bug 6753949** –CAM fails to install on Windows 2008 when User Account Control is turned on.

**Workaround** –Users with Administrative privileges that are used to install CAM on Windows 2008 must have User Account Control turned off. From the Control Panel, select User Accounts, and then turn the User Account Control off.

### *Installation Fails due to Missing TEMP - Windows*

**Bug 6791511** –When CAM is being installed on a Windows system, an “Invalid TEMP” directory pop-up window displays.

**Workaround** –Windows users should investigate TEMP, TMP, and USERPROFILE environment variable settings, rather than follow the directions in the pop-up window.

### *Jobs Checkbox Does Not Display; Job Will Not Cancel*

**Bug 6600387** –When a long job is running, such as large volume creation, the Cancel checkbox does not display on current job status. Some jobs cannot be cancelled once they have started on the array.

**Workaround** –If the queue includes multiple jobs for the array to perform, the job can be cancelled at the point where the GUI sends the next job to the array.

### *Mid-plane Tray Replacement Must Have Power Off Controller Tray First*

**Bug 6816773** –For all arrays that can have external expansion trays separate from the RAID controller tray, you must power off the controller tray before replacing the mid-plane tray.

**Workaround** –Before replacing a mid-plane expansion tray, perform the following steps:

1. Stop all I/O activity.
2. Wait two minutes to ensure the data in the controller cache is flushed to the drives.
3. Power off the controller tray.
4. Power off the expansion tray which has the mid-plane that needs to be replaced.

## *Registration Page Displays Upon Initial Installation*

When you install the CAM software for the first time, upon logging into the Browser User Interface, a registration page will display. Fill out the information before continuing.

During the initial storage array registration process, CAM prompts you to register with the Auto Service Request service by displaying the Auto Service Request (ASR) Setup page. This page continues to display until you either fill out the page and click OK, or click Decline to either decline or defer ASR service registration.

---

**Note** – You must register the array with ASR before using the Test button.

---

## *Volume Copy License Not Enabled - Microsoft Internet Explorer 7*

**Bug 6684322** –Cannot enable volume copy license by specifying the license file using Internet Explorer 7.

**Workaround** –Internet Explorer version 7 is not supported. Use a supported browser listed in [Table 10 on page 14](#).

## *Webconsole Service Fails -- InstallShield Provides Wrong Switch*

**Bugs 6792599 and 6753860** –Webconsole service fails. InstallShield provides wrong switch (should be -c) in error message.

- Invalid switch option given on GUI based CAM install failure.
- Webconsole Service' Default 40bit SSL keys fail FIPS/Fed audits.
- When attempting to install CAM via text-based install, the installer is unable to run in graphical mode unless the correct switch is added.

**Workaround** –Run the installer with:

-c flag

```
root@sx-dimen-a04# ./RunMe.bin -c
```

---

**Note** – Appropriate ciphers can be setup in JVM or Tomcat used by Java Web Console via configuration files. Contact Sun Microsystems Support Services at <http://www.sun.com/contact/support.jsp> for instructions on how to modify the default ciphers for JVM or modify Tomcat configuration files.

---

## *Windows Installation -- Prerequisite*

1. **Before installing CAM on Windows, be sure the file or directory “%SystemDrive%\Program” does not exist.**

This file can prevent some applications from functioning properly.

2. **If it does exist, rename the file to “%SystemDrive%\Program1.”**

## *Windows --Uninstallation of CAM Panics Host*

**Bug 6769156** –Users must stop all applications that are running a java.exe or javaw.exe before running the uninstaller.

## Configuration Issues

---

**Note** – Using multiple configuration tools can cause issues. CAM has locking to prevent multiple CAM sessions from interfering with one another. There is, however, no way to prevent interference from other tools that perform equivalent functions such as configuring the storage array.

---

### *6150 Array Shows Controller Host Ports as Down*

**Bug 6756920** –Directly connected 6140 array registered with one controller shows opposite controller host ports as down.

Example: A 6140 array is connected to a two-node Windows 2003 Cluster. Each node has two HBAs. Node 1 is connected to A1/B1; Node 2, to A2/B2. The array is successfully registered, using Controller A IP and Controller B, yet Host Ports show as “down.”

**Workaround** –In progress. Targeted release for fix is CAM 6.5.

## *CLI Error -- Connection Failed*

**Bug 6635453** –sscs displays “Connection failed!” error when user’s home directory or its files cannot be read.

**Workaround** –If you get a “Connection failed!” error when using the CAM CLI command sscs, do the following:

1. **Ensure the value of the HOME environment variable is set to your home directory.**
2. **Verify that \$HOME/.sscs\_conf, if it exists, has owner read and write permission.**

## *CLI Usage Statement Syntax Error - “The resource was not found”*

CLI usage statement yields syntax error “The resource was not found.”

**Workaround** –Add spaces between the disks.

Resolution for this issue is in progress. Generally, adding spaces can break scripts; however, in this case it is the only workaround.

## *CLI Uninstall Yields Errors*

**Bug 663281** –If gettext rpm is not present on Suse 9 platform, CLI uninstall gives error messages.

**Solution** –Before installing CAM on a Suse 9 platform, you must install the following RPM packages:

- libgcj-3.3.3-43.24.x86\_64.rpm
- gettext-0.1.14.1-30.1.x86\_64.rpm

See [“Uninstalling a Previous CAM Version” on page 23](#).

## *CLI - Warning Message Displays in GUI After Issuing “sscs add -d registeredarray” Command*

**Bug 6796540** –After the “sscs add -d registeredarray” command is issued and associated arrays are registered on the host, this message displays on the GUI: “A script on this page may be busy, or it may have stopped responding. You can stop the script now, or you can continue to see if the script will complete.”

If you click Continue, wait a few minutes, and click the Storage System tab, this message still pops up. If you click Stop Script., the message goes away. However, if you click either Refresh or Storage System tab, the message re-displays.

**Workaround** –In progress.

### *Controller Cache Memory Size Displays 0 for 2500 Series Arrays*

**Bug 6756414** –Controller Cache Memory size displays 0 from both the GUI and CLI for 2500 Series Arrays. This issue only affects reporting and does not impact cache or array performance.

For 2500 Series Arrays using 07.35.07.10 firmware and above, a 0MB value for Cache Memory displays when you select Physical Devices -> Controllers. This can cause confusion when a customer upgrades the cache DIMM to a different size, because the new size is not reported.

**Workaround** –In progress.

### *Disabled Snapshot Re-enabled After Firmware Update*

**Bug 6529172** –A snapshot volume that is disabled will be automatically reenabled after a firmware update occurs. If the snapshot volume is full, it can start generating warning events.

**Workaround**–Disable the snapshot again after the firmware update.

### *Email Notification with “null” PC/RA Results from Creating/Removing Pool on 6580*

**Bug 6826826** –After creating/removing a pool on a 6580 array, an email notification event received as Component Insert Event with Probable Cause “null” and Recommended Action “null.”

**Workaround** –In progress.

### *FMS Engine Might Not Respond During CAM Upgrade*

**Bug 6826578** –Fms engine might not respond during CAM upgrade. After upgrading from 6.2.0.13 to 6.4.0.10 on Windows platforms and then logging in to GUI, CAM displays this error message: “CAM FMS Engine may not be responding. Please contact your Technical Representative for assistance.”

**Workaround** –Restarting the FMS engine/service resolves this issue.

## *Import Configuration Error - 2510 Arrays*

**Bug 6764318** –Importing array configuration from Administration page yields errors.

This issue occurs with 2510 arrays when these steps are followed:

1. **Register array with CAM and create a configuration (volumes, etc.).**
2. **Select Administration -> Export/Import page.**
3. **Click Export.**
4. **Browse for the exported file and then click Import.**

Several minutes might transpire at this point.

Result: This error message displays: “Error executing the import command”

**Workaround** –Prior to Importing, select Reset Configuration on the array’s Administration page or run the following CLI command:

```
sscs reset -a ArrayName -l array array
```

## *Import Errors - 6580 and 6780 Arrays*

**Bug 6826976** –While performing an import using CAM 6.4.0.10 with registered 6580 array, this error message was received: “The target array does not support a required licensable feature.” Performing an import with a registered 6780 array yields this error message: “Error executing the import command. It may be necessary to manually reset the array and try the import again.”

**Workaround** –Prior to importing, select Reset Configuration on the array’s Administration page or run the following CLI command:

```
sscs reset -a ArrayName -l array array.
```

The array name will be “unlabeled” after the import is complete.

## *Import Fails when Target Array has a Password*

**Bug 6800352** –Import failure displays the following error: “Error executing the import command. Errors occurred while importing the array settings. Try importing again, or configuring the array manually.”

**Workaround** –Reset the array password before performing the import.

### *Initiator Window Brings Up Host Create Window and Fails*

**Bug 6703796** –Application fails when New Initiator window brings up Host Create window. The Cannot Add a Host Application Error window appears when a carriage return is hit when creating the host name after creating a new initiator.

In Internet Explorer, user will encounter application error when pressing Enter from either the Virtual Disk or Initiator Creation Wizards.

**Workaround** –Do not use carriage returns when naming initiators in the Create window. Use the buttons instead.

### *Installation Fails When Another Version's Installation Exists*

**Bug 6729062** –CAM fails to install on Windows with another version already installed.

**Workaround** –If either of the following two instances occur, use the procedure that follows:

- The following error occurs at any time during CAM installation: “Another version of this product is already installed. Installation of this version cannot continue. To configure or remove the existing version of this product, use Add/Remove Programs on the Control Panel.”
  - Uninstallation of CAM cannot clean up the Windows registry
1. Download the Windows Installer CleanUp Utility from the following website:  
<http://support.microsoft.com/kb/290301>
  2. Install the Windows Installer CleanUp Utility, by running msicuu2.exe.

### *IP Address for Replaced Controller - Unable to Change (ipv4)*

**Bug 6807816** –CAM6.4.0.6 - Not able to change (ipv4) IP address for a replaced controller.

**Workaround** –Change the IP address on the controller from the serial port.



### *Java Web Console Version 3.0.2 Goes into Maintenance Mode*

**Bug 6657309** –After several minutes of inactivity, the Sun Java Web Console Version 3.0.2 goes into maintenance mode and yields errors similar to the following:

```
m4000 gconfd (noaccess-2277): I can't write to '/var/tmp/orbit-noaccess', ORB init failed
```

```
m4000 svc.startd[7]: system/webconsole:console failed: transitioned to maintenance (see 'svcs -xv' for details)
```

```
svc:/system/webconsole:console (Java web console)
```

```
State: maintenance since Tue Apr 18 14:08:06 2009
```

```
Reason: Method failed.
```

```
See: http://sun.com/msg/SMF-8000-8Q
```

```
See: man -M /usr/share/man -s 1M smcwebserver
```

```
See: /var/svc/log/system-webconsole:console.log
```

```
Impact: This service is not running.
```

**Workaround** –For unix hosts, set the directory permission to 01777 (i.e., `chmod 01777 /var/tmp`) and restart the console.

### *License Summary Page Does Not Display Array Name*

**Bug 6673878** –After resetting storage configuration, array name is not present in License Summary Page.

**Workaround** –Arrays should be named before licenses are added.

### *Login Not Required When sscs Used to Execute Commands Using Linux*

**Bug 6742577** –sscs does not require user login to execute commands

This issue is specific to Linux. There are two sscs executables--one for local in-band and one for remote out-of-band communication:

```
/opt/sun/cam/bin/sscs (in-band)
```

```
/opt/sun/cam/se6x20/cli/bin/sscs (out-of-band)
```

## *Patch for Linux Hosts*

**Bug 6701605** –WebConsole 3.1 patch is breaking the CAM UI on Linux host.

**Workaround** –Download patch 125954-16 or later from <http://www.sunsolve.sun.com> for Linux hosts and apply it to the CAM server to upgrade the WebConsole to 3.1. For Solaris and Windows, the upgrade is seamless. For Linux, the CAM interface might have problems, in which case you can refer to your Linux documentation. Fix in progress. Look for patch ID version -17 to come out for the WebConsole 3.1 soon.

## *Primary Volume in Replication Set Cannot Exceed the Size of the Secondary Volume*

**Bug 6596281** – If a data replication set is created between two volumes with the primary volume having a size less than the secondary volume, the primary volume can be expanded till it reaches the size of the secondary volume.

## *Removing Replication Set from Consistency Group Issue*

**Bug 6788023** –When replication set is removed from consistency group, Replication Set Summary Page does not show the “Write Consistency Group” as “off.”

**Workaround** –In progress.

## *Replication Status May be Listed Incorrectly when Primary Volume Fails*

**Bug 6561709** –When the primary volume in a replication set fails, the management software may incorrectly list the volume as replicating.

## *Replication Set Detail Page Shows Incorrect Dedicated Port*

**Bug 6684018** –Replication Set Details page shows an incorrect replication dedicated port for 6540 array.

**Workaround** –In progress.

## *Service Advisor for 8GB HICs is Incorrect*

**Bug 6819748** –When the management software lists a disk as failed and the Service Advisor procedure for replacing drives is followed, the step to verify that the disk is ready to remove might not list the failed disk.

### **Workaround –**

**1. Check to see if the array is at 7.50 or later firmware.**

If it is not, an upgrade is recommended. [“Installing and Upgrading CAM” on page 17](#)

**2. Turn off the controller module by switching the AC/DC I/O switch to OFF.**

**3. Remove Controller A and perform a component update, then insert.**

**4. Remove controller B and perform component update, then insert.**

**5. Re-cable**

**6. Power on**

---

**Note –** If you have RVM enabled, you need to move the cable to the highest numbered port, and this will require a rezone of your FC switches.

---

## *Snapshot Mapping Fails with Invalid LUN Error*

**Bug 6764785** –When attempting to map a snapshot from the Snapshot Details page, an error is observed that an invalid LUN number had been passed in. The user is not allowed to select a LUN number as the only option available from the pull down menu is “Next Available.”

**Workaround** –From the Snapshot Summary page, select the checkbox beside the snapshot and then click Map.

## *Snapshot Quantity Incorrect: Snapshot Details and License Summary Pages*

**Bug 6681459** –There is a discrepancy in the snapshot quantity shown on Snapshot details and License summary pages.

**Workaround** –Use the License page for accurate snapshot quantity details.

### *Snapshot Reserve Error When -Z Option is Used*

**Bug 6665092** –When used together, the -Z option overrides the -L option.

Therefore, the following command yields an error:

```
/sscs create -a 6540-1 -V master-vol-1 -f failsnapshot -m res-vol-1 -Z 5GB -w 50 -C 1  
-L average snapshot snap-1.
```

**Workaround** –Do not use the -Z option. Instead, use the -w option. The -Z option is only supported on the 6920 array.

### *Snapshot Reserve Space is Insufficient and Fails Resnap*

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

**Workaround** –In the snapshot feature of the management software, configure snapshots to fail if sufficient reserve space is not available. The fail message will prompt you to increase the reserve space.

### *Snapshot Volumes Do Not Support Read-ahead*

**Bug 6560461** –Although both the base volume and the snapshot reserve volume support read-ahead, the snapshot volume itself does not support read-ahead. As a result, the Read-ahead Enabled Option is set to False on the Snapshot Details page.

This works as designed.

### *Snapshot/Volume does not Display Objects in “Create New Mappings”*

**Bug 6743793** –Searching volume/snapshot in “Create New Mappings” does not display all objects when there are 2048 volumes defined. This impacts users who have many volumes but do not provide filtering criteria to reduce the set they want to manipulate from the wizard interface.

**Workaround** –Use the CLI to create the map.

### *Virtual Disk Name Change Fails When GHS is in Use*

**Bug 6757428** –Attempting to change the name of a optimal/enabled vdisk fails when GHS is in use.

**Workaround** –In progress.

### *Virtual Disk Wizard Returns Application Error/Servlet Exception*

**Bug 6749919** –From WinXP, using MSIE to access CAM on SuSe10 Linux: While the Virtual Disk link is clicked in the left pane and displayed in the right pane, click the NEW button. In the first window of the wizard, fill in a name and press Enter (rather than click next). The application error appears.

**Workaround** –In progress.

### *Volume Copies can take Several Minutes to Complete*

**Bug 6762700** –As volume copies are created, some sscs commands take a long time to complete.

**Workaround** –In progress.

### *Volume Copy Instances While Volume Copy License is Removed*

**Bug 6826242** –Unable to activate replication set license if installed volume copy license is removed. The array has a variety of issues while the volume copy license is removed.

This works as designed. Arrays must be compliant with volume copy license. Otherwise, you cannot perform the following operations:

- Standard RAID Volume Creation
- Automatic Configuration
- Creation of Storage Partition Mappings
- Hot Spare Assignment
- Dynamic Segment Sizing (DSS) and Dynamic RAID Migration (DRM)
- Dynamic Capacity Expansion (DCE) and Dynamic Volume Expansion (DVE)
- Snapshot Volume Creation
- Remote Volume Mirror (RVM) Activation and Mirrored-Pair Establishment  
Volume Copy
- Establishment and “Start Copy” Operations

If the storage array supports multiple performance tiers, performance will suffer after the next storage array reboot, unless the condition is resolved and the array is brought into compliance.

**Solution** –See [“Licensing Optional Premium Features” on page 4](#) or search for this information in Online Help.

### *Volume Fail Error Occurs when VDisk does not Re-initialize*

**Bug 6760872** –Clicking vdisk button in Service Advisor does not re-initialize. Failed volume error is reported.

**Workaround** –Delete volumes (and subsequently the vdisk will be deleted). Recreate volumes/vdisk and restore data from backup.

### *Volume Incorrectly Mapped to Default Storage Domain*

**Bug 6796955** –Volume is incorrectly mapped to the default storage domain after volume creation. This has been observed on two separate CAM hosts (Win 2008 and Sol 10).The volume appears to be mapped to the default storage domain while all other volumes remain with the state showing Free.

All volumes should be created and no volume should be mapped.

**Workaround** –In progress.

### *Volume Mapping - Historical Job “Create Mappings” Failed with non-specific failure data provided*

**Bug 6801450** –Historical job “Create mappings” failed with non-specific failure data provided.

Using the New wizard to select and map volumes starts the job; then the job finishes and displays in Historical Job Summary. Mappings failed; however, the error is not specific as to which volumes failed. Status displays as follows:

The operation cannot be completed because the volume you are trying to map is already accessible by a host group or host in this storage domain.

**Workaround** –In progress.

### *Volume Name Should be 25 or Fewer Characters*

**Bug 6809745** –Assigning a very large name to a volume and selecting Multiple Volume Creation from the Volume Wizard does not work. After you specify the size and complete the volume creation, a job is started but it does not complete. No error message displays.

**Workaround** –When naming a volume, use 25 or fewer characters.

## *Volumes Not Created Using Fractional Sizes*

**Bug 6665635** –Creating volumes with sizes that contain a fraction does not work in locales using a comma as decimal point. The check for a legal numeric value is not localized, but the interpretation of the number afterwards is. If you correctly enter the locale with a comma as 17,352, you will get this error message: “You must provide a numeric capacity value.” The check for a legal numeric value is not localized, but the interpretation of the number afterwards is.

**Example** –When you create a volume with 17.352GB under the standard “en” locale, you can enter the size as 17.352 and select GB as unit. However, under the “de” locale, the dot is interpreted as 1000-separator. A 17.352 size with a 1GB unit would try to create a ~17 TB volume and likely fail with this error message: “The size entered for the new volume exceeds the maximum space available on the selected pool.”

**Workaround** –For GB and TB values you can multiply by 1024 and enter as MB or GB. You can perform one of the following tasks:

- Remove or modify the check for a numeric value, so that values containing a comma can pass.
- Always interpret the value entered in the “en” locale.

## *Volumes Not Deleting from the Single Page Window*

**Bug 6807053** –Unable to delete volumes with the “show data in single page” option from the Volume Summary Page. After multiple volumes are deleted, the Volume Summary Page still shows the same number of volumes as before.

**Workaround** –In progress.

## *Volume Segment Size Associated Requires a New Profile with a Variable Number of Disks when Changed*

**Bug 6599933** –Changing a volume created with a one segment size to one with a different segment size requires that you create a new profile with the desired segment size, create a pool using that profile, and apply the new pool to the volume. However, if the original profile was created using a fixed number of disks instead of a variable number of disks, then an error is returned.

**Workaround** –Adjust the new profile so that the number of disks is variable instead of fixed.

## *Volumes Supported on the Sun StorageTek 6130 Array Up to 1022*

**Bug 6540170** – CAM can be used to create up to 1022 volumes (volumes 0 through 1021) on the Sun StorageTek 6130 array. However, if the Access LUN is in use, up to 1023 volumes (volumes 0-1022) can be created. If you attempt to create more than the supported number of volumes, an error message is returned.

## *Windows “ param=value” --CLI throws exception in Modify Site*

**Bug 6800989** –Modify site in CLI throws exception in W2k3 and WinXP when incorrect format (“ param=value”) is used.

**Workaround** –Do not insert a space before the first quotation mark.

## *Write Consistency Group Members Not All Consistent*

**Bug 6598844** –Members of a replication write consistency group should all have matching attributes and roles.

# Documentation Issues

---

**Note** – The CLI Guide, manpages, and Online Help contain information concerning Access Configuration features and support for Sun Storage J4200, J4400, and J4500 arrays; Sun Storage F5100 Flash array; and Sun Blade 6000 Disk Module arrays. However, these are not supported in the 6.4 CAM release unless patches have been installed: See [“CAM 6.4 Platform and Firmware Patches” on page 1](#).

---

## *CLI Doc: Trap Notification - Incorrect Usage Example*

**Bug 6826990** –The example noted in the CLI documentation for proper usage of the add notification command is incorrect, as it is missing the -o option.

**Workaround** –Use the following as a replacement example for this command:

```
sscs add -i 10.10.10.1 -o 162 notification trap
```



## *CLI Command Changes for `sscs map initiator` and `sscs map snapshot`*

**Bug 6599146** –Although the CLI command `sscs map initiator` is listed in the CLI manpage, it is not implemented. And, although the CLI manpage lists the `-i` option for use with the CLI commands `sscs map volume` and `sscs map initiator`, this option is not yet implemented.

## *CLI Man Page & Help Provide Incorrect Option for `Modify fcport`*

**Bug 6799310** –The loop ID range for the `modify fcport` command is incorrectly reported as 1..127. The correct range is actually 1..125.

**Workaround** –When specifying a loop ID for this command, use a range of 1..125.

---

**Note** – The range may differ when using older firmware. Use the `--help` command to verify the correct syntax for your array and firmware.

---

## *Virtual Disk Expansion has Errors in Online Help*

**Bug 6686067** –Documentation error in Expansion of Vdisk Help page. Wrong information is given to the user regarding maximum number of disks.

**Solution** –The Help is being updated with content similar to the following:

### *Rules for Virtual Disk Expansion*

- RAID-0–Up to 30 disk drives with 06 level firmware and 224 disk drives with 07 level firmware. A minimum of one disk drive is required for virtual disk expansion.
- RAID-1–Up to 30 disk drives with 06 level firmware and 224 disk drives with 07 level firmware. A minimum of two disk drives is required for virtual disk expansion.
- RAID-3, RAID-5, and RAID-6–Up to 30 disks. A minimum of one disk drive is required for virtual disk expansion.
- All RAID levels– Maximum two disk drives can be used for virtual disk expansion at a time.

---

**Note** – When you expand a virtual disk, its disk drives must all be of the same size and type– either Serial Advanced Technology Attachment (SATA), Fibre Channel (FC), or Serial Attached SCSI (SAS).

---

## Firmware Issues

To see notable updates/fixed issues related to firmware, see “[Array Firmware Bug Fixes](#)” on page 70.

### *Avoiding Firmware Issues*

To avoid issues regarding the new 07.xx.xx.xx firmware:

- Contact Sun Microsystems Support Services at:  
<http://www.sun.com/contact/support.jsp>  
to upgrade from 06.xx firmware baseline for the 6140, 6540, and FLX380 arrays.
- To install the new 07.35.xx.xx firmware for the 2500 Array Series, consult the *2500 Array Series Firmware Upgrade Utility Guide* (part number 820-6362).

---

**Note** – After the initial installation of 07.10.xx.xx, you can install future changes to the 07 firmware baseline using the normal upgrade procedures in CAM described in this document.

---

### *2510 Arrays - sscs modify iscs-ports Lacks IPV6 Support*

**Bug 6763354** – For 2510 arrays - sscs modify iscs-ports is lacking IPv6 support

**Workaround** – Use the GUI to use ipV6 for iscsi ports for the arrays.

### *2510 Arrays - Disabling IPv6 Support on Data Ports Does Not Work*

**Bug 6763343** – Disabling IPv6 support on the data ports does not work. Using CAM to manage the 2510 arrays disabling IPv6 Support on the data ports displays a successful status, however IPv6 is not disabled. The check-box stays selected and there is no indication on the controller serial console of the disabling taking place.

**Workaround** – In progress.

### *Controller Slot Positions Contained in MEL Log are Unreliable*

**Bug 6747684** –The controller redundancy lost event is showing the wrong controller slot in the component field on a 2530 array.

**Workaround** –In progress.

### *Install Wizard Displays False Warning*

**Bug 6593508** –The review step of firmware Install wizard might display a false warning that the array health is not optimal.

**Workaround** –Check the Alarm Summary page to verify the alarm.

### *Upgrade Utility Automatic Array Discovery Password Verify does not Reference the Array*

**Bug 6736963** – When multiple arrays are discovered (using the Automatic scan subnet option), the Password Verification pop-up windows do not make reference to the array.

**Workaround** – None at this time.

## **In-Band Array Management - Operational Information and Issues**

In-band management is supported on the Sun StorageTek 6130, 6140, 6540, 2530 and 2540 arrays.

### **About the RAID Array Proxy Agent**

---

**Note** – This information applies only to FLX240, FLX280, FLX380, 6130, 6140, 6540, 6580, 6780, 2510, 2530 and 2540 arrays.

---

The in-band management proxy agent is a package which is added to a host (or group of hosts) with in-band connectivity via Fibre Channel to the storage array. An external management station can then talk to this proxy host via an out-of-band connection and the management commands are then relayed to the storage device via the in-band path. This is a transparent proxy agent which simply converts the

RPC request packets to UTM SCSI- specific messages. The API CAM uses to manage the arrays is identical whether the array is managed via the in-band or out-of-band path.

Multiple in-band proxy hosts may be used to access the same array and multiple arrays are allowed behind a single proxy host.

Installation of the proxy agents is accomplished via the standard package addition tools inherent to the specific operating system. For example, the `pkgadd (1M)` command would be used to install the Solaris agent and the associated Java Runtime package should also be installed. For Linux, the packages are RPM based and a runtime package is also needed. For Windows, the installation packages are executable files that include their own “Install Anywhere” installer.

---

**Note** – CAM 6.1 added support for Solaris (x86) and Windows proxy agents.

---

## Known RAID Array Proxy Agent Limitations

---

**Note** – This information applies only to FLX240, FLX280, FLX380, 6130, 6140, 6540, 6580, 6780, 2510, 2530 and 2540 arrays.

---

A proxy agent restart is required after disruptive changes to the storage configuration. This does not apply to changes in volumes exposed from a single array but it does apply if storage arrays are re-cabled differently or if the storage array configuration has changed (i.e. adding new storage arrays to the configuration).

The in-band proxy agents will start when the host boots, but they will terminate if storage is not immediately seen. A restart of the agent (instructions below) will force a re-scan for storage arrays and, if any are found, the agent will remain running.

## Solaris: Checking the UTM LUNs and Start/Stop of the Proxy Agent

---

**Note** – This information applies only to FLX240, FLX280, FLX380, 6130, 6140, 6540, 2510, 2530 and 2540 arrays.

---

Download CAM in-band proxy agents for Solaris from here:

<http://www.sun.com/download/products.xml?id=471e7573>

To verify the host sees the arrays management (UTM) LUN, do the following:

1. Start / Stop the Agent (Solaris)

```
/opt/SMgr/agent/SMagent start
```

If the agent is already running, this will stop and then restart it.

2. Check the status of the agent

```
# ps -ef | grep SMagent | grep -v grep
root 5144      1    0 11:58:24 pts/3          0:01
/opt/SMgr/agent/jre/bin/java -classpath
/opt/SMgr/agent/SMagent.jar devmgr.launch
```

## Linux: Checking The UTM LUNs and Start/Stop of the Proxy Agent

---

**Note** – The SMagent requires Red Hat 5.1 (also known as “5 update 1”) or higher. It is not supported on Red Hat 5.0.

---

---

**Note** – This information applies only to FLX240, FLX280, FLX380, 6130, 6140, 6540, 6580, 6780, 2510, 2530 and 2540 arrays.

---

Download CAM in-band proxy agents for Linux from here:

<http://www.sun.com/download/products.xml?id=471e7573>

To verify the host sees the arrays management (UTM) LUN:

#### 1. Start/Stop Agent

```
[root@nsvr-150 agent]# /opt/SMgr/agent/SMagent start
Stopping Agent process 12632.
SMagent started.

[root@nsvr-150 agent]# SANtricity Storage Array Host Agent,
Version 09.17.A0.03
Built Tue Dec 05 14:52:38 CST 2006
Copyright (C) 1999-2006 LSI Logic Corporation. All rights
reserved.

Checking device /dev/sda (/dev/sg0): Skipping
Checking device /dev/sdb (/dev/sg1): Skipping
Checking device /dev/sdc (/dev/sg2): Activating
Running...
```

#### 2. Check for UTM LUN

```
[root@nsvr-150 agent]# java -classpath
/opt/SMgr/agent/SMagent.jar
devmgr.versioned.agent.DeviceIdentifier | grep "Volume
Access" /dev/sdc

(/dev/sg2) [Storage Array fms-lca1, Volume Access, LUN 31,
Volume ID <600a0b80002fc07400000000000000000>]
```

## Windows: Checking The UTM LUNs and Start/Stop of the Proxy Agent

---

**Note** – This information applies only to FLX240, FLX280, FLX380, 6130, 6140, 6540, 6580, 6780, 2510, 2530 and 2540 arrays.

---

To verify the host sees the arrays management (UTM) LUN, do the following:

#### 1. Start/Stop Agent

```
E:\Program Files (x86)\StorageManager\agent>net start
"SANtricity Storage Manager Agent"

The Storage Manager Agent service is starting.
The Storage Manager Agent service was started successfully.
```

## 2. Check for UTM LUN

```
E:\Program Files (x86)\StorageManager\agent>C:\Java\
jdk1.5.0_11\bin\java -classpath SMagent.jar
devmgr.versioned.agent.DeviceIdentifier |
findstr Access

\\.\PHYSICALDRIVE0 [Storage Array fms-lcal, Volume Access,
LUN 31, Volume ID <600a0b80002458d20000000000000000>]

\\.\PHYSICALDRIVE1 [Storage Array fms-lcal, Volume Access,
LUN 31, Volume ID <600a0b80002fc074
```

### *Access LUN does not Correlate with Host to which it is Mapped*

---

**Note** – This information applies only to FLX240, FLX280, FLX380, 6130, 6140, 6540, 2510, 2530 and 2540 arrays.

---

**Bug 6584815** –When an access LUN is mapped to a proxy agent host for in-band management use, you must correlate the mappings between the LUNs and the host by using the `format` command at the UNIX prompt. The system will list the access LUNs and the array ports from the UI or the CLI, and it will then compare the results. For example:

- **Format**

```
c8t0d31 <SUN-UniversalXport-9617 cyl 8 alt 2 hd 64 sec 64>
/pci@8,700000/fibre-channel@2/fp@0,0/ssd@w200500a0b82fbc3c,1f
c9t0d31 <SUN-UniversalXport-9617 cyl 8 alt 2 hd 64 sec 64>
/pci@8,700000/fibre-channel@2,1/fp@0,0/ssd@w200400a0b82fbc3c,1f
```

- **List the array ports using the UI or CLI**

```
A/1 A Up FC 2 Gbps 20:04:00:A0:B8:2F:BC:3B
A/2 A Up FC 2 Gbps 20:04:00:A0:B8:2F:BC:3C
B/1 B Up FC 2 Gbps 20:05:00:A0:B8:2F:BC:3B
B/2 B Up FC 2 Gbps 20:05:00:A0:B8:2F:BC:3C
```

- **Correlate WWNs**

In this example, Port A/2 exposes c9t0d31 and Port B/2 exposes c8t0d31

## *Array Removal Might Not Complete Successfully*

**Bug 6593318** – When a number of in-band managed arrays are selected for removal, the operation appears to complete successfully. However, one array may still be listed on the Storage System Summary page.

## *Controller Resetting Issues on In-band Managed Array*

This information applies only to FLX240, FLX280, FLX380, 6130, 6140, 6540, 6580, 6780, 2510, 2530 and 2540 arrays.

For best performance, ensure both controllers are connected during configuration.

**Bug 6603978** –The controller for an in-band managed array cannot not be reset even when physical connectivity between the array and the management host has been verified.

**Workaround** –If physical connectivity is valid, un-register and then re-register the array.

## *Error: Could not Communicate with Controller to Complete Request*

This information applies only to FLX240, FLX280, FLX380, 6130, 6140, 6540, 6580, 6780, 2510, 2530 and 2540 arrays.

**Bugs 6610504, 6609734, 6609155, 6607104, 6609732, 6612120** –An occasional problem exists where the in-band proxy agent may return the paths to the controllers in reverse order. This error can occur on any platform.

The net result is an immediate communications error. The error message will typically read “Error: Could not communicate with the controller to complete this request. Possible causes include network or connection problems, controller problems, or no power to the host or storage array. Check these possible causes, then retry the operation.”

This error might occur when performing the following operations:

- Volume expansion
- Snapshot copy, re-snap and disable
- Virtual disk defragmentation

**Workaround** –Change the Current Volume Ownership when a “communication error” is encountered during volume expansion: From the Volumes page, select the “Specific Volume” and then change the value of the “Owning Controller.”



Changing the Current Volume Ownership will create an Alarm because the volume is not on the preferred controller. Select one of two actions:

- Change the Volume back to the original owner after performing the desired command.
- Change the Preferred Volume Ownership of the desired volumes via sscs(1m).

For best performance, ensure both controllers are connected during configuration.

### *Linux (Red Hat) 5.1 Version Required - 5.0 not Supported*

This information applies only to FLX240, FLX280, FLX380, 6130, 6140, 6540, 2510, 2530 and 2540 arrays.

**Bug 6661742** – SMagent-LINUX-10.00.A2.02-1.i386.rpm will not load. SMagent is not supported on Red Hat 5.0.

**Workaround** – The SMagent requires Red Hat 5.1 (also known as “5 update 1”) or higher.

### *Network Address Column Shows Change from Out-of-band to In-band when Registering an In-band Array*

This information applies only to FLX240, FLX280, FLX380, 6130, 6140, 6540, 2510, 2530 and 2540 arrays.

**Bug 6612214** – When one of the arrays behind an in-band management proxy is removed in CAM, the software will change the management of the other arrays behind the proxy to out-of-band management if that path exists. An in-band discovery of the proxy agent would return them to in-band management in this case.

### *Performance Monitoring Page Does Not Display In-band Statistics*

This information applies only to FLX240, FLX280, FLX380, 6130, 6140, 6540, 6580, 6780, 2510, 2530 and 2540 arrays.

**Bug 6681582** –Performance Monitoring page lists the Performance statistics as Unavailable.

**Workaround** –Check the physical connectivity from the management host to the array. If the connectivity is good, try un-registering and then re-registering this array.

## Localization Issues

### *“Adding Expansion Trays” Procedure Missing Illustrations*

**Bug 6762874** –“Adding Expansion Trays” service procedure missing illustrations under localized system.

**Workaround** –Please install patch 139784-01 to fix this issue. For the latest patches available for your system, check SunSolve at:

<http://www.sunsolve.sun.com>

### *Apostrophe Displays Incorrectly for French*

**Bug 6648569** –Apostrophes display incorrectly in the Browser User Interface in some cases for the French language.

**Workaround** –Please set your browser language to en-us.

### *Pages Appear in English*

**Bug 6764994** –Some pages appear in English.

**Workaround** –Please install patch 139784-01 to fix or set your browser in english. For the latest patches available for your system, check SunSolve at:

<http://www.sunsolve.sun.com>

## Solaris Issues

### *SES vs. SD Paths for UTM LUNs*

This information applies only to 2500 arrays.

**Bug 6500605** –For Solaris 10u4 and Solaris 8 and 9, the host cannot see the storage device's management UTM LUN.

---

**Note** – This bug is fixed in S10u5.

---

**Workaround** –Perform the following commands on the data host:

```
# setenv LD_LIBRARY_PATH /opt/SMgr/agent
# java -classpath /opt/SMgr/agent/SMagent.jar
devmgr.versioned.agent.DeviceIdentifier | grep "Volume
Access"
```

You should then receive output like the following, indicating which arrays have access LUNs visible to the agent:

```
/dev/rdsd/c5t200600A0B82458D4d31s2 [Storage Array fms-lca1, Volume
Access, LUN 31, Volume ID <600a0b80002458d20000000000000000>]
/dev/rdsd/c5t200700A0B82458D3d31s2 [Storage Array fms-lca1, Volume
Access, LUN 31, Volume ID <600a0b80002fc07400000000000000000>]
```

### *UTM LUNs Controlled by “Solaris Traffic Manager”*

This information applies only to 2500 arrays.

**Bug 6594360** –After you upgrade to S10U3 (or later), the in-band management UTM LUNs are controlled by Solaris Traffic Manager (MPxIO). In most cases, in-band management will not fail as a result of this; however, it is best practice to ensure that the UTM LUNs are not controlled by MPxIO. Performing the following workaround task will help prevent problems.

**Workaround** –Use the `format inquire` command to get the eight-character Vendor (VID) and Product IDs. Use the procedure that follows.

#### **1. Edit the file `/kernel/drv/scsi_vhci.conf`**

The following line should read:

```
device-type-scsi-options-list = "SUN Universal Xport",
"disable-option"; disable-option = 0x7000000
```

#### **2. Run the `stmsboot -u` command.**

Respond to the prompts as follows:

```
WARNING: This operation will require a reboot.
```

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

The changes will come into effect after rebooting the system.

```
Reboot the system now? [y/n] (default: y) y
```

## Notable Updates/Fixes in this Release

**Bug 6706123** –Support Data should collect the pool and profile information.

**Bug 6784562**–Import functionality is broken in CAM 6.2.0 and 6.3.0.

**Bug 6810847** –Activation of replication license on array with 06.xx.xx.xx FW fails in 6.2.0.13, 6.3.0.11, 6.4.0.7.

**Bug 6795734** –Unable to connect via CAM 6.x GUI & CLI on s10u7 management host.

**Bug 6728888** –CAM 6.1: Array Profile does not describe the location of the array’s thermal sensors.

**Bug 6742340** – GUI installer does not adjust screen for localized messages.

**Bug 6747973** –storageArrayProfile.txt should indicate whether a 6580/6780 network interface has autoneg ON or OFF.

**Bug 6748733** –storageArrayProfile.txt should report the vdisk names instead of their index numbers.

**Bug 6753631** –In-band supportdata collection from CAM appears hanging when controller B is offline.

**Bug 6787951** – No Help page display for Import/Export (on both 6.3.0.7 & 6.4.0.4).

**Bug 6762697** –CAM6.2.0.13: PC/RA are internal strings instead of user text in event 48.41.245; regression.

**Bug 6767100** – Battery status shows “Unknown” instead of optimal or charging.

**Bug 6808636** –Profile collected by CAM does not show volume mapping of snapshot volumes.

**Bug 6604026** –Data channels 3 and 4 not available for management through FMS/Service Advisor.

**Bug 6738435** –CAM 6.4.0.5 6780 Aurora sscs add -a <array> -l <license\_key\_file> license does not add license.

## Array Firmware Bug Fixes

**Bug 6790533** –Controller reset due to Ancient IO.

**Bug 6792398** –After upgrading to latest crystal, customer encounters controller reboots when running full I/O load.

**Bug 2172381** –RVM deletion operation staying queued and causing loss-of-management.

**Bug 6804830** –PANIC: sasDoTargetCmd: Cannot allocate mirror buf on CTLR B.

**Bug 697188** –SATA drives may fail further to a 06/3f/01 during drive code update.

**Bug 6810115** –RVM remained synchronized on odd volumes but was not synchronized on even volumes after cables were pulled.

**Bug 6821654** –(LBA) truncation issue on greater than 2TB volumes.

**Bug 6824635** –6140 controller panic reboot “PANIC: StateChangeMgr::incGenerationNumberAlt.”

**Bug 6803561** –SYMBOL is configuring the Java logger such that it interferes with management application logging.

**Bug 6812994** –DDC data not collecting traces in b.dq.

**Bug 6810118** –Data corruption when changing RVM mode from Asynchronous to Asynchronous with Consistency mode.

**Bug 6754351** –Problem related to GUI connection via Ethernet - causes exceptions.

**Bug 6797173** –6140/6540 report degraded path to drive(s) that isn’t degraded.

**Bug 6829052** –Santricity 10.50 cd HTML docs missing or in wrong location.

**Bug 6747153** –Controller Cache Memory size displays 0 from both the GUI and CLI.

**Bug 2170590** –False “impending failure” alerts. Related to PFA. Failure alerts are migrating to other drives.

**Bug 6765184** –6540 reports “Temperature Exceeded” on a few trays if running firmware (07.10.25.10).

**Bug 6767241** –After a controller reboot, loss of path redundancy might be reported on some internal drives.

**Bug 6822129** –(LBA) truncation issue on greater than 2TB volumes.

**Bug 6697651** –Expansion of Snapshot repository froze and resulted in Write Cache becoming disabled.

**Bug 6823965** –Controller Panic with (iconMgr2): PANIC: Already freed memory block at 0x10a374a0.

**Bug 6821652** –(LBA) truncation issue on greater than 2TB volumes.

**Bug 6770088** –6x80 firmware not accepting host board diagnostics requests PROC\_UNAVAILABLE.

---

# Sun Microsystems Support

If you need help installing or using a product, contact Sun Microsystems Support Services at:

<http://www.sun.com/contact/support.jsp>

For the latest patches available for your system, check SunSolve at:

<http://www.sunsolve.sun.com>

To download Common Array Manager software, go to:

<http://www.sun.com>

Click the New Downloads tab, and scroll down the list to find the link.

To search for a document from Sun's website, go to:

<http://www.sun.com/documentation>

Type the document title, part of the title, or the document's part number in the "Search" field, and press Return.

---

## 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 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 available on or through such sites or resources.