



Sun StorEdge™ T3+ Array Release Notes

Version 2.1 Controller Firmware

Sun Microsystems, Inc.
901 San Antonio Road
Palo Alto, CA 94303
U.S.A. 650-960-1300

Part No. 816-4771-10
April 2002, [Revision A](#)

[Send comments about this document to: docfeedback@sun.com](mailto:docfeedback@sun.com)

Copyright 2002 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, CA 95054 U.S.A. All rights reserved.

This product or document is distributed under licenses restricting its use, copying, distribution, and decompilation. No part of this product or 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 other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, AnswerBook2, docs.sun.com, SunSolve, Sun StorEdge, and Solaris are trademarks, registered trademarks, or service marks of Sun Microsystems, Inc. in the U.S. and other countries. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

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.

Federal Acquisitions: Commercial Software—Government Users Subject to Standard License Terms and Conditions.

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 2002 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, CA 95054 Etats-Unis. Tous droits réservés.

Ce produit ou document est 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, SunSolve, Sun StorEdge, et Solaris sont des marques de fabrique ou des marques déposées, ou marques de service, de Sun Microsystems, Inc. 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 licenciés 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'ETAT" 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.



Sun StorEdge T3+ Array Release Notes Version 2.1 Controller Firmware

Introduction

This document contains late-breaking product information and known issues that are specific to the Sun StorEdge™ T3+ array. Issues documented previously for the Sun StorEdge T3 array model that do not appear in these release notes have either been resolved or do not apply to the Sun StorEdge T3+ array.

Review this document so that you are aware of issues or requirements that can impact the installation and operation of the Sun StorEdge T3+ array. The information in this document supplements the information contained in the *Sun StorEdge T3+ Array Installation and Configuration Manual* and the *Sun StorEdge T3+ Array Administrator's Manual*.

Use this release note in conjunction with other release notes and README files that you may have received with other software products related to the Sun StorEdge T3+ array, such as VERITAS Volume Manager.

These Release Notes are organized as follows:

- “Related Documentation” on page 4
- “Required Patches” on page 4
- “General Issue” on page 6
- “Sun Cluster Issue” on page 6
- “VERITAS Issues” on page 7
- “Service Issues” on page 8
- “System-Level Issues” on page 9

Related Documentation

Title	Part Number
<i>Sun StorEdge T3+ Array Installation and Configuration Manual, Version 2.1 Controller Firmware</i>	816-4769
<i>Sun StorEdge T3+ Array Administrator's Manual, Version 2.1 Controller Firmware</i>	816-4770

Required Patches

Install all the required patches listed in TABLE 1 before installing the Sun StorEdge T3+ array version 2.1 controller firmware. TABLE 1 is current as the date of publication. The most up-to-date list of patches is available on the SunSolve™ web site under PatchPro™.

- 1. To retrieve the patches in TABLE 1, access the SunSolve web site at:**
<http://sunsolve.sun.com>.
- 2. Under SUNSOLVE ONLINE | SunSolve Contents | Patches, click on PatchPro.**
- 3. Click on the Network Storage Products link.**
- 4. Check all the appropriate boxes for your configuration.**
 - a. Next to OS Release, click to select your version of the Sun Solaris™ operating environment.**
 - b. Next to Platform, click to select your server.**
 - c. Check all applicable boxes:**
 - Under Disk Arrays, the box next to StorEdge T3 and T3B as applicable
 - Under Switches and HBAS, the box next to your configuration
 - Under Software, click to select your version of VERITAS Volume Manager
- 5. Scroll to the bottom of the page and click Generate Patch List.**

This produces a list of all the Network Storage patches that are specific to your Solaris operating environment.
- 6. Check the box next to all the desired patches to download.**

7. Click the [README](#) link next to each selected patch for download instructions and patch information.

8. Click Download selected patches.

TABLE 1 Patches Required to Use the Version 2.1 Controller Firmware.

System Type	Solaris™ 2.6 Operating Environment	Solaris 8 Operating Environment
All	105356-19 or later (ssd driver) 106226-02 or later (format patch) 105181-31 or later (kernel update patch)	109524-11 or later (ssd driver)
VERITAS VM 3.1	110253-04	110255-04
VERITAS VM 3.1.1	110451-05	111118-05
VERITAS VM 3.2	111907-04	111909-04
Volume Manager Storage Administrator	111904-04	111904-04
PCI (ifp) Only	107280-08 or later (ifp/PCI driver/PCI Systems only) 109399-03 or later (PCI Host Adapter Firmware Fcode)	109189-04 or later (ifp/PCI driver/PCI Systems only) 109399-03 or later (PCI Host Adapter Firmware Fcode)
SBus/sf-socal Only	105375-26 or later (sf/socal driver/SBus systems only) 109400-03 or later (SBus Host Adapter Firmware Fcode)	109460-06 or later (sf/socal driver/SBus systems only) 109400-03 or later (SBus Host Adapter Firmware Fcode)
Sun StorEdge Network Foundation Software on PCI Network Adapters ¹		111095-08 111096-04 111097-08 111412-08 111413-08

1. Applies only to the following PCI network adapters: Sun StorEdge PCI Single Fibre Channel network adapter, Sun StorEdge PCI Dual Fibre Channel network adapter, and Sun StorEdge CompactPCI Dual Fibre Channel network adapter.

General Issue



Caution – Sun StorEdge T3 and T3+ arrays should never be connected to a public Ethernet network—only to a secure network.

Sun Cluster Issue

4406863: Sun Cluster cannot use `recon_rate=high` Sun StorEdge T3+ array setting.

If the Sun StorEdge T3+ array is configured in a Sun Cluster environment, use either the `low` or `med` setting for the `recon_rate`. You can change this setting using the Sun StorEdge T3+ array `sys recon_rate` command. The `recon_rate=high` setting on an Sun StorEdge T3+ array can cause node takeover issues.

VERITAS Issues

4527907: VERITAS Volume Manager 3.2 encapsulation of alternate master volume can fail.

If you use an alternate master controller unit disk as the boot disk, VERITAS Volume Manager 3.2 will not select the path to that disk, but will attempt to encapsulate the primary path boot disk. Upon rebooting, the system hangs and the following message is displayed:

```
# /etc/rcS.d/S86vxvm-reconfig: /etc/vx/reconfig.d/disks-cap: cannot create
```

If building an OS on a multipathed Sun StorEdge T3+ array and you plan to encapsulate the system boot disk, build the OS on the first device in the device tree. For example, if the two paths to a T3+ LUN are c1 and c3, build the OS on c1, even if it is the alternate path to the T3+ LUN.

4313336: Enable DMP support for a Sun StorEdge T3+ array and StorEdge A3500 configuration.

DMP support is necessary to obtain full redundancy between interconnected Sun StorEdge T3+ array controller units. If you are connecting redundant Sun StorEdge T3+ arrays to a host running DMP that also has StorEdge A3500 storage devices connected to it, you must remove the Alternate Pathing (AP) file to make sure that both types of storage devices co-exist properly.

To perform the following procedure, you must be logged in as `root`.

1. On the data host, type:

```
# ls -l /kernel/drv/ap
```

2. If the `/kernel/drv/ap` file is of 0 length, remove `/kernel/drv/ap` by typing:

```
# rm /kernel/drv/ap
```

3. Reboot the system.

```
# reboot
```

If the `/kernel/drv/ap` file is *not* of 0 length, AP is installed and you cannot enable DMP because AP and DMP cannot co-exist. Sun Microsystems, Inc. recommends that you remove the AP product entirely using `pkgrm (1m)`. Refer to the AP product documentation for further details.

Service Issues

FRU removal for longer than 30 minutes will initiate a partner group shutdown.

If any field replaceable unit (FRU) is removed for an extended period of time, thermal complications might result. To prevent this, the Sun StorEdge T3+ array is designed so that an orderly shutdown occurs when a component is removed for longer than 30 minutes. Therefore, a replacement part must be immediately available before starting a FRU replacement procedure. You must replace a FRU that has been removed within 30 minutes or the Sun StorEdge T3+ array, and all attached Sun StorEdge T3+ arrays in that partner group, will shut down and power off.

4348664: `fru list` command should display new drive firmware versions automatically.

After upgrading the Sun StorEdge T3+ array internal drive firmware, perform a `disk version undl-9` operation on the upgraded drives. This Sun StorEdge T3+ array command ensures that correct drive firmware version information gets updated correctly in internal databases. If you do not do this after a drive firmware upgrade, it is possible that stale drive firmware version information can be displayed when using the `fru list` command.

For more information on using the `disk version` and `fru list` commands, refer to the *Sun StorEdge T3+ Array Administrator's Manual*.

System-Level Issues

Bootability

The Sun StorEdge T3+ array supports *warm* bootability for hosts running the Solaris operating environment that are connected by a Sun StorEdge SBus Dual Fibre Channel Host Bus Adapter, p/n X6730A. Warm bootability means that the Sun StorEdge T3+ array must be completely booted before attempting to boot the host from the Sun StorEdge T3+ array volume. Warm bootability is supported by Solaris 7 (Release 11/99) and later. Bootability for the Solaris 2.6 operating environment is not currently supported.

Note – Warm bootability is not supported with the ifp (Qlogic 2100) HBA.

Note – *Cold* bootability—that is, booting the Sun StorEdge T3+ array and the host at the same time—is only supported with certain Solaris-based hosts (SunFire™ 12000 and 15000). Contact your Sun Service provider for details.

The delayed time required for a Sun StorEdge T3+ array to become fully available to host I/O operations may cause issues, especially if the array is used as a boot device. To avoid these issues, the boot time directive named `maxwait` can be used on arrays that have the FCode version 1.13 loaded on one of the following HBAs:

- Sun StorEdge PCI Single Fibre Channel Network Adapter, p/n X6799A
- Sun StorEdge PCI Dual Fibre Channel Network Adapter, p/n X6727A

The `maxwait` boot time directive can be used to cause hosts running the Solaris operating environment to wait for the arrays in a workgroup or enterprise configuration to become ready. If you want to use the Sun StorEdge T3+ array as a cold bootable device with the `maxwait` boot time directive, please call your Sun Service provider for specific restrictions and configuration guidelines.

The recommended `maxwait` time is 10 minutes. If the array(s) completes booting before the wait time specified, the system stops *waiting* automatically and continues.

EXAMPLE

```
ok boot /pci@1f,0/pci@5/pci@0/SUNW,qlc@4:maxwait=10/fp/  
disk@w21000020371b80ef,0
```

4625215: When the Sun StorEdge T3+ array file system area reaches the 20-Mbyte capacity, `syslog` error messages are no longer reported.

This can be prevented by checking the file system area to ensure that it does not exceed 20 Mbytes. Use the `ls -l` command to list the file contents. When the file size approaches 20 Mbytes, delete old copies of image files as required.

Note – In general, files residing in the Sun StorEdge T3+ array reserved system area remain static. The one exception to this is the systems log file (`syslog`). The `syslog` file can grow to a maximum size of 1 Mbyte before it is automatically copied to a backup file. Thus, the largest you can ever get in terms of `syslog` files is 2 Mbytes. The most likely way you can exceed the reserved system area is by leaving extraneous file images on the Sun StorEdge T3+ array after sessions using the `ftp` command.

4253419: Sun StorEdge T3+ array controller has extended boot times.

In some cases, host systems running the Solaris operating environment can boot faster than Sun StorEdge T3+ arrays. This results in a host configuration that might not be able to detect all available Sun StorEdge T3+ array storage during a full AC power-loss boot cycle. This can occur when the host system has minimal amounts of memory (or memory power-on self-test operations have been disabled).

When powering up a configuration, always power on the Sun StorEdge T3+ arrays *before* the host server.

If this scenario still occurs, contact an authorized Sun Service provider or Sun Service at 1-800-USA-4SUN for an evaluation and suggested workaround.

Note – Any modification to the system non-volatile random access memory (NVRAM) configuration should be avoided as errors can result in extensive system down time. Before making modifications to NVRAM, contact Sun Service.

4652837: Booting from a mirrored Sun StorEdge T3+ array fails.

Do not boot from a mirrored Sun StorEdge T3+ array.

4497814: Must Telnet from the same subnet.

The `telnet` command must be run from a host on the same subnet as the Sun StorEdge T3+ array.

4362567: Use default port addressing on the Sun StorEdge T3+ array.

The default setting for Sun StorEdge T3+ array port addressing is `hard`. Although it is possible to change this setting, use the default setting to avoid unexpected system behavior.

4395542: SUNWlux package installation required for hosts running Solaris 2.6 environment.

The SOC patch (105375) for the Solaris 2.6 software environment will install and not fail, even when SUNWlux packages are not installed on the host. This results in a configuration where the host can see only one LUN on a Sun StorEdge T3+ array. If this occurs and there is no indication of other problems, check that SUNWlux packages are installed correctly on the host.

4292162: Permanent serial cable connections to the Sun StorEdge T3+ array are not recommended.



Caution – The serial port cable must be disconnected from the Sun StorEdge T3+ array to meet regulatory emissions requirements. Do not leave it connected after performing a procedure.

Note – The serial cable is used for special service procedures only and should not be used by anyone except authorized, qualified service personnel. The serial cable must be removed when the service procedure has been completed.

Because the Sun StorEdge T3+ array serial port provides diagnostic and EPROM access to the system during the boot cycle, there is a risk of a security breach if the serial cable is left connected to the Sun StorEdge T3+ array. To avoid this risk, remove the serial cable connection from the Sun StorEdge T3+ array to external host systems after use.

4660974: Specifying the `lun default` parameters incorrectly can cause the array controller to reset. 4651702: The `lun perm list` command output is sometimes incorrect.

Array controller can reset. Due to known problems with the `lun default` command, it is recommended that this command *not* be used to modify the default permissions for the LUN. All functionality provided by the `lun default` command can be addressed by the `lun perm` command and does not limit you in any way to use the new features of the version 2.1 controller firmware.

The `lun perm list` Command output is sometimes incorrect. The effective permission listed with the `lun perm list` command is sometimes incorrect if the `lun default` permission is changed from the default of “none” via the `lun default` command. To avoid this error, do not use the `lun default` command.

4661583: The `lun wwn rm` command does not always work properly with a Telnet session.

When using a Telnet session, the `lun wwn rm` command do not always work properly. Entering the command returns the message: Do you want to remove? (Y/N) [n]: as shown below. However, it does not always wait for the user's input before returning to the system prompt (#).

```
# lun wwn rm wwn 2002067890123456
2002067890123456 will get default access right.
Do you want to remove? (Y/N)[n]:
```

This command exhibits this condition every other time it is executed. If this problem is encountered, simply rerun the command.

4675668: The `hwwn rm` command used interactively, fails in the Telnet mode.

Do not use the interactive method (where the system prompts you to enter data) with the `hwwn rm` command. Use the manual method where you enter all the data with the command at the same time.

