



Product Release Notes for 3ware 9750 SATA+SAS 6Gb/s RAID Controller Cards

Release 10.2

READ ME FIRST!

Introduction

Thank you for purchasing a LSI 3ware SATA+SAS RAID controller card. This document contains the latest information that may not be included in the Installation or User Guides. Please read this document before you contact Technical Support.

Latest product information, compatibility lists, software upgrades, and OS drivers are available through the LSI World Wide Web site

at: <http://www.lsi.com/channel/ChannelDownloads/>.

- Select “RAID Controllers” from the “Product Family” pull-down menu and then select your applicable product, such as “3ware SAS 9750-8i”.

The 3ware knowledge base, including frequently asked questions (FAQs), is viewed at: <http://kb.lsi.com>

Product compatibility and interoperability lists can also be found

at: http://www.lsi.com/channel/support/marketing_resources/index.html

- Select the ‘Data & Interoperability’ tab.

For specific answers to questions, technical support, or to give feedback about the product, please visit our website at <http://www.lsi.com/channel/ContactUs>.

LSI also offers support 24 hours a day, 7 days a week at 888-646-4566 or 408-433-4567 in North America. For international customers call 00-800-5745-6442.

For the latest LSI news and support updates, sign up at: <http://twitter.com/LSIsupport>.

Release Highlights

This release includes the following:

- SATA+SAS 6Gb/s controllers
 - 9750-4i
 - 9750-8i
 - 9750-4i4e *New!*
 - 9750-8e *New!*
 - 9750-16i4e *New!*
 - 9750-24i4e *New!*
- Added external SAS enclosure support, for configurations of up to 127 drives
- Support for LSI's new 620J and 630J SATA+SAS JBOD external enclosures
- Products available as a single controller, as well as in a kit with associated cables
- High port count controllers, for high-capacity direct attach applications
- Support for SATA and SAS hard drives larger than 2 TB
- Improved serviceability to upgrade storage enclosure processor (SEP) firmware
- Support for the latest FreeBSD and Linux distributions
- PC and Mac OS support now includes a common multi-session CD
- Updated firmware, software (3DM2 & CLI), and Windows drivers

Release Details

The release has the following components:

- 3ware PC CD version: 3.00.02.007 and Mac CD version: 3.01.02.005
- Firmware version: 5.12.00.007
- 3DM2 version: 2.11.00.016
- CLI version: 2.00.11.016
- FreeBSD 7.x driver version: 10.70.00.007
- FreeBSD 8.x driver version: 10.80.00.001
- Linux driver version: 3.26.00.028 (for supported distributions)
- Linux up-stream driver version: 3.26.02.000 (for newer kernels)
- Mac OS X driver version: 2.2.3
- OpenSolaris driver version: 2.3
- VMware ESX/ESXi driver version: 3.26.00.001
- Windows Storport driver version: 5.01.00.018 (Logo certified)

Operating System Support

The following operating systems are supported:

- FreeBSD 7.3 and 8.0 (x86 & amd64)
- Linux (x86 and x86_64)
 - Fedora Core 12
 - Red Hat Enterprise Linux 5.5
 - openSUSE 11.2
 - SUSE Linux Enterprise Server (SLES) 11 SP-1
 - For other distributions, refer to KB article: <http://kb.lsi.com/KnowledgebaseArticle14546.aspx>

- Specific driver sources for kernels 2.6.8 through 2.6.34
- Mac OS X Leopard (10.5) and Snow Leopard (10.6) for Intel based Mac Pros
- OpenSolaris 2009.06 (x86 & amd64)
- VMware ESX/ESXi 4.0/4.0 update-1
- Windows 2003 SP-2, Vista, 2008, and Windows 7 (x86 & x64)

Bug Fixes

- Fixed controller offline issue during large overlapping writes with the write cache disabled (SCR-819)
- Updated 3BM to support up to 3 boards per BIOS session (SCR-1017). Additional 9750 boards, if installed, will appear in a second instance of the BIOS.
- Fixed controller offline issue after a drive data cable rapid disconnect and reconnect under heavy I/O (SCR-800)
- Fix to keep a degraded RAID 5 unit online if one of the remaining drives has a recoverable link problem (SCR-771)
- 3DM2 now issues a warning (same as CLI) that a reboot is required when the controller's SAS link speed settings have been changed (SCR-698)
- 3BM (BIOS) now shows the correct initialization percentage completed for newly created redundant units (SCR-836)
- Direct attached backplanes will now illuminate the applicable status light on the enclosure when a drive's SMART threshold is exceeded. (SCR-983)

Restrictions

Important: Older Drivers & Software Tools Are Not Compatible With This Release

If your system contains a 3ware driver and/or software released prior to 10.0, these will not work with the 9750 controller. Older 96xx or 95xx controllers will only work with drivers from earlier releases.

No Legacy Firmware and Driver Updates For This Release

There is no firmware or driver updates for the 9550SXU, 9650SE, and 9690SA controllers in this release. The latest 3ware management tools (CLI & 3DM2) included in this release can be used to manage these earlier controllers.

Errata

Performance Testing Recommendation for Random Large Block Reads (SCR-885)

For performance tests that include random reads of 256K request size blocks (or larger), far better performance is possible by setting the unit's read cache to "basic" to disable read ahead which is used by the default setting of "intelligent"

Best Practices on Removing a Drive to Prevent Data Loss While In Use (SCR-548)

Please refer to KB article <http://kb.lsi.com/KnowledgebaseArticle15869.aspx> for details.

Support for Hard Drives Larger Than 2 TB

As new hard drives larger than 2 TB are made available, please check our compatibility list at http://www.lsi.com/channel/support/marketing_resources/index.html in the 'Data & Interoperability' tab for the latest additions.

Support for Units Larger than 2 TB on OpenSolaris (SCR-973)

While the 9750 supports units that are greater than 2 terabytes in size, these storage objects are too big for some 32-bit kernels, such as OpenSolaris.

Tools From 3ware CD Menu Do Not Run With Fedora Core 10 & Later (SCR-1781)

Due to security restrictions the 3ware menu is no longer supported with Fedora Core. The workaround is to login as root and run the tools directly from a command line instead.

Driver for Fedora Core 12 Does Not Load on Primary Storage (SCR-521)

Due to an OS installer issue, the Fedora Core 12 operating system does not load the 3ware driver when you install the operating system on a 3ware controller. Run the workaround as documented in the [Fc12-Install.txt](#) file included on the storage medium containing the 3ware driver.

Unable to Boot openSUSE 11.2 and SLES 11 SP-1 after OS Install (SCR-922 & 993)

Due to OS installer issues, the openSUSE 11.2 or SLES 11sp1 operating systems fail to boot from the 3ware array following installation. Run the workaround as documented in the [Readme](#) file included on the storage medium containing the 3ware driver.

SUSE Driver Does Not Load Automatically for Secondary Storage (SCR-2166)

Due to SUSE Linux Enterprise Server (SLES) 11 restrictions, the 3ware driver fails to load on boot even after the `mkinitrd` command is executed. As a workaround, edit the `/etc/init.d/boot.local` file in the distribution to add either of the the following commands:

```
insmod /lib/modules/<kernel version>/kernel/drivers/scsi/3w-sas.ko
modprobe --allow-unsupported 3w-sas
```

While other supported Linux distributions should not be affected, the same procedure may be used. For Redhat or Fedora, edit the `/etc/rc.d/rc.local` file instead.

Units created while BBU Capacity Test is Running Results in an Error (SCR-503)

If unit creation in 3BM is attempted while the BBU battery capacity test is running, 3BM will report "Parameter not changeable" since the write cache cannot be enabled until after the test is completed. The error can be safely ignored and the write cache will be automatically enabled after the test has completed.

SATA Drive Spindle Speeds are Reported Incorrectly (SCR-262)

This occurs for both direct connect and expander based SATA drives. SAS drives are not affected.

No Warning is Shown if More Than 32-units Are Available (SCR-673)

If more than 32-units are attached to the controller no warning message is reported that the maximum number of units allowed by the firmware and software was exceeded. Drives associated with the subsequent units will appear with a “u?” designation in 3DM2 and CLI. In the 3BM, the units will be marked “incomplete”.

CLI or 3DM2 May Fail to Import an Incomplete Unit After Rescan (SCR-671)

In most cases rescan will correctly import an incomplete or dead unit. Prior to rescan the drive(s) may appear as ‘u?’ since a unit number is not yet assigned. If the ‘u?’ designation remains after rescan a reboot may be required.

CLI for FreeBSD May Fail to Show Controllers and CLI Version (SCR-945)

With certain FreeBSD systems CLI may report a syntax error with the show and show version commands. Other commands are not affected including /cx show & /cx/ux show.

CLI Allows Migration of a Single Disk SAS Drive to a RAID-1 Using a SATA Drive (SCR-594)

Mixed SAS and SATA drive configurations are not allowed during create and migration by 3BM, CLI, or 3DM2. This exception in CLI will be fixed in an upcoming release.

3ware Installer for Mac Reports an Unusual Debug File Location (SCR-792)

When 3DM2 is installed on an Apple OS-X system, the debug file is actually written to: /var/folders/zz/zzzivhrRnAmviuee++++++/-Tmp-/3wareDebugFile as reported by the installer. The folder is accessible if the user logs in as root.

3DM2 Displays Mac OS 10.6.2 as Darwin 10.2.0 (SCR-754)

This is by design and is the logical equivalent of Redhat or openSUSE running on Linux.

3DM2 and CLI Incorrectly Shows a RAID-6 Initialization as Paused (SCR-619)

If a RAID-6 array single drive rebuild occurs during initialization both activities actually continue together even though the initialization is shown as paused.

An Enclosure with Dual Expanders May Appear As Two Enclosures (SCR-285)

If a single enclosure is attached with dual expanders it may incorrectly appear as two enclosures in 3BM, CLI, or 3DM2. If multiple enclosures are attached the last enclosure may be shown as a duplicate.

3DM2 May Display Invalid Characters in Email Notification Settings (SCR-705)

If the 3DM2 email notification setting fields are not populated, random characters may be displayed in place of a blank field. Only Windows operating systems appear to be affected. These characters can be safely ignored.

3DM2 Unable to Migrate From a 2-drive RAID-0 Array (SCR-1020) and From a Single Drive to a RAID-1 Array (SCR-1030)

In these cases CLI can be used to perform the migration, until a 3DM2 fix is available.

Possible Timeouts with Multiple SAS 2.0 (6Gb/s) Enclosures

Certain SAS 2.0 enclosures w/ expanders, (e.g.: Supermicro 216A, and LSI 620J and 630J), should be limited to no more than 3 cascaded enclosures with the 3ware 9750 controller, unless all SAS or SATA drives have the exact same link speed, to prevent connection timeouts. Direct attached configurations are not affected.

Important Configuration Note for 3ware 9750-16i4e & 24i4e Controllers (SCR-997)

SAS expanders should only be attached to the external port of the 3ware 9750-16i4e or 9750-24i4e controllers. The internal ports are designed for direct attached SATA and SAS drives only, since an onboard SAS expander is already included.

Restrictions When Updating SES Enclosure Firmware Using CLI

Initially only LSI and Supermicro SAS expanders are supported when updating the enclosure's storage enclosure processor (SEP) firmware using CLI. Please refer to KB article: <http://kb.lsi.com/KnowledgebaseArticle15857.aspx> for more details.

New SAS I2C Breakout Cable Required for Supermicro Direct Attached Enclosures

Direct attached drive enclosures, such as the Supermicro 826TQ, 836TQ, & 846TQ series require a new SAS breakout cable for use with I2C enclosure management. Please refer to KB article: <http://kb.lsi.com/KnowledgebaseArticle15858.aspx> for more details.

Managing audible alarms w/ Supermicro Direct Attached Enclosures

Please refer to KB article: <http://kb.lsi.com/KnowledgebaseArticle15859.aspx> for more details on how to manage your SES enclosure's audible alarm with Supermicro direct attached TQ backplanes.

Supermicro X7DWN+ Support of More than Three 9750 boards (SCR-1017)

3BM (BIOS) for 9750 supports up to 3 boards per BIOS session, and additional boards should appear in a second instance of the BIOS. If not, please refer to KB article: <http://kb.lsi.com/KnowledgebaseArticle15868.aspx> for additional instructions.

3ware 9750 is Not Detected Correctly with Certain Supermicro X7 Series (SCR-283)

If the error "PCI Vendor and Device IDs do not match" appears during POST and the 9750 controller's messages are not displayed, upgrade the motherboard to the latest Supermicro BIOS from KB article: <http://kb.lsi.com/KnowledgebaseArticle15595.aspx>.

3ware 9750 is Shown in BIOS But Freezes at Boot on Supermicro X8DA3 System

Please refer to KB article: <http://kb.lsi.com/KnowledgebaseArticle15693.aspx> to upgrade the motherboard to the latest Supermicro BIOS.

Supermicro 826TQ Drive Identify LEDs Do Not Stay On (SCR-978)

When using the Supermicro 826TQ enclosure with the 3ware 9750 and earlier controllers, drive LEDs 9-12 will stop blinking after a few minutes. The first 8 drives are not affected and will continue to blink until the drive identify feature is turned off.