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

Release 10.2.2.2

READ ME FIRST!

Introduction

Thank you for purchasing an LSI 3ware 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.

The latest 3ware product information, firmware, software upgrades, and OS drivers are available from LSI at: http://www.lsi.com/support/Pages/download-search.aspx

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

LSI product compatibility and interoperability lists can also be found at: http://www.lsi.com/support/Pages/interoperability.aspx

For specific answers to 3ware questions, technical support, or to give feedback about a 3ware product, please visit: http://www.lsi.com/support/email/Pages/3ware.aspx

LSI also offers support 24 hours a day, 7 days a week at 800-633-4545 in North America, + 49 (0) 89 45833-113 in Germany, and 00-800-5745-6442 for international customers.

Sign up for the latest LSI news and support updates at: http://twitter.com/LSIsupport

Release Highlights

This release includes the following:

- SATA+SAS 6Gb/s controllers
    - 9750-4i
    - 9750-8i
    - 9750-4i4e
    - 9750-8e
    - 9750-16i4e
    - 9750-24i4e

Release Details

The release has the following components:

- Windows driver version: 5.01.00.048 for Windows 7 and earlier

The following components are the same as 10.2.2.1:

- Firmware version: 5.12.00.016
- 3DM2 version: 2.11.00.021
- CLI version: 2.00.11.022
- FreeBSD 7.x driver version: 10.70.00.012
- FreeBSD 8.x driver version: 10.80.00.005
- FreeBSD 9.x driver version: 10.90.00.004
- 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: 2.2.10
- OpenSolaris driver version: 2.3
    - Windows driver
- Windows driver version: 5.01.00.047 in-box for Windows 8 & 2012

There is no 3ware software CD for this release. Refer to the 3ware Windows Driver Installation Addendum from this release for further instructions.

Bug Fixes

- Windows driver not signed, system won't boot (SCR-2302)

Operating System Support

The following operating systems are supported:
- FreeBSD 7.4, 8.2, & 9.x (x86 & amd64)
- Linux (x86 and x86_64)
  - Fedora Core 12
  - Red Hat Enterprise Linux 5.6 & 6.1 (in kernel)
  - openSUSE 11.2 & 12.1 (in kernel)
  - SUSE Linux Enterprise Server (SLES) 11 SP-1 & SP-2
  - For other distributions, refer to KB article:
    http://kb.lsi.com/KnowledgebaseArticle14546.aspx
  - Specific driver sources for kernels 2.6.8 through 2.6.39
- Mac OS X Leo (10.5), Snow Leopard (10.6), and Lion (10.7) for Intel Mac Pros
- OpenSolaris 2009.11 (x86 & amd64)
- VMware ESX, ESXi 4.x & ESXi 5.0 (x86_64)
  - VMware drivers are available at www.vmware.com and www.lsi.com
- Windows XP, Vista, 7, 8, 2003 SP2, 2008, 2008 R2, & 2012 (x86 & x64)

Restrictions

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

Drivers and software released prior to version 10.2.2.1 are not fully compatible with the firmware in this release. You must upgrade the 3ware driver and software before you update the firmware on your 9750 controller.

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 9650SE and 9690SA controllers have updates available separately. The latest 3ware management tools (CLI & 3DM2) included in this release can be used to manage these earlier controllers.

Errata

Support for Hard Drives Larger Than 4 TB
As new capacity hard drives are made available, please check our compatibility list at http://www.lsi.com/support/Pages/interoperability.aspx for the latest additions.

Support for 3DM2 with Latest Windows Security Patch (SCR-1120)
The latest Windows security service patch stops 3DM2 from running. Contact LSI support for a beta version to fix this issue.

Support for SNMP with Linux & FreeBSD (SCR-1128, SCR-2258, 2284, 2288)
New Linux & FreeBSD distributions do not support SNMP

Support for CLI and 3DM with Linux 3.0 kernels & Debian Linux (SCR-1152)
New releases of Debian with Linux kernel 3.0 do not support CLI and 3DM

Support for 3DM2 with Linux 3.0 kernels (SCR-1148)
New Linux distributions using kernel 3.0 do not support 3DM2 email notification, causing the 3DM2 daemon to panic

Support for CLI with Linux 3.0 kernels (SCR-1135)
New Linux distributions using kernel 3.0, such as openSUSE 12.1, benignly reports "malloc: using debugging hooks" when running CLI. This error can be ignored.

Support for CLI with VMware
Refer to the following KB article for important tips when using CLI with VMware
http://kb.lsi.com/KnowledgebaseArticle16671.aspx

Fedora Core 12 Driver 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 `install.txt` file included on the storage medium containing the 3ware driver.

Unable to Boot openSUSE 11.2 and SLES 11 SP1 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 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 SAS Disk to a RAID-1 Array Using a SATA Drive (SCR-594). Mixed SAS and SATA drive configurations are normally not allowed during creation and migration by 3BM, CLI, or 3DM2.

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.

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.

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.

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 I^{2}C 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.

WinAVAlarm Does Not Sound on 64-bit Windows Systems (SCR-1161)

No alarm is audible with Windows 64-bit systems when the WinAVAlarm option is activated for an AEN.

OpenSolaris UFS File System Unit Limit (SCR-2157)

To support eight or more drive units on OpenSolaris 2009 v6, use the ZFS file system instead. There are limitations with eight or more units when using the UFS.

OpenSolaris System Hang Issue Using UFS File System (SCR-2087)

When creating a UFS file system in Open Solaris 2009 v6, you must use the `-T` option to avoid a possible system hang: `newfs -T /dev/rdsk/cx/tx/dx/sx`

Support for Units Larger than 2 TB 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. Use the 3ware autocarve option as a workaround. Refer to the 3ware SATA+SAS RAID Controller Card Software User guide for more details.

<u>3ware Windows Driver Installation Addendum for 9.5.5.2 and 10.2.2.2 Release Notes</u>

Installing LSI 3ware Drivers for Windows

This section provides detailed instructions for installing the 3ware driver running under a Windows operating system.

The following topics are included in this section:
- Driver Installation Under Windows
- Updating the 3ware Driver Under Windows

Driver Installation Under Windows

Note: Before installing the 3ware driver, you may want to physically install your 3ware RAID controller in the system. Consult the installation guide that came with your controller for how to do this. If you do not have a hardcopy of the installation manual, it is available from the LSI website at http://www.lsi.com/support/pages/download-search.aspx.

The 3ware RAID controller can be used with Windows OS versions mentioned in the 3ware release notes. It is recommended that you upgrade to the latest service pack available.

A drive or unit managed by the 3ware RAID controller may be configured to be your system's boot device. Or, you can use units managed by the 3ware controller for secondary storage and boot from another device, such as a disk attached to the motherboard, or other bootable media.

This section contains instructions for how to:
- Create a driver disk for the 3ware RAID controller
- Install the 3ware driver and Windows on a new drive or unit
- Install the 3ware driver when Windows is already installed on a different device

Note: You must have administrator privileges for your system to install the Windows operating system and the 3ware driver.

Materials Required
- Microsoft Windows installation media (Not required if Windows is already installed on another drive.)
- Floppy diskette or USB drive, to create a driver disk, if required

Creating a 3ware Driver Disk

If you are installing Windows on a new unit or drive managed by the 3ware RAID controller, you can create a driver disk. The latest 3ware OS drivers are available from LSI at: http://www.lsi.com/support/Pages/download-search.aspx

Download and copy the driver to a floppy diskette or USB drive

1. Download the latest 3ware driver for your controller from:
   http://www.lsi.com/support/Pages/download-search.aspx

   For Windows 8 and Windows 2012, no driver download is required for the 3ware 9750 controller. The 3ware driver is already included (in box) with the Windows OS.

2. Unzip the 3ware driver installation package. The SDK7 driver package is for Windows 7 and earlier. The SDK8 driver package is for Windows 8 and 2012. There are 32-bit and 64-bit drivers available for each. Be sure to select the correct one.

3. Copy the driver files to a floppy diskette or USB drive

Installing the 3ware Driver and Windows on a New RAID Unit

If you want to install Windows on a new drive configuration managed by the 3ware RAID controller, follow the instructions in this section.

If Windows is already installed on another drive, refer to "Installing the 3ware Driver and Windows on a New RAID Unit"

To install Windows XP, Vista or 2003 and the 3ware driver

1. Boot from the Windows installation media and press **F6** when you see the message: "Press F6 if you need to install a 3rd party SCSI or RAID driver" at the bottom of the display.

2. When you see the message: "Setup could not determine the type of one or more mass storage devices or you have chosen to manually specify an adapter…" Type **S** to specify that you have an additional 3ware RAID controller.

3. Insert the floppy or USB drive with the 3ware driver and press **Enter.** Once inserted, select **Browse** or **OK** and navigate to the location of the driver.

4. When a box with **LSI 3ware RAID Controller** appears, press **Enter** to select it.

5. Type **S** if you have additional devices to add. Otherwise, press **Enter**.

6. Continue with the normal Windows installation at this point. There are no instructions after installing the driver that are specific to 3ware. If you need additional instructions, refer to the Windows documentation supplied by Microsoft.

To install Windows 7, 8, 2008 or 2012 and the 3ware driver

1. Boot from the Windows installation media and specify the following: language to install, time and currency format, and keyboard or input method. Click **Next** and then click **Install Now**.

2. Accept the Microsoft License Terms and click **Next**.

3. When the message "Which type of installation do you want:?" appears, click **Custom (advanced)**.

4. When the message "Where do you want to install Windows?" appears, click **Load Driver**.

5. Insert the media with the 3ware driver. Once inserted, select **Browse** or **OK** and navigate to the location of the driver.

6. When the message "Select the driver to be installed" appears, choose **LSI 3ware RAID Controlle**r and click **Next**.

7. Continue with the normal Windows installation at this point. There are no instructions after installing the driver that are specific to 3ware. If you need additional instructions, refer to the Windows documentation supplied by Microsoft.

Installing the 3ware Driver on a Windows System that Boots from a Different Device

If you are installing the 3ware RAID controller on a system that already has a Windows operating system boot device, follow the instructions in this section.

Note: It is easiest and simplest to install the driver before you install the 3ware RAID controller card. If you install the controller card first, when Windows displays the Found New Hardware wizard, cancel the prompts. Then continue with the procedure below.

1. Download the latest 3ware driver for your controller from:
   http://www.lsi.com/support/Pages/download-search.aspx

   For Windows 8 and Windows 2012, no driver download is required for the 3ware 9750 controller. The 3ware driver is already included (in box) with the Windows OS.

2. Unzip the 3ware driver installation package. The SDK7 driver package is for Windows 7 and earlier. The SDK8 driver package is for Windows 8 and 2012. There are 32-bit and 64-bit drivers available for each. Be sure to select the correct one.

3. Select and double-click to run the applicable SDK executable for your 3ware system. For newer Windows versions right click on the executable and select "Run as administrator".

4. The 3ware Device Driver Installation Wizard will open.

5. Click **Next**

    You will see the following screen. The green checkmarks indicate successful installation of the driver. If unsuccessful, there will be a red checkmark.

3ware Device Driver Final Installation Screen:

6. Click **Finish** to exit the installer

7. If your 3ware RAID controller card is not yet installed, power down the system and physically install the controller card

8. When you turn your computer on again, Windows will automatically detect that the controller has been installed

9. When prompted, click the default **Next** to have Windows automatically select the driver.

10. The driver will automatically be detected, and the controller will be ready to use. Windows may or may not require that you reboot your computer.