



3ware®

Serial ATA RAID Controller
Supports the 9550SX and 9590SE Models

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User Guide

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Book Descriptions:

3ware 9550sx manual

Maintaining Your Controller Troubleshooting The 3ware logo, 3BM, StorSwitch, TwinStor, and R5 Fusion are all trademarks of AMCC. All other trademarks herein are property of their respective owners. Disclaimer. You can also perform many tasks at the command line, using 3ware's Command Line Interface CLI. Provides a summary of the steps required to install and set up your 3ware RAID controller. Provides stepbystep instructions for configuring RAID units if you have just installed the controller. Also known as an array. Array and unit are used interchangeably throughout this manual. Requires a minimum of two drives. With TwinStor technology, read performance is twice the speed of a single drive during sequential read operation. Requires a minimum of four drives to use both RAID 0 and RAID 1 techniques. Like disks in other RAID configurations, single disks contain 3ware Disk Control Block DCB information and are seen by the OS as available units. To change this, the unit has to be recreated. For more information, see "Using AutoCarving for Multi LUN Support" on page 121. www.3ware.com Understanding RAID Concepts and Levels. For details about working with 3DM, see "3ware Disk Manager 3DM 2" on page 65. The 3ware CLI is described in 3ware 9000 Series Serial ATA RAID Controller CLI Guide. Monitoring, Maintenance, and. When write cache is enabled, data will be stored in system cache, 3ware controller cache, and drive cache before the data is committed to disk. This allows the system to process multiple write commands at the same time, thus improving performance. However when data is stored in cache, it could be lost if a power failure occurred. You will find stepbystep instructions in Chapter 3, "FirstTime RAID Configuration Using 3BM." Information about using 3BM is also included in the later chapters of this user guide, but Chapter 3 offers a sequential set of steps for initial installation. <http://charletdesign.com/uploads/comex-gearbox-manual.xml>

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Set Up Management and Maintenance Features 3ware RAID controllers come with software that include a number of features to help you manage and maintain the controller and your configured units. The default settings for these features allow you to begin using your newly configured units right away. Normally your 3ware configuration remains onscreen for just a few seconds. However, if a unit has degraded, the screen indicates the problem and remains on your screen longer. The Create Disk Array screen appears see Figure 9. www.3ware.com Basic Steps for Creating a Unit. Striping size is not applicable for RAID 1, because it is a 3ware Serial ATA RAID Controller User Guide. The remainder of the unit will be created as a separate volume. www.3ware.com Basic Steps for Creating a Unit. Setting a Boot Volume Size is optional. In addition, if you 3ware Serial ATA RAID Controller User Guide. A warning message asks you to confirm that all existing data on the drives will be deleted. Figure 13. Confirmation Message when Saving and Exiting www.3ware.com Basic Steps for Creating a Unit. Data remains intact when initialization is done in the operating system. For complete information about initialization of RAID units, see "About Initialization" on page 177. 3ware Serial ATA RAID Controller User Guide. For details, turn to Chapter 4, "Driver Installation." 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. To create a driver diskette Insert the 3ware software CD into your system. This wizard guides you in installing the 3ware driver see Figure 19. Note that you will see screens for the installation of two drivers during this

process. <http://designforthehumanspirit.com/uploads/comex-diving-manual.xml>

Remove the driver diskette or CD, reboot the system, and log in as the system administrator. 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. If Linux is already installed on another device, you may install the 3ware kernel driver module from the 3ware software CDROM. A confirmation window opens. Install the 3ware kernel driver module, using the driver install diskette. Insert the driver install diskette containing the 3ware driver for Red Hat and press Enter. The system automatically reports. When prompted, select the proper language and keyboard types for your locality. Mount the CD which contains the 3ware kernel driver module. To mount the CD, type. The 3ware kernel driver module will be loaded from the ram disk automatically at boot time. To install the 3ware kernel driver module and load the module manually instead of using a RAM disk. Log in as root and open a console window. If Linux is already installed on another device, you may install the 3ware kernel driver module from the 3ware software CDROM. When the 3ware Escalade Menu appears, click Driver and Firmware Disks. In the 3ware Driver and Firmware Disk Images menu, click the button for the driver disk you want to create. A confirmation window opens. You may see entries like reiserfs there is a space between each module name, since the system needs them to boot properly. For more information, see 3ware knowledgebase article 14546 Boot the system from the FreeBSD installation CD. Immediately after the system starts booting the kernel, insert the floppy containing the appropriate 3ware 9550SX kernel driver module into the floppy drive. If you want to upgrade to the latest driver, you can do so and rebuild the kernel. However, if a unit has degraded, the screen indicates the problem and remains on your screen longer.

If you have more than one 9000series controller in your system, a screen lists the available boards. For detailed information, see the version of the 3ware Escalade ATA RAID Controller User Guide that supports the 7000 and 8000 series controllers. If you have two 9000 controllers that have different versions of the BIOS installed, they will also appear in different BIOS summaries, and will launch different versions of 3BM. For more information, see the section "Moving a Unit from One Controller to Another". Note BIOS for all controllers for one time only by pressing AltB. This is useful to temporarily boot from a non3ware device without having to change the system's boot order. www.3ware.com Adjusting BIOS Loading Settings Specifies what level of detail to display on the startup. On the popup menu, select BIOS and press Enter. The BIOS Options Settings screen appears. Figure 28. BIOS Option Settings Screen Tab through the options and make the desired changes. A description of the basic 3BM tasks appears. When you're finished using help, press Esc to close the help window. www.3ware.com Displaying Controller Information Enter. When it is running, you can use your browser to view status and perform administrative tasks locally or remotely. You can also download the current version from the website at 3DM must be installed on the system in which the controller is installed. 3DM does not have to be installed on remote systems in order to remotely manage a 3ware controller. When the second checkbox is checked, only localhost connections are allowed. Internet and Intranet connections are not allowed. You can change this setting later in 3DM. Figure 30. If you are installing for FreeBSD, replace To start the installation Insert the 3ware software installation CDROM for Linux into the CD ROM drive. It is a good idea to leave 3DM running on the system that contains your 3ware RAID controller.

<http://www.drupalitalia.org/node/69117>

That way email alerts can be sent by 3DM, and administrators can manage the controller remotely, if remote administration is enabled. You do not need to install the 3DM software on the remote computer. As you work in 3DM, the Messages area just below the menu bar displays information about the results of commands you have selected. These passwords work independently of each other. The default password for both the User and Administrator is "3ware". Passwords are case sensitive. You can only change passwords if you are logged in as Administrator. If you change the

Administrator password, you will be automatically logged out, and must log back in with the new password. That way you can be assured that the information you see in 3DM is current. The Summary page provides basic information about each 3ware RAID controller in your system. To see details about the units in a controller, click the link in the ID column. Controller Details Page The Controller Details page appears when you choose Controller Details The Controller Details page provides detailed information about the controller specified in the dropdown list on the menu bar. RAID 0, RAID 1, RAID 5, RAID 10, RAID Type. 50, Single Disk, Spare, JBOD, or Disk www.3ware.com 3DM 2 Reference Unit Information in the. This is usually 1. If you Volumes. created a boot volume on this unit, or if you have a unit on which you have enabled the autocarving policy, you will see the number of volumes into which the unit has been divided. This Drive Details window shows some Extra Drive Information, including NCQ and SATA Link Speed support, and the SMART data for the drive. For 9500S controllers, a be set in 3ware BIOS Manager 3BM. You can see if this setting is enabled in Other Controller Settings page. If. Three profiles are available Protection, Balanced, and Performance. These profiles automatically adjust several different factors that affect protection and www.3ware.

<http://homebackpackers.com/images/canon-mini-dv-md205-manual.pdf>

com Management This policy applies only to units is not selected, then you have the. For additional information, see "Setting the StorSave Profile for a Unit" on page 149. For detailed information, see the 3ware KnowledgeBase article 12290, on the website at Check SMART Thresholds. The SMART thresholds indicate when a drive is likely to fail, based on the number of errors that have been recorded through SMART SelfMonitoring, Analysis and Reporting Technology. It checks empty ports for newly plugged in drives. If those drives were previously part of a 3ware RAID configuration and they still have valid DCB Disk Configuration Block information on them, the controller tries to piece them back together into a working unit. When you select a degraded unit and click Rebuild Unit can select the drive you want to use. If the degraded unit has more than one degraded drive for example, a RAID 10 where both mirrored pairs each have a degraded drive, you will repeat this process a second time. The drives appear in the list of Available Drives. www.3ware.com Before you click, make sure the unit you Remove Unit. If a unit is not unmounted and you delete it, it is the equivalent of physically yanking a hard drive out from under the operating system. These policies can also be set and changed on the Controller Settings page. Clear Alarms. Shows the severity of the event. When the status is not "Ready," write caching is automatically disabled on all units attached to the controller. This field is set to zero at www.3ware.com. The BBU was not detected or is disabled. The BBU can be. A capacity of zero will also show if the BBU is disconnected and then reconnected. Under optimal conditions, a battery can protect for up to 72 hours. However, with a fresh battery, you may see a higher number in this field. When 3DM is first installed, the default password for both is 3ware Change Password For. Select the access level for which you are setting the password.

<https://www.hotel-forsthaus.com/images/canon-mg5300-manual.pdf>

To change this setting, select another option from the dropdown. If you prefer 3DM to only refresh when you click Refresh Page The Login, Help and Drive SMART data pages do not automatically refresh. The 3DM Controller Summary page appears, listing all the 3ware controllers installed in your system. The rightmost column of the list shows the status of each controller. For a summary of the initial default settings, see Table 5, "Initial Default Settings for Policies," on page 17. Indicates whether the type of staggered spinup is section at the bottom of the Controller Settings Page, as 3ware Serial ATA RAID Controller User Guide Other. On the main 3BM screen, On the popup menu, select The Policy Control screen displays. Figure 50. 3BM Policy Control Screen www.3ware.com Viewing and Setting Controller Policies from the menu bar. Settings and press Enter. For how to change this setting through CLI, see 3ware 9000 Series Serial ATA RAID Controller CLI Guide. To enable AutoRebuild through 3BM. For more information, see the 3ware 9000 Series Serial ATA RAID

Controller CLI Guide. Create a new unit or migrate an existing unit to include the drives you want to use. Enabling and Setting Up Staggered Spinup Three policy settings let you set the number of drives that will spin up at the same time and set the delay between drive groups that spin up at one time. This means that any drives you leave unconfigured are not seen by the operating system, and cannot be used for storage. In case of a second drive failure, the software RAID layer can still provide redundancy since no data was lost. Note unit managed through the new 3ware RAID controller, Chapter 3, "FirstTime RAID Configuration Using 3BM," provides step by step instructions. Although Configuring a New Unit. For information about working in 3DM, see "3ware Disk Manager 3DM 2" on page 65. Configuring a New Unit. You can also set the StorSave policy.

For details about these settings, see "Configuration Options When Creating a Unit" on page 128 and "Setting Unit Policies" on page 142. Click 3ware Serial ATA RAID Controller User Guide. From this screen you can configure new units, delete existing ones, or perform maintenance tasks. Create Unit button and Enter. You are returned to the main 3BM screen. www.3ware.com field and press Enter to select the configuration you want and press. Rightclick on the drive and select Follow the steps that appear onscreen to create a volume and to assign a drive letter. www.3ware.com key to move the unit up the list; press the menu Start. When you are finished making changes, press 3BM. www.3ware.com from the menu bar in 3DM. If you want to cancel your change before saving it, click Reset Names button. Do not use Windows Control Panel to enable or disable cache on 3ware RAID units. www.3ware.com Disable write cache on unit degrade Other Controller Settings section of the. Enter 3ware Serial ATA RAID Controller User Guide to select the setting. Enter from the menu bar in 3DM. You can enable support for NCQ in 3ware 9550SX and 9590SE controllers on a perunit basis, as described below. Enter 3ware Serial ATA RAID Controller User Guide Enter Drive Queuing to select the setting again to choose it. When performance is considered more important than protection, it may be desirable to ignore FUA commands. www.3ware.com If the write cache setting is disabled for a unit, the StorSave Balanced. In the event that a unit degrades, the from the menu bar in 3DM. Changing An Existing Configuration With 3ware 9000 series RAID controllers you can convert one RAID configuration into another while the unit is online. This process is known as RAID Level Migration RLM. Instructions for using migrate in 3DM2 are described below. For information about CLI, see 3ware 9000 Series Serial ATA RAID Controller CLI Guide. Inform the operating system of the change, as described below.

www.inkfactory.pk/wp-content/plugins/formcraft/file-upload/server/content/files/1626bf60f891d1---91-camry-service-manual.pdf

Note information, see the 3ware 9000 Series Serial ATA RAID Controller CLI Guide. Informing the Operating System of Changed Configuration After you change the configuration of a unit, you must inform the operating system of the change, and you may need to repartition the unit. Delete Unit 3ware Serial ATA RAID Controller User Guide. Even though removing a unit is supported in 3BM, you can 3ware Serial ATA RAID Controller User Guide Remove the logical drive page Maintenance. This is referred to as "array roaming." If you want to use these drives on an older 3ware controller, a non3ware controller, or connect them directly to a motherboard ATA controller, you must first unlock them. Contact Technical Support to obtain the utility. This utility is not required for legacy JBOD units. Do not remove the 8000 board from your system until you have converted the units. Reboot the system and enter the 3ware 9000 series BIOS 3BM by pressing Alt3. Enable the Export JBOD policy on the Policy screen. Some operating systems for example, Windows 2003 will allow the units attached to the controller to be used at this point without an additional reboot. www.3ware.com Moving a Unit from One Controller to Another command. command. This is required for 3ware controllers before the 9550SX model, and recommended for the 9550SX and 9590SE models. If you removed a drive that was part of a unit, the unit may become degraded, as shown in Figure 69. 3ware Serial ATA RAID Controller User Guide. For more information, see. Type

for Yes. The controller is rescanned. These events include alarms that occur when the 3ware RAID controller requires attention, such as when a disk unit becomes degraded and is no longer fault tolerant. This can be useful when troubleshooting certain types of problems. For example, you might want to send the saved file to 3ware Customer Support for assistance when troubleshooting.

You can adjust how much initialization will slow performance by setting the rate at which it www.3ware.com About Background Tasks and booting to the operating system. Units that do not need to be immediately initialized for full 3ware Serial ATA RAID Controller User Guide. This mechanism is intended to ensure that redundant units have consistent data and parity. When a redundant unit is unexpectedly shutdown, there is a possibility some data and parity may be inconsistent. During driver startup, a flag is set that indicates that the driver loaded. Upon an orderly shutdown, the flag is rewritten, indicating that there was a clean shutdown. Rebuilding Units About Verification For the 3ware 9000 series, the verify feature combines verification of redundant units confirming the validity of the redundant data and media scans for nonredundant units. When verification encounters an error, the controller typically retries the command. For details about manually starting these processes, see “Rebuilding Units” on page 189 and “Verifying Units” on page 194. For details about scheduling rebuild, verify, and other tasks, see “Scheduling Background Tasks” on page 184. www.3ware.com About Background Tasks. This means that if you have both a redundant unit and a nonredundant unit, the verification of the redundant unit and the media scan of the non redundant unit will occur at the same time. You can easily disable a current Verify or Rebuild schedule without deleting the schedule itself. When you first use 3DM, daily schedules exist with 24 hour 3ware Serial ATA RAID Controller User Guide. Click the Remove Checked The page refreshes, and the selected schedules are removed. You can now add another schedule. www.3ware.com Scheduling Background Tasks from the menu bar. Ignore Schedule from the menu bar. For example 3ware Serial ATA RAID Controller User Guide. Rebuild Unit 3ware Serial ATA RAID Controller User Guide.

Then power on the system and Not In Use Enter to select it see Figure 73. 3ware Serial ATA RAID Controller User Guide, the drive may Rebuild Not In. Press to save your changes and exit 3BM The unit will begin rebuilding about ten minutes after the operating system finishes loading and the 3ware driver has loaded. www.3ware.com Enter button and press Enter from the popup menu and press button to continue. If the unit is link on the Maintenance Remove Drive If you want to pause the rebuild process through 3DM, you is logged and the entire unit is 3ware Serial ATA RAID Controller User Guide is posted to “Verify. You can issue the command to blink the LED through 3DM and through the CLI. For details about using the CLI, see 3ware 9000 Series Serial ATA RAID Controller CLI Guide. and press. When you are finished working with the drive and no longer need to see the LED, return to this page and uncheck the www.3ware.com Locating a Drive by Blinking Its LED from the main menu in 3DM. Maintaining Your Controller You can also use the 3ware Command Line Interface to check the version. For more information, see 3ware 9000 Series Serial ATA RAID Controller CLI Guide. In addition, if you boot from a unit on a 3ware RAID controller, updating the driver will require that you restart the system. To update the 3ware driver and firmware using the update utility Download and extract the driver files, as described on page 200. To update the 3ware driver under Windows XP Note that during this process, you will step through driver installation wizards twice. I will choose the driver to install” and click Next. Figure 85. Search for Driver Screen www.3ware.com Updating the Driver and Firmware. Be sure to select the correct driver name, otherwise the driver upgrade will not be successful. 3ware Serial ATA RAID Controller User Guide. If you are using Windows XP Service Pack 2, the screen asks whether you want to connect to Windows Update Figure 89. www.3ware.

com Updating the Driver and Firmware. To update the 3ware driver under Red Hat Download and extract the driver, as described on page 200. Backup any critical data prior to updating the 3ware

driver. Note Precompiled, tested, and supported drivers are no longer available for older SuSE releases using the 2.4 kernel. The source code is still available for a limited time if a newer driver is still needed. You should see a printout of kernels that are able to boot on this system after running lilo. 10 Reboot, if booted from the 3ware controller. Otherwise, continue with step 11. The driver is now updated. To update the 3ware driver under FreeBSD Download and extract the driver, as described on page 200. Reboot your system to flash the firmware upgrade. www.3ware.com Updating the Firmware Under Linux and FreeBSD CurrentFirmware CurrentDriver FE9X 3.0x.xx.xxx 2.xx.xx.xxx CurrentAPI 2.xx.xx.xxx. This allows the controller to use writecaching for optimal performance and to preserve data in the event of a system power failure. After the voltage drops to a point, it will start charging again, and the status will change to "Charging." Eventually, the battery voltage will say "OK" again. www.3ware.com Testing Battery Capacity. Tab to Test Battery Capacity and press Enter. Figure 93. Battery Backup Information Screen in 3BM 3ware Serial ATA RAID Controller User Guide. Troubleshooting You can copy and paste the information from these screens into an email using the system clipboard. The motherboards BIOS may need to be upgraded. Check the web site of the motherboard manufacturer to download and install their latest BIOS. Problems in 3DM Q6 A 3ware RAID controller does not show in the list of controllers. These are summarized in Table 11. Descriptions of each are provided at the end of the table.

If the 3ware RAID controller fails to respond to the device driver within a reasonable amount of time, the device driver may issue a soft reset to the 3ware RAID controller and retry the command packet. If the system loses power or is reset without going through the normal shutdown procedure, it is possible that the data on a redundant array may be out of synchronization. If the drive returns an error to the 3ware RAID controller, the user is notified by this AEN. If a failure of any drive is determined to be likely, the user is notified by this AEN. It will then use this data to force the failing drive to reallocate the bad sector, which essentially repairs the sector. The DCB format expected by the 3ware RAID controller and the DCB that is written on the drive must be 3ware Serial ATA RAID Controller User Guide. Please contact 3ware technical support if this event occurs. The replacement drive must be equal to or greater capacity than the drive its replacing. Rebuilds are normally paused for ten minutes after a system first boots up and during nonscheduled times when scheduling is enabled. www.3ware.com. This AEN will be sent if unit number assignments were lost from some unknown reasons. This event rarely happens. Please contact AMCC 3ware technical support if this event occurs. When this event happens, the Battery Backup Unit is still able to backup the 3ware RAID controller, but the user should replace the battery. When this event happens, the Battery Backup Unit is still able to backup the 3ware RAID controller but the user should replace the battery pack. The test estimates the battery capacity in hours, which is how long the Battery Backup Unit can back up the 3ware RAID controller. When this occurs the Battery Backup Unit is still able to backup the 3ware RAID controller but it signals that the battery pack should be replaced soon. This AEN is posted when the result of the health test is below the warning threshold.

The 3ware CLI is a text program, rather than a GUI graphical user interface, for Windows, Linux, and FreeBSD. It has the same functionality as 3DM, and can be used to view, maintain, and manage 3ware controllers, disks, and units. Initialization does not erase user data if done while the operating system www.3ware.com. Determines whether an error detected during a rebuild Chassismonitoring functions. The acronym is derived from "just a bunch of disks." Note that earlier versions of the 3ware RAID controller exported JBODs to the OS. By default, this is not the case in 9000series controllers. However, a policy in 3BM can be set that allows JBODs to be seen by the OS. For RAID 5 and RAID 50, a verify will calculate RAID 5 parity and compare it to what is written on the disk drive. 3ware Serial ATA RAID Controller User Guide. To maintain compliance with FCC radio frequency emission limits, use shielded cables and connectors between all parts of the computer system. www.3ware.com. European Community Conformity. For detailed terms and conditions,

please see the Limited Hardware Warranty and Software License Agreement at our website AMCC warranty service is provided by returning the defective product to AMCC. Advanced replacement is available with a credit card number with authorization in the amount equaling the then current list price of the 3ware Serial ATA RAID Controller, including shipping costs. As soon as practicable thereafter, AMCC will ship the advanced replacement to you at the address of your choosing. Learn more Learn more Learn more Learn more Learn more Learn more Learn more Learn more Highend components and thermal solutions, made possible by our years of industry experience, provide better efficiency, performance, and quality. Learn more Learn more All rights reserved. Please email us if youre running the latest version of your browser and you still see this message.

The actual Open Box product may differ in packaging and included accessories, but has been tested to ensure basic functionality. Most customers receive within 39 days. Combined with an advanced RAID management feature set that includes webbased, commandbased, and API software components, the 9550SX4LP, available in 4port configuration is the most compelling solution available. It recognized this controller at installation without additional drivers. Really easy to use and configure. Reasonably fast. Only ever used them with Western Digital Black drives so cant comment on drive compatibility. They were awesome for us and we appreciate it! Over a year now and no issues at all. They sent me a replacement card in two days. That makes four reported shortterm failures in 17 reviews. 3Ware reports their failure rate at less than 1%. Based on these reviews, I doubt this. This sort of failure rate does not inspire confidence. Weve had it for more than a year now, and it has kept that server going without a hitch so far. I also like the range of configuration options available, the logging, and the notification emails. The performance is pretty good with RAID5, as long as you have the write caching turned on with the BBU. I had my doubts about SATA RAID before, but not now. Actually had better luck with this SATA RAID than with some of the SCSI RAID systems Ive had to deal with in the past. I am going to buy one of these for my server at home here pretty soon. I just wish I could have gotten them from Newegg because they have my confidence. I ordered this product on Friday and tracked it on Monday morning. The items were already at my door. I have had RMAs on other products and Newegg was always courteous and efficient. I do not hesitate to pay 10% more from Newegg over the noname competitor that may make me miserable with the details. My time is worth mor than that. JSmithClick here for more details. Secure shopping made faster. Check out with PayPal.

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