RocketRAID 3530/3540 SATAII Host Adapter User's Guide

HighPoint

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Congratulations

You have purchased one of the highest performing and SATA hardware RAID controllers available. The RocketRAID 3500 series offers the performance and data protection features for homogeneous storage environments. The RocketRAID 3500 series meets the bandwidth requirements for high performance applications like video capture and editing, CAD/CAM and digital graphics.

Remember to visit the HighPoint websites at <u>http://www.highpoint-tech.com</u> and <u>http://www.hptmac.com</u>. There you can find information on all of HighPoint's products with FAQ's, online manuals, BIOS and driver updates.

1 - Features and Specifications

Host Adapter Architecture

- TerabyteStreamTM for Blazing Performance
- TerabyteSaverTM and TerabyteGuardTM for Data Protection and Reliability
- Intel IOP 81341(800MHz)
- PCI -Express x8 (compatible with x16 slot)
- 256 MB of DDR II memory with ECC protection
- RocketRAID 3530/3540 support up to 12/16 SATAII drives
- Multi adapter support up to 4 adapters
- Intel RAID 6 (P+Q) for large capacity RAID arrays
- NVRAM for write journaling
- Battery Backup Unit (BBU) Optional
- RoHS compliant

Advanced RAID Features

- Support RAID 0, 1, 3, 5, 6, 10, 50 and JBOD
- Multiple RAID support
- Multiple logical drive support



Congratulations

- BIOS booting support
- BIOS PnP and BBS (BIOS boot specification)support
- Write through and write back cache
- Online array roaming
- Online capacity expansion (OCE) and Online RAID level migration (ORLM)
- Quick and Background initialization for instant RAID configuration
- Automatic RAID rebuild
- 64bit LBA support greater than 2TB per volume
- S.M.A.R.T monitoring hard drive status for reliability
- Staggered Drive Spinup
- (MAID) spin down drives in array when idle
- ATA pass-through mode support
- Firmware update while running the Operating System

Array Monitors, Alerts and Indicators

- SMTP for email notification
- Alarm / Buzzer alerts for drive failure
- SAF-TE (I2C) and SGPIO enclosure management
- SNMP for remote management
 - Ethernet port for (OBM) Out of Band Management
 - NTP (Network Time Protocol)
 - Intelli-VRM. (Intelligent Virtual RAID Management)
- SHI Storage Health Inspector (S.M.A.R.T. and disk maintenance)

HighPoint RAID Management (HRM)

- Hot key (ctrl-h) boot-up RAID manager via BIOS
- Web browser-base RAID management software
- Command Line Interface (CLI)
- API library for customizing AP

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Operating System Support

- Windows XP, 2003, Vista, 2008 (32 and 64-bit versions)
- Linux (Fedora Core, Red Hat Enterprise / CentOS, SuSE)
- Mac OS X 10.4.x and above
- FreeBSD

Physical Specifications

Size: (202.0mm x 96.0mm) 7.95" L x 3.77" W EMI: FCC Part 15 Class B and CE

Thermal and Atmospheric Characteristics:

Work Temperature Range: +5 C ~+ 55 C Relative Humidity Range: 5% ~ 60% non condensing Storage Temperature: ~20 ~ 80 C MTBF: 920,585 Hours

Electrical Characteristics:

PCI-e	3.3V	12V
Power	2W max	14W max

2 - Kit Contents

Host Adapter Mini-SAS to SATA cables User Guide HighPoint Products Software CD

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Hardware - Description and Installation

1 – RocketRAID 3540/3530 Host Adapter layout

RocketRAID 3540



RocketRAID 3530





Port1-4 - These represent the RocketRAID 3530/3540's Internal Mini-SAS ports. Each port can support up to 4 SATA hard disks. The RR3530 is 3 ports, and can support up to 12 disks. The RR3540 is 4 ports, and can support up to 16 hard disks.

BEEP1 – (alarm/speaker): the speaker emits and audible alarm in the case of disk/array failure.

A1-A4/F1-F4 – LED connections. "A" refers to the disk activity connectors, and those marked "F" function as disk failure connectors

Note: The RocketRAID 3530 supports 12 disks, and only provides 3 LED connectors for each function (A1-A3, F1-F3).

J17 - This jumper can be used to enable or disable the card's alarm (BEEP1). The alarm is enabled by default (the jumper is attached). To disable the alarm, remove the jumper

J4 - This jumper supports SAF-TE interface (I2C).

J18 (BBU connector) - Connector for battery backup unit (optional part).

Ethernet Port - Ethernet port (U32) for Out of Band Management, support Net Time Protocol.

Hardware – Description and Installation

2 – LED Connections

LED connectors (Drive-activity/Drive-failure):. The RocketRAID 3530/3540 host adapters have multiple LED connectors that are used to indicate the activity and failure status of hard drives to the card's SATA channels.

Active and Failure LED

Connectors A1-A4 provides LED support for Drive Activity, while connectors F1-F4 indicate Drive Failure.

Pin4

Drive8 NC

Drive12 NC

Drivel6 NC

Drive4 NC

Drive8 NC

Drive12 NC

Pin S

NC Drive4

ACT LED and Fail LED have 5 pins while we just explain 4 pin's function.



J4 – This jumper is the SAF-TE interface port (for disk enclosures/chassis) SAF-TE jumper has 4 pins while we just explain 3 pin's function.



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Pin Number	Pin description
Pin 1	SCL
Pin2	GND
Pin3	SDA
Pin4	NC

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3 – Hardware Installation

Note: Make sure the system is powered-off before installing the RocketRAID host adapter.

- 1. Open the system chassis and locate an unused PCI-Express x8.
- 2. Remove the PCI slot cover.
- 3. Gently insert the RocketRAID card into the PCI-Express slot, and secure the bracket to the system chassis.(*illustration shows* RocketRAID *3540*)
- 4. After installing the adapter, attach the Mini-SAS connectors to the RocketRAID Card's Mini-SAS port, and to chassis backplane. Each Mini-SAS cable supports up to 4 hard drives. Consult the chassis manual for proper installation procedures.
- 5. Close and secure the system chassis.



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4 - Verifying Installation

Once the host adapter and hard disks have been installed into the chassis, boot-up the system to verify that the hardware is properly recognized.

- 1. Power on the system. If the system detects the presence of the adapter, the RocketRAID BIOS Utility will be displayed during boot up.
- Press Ctrl+H to access the RocketRAID BIOS Utility. The BIOS Utility will display information about hard drives attached to the adapter. Make sure all attached drives are detected by this utility. If any of the hard drives are not detected, power down the system and check the cable connections to both the card and enclosure.

5 - Battery Backup

A battery backup option will be available as an optional add-on component. The battery provides additional data security in case of a critical system failure. Data normally lost during a major system fault, such as a power outage or CPU failure which was in transit at the time of the failure (stored in the card's onboard cache), will remain viable for up to 72 hours. The battery unit can be attached to the card using the BBU CONN. Attach the BBU into J18 of RocketRAID 3530/3540 using the cable included with the BBU unit: (illustration shows RocketRAID 3540)



RocketRAID BIOS Utility

The RocketRAID 3530/3540 card will display it's BIOS screen during the system's boot process.

Press Control + H when prompted, to access the BIOS settings Menu.

1 - BIOS Settings Overview

The RocketRAID 3530/3540 BIOS utility is an interface that provides management commands and controller related settings.

System	Disk	Array Con	troller Wi	ndow Help			
Channe 1 2 3 4 5 6	Statu Norna Norna Norna Norna Norna	s Type 1 New 1 New 1 New 1 New 1 New 1 New 1 New	Capacit 768.00 409.60 768.00 409.60 768.00 409.60	D13K C 0.090 G 0.090	VCache On On On On On On On On	Hode 1 Numbe UD7500AYSY HDS724040KI WD7500AYSY HDS724040KI WD7500AYSY HDS724040KI	VD RE2 LSA80 VD RE2 LSA80 VD RE2 LSA80 LSA80
28	Norna Norna	1 Nev 1 Nev	768.00 409.60	1G 0.000 1G 0.000	3 On 3 On	WD7500AYSY HDS724040KI	WD RE2 LSA80
Напе		Туре	Capacity	Status (SNane	Task	Progress

[F10] Menu [TAB] Switch window [Enter] Select

Using the BIOS Utility

The following keys are utilized by the RocketRAID 3530/3540 BIOS utility:

F10 – press F10 to highlight the tool bar Menu.

Arrow keys – use these to move between different menu items

Enter – Open the selected toolbar command/execute the selected command.

Esc – move back to the previous menu, cancel the selected operation.

Tab - Switch between Disk and Array menus, move to next Menu item.

Space Bar – select an item (when selecting Block Size for a RAID configuration, for example).

BIOS Menu Shortcuts

The BIOS interface can also be navigated using key stroke combinations (Alt +" X").

When viewing the interface, letters highlighted in "red" represent the "X" values:

"S" – System "D" – Disk "A" – Array "C" – Controller "W" – Window "H" – Help "X" - Exit

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Logging In

The BIOS Utility has two interface modes: User and Supervisor

The User mode can only view information about the RocketRAID card, disks and arrays.

The Supervisor mode is used to create/delete arrays, and configure RocketRAID related settings. Supervisor mode requires a password – this is the same password that you will need in order to use the Web Management interface.

Press F10 – this should bring you to the "System" toolbar command. Press Enter.

c	Super User Change	visor mode node e passwore	t .	Capacit 768.00 409.60 768.00 409.60	Disk y FreeSpac G 0.06 G 0.06 G 0.06	te WCache <mark>G On</mark> HG On HG On HG On	Model Number WD7500AYSY W HDS724040KLS WD7500AYSY W HDS724040KLS	D RE2 A80 D RE2 A80
l	Exit ? 8	Normal Normal	[Alt+X] New New	768.00 409.60 768.00 409.60	IG 0.06 IG 0.06 IG 0.06 IG 0.06	IG On IG On IG On IG On	WD7500AYSY W HDS724040KLSI WD7500AYSY W HDS724040KLSI	D RE2 A80 D RE2 A80
Na	.ne	1	Гуре	A Capacity	Status	OSNane	Task	Progress

To log on as a User, use the arrow keys to highlight "User mode", and press Enter.

To log on as Supervisor, select "Supervisor Mode":, and press Enter.

1 2 3 4 5 6 7 8	Status 193 Nornal Net Nornal Net Nornal Net Nornal Net Nornal Net Nornal Net Nornal Net	Capa 768 409 768 409 768 768 768	city FreeS .00G 0 .00G 0 .00G 0 .00G 0 .00G 0 .00G 0	pace VC 90G 0 90G 0 90G 0 90G 0 90G 0	ache Mode n VD75 n HD\$7 n VD75 n HD\$7 n VD75 n HD\$7 n VD75 n HD\$7	1 Number 90AYSY VD 24040KLSA 90AYSY VD 24040KLSA 90AYSY VD 24040KLSA 90AYSY VD 24040KLSA	RE2 80 RE2 80 RE2 80 RE2 80
Nane	Туре	0 Capaci	K Can	cel OSNa	ne Task	0	Progress

You will be asked to enter the Supervisor password. The default password is "**hpt**".



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RocketRAID BIOS Utility

BIOS Commands

System Disk Array Controller Window Help Disk #Channel Status Type Capacity PresSpace WCache Model Number

System

User/Supervisor modes – interface modes

Change password - for Supervisor mode

Exit the utility - quit and exit the RocketRAID BIOS utility

Disk

Information - displays information about the select hard disks

Initialize – initialize the selected disks (required in order to use new hard disks for creating RAID arrays, disk replacement, or configuring spare disks.

Toggle Spare – configure spare disks.

Unplug – remove the selected disks (hot-swap)

Turn on write cache – enable write cache for the selected disks

Turn off write cache – disable write cache for the selected disks

Rescan – prompts the RocketRAID card to scan for new hard disks.

Array

Information – displays information about the selected RAID array

Create - Create a RAID array using the selected disks

Delete - Delete the selected RAID array

Unplug – Remove the selected RAID array (safe removal of disk members of the target array - hot-swap)





Verify – Verify the selected array (checks for parity errors)
Start Task –
End Task – Stop/Pause current task

Controller

Information – View information about the RocketRAID host adapter
Eventlog – View event log entries
Setting – View and configure host adapter settings
Network – View and configure host adapter network configuration

Window

Maximize – enlarge the selected Window
Restore – restore Windows sizes to default setting
1.Disk – toggle/select the Disk Window
2.Array – toggle/select the Array Window
Refresh – updates on screen information

Help

About -- BIOS utility/Company information



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RocketRAID BIOS Utility

2 - Creating RAID Arrays

Initializing Disks:

Before creating a RAID array, the disks must be initialized. Disk initialization writes necessary RAID configuration information to the hard disks.

System	Disk Ar	ray Con	troller Wi	indow He	p		
Channel (1) 1 (2) 2 (3) 3 (4) 4 (5) 5 (7) 7 *(8) 8	Status Nornal Nornal Nornal Nornal Nornal Nornal	Type New New New New New New New	Capac i 768 .96 409 .66 768 .96 409 .66 768 .96 409 .66 768 .96 409 .66	Disk y FreeSpa G 0.6 G 0.6	ice WCache 19G On 19G On 19G On 19G On 19G On 19G On 19G On	Model Numbe WD7500AYSY HDS724040KL WD7500AYSY HDS724040KL WD7500AYSY HDS724040KL WD7500AYSY HDS724040KL	r WD RE2 SA80 SA80 WD RE2 SA80 WD RE2 SA80 WD RE2 SA80
Name		Tune	Canacitu	rray	0°Nana	Taak	Programes
Hane		rype	Capacity	status	osnane	lask	rrogress

- 1. From the Disk window, highlight the target disks using the arrow keys, then select using Enter. A numeral will be displayed before each selected disk.
- 2. Once all target disks have been selected, select **Disk** from the tool bar, then highlight Initialize and press Enter.

The utility will display a warning, and ask you to press Y (yes) to initialize, or N (no) to cancel. Once initialized, these disks can be used to create RAID arrays.

Warning: Initialization will destroy all pre- existing data on the selected hard disks. Only initialize disks that do not contain critical data. Disks only need to be initialized once.

Disks do not have to be re-initialized after an array is deleted, or before creating a new array.





Creating Arrays:

From the Disk window, highlight the target disks using the arrow keys, then select using Enter. A numeral will be displayed before each selected disk. To de-select a disk, highlight the target disk, and press Enter once more.

System	Disk Array Co	ntroller Window Help	
Channel (1) 1 (2) 2 (3) 3 (4) 4 (5) 5 (6) 6 (7) 7 (8) 8	Status Type Nornal Enpty Nornal Enpty Nornal Enpty Nornal Enpty Nornal Enpty Nornal Enpty Nornal Enpty Nornal Enpty	Capacity FreeSpace W 767.926 767.926 409.496 409.496 767.926 767.926 409.496 409.496 767.926 767.926 409.496 409.496 767.926 767.926 409.496 409.496 409.496 409.496	Cache Model Humber On HDS7500AYSY HD RE2 On HDS724040KLSA80 On HDS724040KLSA80
Name	Туре	Array Capacity Status OSN	ane Task Progress

Once all target disks have been selected, select **Array** from the tool bar, then highlight **Create** and press Enter.

System	Disk	Array Con	troller	Window	Help			
Channel	Statu Norma	Informat	ion	- Disk ity Fr 9 <mark>2G</mark>	eeSpace 767.92G	WGache On	Model Num WD7500AYS	ber Y WD RE2
(2) 2 (3) 3 (4) 4	Norna Norna Norna	Delete Unplug		9G 19G	409.49G 767.92G 409.49G	On On On	HDS724040 WD7500AYS HDS724040	KLSH80 Y WD RE2 KLSA80
(6) 6 (7) 7 (8) 8	Norna Norna Norna	Verify Start ta Stop tas	isk ik	49G 92G 49G	409.49G 767.92G 409.49G	On On On	WD7500AYS WD7500AYS HDS724040	KLSA80 Y WD RE2 KLSA80
		Set Boot	;					
				0	<u> </u>			
Nane		Туре	Capacit	y Sta	tus OS	SNane	Task	Progress
FRAGT Man	TAD	1 Contrals	and and the	and the second second	Calast			

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RocketRAID BIOS Utility

This will open the RAID creation Menu.

Channel Status Type Capacity FreeSpace UCache Model Number (2) 1 Create Array Up RE2 (3) 3 (-) 1:RAID 0 Init Method (4) 4 (-) 2:RAID 1 (-) (5) 5 N (-) 2:RAID 1/0 (5) 5 (-) 4:RAID 1/0 (5) 5 (-) 6:Reip old data (2) 7:RAID 5 (-) 8:RAID 5/0 (-) 7:RAID 5 (-) Capacity(GB) (C) 8:RAID 5/0 Capacity(GB) (C) Nane Block Size(16KB - 1024KE)

- 1. Array Type: First, use the Tab or arrow keys to highlight the desired RAID level, and press the Spacebar to select the Array Type. The RocketRAID 3530/3540 host adapters support RAID 0, 1, 3, 5, 6, 10, 50 and JBOD.
- 2. Cache Policy: Specify the Cache Policy of the array.
 - a. None: No cache policy set
 - **b.** Write-back utilizes disk cache. Default setting, optimal for performance.
 - c Write-through data is written directly to disk. More secure than Writeback, but will perform slower.
- **3.** Init Method For redundant arrays (RAID 1, 3, 5, 6, 10 and 50) specify the RAID Initialization method.
 - Quick init use this option if you want to quickly create an array for testing purposes. This will clear all previous data, and will not build parity. Do not use this method if data integrity is priority.
 - **b.** Foreground this will instruct the host adapter BIOS utility to start the initialization process immediately after creating the array. This option is recommended for data security.
 - c. Background this will instruct the host adapter to initialize the array in the background, after the operating system has booted. Consider this option if you need to install an operating system to the array this allows the array to be used immediately.

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- d. Keep old data this will only write RAID configuration data to the disks. Use this option when attempting to recover lost arrays.
 Note: Make sure the array is re-created using the same settings (disk order, RAID level, Block size, Capacity, Sector Size). If the settings differ from the original configuration, the array will not be accessible, and data may be lost.
- **4.** Name: Use the Tab or arrow keys and highlight Name. This feature allows you to name an array for reference. This is an optional setting. Press **Enter** to use the default name, or type in the desired name, and press **Enter**.
- **5. Capacity (GB):** The adapter will display the full available capacity by default. If you want to specify the size of the array, type in the desired capacity (in Gigabytes), and press **Enter**. Specifying the capacity allows you to create multiple arrays using the same set of disks. Any free disk space can be used to

create additional arrays, or used as a **Spare** disk (if the available capacity meets the requirement – see **5 - Maintaining Arrays – Spare Disks**, for more information).

6. Block Size – This option allows you to specify the block size (also known as "stripe size") for specific array types (RAID 0, 3, 5, 6, 10 and 50). You can specify block sizes ranging from 16(KB) to 1024(KB). This allows you to tailor the array for specific applications. A balanced block size of 64 (in KB) is recommended for most applications.

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Create / Cancel – Use Tab or arrow keys to highlight the Create or Cancel options, and press Enter. Selecting Cancel will stop the creation process. Selecting Create will create an array based on your selections, and open the Sector Size window.

System Di	isk Array Controller Window Help
Channe 1 (2) 2 (3) 3 (4) (4) (5) 5 (5) 5 (6) (6) (7) 7 (8) 8 (7) (8) 8 (7) (7) (7) (7) (7) (7) (7) (7) (7) (7)	Disk Capacity FreeSpace WCache Model Number Array Type Copacity FreeSpace WCache Model Number Array Type Create Array Array Type Create Cancel
[F10] Menu	[IAB] Switch window [Enter] Select

8. Sector Size – Also known as VSS (Variable Sector Size), this option allows you to specify the sector size of the array, for use With Windows operating systems. Older, 32-bit versions of Windows do not support volumes over 2TB in size, unless the sector size is altered. This option is not needed for Windows XP 64, Win2003 (SP1), Windows 2008, or Windows Vista. These operating systems support larger volumes, and introduce a partitioning method known as GPT (GUID Partition table). Use GPT when creating arrays over 2TB in size. For Windows 2000, or 32-bit versions of XP, refer to the following chart:

512B – Default sector size (supports up to **2TB**). Use this setting for Windows OS that support GPT.

- 1K Supports arrays up to 4TB
- 2K Supports arrays up to 8TB
- 4K Supports arrays up to 16TB

Highlight the appropriate Sector Size, and press Enter to create the array



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3 - Deleting Arrays

From the Array window, highlight the target array and press **Enter**. Highlight **Array** from the toolbar.

Channe 1 2 3 4 5 6 7 8	Statu Norma Norma Norma Norma Norma Norma	Informat: Create Delote Unplug Verify Start tas Stop tasl Set Boot	ion 92 92 93 94 95 95 95 95 95 95 95 95 95 95 95 95 95	y FreeSpace G 358.49G C 0.06G CG 358.49G C 0.06G CG 358.49G CG 0.06G CG 358.49G CG 0.06G 0.06G	WCache On On On On On On On On	Hodel Nunber UD750804VSY UD RE2 HD5724040KLSR80 UD750804VSY UD RE2 HD5724040KLSR80 UD750804YSY UD RE2 HD5724040KLSR80 UD750804YSY UD RE2 HD5724040KLSR80
Nane •RAID5_00		Type RAID5	Capacity 2865.99G	hrray Status O Uninit	SName	Task Progres Initializing 0.00

Select Delete and press **Enter**. The utility will display a warning message. Press **Y** (yes) to delete the array, or select **N** (no) to cancel.

System	Disk A	Irray Cor	ntroller	Window H	elp		
Channe 1 2 3 4 5 6 7 8	Status Norma Norma Norma Norma Norma Norma Norma	Are you	Capac lisk 267. lisk 409. lisk 767. lisk 767. lisk 767. lisk 767. lisk 409. sure to d	Disk	pace WCa 49G On 49G On 49G On 06G On 49G On 56G On selecte	che Model UD750 HD872 WD750 HD872 WD750 HD872 HD872 d array?	Number 1949KLSA80 4949KLSA80 4949KLSA80 4949KLSA80 4949KLSA80 745Y W RE2 1949KLSA80 1949KLSA80
Nane •RAID5_88		Type RAIDS	Capacit 2865.99	Array y Status G Uninit	OSNam	e Task -	Progress

Warning: all data stored on the array will be lost – do not delete if the array contains critical data.

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4 - Monitoring the Host Adapter, Arrays and Devices

The BIOS Settings Utility allows the Administrator to check the status of the RocketRAID host adapter, and any devices (hard disks), and arrays hosted by the adapter.

Disk/Array Status

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To check the status of any disk or array, use Tab to select the Disk or Array Windows, highlight the target disk/array and press enter.

Array Information – this will display the array's Name, RAID type, Block size, Sector size, member hard disks, and status.



[F10] Menu [TAB] Switch window [Enter] Select

Disk Information – this will display the disk Model Number, serial number, firmware revision, capacity, and various disk related settings (NCQ, TCQ, Read Ahead, Write Cache, and Staggered Drive spinup mode).



Alternately, highlight the target disk/array, then highlight either Disk or Array from the tool bar, select Information, and press Enter.



Controller Information

Highlight Controller from the toolbar, select Information, and press Enter.



This option will display information about the host adapter's model (Product ID), PCI-E bus location, IO Processor model, memory, firmware revision, serial number, and the status of the BBU (battery backup unit).

Event Log

The RocketRAID host adapter automatically generates Event Log entries during the case of routine administration (creating arrays), or in the case of a critical error (disk or array failure).

Highlight (Controller from	the toolbar	select Event	Log and	press Enter
i ngimgin 🕻	controller nom	inc tooldar,	Sciect Event	Lug, and	press Enter.

•Chann Fil	el Stat ter: [<u>X</u>]	ius Type Informati	Gapa on [X] War	Disk city FreeSpace WCad Eventlog ning [X] Error	the Model Number
	ine 107-09-27 107-09-27 107-09-27 107-09-27 107-09-27 107-09-27 107-09-27 107-09-27 107-09-27	11:00:45 11:01:45 11:02:45 11:03:45 11:03:45 11:05:45 11:06:45 11:06:45 11:08:45 11:08:45 11:09:45	Type Info Warning Error Info Warning Error Info Warning Error Info	Description Test eventlog 1. Test eventlog 2. Test eventlog 3. Test eventlog 4. Test eventlog 5. Test eventlog 6. Test eventlog 7. Test eventlog 8. Test eventlog 9. Test eventlog 10.	
		<u>C1</u>	ear Pr	ev Next Ca	uncel.

Use this option to view Event Log information, including **Errors** (disk or array failure), **Warnings** (problems such as disk sector or Smart issues) and **Information** (such as the creation or deletion of arrays).





RocketRAID BIOS Utility

This option will display information about the host adapter's model (Product ID), PCI-E bus location, IO Processor model, memory, firmware revision, serial number, and the status of the BBU (battery backup unit).

You can filter displayed events by using Tab to highlight the **Information**, **Warning**, and **Error** options towards the top of the window. Enable or disable these filter options using the **Spacebar**.

Use the Clear option to delete all **Event** Log entries. Use the **Prev** and **Next** option to scroll through log entries. Select **Cancel** (or press Esc) to exit the window.



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5 - Maintaining Arrays

The BIOS Settings Utility provides several RAID and device related maintenance functions, including device and controller settings, Network Configuration settings (for managing the host adapter, remotely), and rebuilding broken/degraded RAID arrays.

Network Settings

This option allows the Administrator to configure Network Settings for use with the RocketRAID host adapter's Out-of-Band (OOB), and In-Band (IB) Management functions.

Highlight Controller from the toolbar, select Network, and press Enter.



This option will display information about the host adapter's network settings. By default, these settings are configured automatically, based on information provided by the local network. To manually configure these settings, use the Tab or arrow keys and highlight **Use automatic config**, and press the **Spacebar**. Type in the appropriate network settings, highlight **OK**, and press **Enter**.

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RocketRAID BIOS Utility

Controller Settings

Highlight Controller from the toolbar, select Settings and press Enter.



Use the tab and arrow keys to select each item, and the Spacebar to enable/disable the target option.

- Enable Audible Alarm enables/disables card's alarm (beeper)
- Enable Staggered drive spinup enable/disable staggered drive spin-up Disabled by default. If enabled, the host adapter will spin disks in sequence (one disk, every "x#" of seconds – enter the desired value). Some hard disks do not support this setting – consult the hard disk's documentation for more information.
- **Spin down idle disk** If enabled, the host adapter will power down idle (inactive) disks/arrays based on the allotted time. Specify the value (in minutes)
- **Rebuild Priority** This option is provided for redundant arrays. This setting determines the priority of rebuilding arrays in regards to other system tasks.
- **Provide INT13 support** enable or disable INT13 (the host adapter's boot function). Disabling this setting may resolve motherboard BIOS related issues in cases where the card cannot be loaded into memory properly (option ROM/out of memory errors).



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- Use Single BCV Entry also related to motherboard BIOS settings (troubleshooting)
- **Stop on Error** Enabled by default. If disabled, the host adapter BIOS menu will bypass array or device errors when booting the system.
- NCQ enable/disable NCQ (native command queuing)

Device Settings

These options allow the administrator to enable or disable hard disk cache related settings.

From the Disk Window, highlight the target disk and press Enter. Highlight Disk from the toolbar:

Channe 1	Information	Space	WCache	Model Number
1) 1 2 3 4 5	Initialize Toggle <mark>S</mark> pare Unplug	8.49G 8.49G 58.49G 0.06G	On On On On	WD7500HYSY WD RE2 HDS724040KLSA80 WD7500AYSY WD RE2 HDS724040KLSA80 UD7500AYSY UD DE2
6 ?	Turn on write cache Turn off write cache	0.06G 58.49G	On On	HDS724040KLSA80 WD7500AYSY WD RE2
8	Rescan [Alt+R]	0.06G	0n	HDS724040KLSA80
Nane ARID5_00	Type Capacity Sta RAIDS 2865.996 Unit	tus OS nit	Name	Task Progres Initializing 0.00

Turn on Write cache – enables the use of the hard disk cache. This is the recommended setting

Turn off write cache – disable the use of the hard disk cache. Use this setting for troubleshooting hard disks, or for testing purposes. Disabling disk cache will lower performance

RocketRAID BIOS Utility

Spare Disks

Spare Disks are used to automatically rebuild Redundant RAID arrays in the case of disk failure. As with creating RAID arrays, disks must be initialized before they can be used as spares. To set a hard disk to act as a Spare Disk, switch to the Disk window, use the arrow keys to select the target disk from the list of initialized disks, and press **Enter**.

Highlight Disk from the toolbar, then select Toggle Spare, and press Enter.

Channe1 (1) 1 * 2 3 4 5 6 7 8	Information Initialize Toggle Spare Unplug Turn on write cache Turn off write cache Rescan [Alt+R]	2Space 58.49G 58.49G 0.06G 58.49G 0.06G 58.49G 0.06G 58.49G 0.06G	WCache On On On On On On On On	Model Number WD7500AYSY WD RE2 HD5724040KL5A80 WD7500AYSY WD RE2 HD5724040KL5A80 WD7500AYSY WD RE2 HD5724040KL5A80 WD7500AYSY WD RE2 HD5724040KL5A80 WD7500AYSY WD RE2 HD5724040KL5A80
Nane •RAID5_00	Array Type Capacity Stat RAID5 2865.996 Unix	tus O	SName	Task Progress Initializing 0.002

To remove a spare, follow the same procedure. From the Disk window, select the target Spare disk and press Enter. Highlight **Disk** from the toolbar, select **Toggle Spare** and press **Enter**.

System	DISK Hr	ray Cont	roller Wind Di	ow Help s <mark>k =====</mark>			
Channel	Status	Туре	Capacity	FreeSpace	WCac he	Model Number	
• 1	Normal	Spare	767.92G	767.92G	On	WD7500AYSY WD	RE2
2	Normal	Empty	409.49G	409.49G	0n	HDS724040KLSA8	0
3	Normal	Empty	767.92G	767.92G	On	WD7500AYSY WD	RE2
4	Normal	Empty	409.49G	409.49G	On	HDS724040KLSA8	0
5	Normal	Empty	767.92G	767.92G	Qn	WD7500AYSY_WD	RE2
6	Normal	Empty	409.49G	409.49G	Qn	HDS724040KLSA8	0
2	Normal	Empty	767.92G	767.92G	On	WD7500AYSY WD	RE2
8	Normal	Empty	409.49G	409.49G	Un	HDS724040KLSA8	U
Nane		Туре	Capacity S	tatus OS	SName	Task F	rogress
F10] Men	u [TAB]	Switch w:	indow [Enter] Select			

Generally, single disks are designated to act as spares (disks that are not configured into RAID arrays).

However, in some instances, disks that are members of RAID arrays may also be assigned to act as a spare disk. If the disks in question are part of a RAID array that did not utilize the full available capacity at the time of creation, these disks may be





used as spares. For example: a RAID 0 array was created between two 200GB hard disks, but only 200GB of space (out of a grand total of 400GB), was assigned to that array. In this example, 200GB of disk space remains unallocated. This unallocated space allows these disks to be set as spares for a separate redundant array that meets the capacity requirement (200GB or less).

Verifying Arrays

Routine RAID verification is essential for maintaining the integrity of data stored on redundant RAID arrays. The RocketRAID BIOS utility allows you to manually verify RAID arrays.

From the Array window, highlight the target array and press **Enter**. Highlight **Array** from the toolbar, select **Verify**, and press **Enter**.

Channe 1 2 3 4 5 6 7 8	Statu Norna Norna Norna Norna Norna Norna	Informati Create Delete Unplug Uerify Start tas Stop tas Set Boot	lon	ty FreeSpa 2G 358.4 9G 0.0 2G 358.4 9G 0.0 2G 358.4 9G 0.0 2G 358.4 9G 0.0	ce WCache 9 <mark>G On</mark> 6G On 9G On 6G On 9G On 6G On 9G On 6G On	Model Numb UD25000YSY HDS724040K WD75000YSY HDS724040K WD75000YSY HDS724040K WD75000YSY HDS724040K	er VD RE2 LSA80 VD RE2 LSA80 VD RE2 LSA80 VD RE2 LSA80 LSA80
Nane •RAID5_00		Type RAID5	Capacity 2865.996	Array Status Uninit	OSName	Task -	Progress

Progress will be displayed towards the lower right-hand corner of the screen (percent complete).

To stop or pause the verification process, select **Stop Task** from the same menu. To continue the verification process, select **Start Task**.

RocketRAID BIOS Utility

6 – Additional Functions and Settings

Set Boot

Highlight the target array from the Array window and press Enter. Highlight Array from the toolbar:

Channel 2 3 4	Statu Norma Norma Norma	Informat Create Delete Unplug	ion it . 92 . 92 . 92 . 92 . 92 . 92	FreeSpace 358.49 30.06 358.49 358.49 30.06	e WCache G On G On G On G On	Model Number UD7500AYSY UI HDS724040KLSA WD7500AYSY UI HDS724040KLSA	D RE2 A80 D RE2 A80
5 6 7 8	Norma Norma Norma Norma	Verify Start ta Stop tas Set Boot	sk k 490	5 358.49 5 0.06 5 358.49 5 0.06	G On GG On GG On GG	WD7500AYSY WI HDS724040KLSf WD7500AYSY WI HDS724040KLSf	D RE2 180 D RE2 180
Nane •RAID5_00		Type RAID5	Az Capacity 2865.996	rray Status Uninit	0SNane	Task Initializing	Progres 0.00

Note: Use this option to set an array to act as the boot device. The selected array will act as the boot "disk", if the motherboard's BIOS instructs the card to act as the system's boot device.

Hot-Swap

The BIOS utility provides several options that allow the administrator to add or remove disks and arrays, without powering down the system.

Adding/removing Disks

To prepare a disk for removal, first highlight the target disk using the Disk window and press **Enter**. Highlight Disk from the toolbar, select **Unplug**, and press **Enter**.

4567	Unplug Turn on write Turn off write	cache cache	0.06G On 58.49G On 0.06G On 58.49G On	HDS724040 WD7500AYS HDS724040 WD7500AYS	KLSA80 Y WD RE2 KLSA80 Y WD RE2
8	Rescan	[Alt+R]	a.asc on	HDS724040	кгенер
Nape •RAID5_00	T ype RA I DS	Capacity Sta 2865.99G Uni	itus OSName init	Task -	Progress

To add a disk, install the hard disk, then highlight **Disk** from the toolbar, select **Rescan**, and press **Enter**.

Note: After installing the disk into the hot-swap capable drive bay, wait several seconds to allow the disk to fully power on, before using the Rescan command.

Adding/removing Arrays

To prepare a RAID array for removal, highlight the target array using the Array window and press **Enter**. Highlight **Array** from the toolbar, select **Unplug**, and press **Enter**.

Channe 1 1 3 4 5 6 7 8	Statu Norna Norna Norna Norna Norna Norna	Informati Create Delete Unplug Verify Start tas Stop task Set Boot	it on	y FreeSpace G 358.499 G 0.061 G 358.499 G 0.061 G 358.499 G 0.061 G 358.499 G 0.061	WCache G On G On G On G On G On G On G On G On	Model Num WD75004YSY HDS7240400 WD75004YSY HDS7240400 WD7500AYSY HDS7240400 WD7500AYSY HDS7240400	WD RE2 (USA80 (USA80 (USA80 WD RE2 (USA80 (USA80 WD RE2 (USA80 (USA80
Nane •RAID5_00		Type RAID5	Capacity 2865.99G	Irray Status Uninit	OSNane	Task -	Progress

The interface will notify you when the disk can be removed.

To add an array, install all of the RAID hard disks, then highlight **Window** from the toolbar. Select **Refresh**, and press **Enter**.

Note: After installing the hard disks into the hot-swap capable drive bays, wait several seconds to allow the disks to fully power on, before using the Rescan command.

RocketRAID BIOS Utility

Window Menu

The Window menu provides several view options.

lormal RAI lormal RAI	D/Spare 767.	Restore	-		
formal RAI			Un	WD7500AYS	Y WD RE2
	D disk 409.	M Diek	On	HDS724040	KLSA80
ormal RAI	D disk 409.	2. Array	On	HDS724040	KLSA80
ormal RAI	D disk 767.		On	WD7500AYS	Y WD RE2
lormal RAI	D disk 409.	Refresh	On	HDS724040	KLSA80
formal RAI	D disk 409.	49G Ø.Ø	166 On	HDS724040	KLSA80
		Array	1.000		
Type	Capacit	y Status	OSNane	Task	Progress
KH I DS	2865.77	G UNINIC			
TTADI ON IC		1.0.1			
	fornal RA fornal RA fornal RA fornal RA fornal RA Type RAIDS	kornal RAID diak ?67. Kornal RAID diak 409. Kornal RAID diak 267. Kornal RAID diak 409. Type Capacit RAID5 2865.99	Aornal RAID disk 767. Rornal RAID disk 409. Aornal RAID disk 409. Aornal RAID disk 409.496 0.0 Array Type Capacity Status RAIDS 2865.996 Uninit	Arnal RAID disk 267. Refresh On Arnal RAID disk 409. Refresh On Arnal RAID disk 267. Refresh On Arnal RAID disk 409. 496 0.056 On Array Type Capacity Status OSName RAID5 2865.996 Uninit	Array Type Capacity Status OSName Task

- Maximize enlarge viewing area of the selected window (Disk or Array)
- **Minimize** reduce the viewing area of the selected window)
- **Disk** selects the Disk window
- Array selects the Array window
- **Refresh** scans for any hardware changes (used when adding arrays or disks to the card)

HighPoint

Device Driver CD and HighPoint RAID Management

Each retail box includes a copy of the HighPoint Products Software CD.

This CD can be used to generate driver diskettes, and install the HighPoint RAID Management Utility Suite for a variety of operating systems.

1 - Creating a Driver Diskette

Windows 2000, 2003 and several distributions of Linux and FreeBSD require driver diskettes when installing the operating system directly to a disk or array hosted by the Rocket RAID host adapter.

To create a driver floppy diskette:

- 1. Insert the CD into the system's CD/DVD drive. The program should start automatically.
- 2. Insert a blank floppy diskette into the system's floppy drive.
- 3. Click on "Create Driver Diskette".
- 4. Click on the "Please Select a Product" drop-down button, and select the appropriate host adapter model from the list.
- 5. Click on the "Please Select the Diskette you want to create" drop-down button, and select the desired operating system from the list.
- 6. Click on the "OK" button to create the driver diskette.

	HighPoint Products Software CD	×	
	ReadMe First		
	Create Driver Diskette		
	Install RAID Management Softw	vare	
	Browse the CD		
	Exit	wi l	
	Please select a product		
	Rock#RAD 4320/3510/3520/3522/3540/3530		
	Please select the diskette you want to create:		
	Windows driver	×	
	OK	Cancel	
High Doint			25
n ugur oun			- 35

Device Driver CD and HighPoint RAID Management

2 - Device Driver Installation

We recommend visiting the RocketRAID download pages for the latest Windows Device Driver updates:

RocketRAID 3540

http://highpoint-tech.com/USA/bios_rr3540.htm

RocketRAID 3530

http://highpoint-tech.com/USA/bios_rr3530.htm

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Page - () Tools -	·····				te	Velcome to HighPoint" RocketRAID -Ten
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	nioad	Dow		10	Versi	Linux Open Source Driver
	ciaes	Qtest		28-	v1.2.13	Annual Annual Contractor
	to the Linux	Lord Usin			×10	RocketRAD 3522
					Concerned and the second	RocketRAID 3520
	CU	WHE GUN	ervice	ty / Inciand Se	RAD Management Util	RocketRAID 3510
		Sincle and		ndzek	All prosoft W	RocketRAD 3320
1	Shitkinex2.1	100252+1.4.8			Linux	RocketRAID 3220
	GL1 Free830 v3.0-1	WebQut +1.0		0	Presidi	RocketRAD 2120
			ownload	ice Driver Dr	Microsoft Windows Dev	RocketRAID 2000 Series
	Ion	Descript	1	Version		RocketRAID 1000 Series
	A LOW TOTAL OF A PLANTA		miner			ATA RAID Series
	d.	And \$4 pit TV\$9 Juscer	State.	v12.133	Microsoft	ATA non-RAID Series
					Linux Debuers	User Manual
	0.05	Descrit	1	I Varsine	Operation System	
					100	FAQ
		ra Core 1-8	Ee:	10.4	federo 🗩	Technical Glossary
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Drivers are posted in .zip archive format. Most Windows operating systems will recognize this archive format, natively. Double click the driver download to view and extract their contents. Drivers can be extracted and/or copied to various media.

Windows Driver Installation (Win2000, XP, Win 2003)

Before installing the RocketRAID 3530/3540 host adapter's device driver, make sure the host adapter and all required hard disks have been installed into the system's chassis/disk enclosure. If you are working with a supplied driver, or driver download, you will want to extract the contents directly to a directory of your choice (or device). You will need to browse to this location, in order to load the driver (see step 2, below).

Installing the RocketRAID 3530/3540 driver for an existing Windows system.

After the operating system has booted, Windows will automatically detect the RocketRAID 3530/3540 host adapter, and request that a device driver be installed. To install the device driver, follow the steps outlined below:

- 1. When the "Found **New Hardware Wizard**" window appears, select "**Install from a list or specific location (Advanced**)", and click Next to continue.
- Click on the "Include this location in the search" option, and select the system's floppy drive (generally Disk A). Next, insert the Driver Installation diskette into the system's floppy drive, or select Browse, and browse to the location of the driver. *If you are using the RocketRAID 3530/3540 software CD, the drivers are located in RR3xxx_4xxx Windows –Driver– Windows (then select the appropriate folder)*.
- 3. Windows may display a warning message that states the driver has "**not been signed**". Select "**Continue Anyway**", then click Finish when prompted. When windows asks to reboot the system, choose No.
- 4. Remove the Driver Installation diskette from the floppy drive, then Shut down and restart the computer.

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Installation Verification

After the driver has been installed, and the system has been restarted:

- 1. Click the Start button, then right-click the "My Computer" icon. Select the Properties item from the pop up menu.
- 2. In the popup window, click the "Hardware" tab then click Device Manager button.
- Double click the "SCSI and RAID controllers" entry. If the RocketRAID 3530/ 3540 device entry is not displayed, or there are "?" or "!" marks displayed near the RocketRAID 3530/3540 entry, the driver has not been installed properly. Delete the entries and reinstall the driver.

Installing the RocketRAID driver during a fresh Windows installation

- After booting from the Windows CD or DVD-ROM, when the Windows Setup blue screen appears, look towards the bottom of the screen. Windows will prompt you to press the F6 key if you want to install a third party SCSI or RAID driver. Press the F6 key at this time.
- 2. The setup procedure will continue, and will later instruct you to press the "S" key to specify additional adapters. Press the "S" key as instructed.
- 3. Next, the setup program will prompt for the insertion of the driver diskette. Please insert the driver diskette, and then press ENTER to continue.
- 4. The next window will display several driver options. Please select the driver for the corresponding operating system, and press ENTER to continue.





Windows Vista/2008 Driver Installation

Installing the driver during a fresh Windows Vista/2008 installation

- 1. Boot from Windows Vista DVD.
- 2. When the screen "where do you want to install Windows" appears, click "Load driver" and browse for the driver location. Windows Vista will accept install drivers from various sources: floppy diskette, USB flash disk or CD. If you are using the RocketRAID 3530/3540 software CD, the drivers are located in RR3xxx_4xxx Windows-Driver VistaWin2008 32 (or 64, if you are running a 64-bit version of the operating system).
- 3. Select the RocketRAID 3530/3540 controller driver, and click "Next".
- 4. The driver is now installed you can now commence with the standard OS installation procedures.

Installing the driver for an existing Windows Vista/2008 system

- 1. Install the RocketRAID 3530/3540 host adapter into the PC, then boot up Windows.
- Windows should automatically detect the card, and display the "Found New Hardware" wizard pop-up window. Select "Locate and install driver software". When Windows asks: "Windows needs your permission to continue", select "continue".
- 3. Select "I don't have disc, show me other options" and then select "Browse my computer for driver software".
- 4. Specify the location of the driver and click "Next. *If you are using the RocketRAID 3530/3540 software CD, the drivers are located in RR3xxx_4xxx* - *Windows-Driver – VistaWin2008 – 32 (or 64, if you are running a 64-bit version of the operating system).*
- 5. When asked: "Would you like to install this driver software?", select "Install".
- 6. Reboot the system when prompted. The RocketRAID 3530/3540 will be available for use after Windows reboots.

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Installation Verification

After the driver has been installed, and the system has been restarted:

- 1. Click the Start button, then right-click My Computer icon. Select the Properties item from the popup menu.
- 2. In the popup window, select Hardware tab and then click Device Manager button.
- 3. Double click the "**Storage Controllers**" entry. If the RocketRAID 3530/3540 device entry is not displayed, or there are "?" or "!" marks displayed near the RocketRAID 3530/3540 entry, the driver has not been installed properly. Delete the entries and reinstall the driver.

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Linux and FreeBSD Device Driver installation

The RocketRAID 3540 and 3530 host adapters are fully GPL compliant, and are natively support by Linux kernel 2.6.25x. Linux distributions that utilize this kernel (and all later releases) will automatically recognize the host adapter, and do not require driver installation.

In addition, binary and source driver updates are routinely posted for a variety of older Linux operating systems including past versions of Red Hat Enterprise, CentOS, OpenSuSE, and Fedora Core.

Drivers are also available for several FreeBSD revisions, and are available from the same support page:

RocketRAID 3530

http://highpoint-tech.com/USA/bios_rr3530.htm

RocketRAID 3540

http://highpoint-tech.com/USA/bios_rr3540.htm





Several driver sets are included with the RocketRAID 3530/3540 Software CD.

Each binary driver and source package includes an installation guide (.pdf format).

Linux Driver sets:

RR3xxx_4xxx/Linuxdirectory.

FreeBSD Driver sets:

RR3xxx_4xxx/FreeBSDdirectory.

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Device Driver CD and HighPoint RAID Management

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3 - HighPoint RAID Management Utilities (HRM)

The HighPoint RAID Management Utility Suite, also known as "HRM", includes several user interface options. The latest version of the Web Management utility user manual, is available from the following link:<u>http://www.highpoint-tech.com/PDF/</u> RR3530/3540-UM-WebGUI-Linux-Aug232008.pdf

Windows Operating Systems – Installing the Web-based Management Utility

Click on "Install RAID Management Software".

Select the desired software from the drop down menu, and click on the "OK" button.



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Red Hat Enterprise/CentOS, Fedora Core, Open SuSE – Installing the Web-based Management utility

Linux operating systems that support .rpm packages, allow you to double-click the HighPoint Web RAID Management .rpm file to start the installation process.

- Copy the Web RAID Management package from the RR3530/3540 Software CD, to the desktop of the Linux operating system. The .rpm file is located in HighPoint RAID Management Software – WebGUI – RR3xxx_4xxx_OBM – Inband_service – Linux
- 2. Browse to the appropriate .rpm file (there are 32 and 64-bit options).
- 3. Double click the .rpm file this should open the operating systems software installer. Enter the Administrative password when prompted and proceed with installation.
- 4. The package can also be installed manually, using a terminal. Log on in as "root", open a terminal, and browse to the location of the .rpm file. Run the following command:
- 5. # rpm -i hptsvr-https-1.4-8.i386.rpm (or hptsvr-https-1.4-8.x86_64.rpm)

Note: The i386 rpm package can also work on 64-bit systems if you have 32-bit runtime libraries installed. If you use the x86_64 rpm package, please make sure the controller driver has 64-bit ioctl support.-



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Debian/Ubuntu Linux Distributions – Installing the Web-based Management Utility

For Debian/Ubuntu Linux distributions, you can use **alien** to convert the rpm packages to a .deb package, then use "**dpkg -i**" command to install each package. Some script files may be lost during the conversion process from rpm to .deb, so you may need to make manual corrections. .

The following files will be installed/configured:

/usr/bin/hptsvr	- service program
/etc/hptcfg	- service config file
/etc/rc.d/init.d/hptdaemon	- service control script
/usr/share/hpt/webguiroot	- data files

If there is no /etc/hptcfg present, you can add it manually using by using the "echo" command on the driver file name to /etc/hptcfg.

For example: # echo hptiop.ko >/etc/hptcfg

Uninstalling the Utility

Open a terminal, and use the following command: # rpm -e hptsvr-https

Linux Distributions - Command Line Interface (CLI)

Command Line interface versions of the RocketRAID management utilities are available for Linux and FreeBSD operating systems.

These packages are posted on the HighPoint Technologies, Inc. website, under the BIOS & Driver downloads page for the RocketRAID 3530/3540.

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Device Driver CD and HighPoint RAID Management

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Mac OS X Driver and Web-based RAID Management Utility

The driver and software package for the RocketRAID 3530/3540 includes both the device driver for OS X, and a copy of the Web RAID Management utility.

Please check http://www.hptmac.com for the latest software/driver packages.

Driver updates are posted on the card's product page, under the "Download Center" section.

The latest package is posted towards the right-hand side of the page, under "Mac Driver". On the left-hand side of the page, there is a section devoted to user documentation. The latest versions of the Product, and Web-based RAID Management Manuals are posted here.



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Mac OS X Driver and RAID Management Installation

The driver and software package for the RocketRAID 3530/3540 includes both the device driver for OS X, and a copy of the Web RAID Management utility. Copy the Mac driver and software package from the Software CD, to the Mac Desktop. Open the .dmg file, and double click "rr3xxx_4xxx" to begin installation.



Click "Continue" to proceed with installation



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Device Driver CD and HighPoint RAID Management

Select the installation destination:

	Select a Destination
Introduction	Select the volume where you want to install the HighPoint RR3xxx/4xxx RAID Controller software.
Destination Select O Installation Type Installation	
animation animation animation animation animation and animation animat	Installing this software requires 1.2 MB of space.
I	You have chosen to install this software on the volume "MAC 10.5".



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tallation completed successfully
Install Succeeded
The software was successfully installed.
Click Restart to finish installing the software.

Click "**Restart**" – after OS X reboots, the card will be recognized by the system. Configure arrays using the Web RAID Management interface. User guides for the Web interface are available from <u>http://www.hptmac.com</u>. Check the product page for the RocketRAID 3530 or 3540, and click on the "Download Center" link.



Customer Support

If you encounter any problems while utilizing the RocketRAID host adapter, or have any questions about this or any other HighPoint Technologies, Inc. product, feel free to contact our Customer Support Department.

Troubleshooting Checklist

Before contacting our Customer Support department:

- Make sure the latest BIOS, driver and HighPoint RAID Management software has been installed for the host adapter. The latest updates are available from our website
- Prepare a list of the computer system's hardware and software (motherboard, CPU, memory, other PCI-E devices/host adapters, operating system, applications)

Contact Information

E-mail address: support@highpoint-tech.com

Phone: 408-240-6119

9:00AM-5:00PM, Pacific Standard Time



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Customer Support

Contact Us

HighPoint Corporate Headquarter USA

Address 1161 Cadillac Ct. Milpitas, CA, 95035 Website: http://www.highpoint-tech.com Phone: 1-408-942-5800 (9 am ~ 6 pm PST, M-F) Fax: 1-408-942-5801 E-mail: sales@highpoint-tech.com Support: support@highpoint-tech.com Support Phone: 1-408-240-6108 (9 am ~ 5 pm PST, M-F)

HighPoint Taiwan

5F., No.3, Swei Lane , Jhongjheng Rd. Sindian City, Taipei County 231, Taiwan (R.O.C.) Website: http://www.highpoint-tech.com/Taiwan/indextw.htm Phone: + 886-2-2218-3435 (9 am ~ 6 pm) Fax: + 886-2-2218-3436 E-mail:sales@highpoint-tech.com Support: support@highpoint-tech.com

HighPoint China

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4th Floor Kehaifulin Building, NO. 12 Zhong Guan Cun South Rd. Haidian District Beijing, China 100081 **Website:** http://www.highpoint-tech.cn/ **Phone:** + 86-10-6213-0920 (9 am ~ 6 pm) **Fax:** + 86-10-6897-5074 **E-mail:** sales@microaurora.com.cn **Support:** support@microaurora.com.cn



FCC Part 15 Class B Radio Frequency Interference statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

European Union Compliance Statement

This Information Technologies Equipment has been tested and found to comply

with the following European directives:

- European Standard EN55022 (1998) Class B
- European Standard EN55024 (1998)

HighPoint

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Thank You

Thank you for purchasing the RocketRAID 3530/3540 SATAII RAID Host adapter. We appreciate your support, and welcome any questions, comments or product suggestions you may have.