



RocketStor 6614V & 6618V User Manual



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Notice

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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 to radio communications. However, there is no guarantee that 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)

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Product Overview

The RocketStor 6618V and 6614V are 4-Bay/ 8-Bay 40Gb/s Thunderbolt™ 3 Tower RAID Enclosures are ideal for I/O intensive applications that require consistent transfer performance and high levels of data redundancy.

RocketStor 6614V and 6618V enclosures can be easily integrated into any PC or Mac platform with Thunderbolt™ 3 USB-C connectivity.

Kit Contents

Before getting started, check to see if any items are missing, damaged, or incorrect. For any discrepancy contact your reseller or go to <https://www.highpoint-tech.com/support-and-services> for online support.

RocketStor 6614V Kit Contents

- 1x 4-Bay Enclosure
- 4x 3.5 Inch Drive Trays
- 1x 40Gb/s Thunderbolt™4 1M cable
- 1x UL Power Cord
- 20x 3.5" HDD mounting screws
- 20x 2.5" SSD mounting screws
- 1x Quick Installation Guide

RocketStor 6618V Kit Contents

- 1x 8-Bay Enclosure
- 8 x 3.5 Inch Drive Trays
- 1x 40Gb/s Thunderbolt™4 1M cable
- 1x UL Power Cord
- 35x 3.5" HDD mounting screws
- 35x 2.5" SSD mounting screws
- 1x Quick Installation Guide

Feature Specifications

	RocketStor 6614V	RocketStor 6618V
Feature Specifications		
Description	4-Bay Thunderbolt 3 Tower RAID Enclosure	8-Bay Thunderbolt 3 Tower RAID Enclosure
Port Type	2x Thunderbolt™ 3 USB-C	
Number of Drives	4	8
Drive interface	12Gb/s SAS & 6Gb/s SAS/SATA	
Drive Form Factor	3.5" or 2.5" SSD or HDD	
Hot-Plug Support	Yes	
Host Interface	Thunderbolt™ 3 40Gb/s	
Fan control	Smart control & Manual control	
Enclosure Dimensions	5.80" (W) x 9.12" (H) x 10.24" (D)	5.77" (W) x 13.83" (H) x 10.24" (D)
Enclosure Weight	13.09 lbs.	16.07 lbs.
Warranty	1 Year	
Daisy Chain Features	Supports Daisy Chain connections of up to six Thunderbolt™ devices. Notes: <ul style="list-style-type: none"> • The Daisy Chain will end if connected to a USB or Display device via USB-C • RAID5 & 6 configurations are not supported by Daisy Chain configurations • For optimal performance, the enclosure should be connected directly to the host's Thunderbolt™ 3 port 	
Supported Systems		
Operating System	Windows 11, 10 Windows Server 2022, 2019, 2016 Microsoft Hyper-V Only supports 64 bit operating system.	
	Only supports 64 bit operating system. <ul style="list-style-type: none"> • Linux Driver can be installed via internet/network connection • Linux (Support Linux Driver auto Compile) • Redhat/Ubuntu/Debian/Fedora/Proxmox/Rocky Linux (Kernel 3.10 and later) 	
	macOS 10.13 ~ macOS Sonoma 14.x	
Storage Configuration		
RAID Support	0, 1, 5, 6, 10 and JBOD / Non-RAID	0, 1, 5, 6, 10, 50 and JBOD / Non-RAID
TRIM RAID Support	Non-RAID, JBOD, RAID 0, RAID 1, RAID10 (Supported by Linux, not supported for Windows or macOS)	
Boot RAID	No	
Data RAID	Yes	

Advanced RAID Features	
	Storage Health Inspector
	Redundant RAID Configurations
	Multiple RAID Partitions supported
	Online Array Roaming
	Online RAID Level Migration (ORLM) (not supported by macOS)
	Online Capacity Expansion (OCE) (not supported by macOS)
	RAID Quick Initialization for fast array setup
	Global Hot Spare Disk support
	Disk Format compatible: 512, 512e, 4Kn
	Automatic and configurable RAID Rebuilding Priority
	Auto resume incomplete rebuilding after power on or reboot system
	Automatic remap and repair of bad blocks for RAID configurations (HDD) RocketStor 6614V Redundant RAID Levels (RAID1, RAID10, RAID5, RAID6) RocketStor 6618V Redundant RAID Levels (RAID1, RAID10, RAID5, RAID50, RAID6)
	Write Back and Write Through
	Spin down Massive Arrays of Idle Disks support
	Native Command Queuing
	SAS TCQ
	Disk media scan and repair
	Staggered Drive Spin Up
	Storage Configurations Support Details (Direct Attached)
Storage Monitoring and Management Suite	
	Browser-Based management tool
	CLI (Command Line Interface- scriptable configuration tool)
	API package
	Drive LED Indicator: Power, Present, Active
	SMTP Email Alert Notification
	Alarm Buzzer
Operating Environment	
Temperature	(operating) 5°C – 45°C (non-operating) -40°C – 65°C
Certification	CE FCC RoHS REACH WEEE

Step 1: Install the RocketStor 6614V/6618V

The following instructions describe how to install your RocketStor 6614V/6618V for use.

Important: Before installing the RocketStor 6614V/6618V, ensure your system is powered OFF.

Take the RocketStor 6618V as an example.

1. Place the RocketStor 6618V on a level surface and remove each drive tray.



2. Carefully insert the SSD or HDD into the drive tray and secure it with the provided mounting screws.

- 1). For 3.5-inch drive: use black screws to secure the drive to each side of the drive tray.



- 2). For 2.5-inch drive: use silver screws to secure the drive to the back of the drive tray.



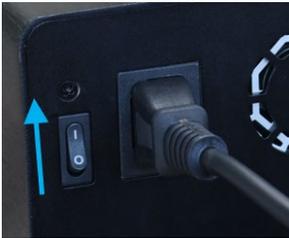
3. Install each drive tray into the Enclosure.



4. Connect the Enclosure to the host system using the included Thunderbolt™4 cable.



5. Connect the Power cable to the rear of the Enclosure and connect it to an AC power source.



6. First switch on the Enclosure power switch (switch to the “ | ” position) to power up the Enclosure, then power up the host system.



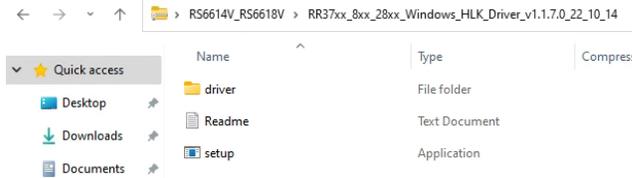
Note: The RocketStor 6614V/6618V connects to the host system via a Thunderbolt™ cable. As a result, the RocketStor 6614V/6618V will automatically power on when the host system is powered on, and power off when the host system is powered off.

Step 2: Install/Update Drivers

Drivers provide a way for your operating system to communicate with your new hardware. Updating to the latest drivers ensures your product has the latest performance, stability, and compatibility improvements. Drivers are updated regularly.

For Windows Users

1. Download the latest driver files from our website.
2. Extract the downloaded files onto your PC and note the location of the files.

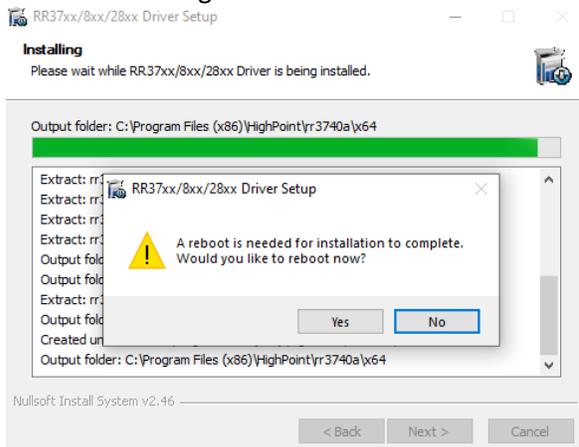


Note: The Driver Software revision shown in the screenshots may not correspond with current software releases. Please make sure to download the latest Driver Software updates from the product's Software Updates page.

3. Double click **setup** to start installing the driver.



4. Click **Next** and wait for the automatic installation to complete.
5. **Reboot** for changes to take effect.



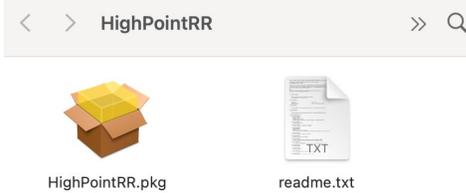
For Mac Users

1. Download the latest driver files from our website and locate the download.

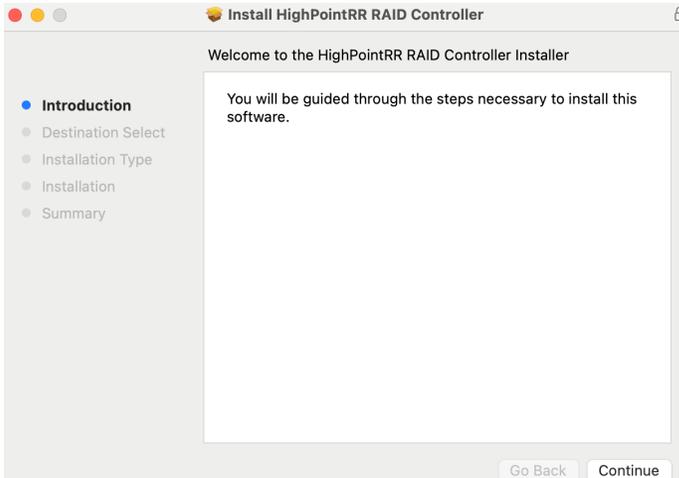


Note: The Driver Software revision shown in the screenshots may not correspond with current software releases. Please make sure to download the latest Driver Software updates from the product's Software Updates page.

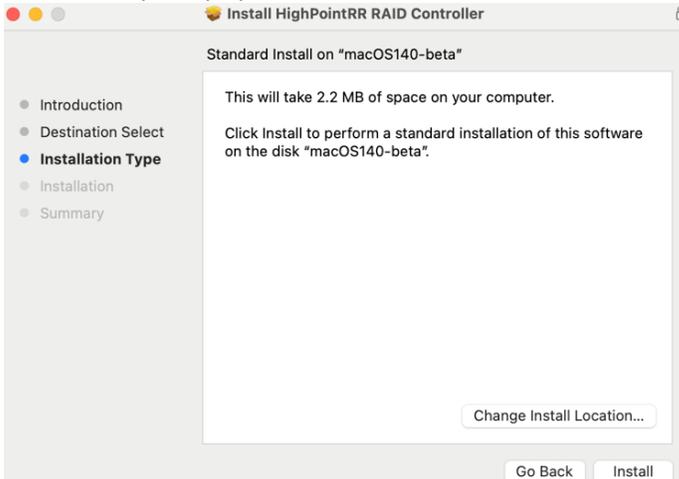
2. Double click the driver package to start installation (.pkg file).



3. Click the **Continue** button.



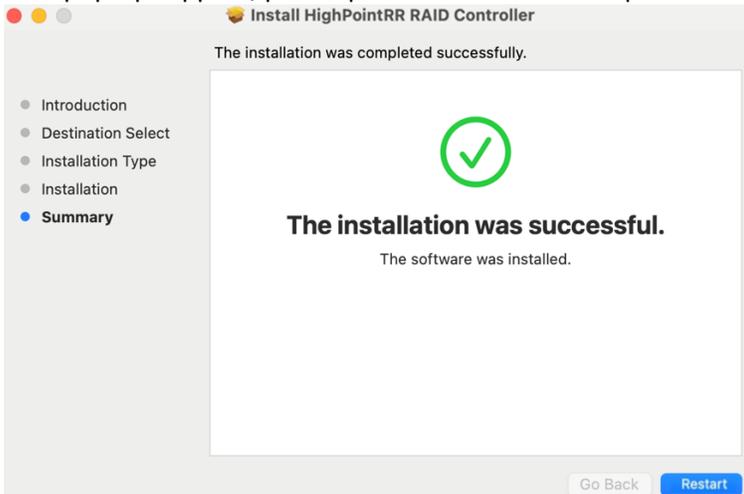
4. macOS will prompt you to install the driver. Click **Install** to proceed.



5. You will be prompted that installer is trying to install new software, enter the **Administrator Username and Password**. Once these have been entered, Click Install Software.



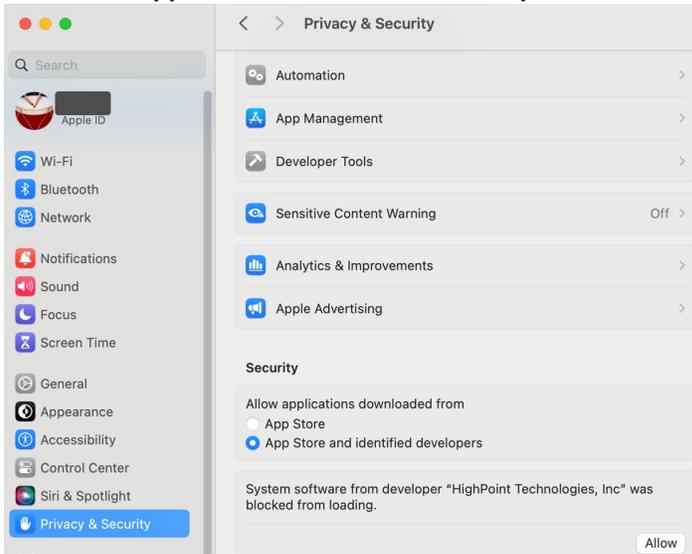
6. If no pop-ups appear, please proceed to the next step of installation. Click **Restart**.



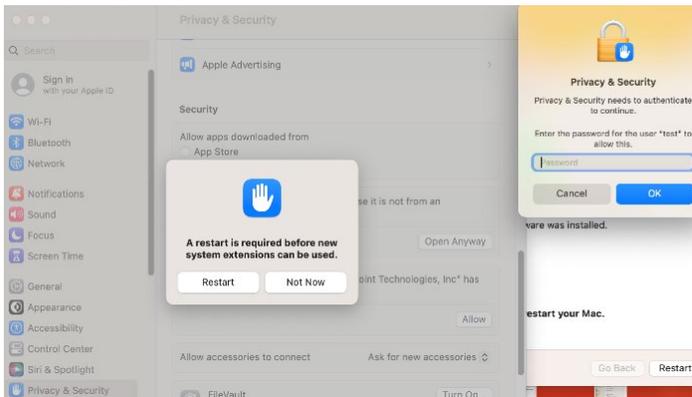
7. If you receive a popup window prompting you for permission, click **Open Security Preferences**.



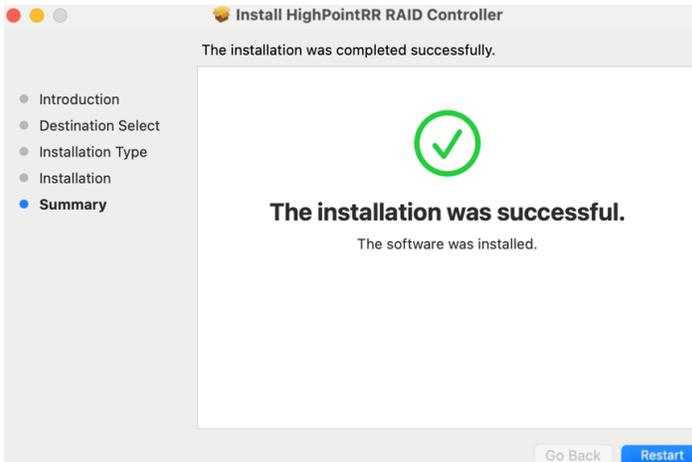
8. Make sure **App Store and identified developers** is checked, and then click **Allow**.



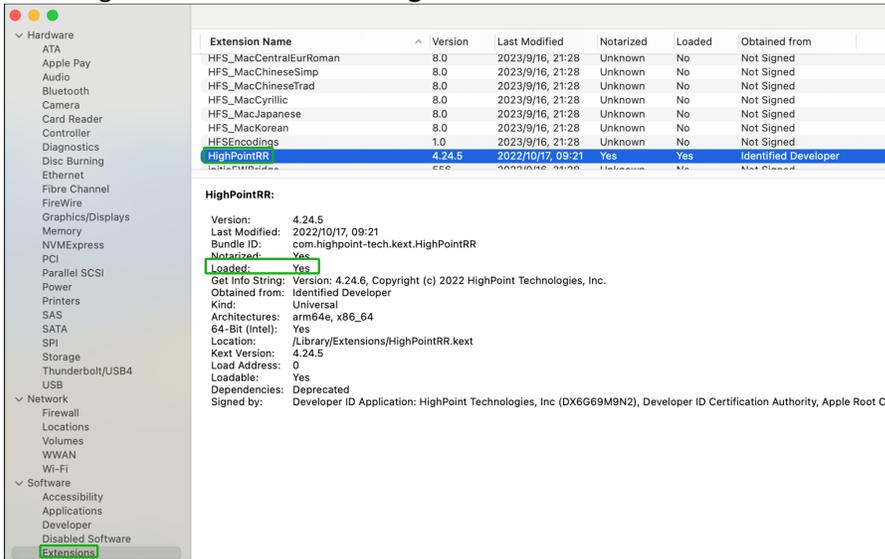
9. You will see a popup window, prompting you to restart. Enter the **Administrator** Username and Password and click **Restart**.



10. Return to the driver installation window. Click **Restart** to restart the system.



11. After the system restarts, the driver’s status can be viewed under **System Information**→**Extensions**; The following screenshot shows the **HighPointRR** driver has been **loaded**.



Note: The driver revision shown in the screenshots may not correspond with current software releases. Please make sure to download the latest driver updates from the product’s Software Updates page.

For Linux Users

1. Download the latest driver files from our website.
2. Open a terminal and go to the directory where the drive package is located.
3. Use root permissions to extract the driver package.

```
# tar zxvf RR37xx_8xx_28xx_Linux_X86_64_Src_vx.x.x_xx_xx_xx.tar.gz
```

```
root@t-desktop:/home/t/Desktop/RS6614V_RS6618V# tar zxvf RR37xx_8xx_28xx_Linux_X86_64_Src_v1.23.13_23_01_16.tar.gz
rr37xx_8xx_28xx_linux_x86_64_src_v1.23.13_23_01_16.bin
README
```

Note: The Driver Software revision shown in the screenshots may not correspond with current software releases. Please make sure to download the latest Driver Software updates from the product's Software Updates page.

4. Run the .bin file to install the driver package.

```
# sh rr37xx_8xx_28xx_linux_src_vx.x.x_xx_xx_xx.bin
```

```
root@t-desktop:/home/t/Desktop/RS6614V_RS6618V# ./rr37xx_8xx_28xx_linux_x86_64_src_v1.23.13_23_01_16.bin
Verifying archive integrity... All good.
Uncompressing RR3740A/840A Linux Open Source package installer.....
.....
Checking and installing required toolchain and utility ...
Found program make (/usr/bin/make)
Found program gcc (/usr/bin/gcc)
Found program perl (/usr/bin/perl)
Found program wget (/usr/bin/wget)
Synchronizing state of hptdrv-monitor.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable hptdrv-monitor
update-rc.d: warning: enable action will have no effect on runlevel 1

SUCCESS: Driver rr3740a is installed successfully for kernel 5.15.0-67-generic.
Driver rr3740a is installed successfully for kernel 5.15.0-88-generic.
Please restart the system for the driver to take effect.
If you want to uninstall the driver from the computer, please run hptuninrr3740a to uninstall the driver files.
```

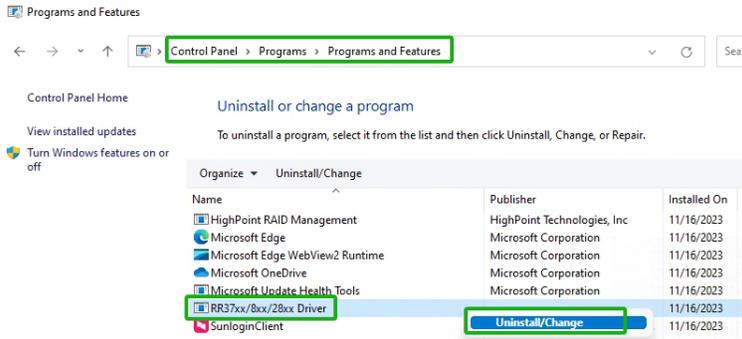
5. The driver will be loaded automatically after reboot.

Note: The installer requires super user's permission to run the installation. So if you are not logged in as root, please supply the password of root to start the installation.

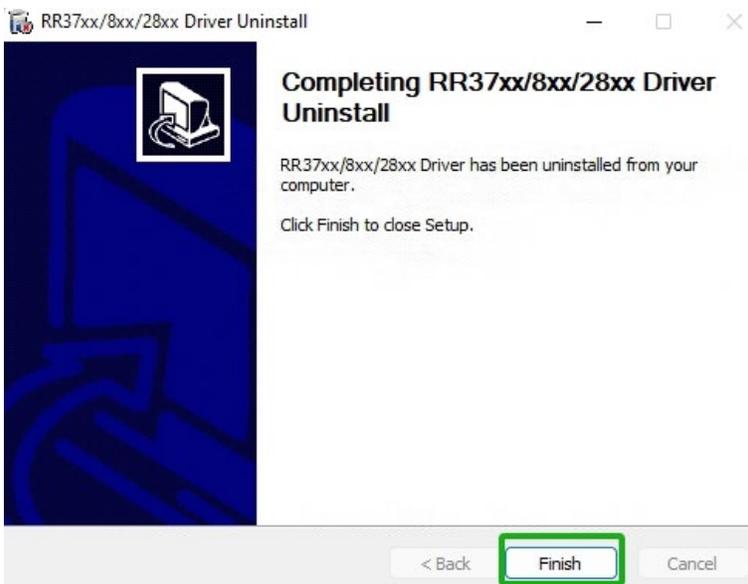
Uninstall Drivers

For Windows Users

1. Power down the system and remove the RS6614V/6618V from the motherboard.
2. Power on the system and boot Windows.
3. Access **Control Panel** and select **Programs > Programs and Features**, and click on the **RR37xx/8xx/28xx Driver** entry.
4. Click **Uninstall/Change**.



5. After uninstalling the driver,click **Finish**.



For Mac Users

1. Open a terminal and enter Administrator Privileges.

2. Enter the command:

```
# cd /Library/Extensions/
```

```
# rm -rf HighPointIRR.kext/
```

```
[tdest@tdests-MacBook-Pro-2018-120 ~ % sudo su
```

```
[sh-3.2# cd /Library/Extensions/
```

```
[sh-3.2# rm -rf HighPointRR.kext/
```

3. Restart your computer when prompted to complete the process of uninstalling the driver.

For Linux Users

1. Open a terminal and enter Administrator Privileges.

2. Enter the command:

```
# hptuninrr3740a
```

```
root@t-desktop:/home/t/Desktop# hptuninrr3740a
```

3. Press "Y" to confirm.

```
Are you sure to uninstall the driver rr3740a from system? (Y/n): y  
All files installed have been deleted from the system.
```

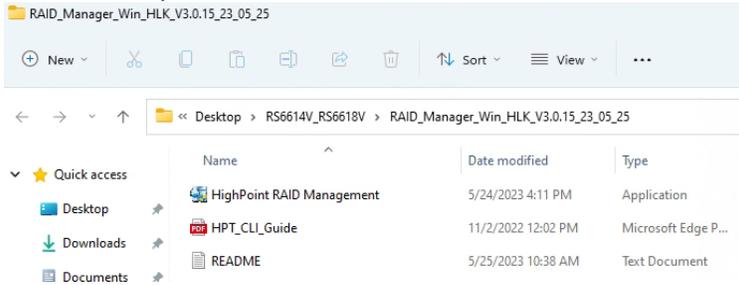
4. Restart your computer when prompted to complete the process of uninstalling the driver.

Step 3: Install HighPoint RAID Management Software (WebGUI & CLI)

The HighPoint RAID Management Software (WebGUI and CLI utilities) are used to create, maintain, and view your RAID arrays hosted by the RS6614V/6618V. Download the latest software package from the HighPoint website.

For Windows Users

1. Download the latest HighPoint RAID Management Software from our website.
2. Extract and open the contents of the downloaded file.



Note: The HighPoint RAID Management Software revision shown in the screenshots may not correspond with current software releases. Please make sure to download the latest HighPoint RAID Management Software updates from the product’s Software Updates page.

3. Double-click **HighPoint RAID Management.exe**.



4. Follow the on-screen instructions to complete the HighPoint RAID Management Software installation.
5. Double-click the **HighPoint RAID Management** desktop icon to start the WebGUI. Alternatively, type <http://localhost:7402> in your browser address bar.



For Mac Users

1. Download the latest HighPoint RAID Management Software from our website.
2. Double Click the downloaded the HighPoint RAID Management Software file.



Note: The HighPoint RAID Management Software revision shown in the screenshots may not correspond with current software releases. Please make sure to download the latest HighPoint RAID Management Software updates from the product’s Software Updates page.

3. Double click the **HighPointWebGUI.pkg** to start the HighPoint RAID Management Software installation.



4. Follow the installer on-screen instructions to complete the HighPoint RAID Management Software installation.
5. Double-click the HighPoint RAID Management desktop icon to start the WebGUI.



Note: macOS only supports WebGUI.

For Linux Users

1. Download the latest HighPoint RAID Management Software from our website.
2. Start Terminal and navigate to the downloaded files.
3. Using the system terminal with root privileges, browse to the directory where the software download, and enter the following commands to extract the management software package:

```
# tar zxvf RAID_Manage_Linux_vx.x.x_xx_xx_xx.tar.gz
```

```
root@t-desktop:~/home/t/Desktop/RS6614V_RS6618V# tar zxvf RAID_Manage_Linux_v3.1.13_22_12_05.tgz  
HPT_CLI_Guide.pdf  
README.txt
```

Note: The HighPoint RAID Management Software revision shown in the screenshots may not correspond with current software releases. Please make sure to download the latest HighPoint RAID Management Software updates from the product's Software Updates page.

4. Install the HighPoint RAID management software (WebGUI & CLI) using the following command:

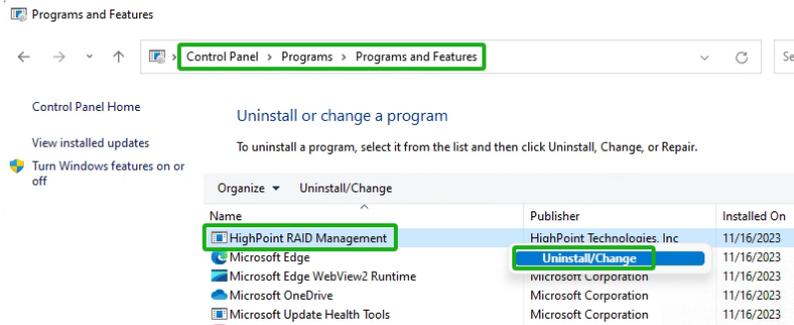
```
#!/RAID_Manage_Linux_vx.x.x_xx_xx_xx.bin
```

```
root@t-desktop:/home/t/Desktop/RS6614V_RS6618V# ./RAID_Manage_Linux_v3.1.13_22_1
2_05.bin
Remove old hpt_install.log.
-----
Install .....
Package readline lib is already installed!
readline/hptsvr_3.1.13_amd64.deb will be installed!
Selecting previously unselected package hptsvr.
(Reading database ... 182974 files and directories currently installed.)
Preparing to unpack ../hptsvr_3.1.13_amd64.deb ...
Unpacking hptsvr (3.1.13) ...
Setting up hptsvr (3.1.13) ...
Starting hptsvr daemon.
Clean .....
Finish .....
```

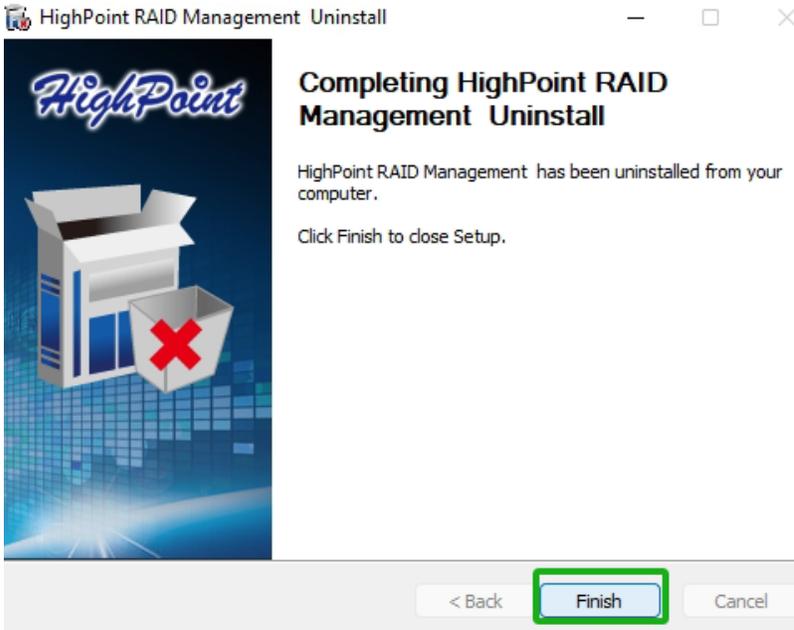
Uninstall HighPoint RAID Management (WebGUI & CLI)

For Windows Users

1. Access **Control Panel** and select **Programs**→**Programs and Features**, and right-click on the **HighPoint RAID Management** entry.
2. Click **Uninstall/Change**.

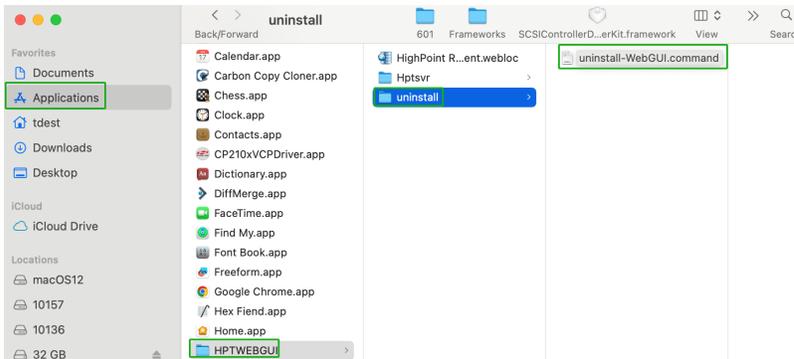


3. After uninstalling the HighPoint RAID Management, click **Finish**.

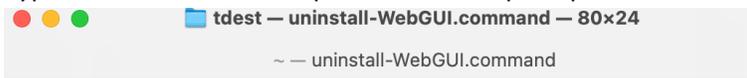


For Mac Users

1. Navigate to **/Applications/HPTWEBGUI/uninstall**.
2. Click on the **uninstall** script.



3. Type in the Administrator password when prompted.



Note: You must be logged on as an administrator to uninstall the software.
The script will prompt you for an administrator password.

If prompted for a password please enter your administrator password.

```
The following service files will be deleted
/Applications/HPTWEBGUI
/Library/Receipts/wwwfiles.pkg
/Library/Receipts/websservice.pkg
/Library/LaunchDaemons/HPTWebGUIDaemon.plist
/usr/share/hpt
/usr/bin/hptdaemonctl
Process has completed.
```

```
Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.
```

For Linux Users

1. Open the system terminal with root privileges. Enter the following commands to uninstall the RAID Management:

#dpkg -r hptsvr (or rpm -e hptsvr-https)

```
root@t-desktop:/home/t/Desktop# dpkg -r hptsvr
(Reading database ... 183129 files and directories currently installed.)
Removing hptsvr (3.1.13) ...
```

2. Enter the following command to check if the RAID Management has been removed successfully:

#hptraidconf

```
root@t-desktop:/home/t/Desktop# hptraidconf
hptraidconf: command not found
```

Step 4A: Login WebGUI

The Web-based Management Interface (WebGUI), is a simple, and intuitive web-based management tool available for Windows /Linux /macOS operating systems. The Wizard-like Quick Configuration menu allows even the most novice user to get everything up and running with a few simple clicks.

For Windows/Mac Users

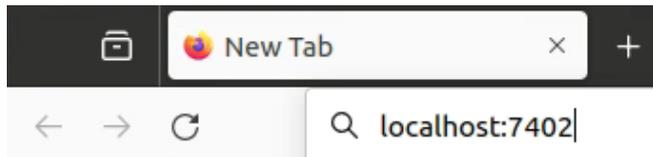
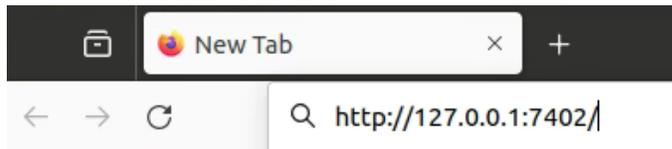
1. Double click the Desktop ICON to start the software using the system’s default web browser. It will automatically log-in to the WebGUI.



2. The password can be set after the first log-in. To change the password, select **Setting>Password Setting** from the menu bar.

For Linux Users

1. Enter <http://127.0.0.1:7402> or localhost:7402 into the browser to log into the WebGUI, 7402 is the WebGUI’s Port Number, which can be modified.



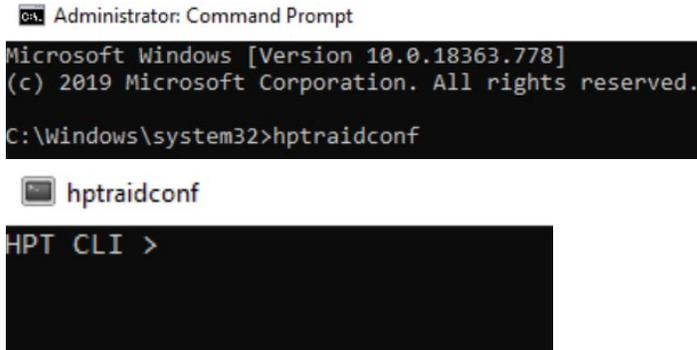
2. The password can be set after the first log-in. To change the password, select **Setting>Password Setting** from the menu bar.

Step 4B: Login CLI

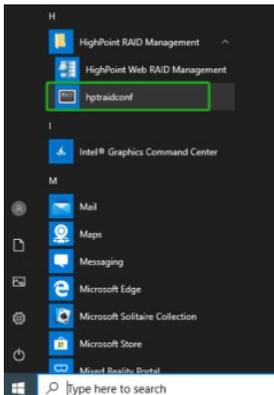
The CLI (command line interface) is a powerful, text-only management interface designed for advanced users and professional administrators. The universal command lines available for Windows /Linux operating systems, and are shared across our entire product line. Comprehensive user guides are available for the CLI, and are included with the most recent product updates available from the Software Updates section of the product category webpages.

For Windows Users

1. Method1: Run **“Command Prompt”** as Administrator and enter **hptraidconf** and press **Enter**.

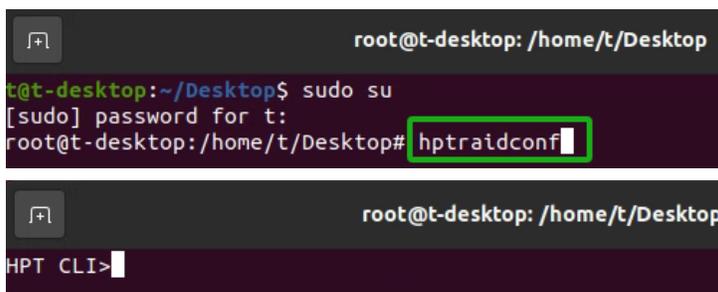


2. Method2: Click **“Start”** to find the **HighPoint RAID Management** folder, and click on **hptraidconf**.



For Linux Users

1. Open **“Terminal”** and enter root permissions.
2. Then execute the command **“hptraidconf”** to enter the CLI.



Step 5A: Create RAID Arrays using WebGUI

For Windows, Mac and Linux Users

1. Open the **WebGUI**.
2. Select the proper controller from the drop down on the top left.
3. Click the **Logical** tab.

Controller(1): RS6618V

HighPoint Technologies, Inc.

Global View Physical **Logical** Setting Event SHI Recover Help

Create Array Spare Pool Logical Device Rescan Beeper Mute

Logical Device Information

Name	Type	Secured	Capacity	BlockSize	SectorSize	OS Name	Status
Device_1_1	Hard Disk	No	4.00 TB			HPT DISK 0_0	Legacy Maintenance
Device_1_2	Hard Disk	No	2.00 TB			HPT DISK 0_1	Legacy Maintenance
Device_1_3	Hard Disk	No	8.00 TB			HPT DISK 0_2	Legacy Maintenance
Device_1_4	Hard Disk	No	4.00 TB			HPT DISK 0_3	Legacy Maintenance
Device_1_5	Hard Disk	No	1.00 TB			HPT DISK 0_4	Legacy Maintenance
Device_1_6	Hard Disk	No	8.00 TB			HPT DISK 0_5	Legacy Maintenance
Device_1_7	Hard Disk	No	6.00 TB			HPT DISK 0_6	Legacy Maintenance
Device_1_8	Hard Disk	No	12.00 TB			HPT DISK 0_7	Legacy Maintenance

Physical Device Information

Location	Model	Secured	Capacity	Max Free
1/1	ST4000VN008-2DR166-WDH0Z88B	No	4.00 TB	0.00 GB
1/2	ST2000VX000-1CU164-W1E8N3QT	No	2.00 TB	0.00 GB
1/3	ST8000VX0002-1Z6112-ZA10NEH8	No	8.00 TB	0.00 GB
1/4	ST4000VX007-2DT166-WDH2VYMQ	No	4.00 TB	0.00 GB
1/5	ST1000NM0033-9ZM173-Z1W5ZGPN	No	1.00 TB	0.00 GB
1/6	ST8000VX0002-1Z6112-ZA10PMG7	No	8.00 TB	0.00 GB
1/7	WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A	No	6.00 TB	0.00 GB
1/8	ST12000NM0008-2H3101-ZH20C2PM	No	12.00 TB	0.00 GB

4. Click **Create Array**.

Controller(1): RS6618V

HighPoint Technologies, Inc.

Global View Physical **Logical** Setting Event SHI Recover Help

Create Array Spare Pool Logical Device Rescan Beeper Mute

Create Array

Array Type: JBOD(Volume)

Array Name: Default

Secure:

Initialization Method: Keep Old Data

Cache Policy:

Block Size: 64K

Number of RAID5 member disks: 3

Select All

Location	Model	Capacity	Max Free
<input type="checkbox"/> 1/1	ST4000VN008-2DR166-WDH0Z88B	4.00 TB	0.00 GB
<input type="checkbox"/> 1/2	ST2000VX000-1CU164-W1E8N3QT	2.00 TB	0.00 GB
<input type="checkbox"/> 1/3	ST8000VX0002-1Z6112-ZA10NEH8	8.00 TB	0.00 GB
<input type="checkbox"/> 1/4	ST4000VX007-2DT166-WDH2VYMQ	4.00 TB	0.00 GB
<input type="checkbox"/> 1/5	ST1000NM0033-9ZM173-Z1W5ZGPN	1.00 TB	0.00 GB
<input type="checkbox"/> 1/6	ST8000VX0002-1Z6112-ZA10PMG7	8.00 TB	0.00 GB
<input type="checkbox"/> 1/7	WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A	6.00 TB	0.00 GB
<input type="checkbox"/> 1/8	ST12000NM0008-2H3101-ZH20C2PM	12.00 TB	0.00 GB

Available Disks:

Capacity: (According to the max free space on the selected disks) (MB)

Create

5. The RAID creation page provides many features, options, and settings.
6. Select **RAID 0** for Array Type.

7. If desired name the array. The example shown below uses the name “Default”.
8. Select **Quick Init** as the initialization method.

Note: *Quick Init gives immediate access to the array by skipping parity synchronization. Recommended for testing/verification purposes or when new disks are used.*
9. Select **64K** as the **Block Size**.
10. Select all 8 available disks.
11. Leave the **Capacity** setting at their default values.
12. Click **Create**.

Create Array

Array Type:

Array Name:

Secure:

Initialization Method:

Cache Policy:

Block Size:

Number of RAID5 member disks:

Select All	Location	Model	Capacity	Max Free
<input checked="" type="checkbox"/>	1/1	ST4000VN008-2DR166-WDH0Z88B	4.00 TB	0.00 GB
<input checked="" type="checkbox"/>	1/2	ST2000VX000-1CU164-W1E8N3QT	2.00 TB	0.00 GB
<input checked="" type="checkbox"/>	1/3	ST8000VX0002-1Z6112-ZA10NEH8	8.00 TB	0.00 GB
<input checked="" type="checkbox"/>	1/4	ST4000VX007-2DT166-WDH2VYMQ	4.00 TB	0.00 GB
<input checked="" type="checkbox"/>	1/5	ST1000NM0033-9ZM173-Z1W5ZGPN	1.00 TB	0.00 GB
<input checked="" type="checkbox"/>	1/6	ST8000VX0002-1Z6112-ZA10PMG7	8.00 TB	0.00 GB
<input checked="" type="checkbox"/>	1/7	WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A	6.00 TB	0.00 GB
<input checked="" type="checkbox"/>	1/8	ST12000NM0008-2H3101-ZHZ0C2PM	12.00 TB	0.00 GB

Capacity: (According to the max free space on the selected disks) (MB)

13. Once created, the WebGUI will acknowledge the array has been create.

localhost:7402 says

```
RAID 0 Array 'RAID_0_0' has been created successfully (Disk
1:ST4000VN008-2DR166-WDH0Z88B, 1/1; Disk 2:ST2000VX000-1CU164-
W1E8N3QT, 1/2; Disk 3:ST8000VX0002-1Z6112-ZA10NEH8, 1/3; Disk
4:ST4000VX007-2DT166-WDH2VYMQ, 1/4; Disk
5:ST1000NM0033-9ZM173-Z1W5ZGPN, 1/5; Disk
6:ST8000VX0002-1Z6112-ZA10PMG7, 1/6; Disk 7:WDC
WD60EFRX-68MYMN1-WD-WX11D74RHV7A, 1/7; Disk
8:ST12000NM0008-2H3101-ZHZ0C2PM, 1/8).
```

14. RAID_0_0 can now be seen under Logical Device Information.

Logical Device Information							
Name	Type	Secured	Capacity	BlockSize	SectorSize	OS Name	Status
RAID_0_0	RAID 0	No	8.00 TB	64k	512B	HPT DISK 0_0	Normal Maintenance

Note: *The OS name is HPT DISK 0_0; this will help identify which volume to initialize.*

Step 5B: Create RAID Arrays using CLI

For Windows and Linux Users

1. Open “Terminal” and enter root permissions.
2. Then execute the command “**hptraidconf**” to enter the CLI.
3. In order to see the devices connected to the Enclosure, type **query devices**.

```
HPT CLI > query devices
```

ID	Secured	Capacity	MaxFree	Flag	Status	ModelNumber
1/1	No	4000.79	0	SINGLE	LEGACY	ST4000VN008-2DR166
1/2	No	2000.40	0	SINGLE	LEGACY	ST2000VX000-1CU164
1/3	No	8001.56	0	SINGLE	LEGACY	ST8000VX0002-1Z6112
1/4	No	4000.79	0	SINGLE	LEGACY	ST4000VX007-2DT166
1/5	No	1000.20	0	SINGLE	LEGACY	ST1000NM0033-9ZM173
1/6	No	8001.56	0	SINGLE	LEGACY	ST8000VX0002-1Z6112
1/7	No	6001.18	0	SINGLE	LEGACY	WDC WD60EFRX-68MYMN1
1/8	No	12000.14	0	SINGLE	LEGACY	ST12000NM0008-2H3101

Note: The device ID gives the position of each drive and is needed to select which drive will be included in the array.

4. If you selected the legacy disk for RAID array creation, you need to initialize the legacy disk first. Using the following command to initialize legacy disks:

HPT CLI > init deviceid start

```
HPT CLI > init 1/1 start
Init device(1/1) successfully!
```

After init initialize legacy disks:

```
HPT CLI > query devices
```

ID	Secured	Capacity	MaxFree	Flag	Status	ModelNumber
1/1	No	4000.69	4000.69	SINGLE	NORMAL	ST4000VN008-2DR166
1/2	No	2000.31	2000.31	SINGLE	NORMAL	ST2000VX000-1CU164
1/3	No	8001.46	8001.46	SINGLE	NORMAL	ST8000VX0002-1Z6112
1/4	No	4000.69	4000.69	SINGLE	NORMAL	ST4000VX007-2DT166
1/5	No	1000.12	1000.12	SINGLE	NORMAL	ST1000NM0033-9ZM173
1/6	No	8001.46	8001.46	SINGLE	NORMAL	ST8000VX0002-1Z6112
1/7	No	6001.08	6001.08	SINGLE	NORMAL	WDC WD60EFRX-68MYMN1
1/8	No	12000.07	12000.07	SINGLE	NORMAL	ST12000NM0008-2H3101

5. To create a 8 disk RAID 0 array named RAID0 input the following command:

HPT CLI > create RAID0 name=RAID0 disks=*

```
HPT CLI > create RAID0 name=RAID0 disks=*
Create array successfully.
```

6. To view the created array, type **query arrays**.

```
HPT CLI > query arrays
```

ID	Secured	Capacity(GB)	Type	Status	Block	Sector	Cache	Name
1	No	8000.99	RAID0	NORMAL	64k	512B	NONE	RAID0

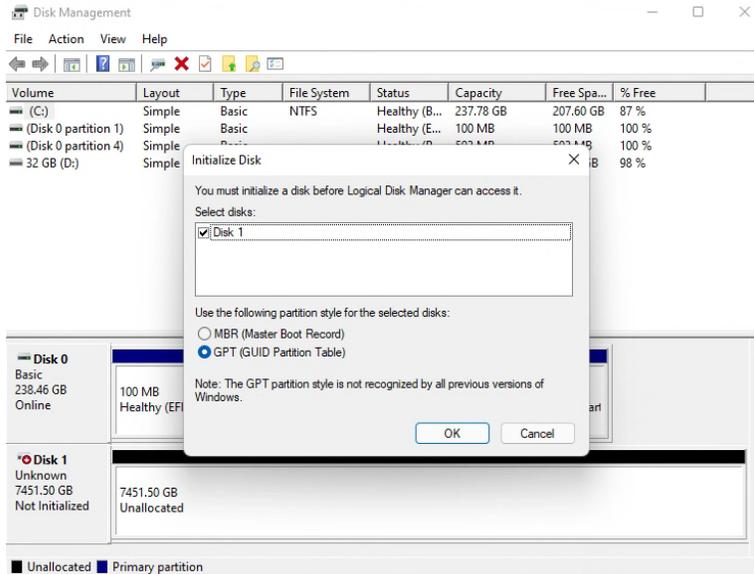
Note: For more HighPoint CLI information type help in the command line or refer to the documentation included in the software package.

Step 6: Initialize and format the RAID Array

Before using the newly created RAID array, you must initialize and format the new volume.

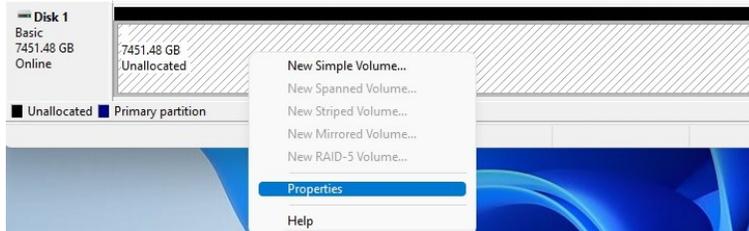
For Windows Users

1. After creating the RAID array, open Windows **Disk Management**.
2. Disk Management will ask to initialize unknown disks either in MBR format or GPT.

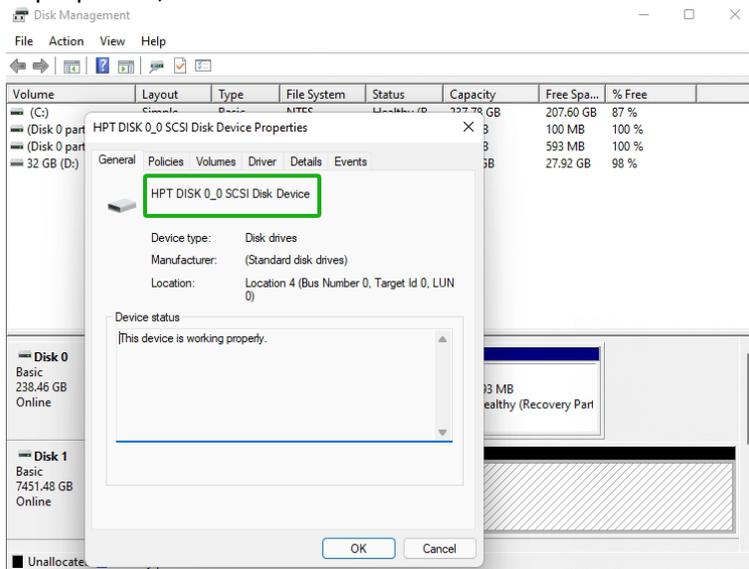


Note: As a general rule, select MBR for disks less than 2TB and GPT for disks greater than 2TB.

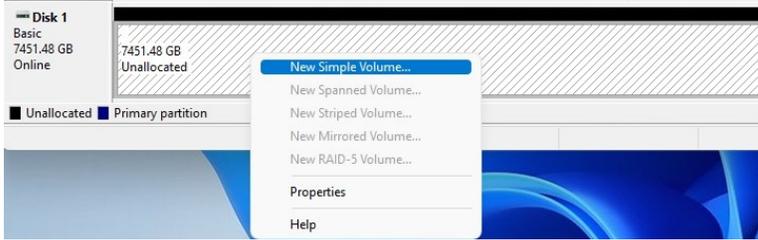
3. Right click the new disk, and click properties.



4. In properties, check and make sure it is an HPT Disk.



- Once the disk has been confirmed, right click the unallocated space and click NewSimple Volume.

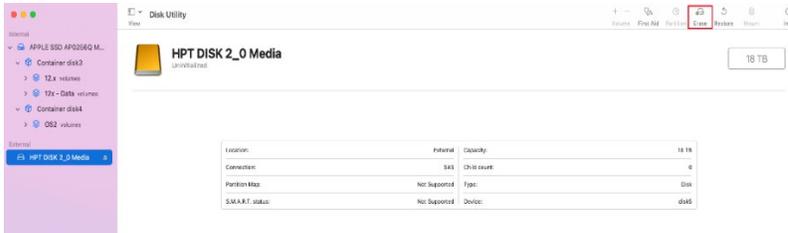


- Follow the on-screen instructions to configure and format the drive.
- Once finished, the new volume will receive a drive letter and be available for use.



For Mac Users

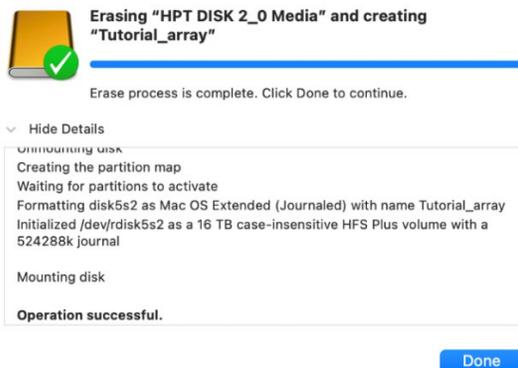
- After creating a RAID array, click Initialize when prompted. (**Note:** If you ignored the prompt, simply open Disk Utility).



- In Disk Utility, select the Volume you created on the right, then click the Erase tab.



- Select the desired disk format and disk name then click **Erase**. (**Note:** All previous data on disks will be erased.)



- When finished, your new RAID volume will be available for use.



For Linux Users

- Enter the terminal with root privileges.
- Enter the command **“lsblk”**, lists information for all available block devices.

```
root@t-desktop:/home/t/Desktop# lsblk
NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
loop0 7:0 0 4K 1 loop /snap/bare/5
loop1 7:1 0 63.3M 1 loop /snap/core20/1828
loop2 7:2 0 91.7M 1 loop /snap/gtk-common-themes/1535
loop3 7:3 0 40.9M 1 loop /snap/snapd/20290
loop4 7:4 0 346.3M 1 loop /snap/gnome-3-38-2004/119
loop5 7:5 0 46M 1 loop /snap/snap-store/638
loop6 7:6 0 49.9M 1 loop /snap/snapd/18357
loop7 7:7 0 349.7M 1 loop /snap/gnome-3-38-2004/143
sda 8:0 0 7.3T 0 disk
```

- Enter the command to format the RAID **“mkfs.ext4 /dev/sda”**.

```
root@t-desktop:/home/t/Desktop# mkfs.ext4 /dev/sda
mke2fs 1.45.5 (07-Jan-2020)
Creating filesystem with 1953366016 4k blocks and 244170752 inodes
Filesystem UUID: 75f2a797-1465-4df6-b555-02ca96030b2e
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,
    4096000, 7962624, 11239424, 20480000, 23887872, 71663616, 78675968,
    102400000, 214990848, 512000000, 550731776, 644972544, 1934917632

Allocating group tables: done
Writing inode tables: done
Creating journal (262144 blocks): done
Writing superblocks and filesystem accounting information: done
```

- Mount the partition to /mnt **“mount /dev/sda /mnt”**.

```
root@t-desktop:/home/t/Desktop# mount /dev/sda /mnt
```

- When finished, your new RAID volume will be available for use.

Step 7: Manage your RAID array

The following features allow you to monitor and maintain your arrays to prevent anycritical failures from occurring:

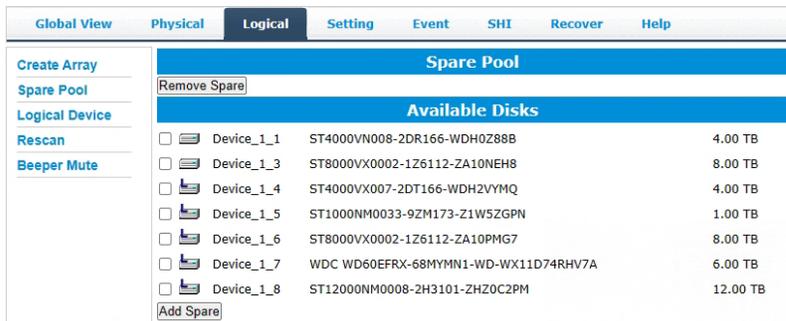
- Spare Pool
- Email Notifications
- WebGUI Remote Login
- Storage Health Inspector

RAID Spare Pool

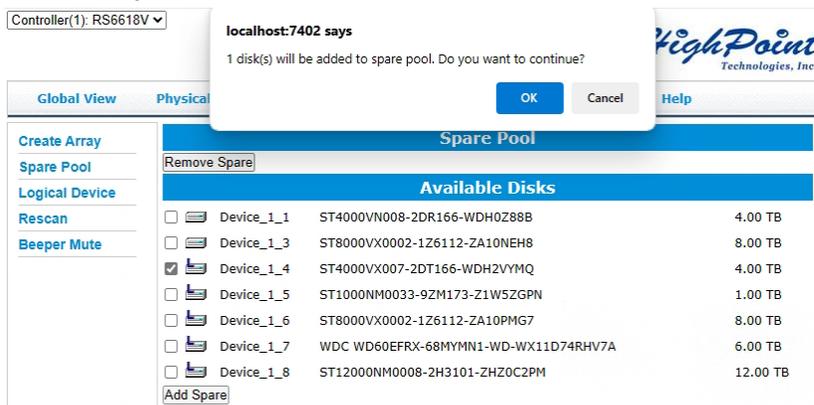
Physical drives marked as a spare will automatically be added to a redundant RAID array (RAID levels 1, 10, 5, 50 and 6) whenever there is a disk failure. Enabling this featureminimizes the chances of data loss since it reduces the time an array is in critical status.

Add/Remove Spare Using WebGUI

1. Log in WebGUI.
2. Click **Logical**.
3. Click **Spare Pool**.



4. Check the box for the disk you want as a spare from **Available Disks**.
5. Click **Add Spare**. Then click **OK**



6. Disks that have been added to the Spare Pool are displayed in the Spare Pool.

Global View	Physical	Logical	Setting	Event	SHI	Recover	Help																																												
<div style="display: flex;"> <div style="flex: 1;"> <ul style="list-style-type: none"> Create Array Spare Pool Logical Device Rescan Beeper Mute </div> <div style="flex: 4;"> <table border="1"> <thead> <tr> <th colspan="4">Spare Pool</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>Device_1_4</td> <td>ST4000VX007-2DT166-WDH2VYMQ</td> <td>4.00 TB</td> </tr> <tr> <td colspan="4" style="text-align: center;">Remove Spare</td> </tr> <tr> <th colspan="4">Available Disks</th> </tr> <tr> <td><input type="checkbox"/></td> <td>Device_1_1</td> <td>ST4000VN008-2DR166-WDH0Z88B</td> <td>4.00 TB</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Device_1_3</td> <td>ST8000VX0002-1Z6112-ZA10NEH8</td> <td>8.00 TB</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Device_1_5</td> <td>ST1000NM0033-9ZM173-Z1W5ZGPN</td> <td>1.00 TB</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Device_1_6</td> <td>ST8000VX0002-1Z6112-ZA10PMG7</td> <td>8.00 TB</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Device_1_7</td> <td>WDC WD60EFRX-68MYMN1-WD-WX11D74RHHV7A</td> <td>6.00 TB</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Device_1_8</td> <td>ST12000NM0008-2H3101-ZHZ0C2PM</td> <td>12.00 TB</td> </tr> <tr> <td colspan="4" style="text-align: center;">Add Spare</td> </tr> </tbody> </table> </div> </div>								Spare Pool				<input type="checkbox"/>	Device_1_4	ST4000VX007-2DT166-WDH2VYMQ	4.00 TB	Remove Spare				Available Disks				<input type="checkbox"/>	Device_1_1	ST4000VN008-2DR166-WDH0Z88B	4.00 TB	<input type="checkbox"/>	Device_1_3	ST8000VX0002-1Z6112-ZA10NEH8	8.00 TB	<input type="checkbox"/>	Device_1_5	ST1000NM0033-9ZM173-Z1W5ZGPN	1.00 TB	<input type="checkbox"/>	Device_1_6	ST8000VX0002-1Z6112-ZA10PMG7	8.00 TB	<input type="checkbox"/>	Device_1_7	WDC WD60EFRX-68MYMN1-WD-WX11D74RHHV7A	6.00 TB	<input type="checkbox"/>	Device_1_8	ST12000NM0008-2H3101-ZHZ0C2PM	12.00 TB	Add Spare			
Spare Pool																																																			
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<input type="checkbox"/>	Device_1_1	ST4000VN008-2DR166-WDH0Z88B	4.00 TB																																																
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<input type="checkbox"/>	Device_1_8	ST12000NM0008-2H3101-ZHZ0C2PM	12.00 TB																																																
Add Spare																																																			

Note: Disks added to the spare pool will show under **Spare Pool** and can be removed by checking the disk checkbox from **Spare Pool** > Click **Remove Spare**.

Email Notifications

When enabled, all added recipients will receive an email notification for any event log entries.

The following topics are covered under email:

- SMTP Setting
- Adding Recipients

SMTP settings

Note: After you click **Change Setting**, the password field will be reset.

To set up email alerts:

Using a **Yahoo Mail** account as an example:

1. Check the **Enable Event Notification** box.
2. Enter the ISP server address name or SMTP name.
For example: smtp.mail.yahoo.com
3. Type in the email address of the **sender**. (email account that is going to **send** the alert)
For example: hptu@yahoo.com
4. Type in the account name and password of the sender.
5. Type in the SMTP port. (default: **25**)
6. Check the **support SSL** box if SSL is supported by your ISP (note the port value will change to **465**).

SMTP Setting

Enable Event Notification

Server Address (name or IP):

Mail From (E-mail address):

Login Name:

Password:

SMTP Port:

Support SSL:

Email Precautions

If you want to receive notification mail using a Webmail account, you may need to modify the mailbox's permissions. The following example is for a Yahoo and outlook webmail account.

Yahoo Setting:

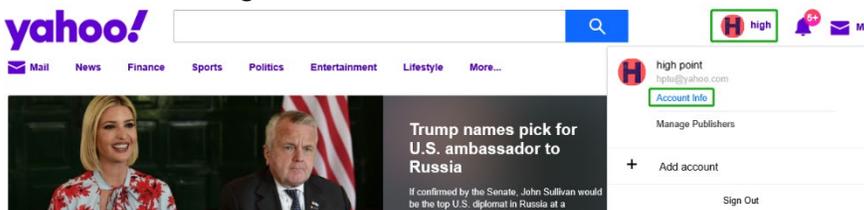
To change permission settings, please refer to the following link:

<https://help.yahoo.com/kb/account/SLN27791.html?impressions=true>

1. Log in to yahoo email; click "**Sign in**" to log in: <https://www.yahoo.com>

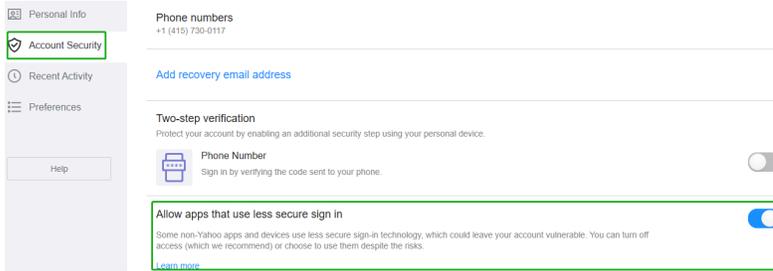


2. After a successful login, click "**Account Info**" under the user name.



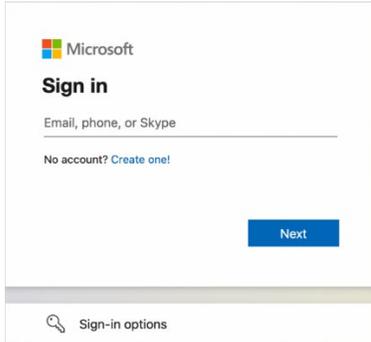
3. Go to the "**Account Info**" page, click "**Account Security**".

- On the "Account Security" page, click the "Allow apps that use less secure sign in" button.

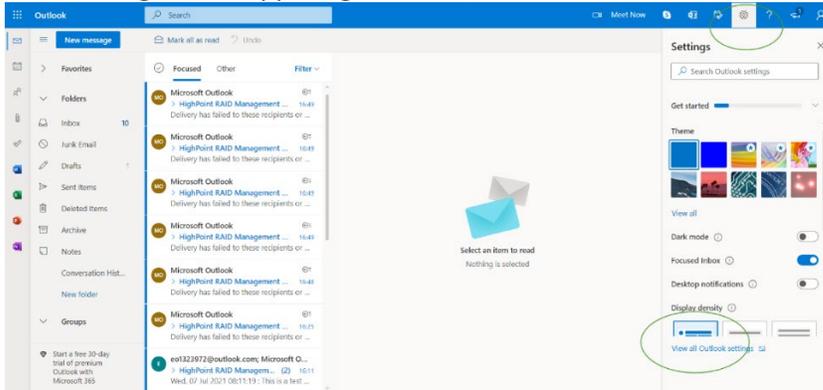


Outlook Setting:

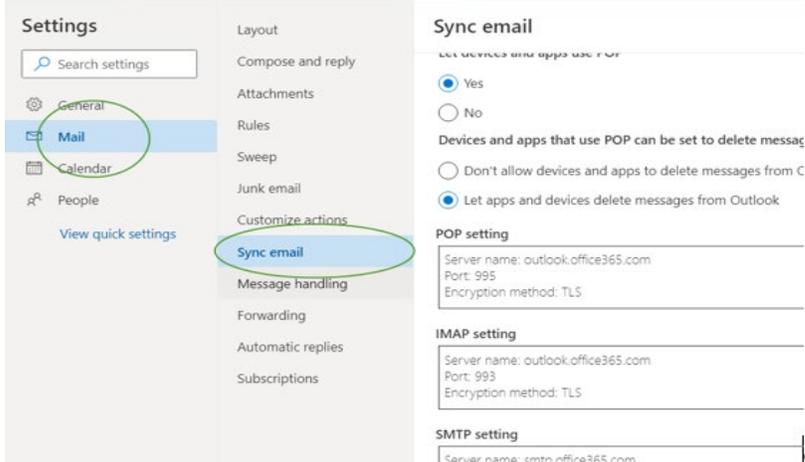
- Sign in to mail and set it up, Login email address link: <https://outlook.live.com/mail/inbox>



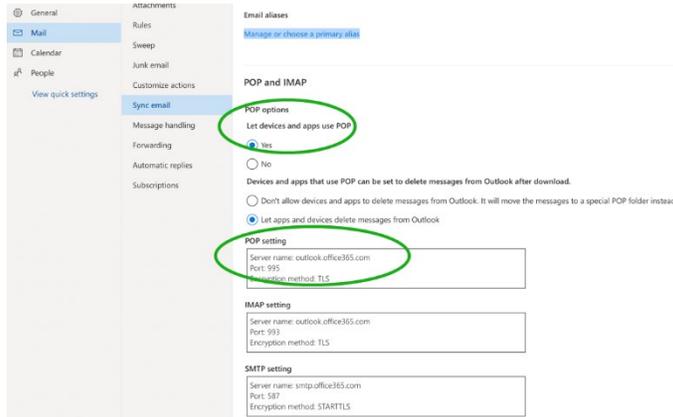
- Click **Settings** in the upper right corner, select the lower left corner: **View all outlook settings**



- Enter the redirect page, select **mail**, then click **Sync email**.



- Let devices and apps use pop select **“yes”**.
- Choose **‘Let app and devices delete messages from Outlook’**



Notes:

The screenshot below can be used as a reference. The POP setting is the mailbox server. If you are having trouble configuring notification for your Email account, please contact our [Technical Support Department](#)

Adding Email Recipients

You can add multiple email addresses as receivers of a notice.

- Type the email of the recipient in the **E-mail** text box.
- Type the name of the recipient in the **Name** text box.
- Set which type(s) of events will trigger an email using the respective **Event Level** check boxes.

Add Recipient

E-mail:

Name:

Event Level: Information Warning Error

- (Optional) Click **test** to confirm the settings are correct by sending out a test email.

Mail has been sent successfully.

[Close](#)

- Click **add** to add the “recipient to recipient” list.
- The added recipient will display in under **Recipients**.

Recipients		
E-mail	Name	Event Level
<input type="checkbox"/> hptu@yahoo.com <input type="button" value="Delete"/>	hpt	Information , Warning , Error

- The email will include the output recorded in the event log.



WebGUI Remote Login

A user connected to a local network can remotely access the WebGUI using the IP address of the host device.

To obtain your IP address

Note: *If you want to use this function, please set WEBGUI login password to prevent others from changing your settings*

For Windows Users

1. Open a command prompt window on the host computer.
2. Type `ipconfig`.
3. Look for the section that contains your network adapter information.
4. Note the IP address.

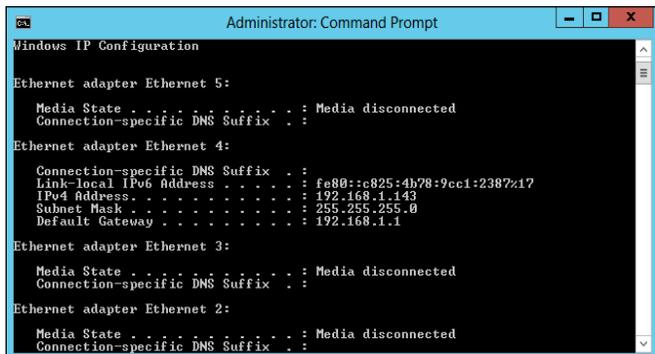


Figure. Example: The IPv4 address is under Ethernet adapter Ethernet 4 and is 192.168.1.143

Note: *Make sure **Restrict to localhost access** is **disabled** in WebGUI Setting (Refer to [setting](#))*

5. You can then remotely access the WebGUI using any other computer that is in your local network by opening any web browser and typing `http://{IP address of host computer}:7402` (default port is 7402).

For Mac Users

1. Open a **terminal** window on the host computer. (Computer that is connected to the devices.)
2. Type `ifconfig`.
3. Look for the connection that has **status: active**.
4. Write the IP address located after `inet`:

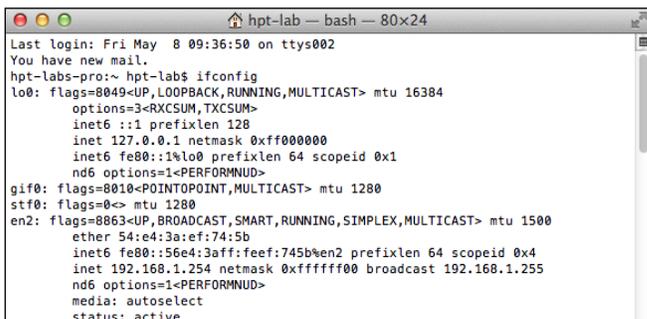


Figure. Example: en2 has active status, the IP is 192.168.1.254

5. You can then remotely access the WebGUI using any other computer that is in your local network by opening any web browser and typing `http://{IP address of host computer}:7402` (default port is 7402).

For Linux Users

1. Open a **terminal** window on the host computer
2. Type “**ip addr**”.
3. Look for the section that contains your network adapter information.
4. Note the IP address.

```
root@test-system-product-name:/home/test/Desktop# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp5s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether 50:eb:f6:77:07:f2 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.184/24 brd 192.168.0.255 scope global dynamic noprefixroute enp5s0
        valid_lft 86322sec preferred_lft 86322sec
    inet6 fe80::bc8c:fdbb:6325:49a1/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: wlp3s0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default qlen
1000
    link/ether 1c:c1:0c:18:4e:3f brd ff:ff:ff:ff:ff:ff
```

Example: enp5s0 has active status, the IP is 192.168.0.184

Note: Make sure **Restrict to localhost access** is **disabled** in **WebGUI Setting** (Refer to setting)

5. You can then remotely access the WebGUI using any other computer that is in your local network by opening any web browser and typing **http://{IP address of host computer}:7402** (default port is 7402).

Storage Health Inspection (SHI)

The Storage Health Inspector (SHI) monitors each individual disk's health. Monitoring disk SMART attributes can prevent critical RAID failures from occurring.

This section covers the following:

- Enabling SMART Monitoring
- Disabling SMART Monitoring
- Storage Health Inspector Scheduling

Enabling SMART Monitoring

Global View
Physical
Logical
Setting
Event
SHI
Recover
Help

[Schedule](#)

Storage Health Inspector (SHI)

Controller ID	Location#	Device Serial Number	RAID	°F	Bad Sectors Found & Repaired	S.M.A.R.T
1	1	WDH0Z88B	RAID_5_0	80	None	Detail
1	2	W1E8N3QT	RAID_5_0	89	16	Detail
1	3	ZA10NEH8	RAID_5_0	100	None	Detail
1	4	WDH2VYMQ	None	86	8	Detail
1	5	Z1W5ZGPN	None	96	None	Detail
1	6	ZA10PMG7	None	104	None	Detail
1	7	WD-WX11D74RHV7A	None	95	None	Detail
1	8	ZHZ0C2PM	None	91	None	Detail

Device Name
 Model Number
 S.M.A.R.T Enabled Disable

S.M.A.R.T Attributes

ID	Name	Threshold	Worst	Value	Status
1	Raw Read Error Rate	44	64	83	OK
3	Spin Up Time	0	91	93	OK
4	Start Stop Count	20	95	95	OK
5	Reallocated Sector Ct	10	100	100	OK
7	Seek Error Rate	45	60	85	OK
9	Power On Hours	0	93	93	OK
a	Spin Retry Count	97	100	100	OK
c	Power Cycle Count	20	96	96	OK
b8	Unknown Attribute	99	100	100	OK
bb	Unknown Attribute	0	100	100	OK
bc	Unknown Attribute	0	96	100	OK
bd	Unknown Attribute	0	100	100	OK
be	Unknown Attribute	40	40	73	OK
bf	G-Sense Error Rate	0	100	100	OK
c0	Power-Off Retract Count	0	99	99	OK
c1	Emergency Retract Cycle Ct	0	92	92	OK
c5	Current Pending Sector	0	100	100	OK
c6	Offline Uncorrectable	0	100	100	OK
c7	UDMA CRC Error Count	0	188	200	OK
f0	Head Flying Hours	0	253	100	OK
f1	Unknown Attribute	0	253	100	OK
f2	Unknown Attribute	0	253	100	OK

HDD Temperature Threshold

Set harddisk temperature threshold : °F

To access the SMART attributes of an individual disk:

1. Log in to WebGUI.
2. Select the proper controller using the drop down menu on the top left.
3. Click the **SHI** tab.
4. Click **Detail** on the desired disk.
5. Click **Enable** to enable SMART monitoring.

Disabling SMART monitoring

Global View Physical Logical Setting Event **SHI** Recover Help

[Schedule](#)

Storage Health Inspector(SHI)

Controller ID	Location#	Device Serial Number	RAID	°F	Bad Sectors Found & Repaired	S.M.A.R.T
1	1	WDH0Z88B	RAID_5_0	N/A	None	Detail
1	2	W1E8N3QT	RAID_5_0	89	16	Detail
1	3	ZA10NEH8	RAID_5_0	100	None	Detail
1	4	WDH2VYMQ	None	86	8	Detail
1	5	Z1W5ZGPN	None	96	None	Detail
1	6	ZA10PMG7	None	104	None	Detail
1	7	WD-WX11D74RHV7A	None	95	None	Detail
1	8	ZHZ0C2PM	None	91	None	Detail

Device Name Device_1_1
 Model Number ST4000VN008-2DR166-WDH0Z88B
 S.M.A.R.T Disabled Enable

HDD Temperature Threshold

Set harddisk temperature threshold : °F

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You have the option to disable SMART monitoring on each individual disk:

1. Select the proper controller using the drop down menu on the top left.
2. Click the **SHI** tab.
3. Click **SMART** on desired disk.
4. Click **Disabled**.

Note: Disabling SMART will prompt the Storage Health Inspector to change the diskstatus to 'Failed'. The Enclosure alarm will not alert you when this setting is disabled. Any potential warnings related to S.M.A.R.T attribute technology will not trigger.

Storage Health Inspector Scheduling

The Scheduler enables you to schedule disk/array checkups to ensure disks/array are functioning optimally.

RAID1/10/50/6 will appear under New Verify Task: Log into the HRM.

Global View	Physical	Logical	Setting	Event	SHI	Recover	Help
-----------------------------	--------------------------	-------------------------	-------------------------	-----------------------	------------	-------------------------	----------------------

Tasks List

New Verify Task

RAID_5_0

Task Name:

Occurs one time on -- at ::

Schedule: Occurs every Day(s) on at ::

Start date: -- End date: --

No end date

New Check Disk Task

Device_1_1(ST4000VN008-2DR166B)

Device_1_2(ST2000VX000-1CU164T)

Device_1_3(ST8000VX0002-1Z61128)

Device_1_4(ST4000VX007-2DT166Q)

Device_1_5(ST1000NM0033-9ZM173N)

Device_1_6(ST8000VX0002-1Z61127)

Device_1_7(WDC WD60EFRX-68MYMN1A)

Device_1_8(ST12000NM0008-2H3101M)

Auto fix the bad sector:

Task Name:

Occurs one time on -- at ::

Schedule: Occurs every Day(s) on at ::

Start date: -- End date: --

No end date

Health Inspector Scheduler

Task Name:

Select a Schedule: Bi-Hourly Daily Weekly Bi-Weekly Monthly

Select a time: ::

1. Select the proper controller from the top left drop down.
2. Click **SHI**.
3. Click **Schedule a task**.
4. Select the array you want to schedule the verify task.
5. Type the name in **Task Name** entry box.
6. Choose whether you want to schedule.
7. One time verify task on specific date (YYYY-MM-DD) at (HH:MM:SS, 24-hr clock).
8. Or a specific schedule you can adjust based on Daily, Weekly, or Monthly options.

9. Click **Submit**.

New Verify Task

RAID_5_0
Task Name:

Occurs one time on 2023 11 17 at 2 : 0 : 0

Schedule: Occurs every 1 Day(s) on Sunday 1 at 2 : 0 : 0

Start date: 2023 11 17 End date: 2023 11 20 No end date

10. Your entry will appear under **Tasks List**.

Tasks List

Name	Description
<input type="checkbox"/> Default	Check all disk every 2 hours start at 18:55:54
<input type="checkbox"/> testult	Verify array "RAID_5_0" on 2023-11-17 at 2:0:0.

Note: New Verify Task box only appears if you have normal status arrays. If you have a critical array, New Rebuild Task will replace New Verify Task.

RAID Expansion (OCE/ORLM)

Important: Before using OCE/ORLM, we recommend that you Verify the current RAID array, using the WebGUI’s Verify function, under Maintenance. The OCE/ORLM process is irreversible; once you start an OCE/ORLM procedure, the process can be temporarily paused (using the Maintenance option), but it must ultimately be resumed until completion.

OCE – Online Capacity Expansion

OCE allows you to add storage capacity to an existing RAID array while preserving your existing data. In most cases, this feature is used when adding one or more physical drives to an array (for example, expanding from a 3-drive RAID 5 configuration to a 7-drive RAID 5 configuration).

ORLM – Online RAID Level Migration

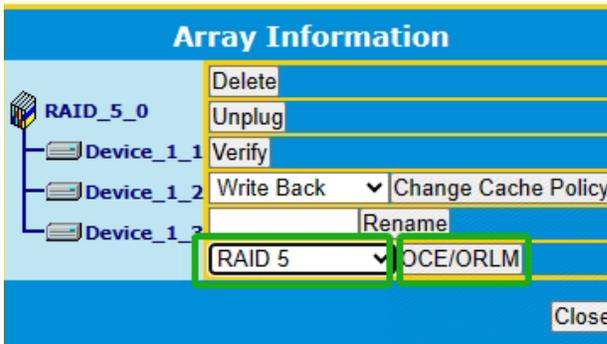
ORLM allows you to convert RAID levels for an existing RAID while preserving existing data. In most cases, this feature is used to convert one RAID level to another. (for example, converting from RAID 1 to RAID 10).

Take ORLM for example.

1. Start the WebGUI and click the **Logical** tab.
2. Locate the array you want to expand, and click the **Maintenance** option displayed to the far-right of the interface.



3. Under the “JBOD/Volume” drop-down menu, make sure you select the array’s current RAID level. In this example, the target array is a RAID 5 configuration:



4. Click the “OCE/ORLM” button continue. The WebGUI will display the following warning message. Click **OK** if you wish to proceed.

localhost:7402 says

Please make sure all member disks of this array are healthy before doing this operation since it is irreversible(You can run "Check Disk" on the "Physical" page.),do you want to continue?



5. This will open the “Array transform/transforming” menu.

Global View Physical **Logical** Setting Event SHI Recover Help

Array transform/transforming

Source Name: RAID_5_0

Target Type: RAID 5

Target Name: RAID_5_1

Cache Policy: Write Back

Block Size: 64K

Select All

Location Model	Capacity	Max Free
<input type="checkbox"/> 1/1 ST4000VN008-2DR166-WDH0Z88B	4.00 TB	2.00 TB
<input type="checkbox"/> 1/2 ST2000VX000-1CU164-W1E8N3QT	2.00 TB	0.00 GB
<input type="checkbox"/> 1/3 ST8000VX0002-1Z6112-2A10NEH8	8.00 TB	6.00 TB
<input type="checkbox"/> 1/4 ST4000VX007-2DT166-WDH2VYMQ	4.00 TB	4.00 TB
<input type="checkbox"/> 1/5 ST1000NM0033-9ZM173-Z1W5ZGPN	1.00 TB	0.00 GB
<input type="checkbox"/> 1/6 ST8000VX0002-1Z6112-2A10PMG7	8.00 TB	0.00 GB
<input type="checkbox"/> 1/7 WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A	6.00 TB	0.00 GB
<input type="checkbox"/> 1/8 ST12000NM0008-2H3101-ZHZ0C2PM	12.00 TB	0.00 GB

Capacity: (According to the max free space on the selected disks and source array capacity(4000627MB))

Maximum (MB)

Create

6. First, check the box before the top entry (A) – this is the current array.

7. Next, check the box for each additional drive you want to add to the array (B)

8. Click “Create”. The WebGUI will announce that your new configuration was created successfully. Click **OK** to continue.

Global View Physical **Logical** Setting Event SHI Recover Help

Array transform/transforming

Source Name: RAID_5_0

Target Type: RAID 5

Target Name: RAID_5_1

Cache Policy: Write Back

Block Size: 64K

Select All

Location Model	Capacity	Max Free
<input checked="" type="checkbox"/> 1/1 ST4000VN008-2DR166-WDH0Z88B	4.00 TB	2.00 TB
<input checked="" type="checkbox"/> 1/2 ST2000VX000-1CU164-W1E8N3QT	2.00 TB	0.00 GB
<input checked="" type="checkbox"/> 1/3 ST8000VX0002-1Z6112-2A10NEH8	8.00 TB	6.00 TB
<input checked="" type="checkbox"/> 1/4 ST4000VX007-2DT166-WDH2VYMQ	4.00 TB	4.00 TB
<input checked="" type="checkbox"/> 1/5 ST1000NM0033-9ZM173-Z1W5ZGPN	1.00 TB	1.00 TB
<input checked="" type="checkbox"/> 1/6 ST8000VX0002-1Z6112-2A10PMG7	8.00 TB	8.00 TB
<input checked="" type="checkbox"/> 1/7 WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A	6.00 TB	6.00 TB
<input checked="" type="checkbox"/> 1/8 ST12000NM0008-2H3101-ZHZ0C2PM	12.00 TB	12.00 TB

Capacity: (According to the max free space on the selected disks and source array capacity(4000627MB))

Maximum (MB)

Create

9. The Status will change to “**Expanding/Migrating**” and will display a progress bar.

Logical Device Information							
Name	Type	Secured	Capacity	BlockSize	SectorSize	OS Name	Status
RAID_5_0	RAID	No	4.00 TB	64k	512B	HPT DISK 0_0	Expanding/Migrating 0% Maintenance
RAID_5_1	RAID	No	7.00 TB	64k	512B		Expanding/Migrating 0% Maintenance

10. Once complete, your operating system will recognize the additional capacity as unpartitioned space – you are free to partition/format this space as a separate volume, or expand the current partition to include this space.

Troubleshooting – Hardware

If you face any hardware related issues involving the RS6614V/RS6618V Enclosure OR disk drives, refer to the following sections for troubleshooting tips. For all other problems, submit a support.

Enclosure Mute Button

The mute button on the back will mute the alarm for enclosure related issues such as enclosure FAN or TEMPERATURE failures.

LED Activity

The following information tells you how to interpret LED activity seen on the enclosure and disk trays.

Table 1. LED Status Information

LED Type	Interpretation
Power LED	<ul style="list-style-type: none"> SOLID BLUE (Normal Status)
Warning LED	<ul style="list-style-type: none"> FLASH YELLOW. The enclosure's temperature has exceeded the warning threshold 55°C or the fan speed is below normal operating levels 700rpm/min
Fail LED	<ul style="list-style-type: none"> SOLID RED. The temperature is greater than 60°C; FLASH RED. The fan speed is less than 500 rpm/min, the red light is flashing, and generates an audible alarm
UNLIT	<ul style="list-style-type: none"> Unit is powered OFF Disk tray is empty

Table 2. LED Diagrams

LED Location	Icon	Normal
Disk Tray Top LED		<ul style="list-style-type: none"> SOLID BLUE: the disk tray is occupied, but the disk is not in use

<p>Disk Tray Bottom LED</p>		<ul style="list-style-type: none"> FLASHING BLUE: the disk is in use (read/write I/O)
<p>Power LED</p>		<ul style="list-style-type: none"> SOLID BLUE: the enclosure is powered on UNLIT: the enclosure is not connected to an active host system
<p>Fail LED</p>		<ul style="list-style-type: none"> SOLID RED. The temperature is greater than 60°C; FLASH RED. The fan speed is less than 500 rpm/min, the red light is flashing, and generates an audible alarm
<p>Warning LED</p>		<ul style="list-style-type: none"> FLASH YELLOW. The enclosure's temperature has exceeded the warning threshold 55°C or the fan speed is below normal operating levels 700rpm/min

Replacing a Failed Disk

When a disk in your array fails it is important to get it replaced or rebuilt as soon as possible to prevent any data loss.

- Identify the faulty disk.
 - Look at the front panel for the RED disk error LED to be LIT.
 - Log in to WebGUI and check the **Logical** Tab.
- Once disk has been identified press the disk tray blue tab and slide the failed driveout.
- Replace the failed drive with a new drive.
- If auto rebuild is **enabled**, the rebuild process should start immediately.
- If auto rebuild is **disabled**, click **rescan** on the left panel to initiate rebuilding.

Troubleshooting - Software

If you have problems in use, please submit the [log](#) to our online service (<https://www.highpoint-tech.com/support-and-services>).

Troubleshooting – RAID

If you face any RAID related issues involving your RAID array, refer to the following sections for troubleshooting tips. For all other problems, submit a support ticket at <https://www.highpoint-tech.com/support-and-services>

Critical Arrays

Global View	Physical	Logical	Setting	Event	SHI	Recover	Help																																																																																																																			
<div style="display: flex; justify-content: space-between;"> <div style="width: 15%;"> <p>Create Array</p> <p>Spare Pool</p> <p>Logical Device</p> <p>Rescan</p> <p>Beeper Mute</p> </div> <div style="width: 85%;"> <table border="1"> <thead> <tr> <th colspan="7">Logical Device Information</th> </tr> <tr> <th>Name</th> <th>Type</th> <th>Secured</th> <th>Capacity</th> <th>BlockSize</th> <th>SectorSize</th> <th>OS Name</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>RAID10_0</td> <td>RAID 10</td> <td>No</td> <td>4.00 TB</td> <td>64k</td> <td>512B</td> <td>HPT DISK 0_0</td> <td>Critical Maintenance</td> </tr> <tr> <td>Member 1 of "RAID10_0"</td> <td>RAID 1</td> <td>No</td> <td>1.00 TB</td> <td></td> <td>512B</td> <td></td> <td>Critical Maintenance</td> </tr> <tr> <td>Member 2 of "RAID10_0"</td> <td>RAID 1</td> <td>No</td> <td>1.00 TB</td> <td></td> <td>512B</td> <td></td> <td>Normal Maintenance</td> </tr> <tr> <td>Member 3 of "RAID10_0"</td> <td>RAID 1</td> <td>No</td> <td>1.00 TB</td> <td></td> <td>512B</td> <td></td> <td>Normal Maintenance</td> </tr> <tr> <td>Member 4 of "RAID10_0"</td> <td>RAID 1</td> <td>No</td> <td>1.00 TB</td> <td></td> <td>512B</td> <td></td> <td>Normal Maintenance</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="6">Physical Device Information</th> </tr> <tr> <th>Location</th> <th>Model</th> <th>Secured</th> <th>Capacity</th> <th>Max Free</th> <th></th> </tr> </thead> <tbody> <tr> <td>1/1</td> <td>ST4000VN008-2DR166-WDH0Z88B</td> <td>No</td> <td>4.00 TB</td> <td>3.00 TB</td> <td></td> </tr> <tr> <td>1/2</td> <td>ST2000VX000-1CU164-W1E8N3QT</td> <td>No</td> <td>2.00 TB</td> <td>1.00 TB</td> <td></td> </tr> <tr> <td>1/3</td> <td>ST8000VX0002-1Z6112-ZA10NEH8</td> <td>No</td> <td>8.00 TB</td> <td>7.00 TB</td> <td></td> </tr> <tr> <td>1/4</td> <td>ST4000VX007-2DT166-WDH2VYMQ</td> <td>No</td> <td>4.00 TB</td> <td>3.00 TB</td> <td></td> </tr> <tr> <td>1/5</td> <td>ST1000NM0033-92M173-Z1W52GPN</td> <td>No</td> <td>1.00 TB</td> <td>0.00 GB</td> <td></td> </tr> <tr> <td>1/6</td> <td>ST8000VX0002-1Z6112-ZA10PMG7</td> <td>No</td> <td>8.00 TB</td> <td>7.00 TB</td> <td></td> </tr> <tr> <td>1/7</td> <td>WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A</td> <td>No</td> <td>6.00 TB</td> <td>5.00 TB</td> <td></td> </tr> <tr> <td>1/8</td> <td>ST12000NM0008-2H3101-ZH20C2PM</td> <td>No</td> <td>12.00 TB</td> <td>11.00 TB</td> <td></td> </tr> </tbody> </table> </div> </div>								Logical Device Information							Name	Type	Secured	Capacity	BlockSize	SectorSize	OS Name	Status	RAID10_0	RAID 10	No	4.00 TB	64k	512B	HPT DISK 0_0	Critical Maintenance	Member 1 of "RAID10_0"	RAID 1	No	1.00 TB		512B		Critical Maintenance	Member 2 of "RAID10_0"	RAID 1	No	1.00 TB		512B		Normal Maintenance	Member 3 of "RAID10_0"	RAID 1	No	1.00 TB		512B		Normal Maintenance	Member 4 of "RAID10_0"	RAID 1	No	1.00 TB		512B		Normal Maintenance	Physical Device Information						Location	Model	Secured	Capacity	Max Free		1/1	ST4000VN008-2DR166-WDH0Z88B	No	4.00 TB	3.00 TB		1/2	ST2000VX000-1CU164-W1E8N3QT	No	2.00 TB	1.00 TB		1/3	ST8000VX0002-1Z6112-ZA10NEH8	No	8.00 TB	7.00 TB		1/4	ST4000VX007-2DT166-WDH2VYMQ	No	4.00 TB	3.00 TB		1/5	ST1000NM0033-92M173-Z1W52GPN	No	1.00 TB	0.00 GB		1/6	ST8000VX0002-1Z6112-ZA10PMG7	No	8.00 TB	7.00 TB		1/7	WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A	No	6.00 TB	5.00 TB		1/8	ST12000NM0008-2H3101-ZH20C2PM	No	12.00 TB	11.00 TB	
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When your disk is critical, that means your array as a whole is still accessible, but a disk or two is faulty (depending on your RAID level) is in danger of failing.

Common scenarios for critical array status

- Unplugging disk that is part of an array
- Bad sector detected on a disk part of the array
- Unrecoverable data during rebuilding
- Defective port or cable interrupts rebuilding process

To recover from this situation,

1. Backup your existing data.
2. Identify which disk is faulty.
 - Refer to the WebGUI **Logical** tab and **Event** tab.
3. Replace with a new disk, and the “faulty” disk can be checked later.
 - **If Auto-Rebuild is enabled:**
Replace the faulty disk. The WebGUI should initiate a rebuild immediately after the replacement disk is detected. If the disk is not detected, or the Rebuild procedure does not start, click **Rescan**. Once a new disk is added, add the new disk into the critical array.
 - **If Auto-Rebuild is disabled:**
Replace the faulty disk.
Log in to the WebGUI.
Click the **Logical** Tab.
Click **Maintenance > Add disk >** and select the appropriate disk.

The Rebuild process should now begin.

If the rebuild process does not start, click **Rescan**.

Note: Rebuilding an array takes on average 2 hours per 1 Terabyte of disk capacity. The process will scan through the entire disk, even if you have very little used disk space.

Rebuild failed

If rebuilding fails to complete due to bad disk sector errors (check in the Event Log), the WebGUI provides an option called “**Continue Rebuilding on Error**”.

1. Log in to WebGUI.
2. Click **Setting** tab.
3. Under **System Setting**, change **Enable Continue Rebuilding on Error** to **Enabled**.



This option will enable Rebuild process to ignore bad sectors and attempt to make your data accessible. It is important to backup immediately after to rebuild is complete and replace or repair any disk(s) with bad sectors.

Critical array becomes disabled when faulty disk was removed

If this is the case, check to make sure you removed the correct disk. When you remove the wrong disk from a critical array, the array status may become disabled. Data is inaccessible for disabled arrays. Follow these steps to restore the previous state:

1. Shut down your PC and the RS6614V/RS6618V Enclosure.
2. Place all disks, including the removed disks, back to original array configuration.
3. Boot up PC.
4. Once array is back to critical status, identify the correct disk (using the event log) and replace it.

Disabled Arrays

Logical Device Information						
Name	Type	Secured	Capacity	BlockSize	SectorSize	Status
RAID10_0	RAID 10	No	4.00 TB	64k	512B	Disabled Maintenance
Member 1 of "RAID10_0"	RAID 1	No	1.00 TB		512B	Disabled Maintenance
Member 2 of "RAID10_0"	RAID 1	No	1.00 TB		512B	Normal Maintenance
Member 3 of "RAID10_0"	RAID 1	No	1.00 TB		512B	Normal Maintenance
Member 4 of "RAID10_0"	RAID 1	No	1.00 TB		512B	Normal Maintenance

Physical Device Information					
Location	Model	Secured	Capacity	Max Free	
1/1	ST4000VN008-2DR166-WDH0Z88B	No	4.00 TB	3.00 TB	
1/2	ST2000VX000-1CU164-W1E8N3QT	No	2.00 TB	1.00 TB	
1/3	ST8000VX0002-1Z6112-2A10NEH8	No	8.00 TB	7.00 TB	
1/4	ST4000VX007-2DT166-WDH2VVMQ	No	4.00 TB	3.00 TB	
1/5	ST1000NM0033-9ZM173-Z1W5ZGPN	No	1.00 TB	0.00 GB	
1/6	ST8000VX0002-1Z6112-2A10PMG7	No	8.00 TB	7.00 TB	
1/7	WDC WD60EFRX-68MYM11-WD-WX11D74RHV7A	No	6.00 TB	5.00 TB	
1/8	ST12000NM0008-2H3101-ZH20C2PM	No	12.00 TB	11.00 TB	

If two or more disks in your array go offline due to an error or physical disconnection your array will become **disabled**.

To recover a disabled array, using the 'Recover Tab' will yield the best results. To utilize the **Recover** tab, you will need to insert the **exact** physical drives that are listed on the recover list. The goal of using recover is to get the RAID status back to critical/normal, allowing you to access and back up your data.

Recover with RAID Maintenance

1. Log in to WebGUI.
2. Click **Maintenance** for the array that is disabled.
3. Click **Recover**.

The screenshot shows the 'Logical Device Information' table with the RAID10_0 array in a 'Disabled' state. A 'Maintenance' button is highlighted. An 'Array Information' dialog box is open, showing a tree view of the RAID members and their corresponding physical devices (Device_1_1 to Device_1_8). A 'Recover' button is highlighted in the dialog.

Recover RAID with Recover Tab

Before using the Recover tab to recover your array, check to see if the RAID array is listed in your **Recover List**. Once you have confirmed the RAID array is there, proceed to delete the disabled array.

1. Log in to WebGUI.
2. Click **Maintenance** for the array that is disabled.
3. Click **Delete**, to delete the disabled array.
4. Click **Recover Tab**.
5. Select the RAID configuration you just deleted.
6. Click **Recover Array**.

Controller(1): RS6618V

HighPoint Technologies, Inc.

Global View Physical Logical Setting Event SHI **Recover** Help

Recover List

Backup To File Clear All

- RAID_0_0 (RAID Level:RAID 0 Capacity:4.00 TB) (Time:2023/11/16 1:42:15)
 Location:Device_1_1 Model:ST4000VN008-2DR166-WDH0Z88B
 Location:Device_1_2 Model:ST2000VX000-1CU164-W1E8N3QT
- RAID_0_0 (RAID Level:RAID 0 Capacity:8.00 TB) (Time:2023/11/16 2:2:11)
 Location:Device_1_1 Model:ST4000VN008-2DR166-WDH0Z88B
 Location:Device_1_2 Model:ST2000VX000-1CU164-W1E8N3QT
 Location:Device_1_3 Model:ST8000VX0002-1Z6112-ZA10NEH8
 Location:Device_1_4 Model:ST4000VX007-2DT166-WDH2VYMQ
 Location:Device_1_5 Model:ST1000NM0033-9ZM173-Z1W5ZGPN
 Location:Device_1_6 Model:ST8000VX0002-1Z6112-ZA10PMG7
 Location:Device_1_7 Model:WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A
 Location:Device_1_8 Model:ST12000NM0008-2H3101-ZHZ0C2PM
- RAID0 (RAID Level:RAID 0 Capacity:8.00 TB) (Time:2023/11/16 2:16:0)
 Location:Device_1_1 Model:ST4000VN008-2DR166-WDH0Z88B
 Location:Device_1_2 Model:ST2000VX000-1CU164-W1E8N3QT
 Location:Device_1_3 Model:ST8000VX0002-1Z6112-ZA10NEH8
 Location:Device_1_4 Model:ST4000VX007-2DT166-WDH2VYMQ
 Location:Device_1_5 Model:ST1000NM0033-9ZM173-Z1W5ZGPN
 Location:Device_1_6 Model:ST8000VX0002-1Z6112-ZA10PMG7
 Location:Device_1_7 Model:WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A
 Location:Device_1_8 Model:ST12000NM0008-2H3101-ZHZ0C2PM
- RAID_5_0 (RAID Level:RAID 5 Capacity:4.00 TB) (Time:2023/11/16 2:26:12)
 Location:Device_1_1 Model:ST4000VN008-2DR166-WDH0Z88B
 Location:Device_1_2 Model:ST2000VX000-1CU164-W1E8N3QT
 Location:Device_1_3 Model:ST8000VX0002-1Z6112-ZA10NEH8
- RAID10_0 (RAID Level:RAID 10 Capacity:4.00 TB) (Time:2023/11/16 3:11:9)
 Location:Device_1_1 Model:ST4000VN008-2DR166-WDH0Z88B
 Location:Device_1_2 Model:ST2000VX000-1CU164-W1E8N3QT
 Location:Device_1_3 Model:ST8000VX0002-1Z6112-ZA10NEH8
 Location:Device_1_4 Model:ST4000VX007-2DT166-WDH2VYMQ
 Location:Device_1_5 Model:ST1000NM0033-9ZM173-Z1W5ZGPN
 Location:Device_1_6 Model:ST8000VX0002-1Z6112-ZA10PMG7
 Location:Device_1_7 Model:WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A
 Location:Device_1_8 Model:ST12000NM0008-2H3101-ZHZ0C2PM

Recover Array

Online Array Roaming

One of the features of all HighPoint RAID Enclosure is online array roaming. Information about the RAID configuration is stored on the physical drives. So, if the RS6614V/RS6618V fails or you wish to use another RAID Enclosure or RAID controller, or you wish the drives to be moved to a different Enclosure or controller, the RAID configuration data can still be read by another HighPoint RAID Enclosure or RAID controller.

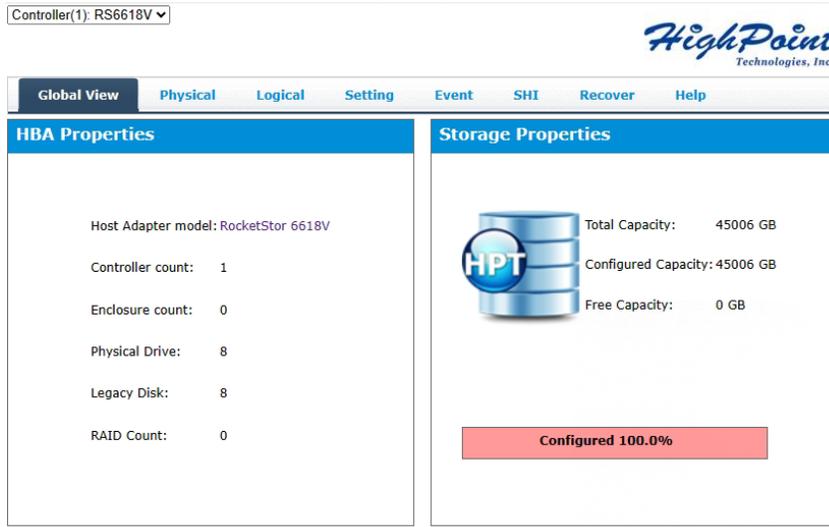
Note: *The prerequisite for using this feature is that both RAID Enclosures or RAID controllers are using the same type of driver.*

Appendix A: Navigating the HighPoint WebGUI

Tab Name	Function
Global View	View HBA and Storage Properties
Physical	View Additional Controller properties View disk properties Adjust selected disk behaviors
Logical	Manage and create RAID arrays
Setting	Adjust WebGUI controls settings
Event	Show WebGUI Event Log
SHI (Storage Health Inspector)	View and schedule S.M.A.R.T monitoring
Recover	Revert to previously created arrays
Logout	Logout of WebGUI, set password will appear
Help	Online Help Diagnostic- collect log information

Appendix A-1: Global View Tab

Take RocketStor 6618V as an example.



The WebGUI Global view provides an overview of what each Enclosure connected to your computer detects. It is also the first page you see when logging in.

- Host Bus Adapter Properties
- Storage Properties

On the top left of the page is a drop-down menu that allows you to select which controller you want to manage (if you have multiple HighPoint products connected).

HBA Properties

- **Host Adapter model:** the model name of the Enclosure
- **Controller Count:** number of Enclosure detected
- **Enclosure Count:** number of external enclosures detected
- **Physical drives:** number of drives seen by the controller
- **Legacy Disks:** number of Legacy disks connected. Legacy disks are physical drives that have previous partitions stored on them
- **RAID Count:** number of RAID arrays

Storage Properties

- **Total capacity:** the combined capacity of each physical disk connected to the Enclosure
- **Configured capacity:** the amount of space used for creating arrays
- **Free Capacity:** total amount of space unused

Appendix A-2: Physical Tab

Global View	Physical	Logical	Setting	Event	SHI	Recover	Help
Controller 1 Devices Spinup Rescan		Controller Information					
		Model Name: RocketStor 6618V Vendor: HighPoint Technologies, Inc. Vendor ID: 0x1103 Device ID: 0x3720 Sub Vendor ID: 0x1103 Sub Device ID: 0x6618 PCI Bus Number: 60 PCI Device Number: 0 PCI Func Number: 0 Maximum Link Width: x8 Current Link Width: x8 Maximum Link Speed: 8.0 GT/s Current Link Speed: 8.0 GT/s BIOS Version: v1.0.1 PCB Version: v1.2 MCU Version: v1.1.2					

The physical tab shows general and extended information about the Enclosure you are using. Information about the MCU, BIOS, and PCB are all located here. This information is useful for identifying what Enclosure model you have and to make sure you have the most updated version available.

The physical tab contains the following information:

- Controller Information
- Physical Devices Information

Controller Information

Global View	Physical	Logical	Setting	Event	SHI	Recover	Help
Controller 1 Devices Spinup Rescan		Controller Information					
		Model Name: RocketStor 6618V Vendor: HighPoint Technologies, Inc. Vendor ID: 0x1103 Device ID: 0x3720 Sub Vendor ID: 0x1103 Sub Device ID: 0x6618 PCI Bus Number: 60 PCI Device Number: 0 PCI Func Number: 0 Maximum Link Width: x8 Current Link Width: x8 Maximum Link Speed: 8.0 GT/s Current Link Speed: 8.0 GT/s BIOS Version: v1.0.1 PCB Version: v1.2 MCU Version: v1.1.2					

- Model Name: model name of the device connected
- Vendor: the controller's owner
- Current Link Width: PCIe width occupied by the current controller
- Current Link Speed: Rate of current bandwidth
- BIOS Version: BIOS version of the controller
- PCB Version: PCB version of the controller
- MCU Version: MCU version of the controller

Physical Devices Information

The following properties are part of the **Physical Devices Information** box under the **Physical** tab.

The screenshot shows a software interface with a top navigation bar containing 'Global View', 'Physical', 'Logical', 'Setting', 'Event', 'SHI', 'Recover', and 'Help'. The 'Physical' tab is selected. On the left, there is a sidebar with 'Controller 1' and buttons for 'Devices', 'Spinup', and 'Rescan'. The main area is titled 'Physical Devices Information' and contains a 'Dump Array Info' section. Below this, there is a table of properties for 'Device 1_1':

Model	ST4000VN008-2DR166-WDH0Z88B	Capacity	4.00 TB
Revision	SC60	Read Ahead	Enabled Change
Location	1/1	Write Cache	Enabled Change
Max Free	0.00 GB	NCQ	Enabled Change
Status	Legacy	Identify LED	[ON] [OFF]
Serial Num	WDH0Z88B	Type	HDD
Interface	SATA	SED Type	None
SED Capable	No	Cryptographic Erase Capable	No
Secured	No		

At the bottom of the interface, there is a 'Check Disk' section with a 'Start' button and a checkbox for 'Fix Bad Sector'.

- **Model** – Model number of the physical drive
- **Capacity** – Total capacity of the physical drive
- **Revision** – HDD device firmware revision number
- **Read Ahead*** - (Enable/Disable) Disk read ahead.
- **Location** – Device location (example: 1/2 states controller 1, slot 2)
- **Write Cache*** – (Enable/Disable) the disk write cache
- **Max Free** – space on disk that is not configured in an array
- **Status** – (Normal, disabled, critical) status of the disk
- **NCQ*** – (Enable/Disable) Native Command Queuing
- **Serial Number** – serial number of the physical disk
- **Identify LED*** – On/Off – toggle the IDENTIFY (RED) on the front panel
- **Unplug¹** – Safely ejects selected disk. Other methods of disk removal will trigger an alarm if enabled.
- **Check Disk¹** - Fix Bad Sector
- **Interface¹** – interface of the physical disk
- **Type¹** – Type of the physical disk

Notes:

* Disk properties that can be adjusted.

¹ This information is only displayed in the Windows HighPoint RAID Management Software.

Read Ahead

Enabling disk read ahead will speed up read operations by pre-fetching data and loading it into RAM.

Write Cache

Enabling write cache will speed up write operations.

NCQ (Native Command Queuing)

A setting that allows disks to queue up and reorder I/O commands for maximum efficiency.

Identify LED

The Disk tray LED lights on the front panel can be toggled ON or OFF.

Rescan

Clicking rescan will immediately signal the controller to scan for any changes in the connection. Clicking this button will also stop any alarm if currently ringing.

Appendix A-3: Logical Tab

Global View	Physical	Logical	Setting	Event	SHI	Recover	Help
-------------	----------	---------	---------	-------	-----	---------	------

Create Array

Spare Pool

Logical Device

Rescan

Beeper Mute

Logical Device Information							
Name	Type	Secured	Capacity	BlockSize	SectorSize	OS Name	Status
Device_1_1	Hard Disk	No	4.00 TB			HPT DISK 0_0	Legacy Maintenance
Device_1_2	Hard Disk	No	2.00 TB			HPT DISK 0_1	Legacy Maintenance
Device_1_3	Hard Disk	No	8.00 TB			HPT DISK 0_2	Legacy Maintenance
Device_1_4	Hard Disk	No	4.00 TB			HPT DISK 0_3	Legacy Maintenance
Device_1_5	Hard Disk	No	1.00 TB			HPT DISK 0_4	Legacy Maintenance
Device_1_6	Hard Disk	No	8.00 TB			HPT DISK 0_5	Legacy Maintenance
Device_1_7	Hard Disk	No	6.00 TB			HPT DISK 0_6	Legacy Maintenance
Device_1_8	Hard Disk	No	12.00 TB			HPT DISK 0_7	Legacy Maintenance

Physical Device Information					
Location	Model	Secured	Capacity	Max Free	
1/1	ST4000VN008-2DR166-WDH0Z88B	No	4.00 TB	0.00 GB	
1/2	ST2000VX000-1CU164-W1E8N3QT	No	2.00 TB	0.00 GB	
1/3	ST8000VX0002-126112-ZA10NEH8	No	8.00 TB	0.00 GB	
1/4	ST4000VX007-2DT166-WDH2VVMQ	No	4.00 TB	0.00 GB	
1/5	ST1000NM0033-9ZM173-Z1W5ZGPN	No	1.00 TB	0.00 GB	
1/6	ST8000VX0002-126112-ZA10PMG7	No	8.00 TB	0.00 GB	
1/7	WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A	No	6.00 TB	0.00 GB	
1/8	ST12000NM0008-2H3101-ZHZ0C2PM	No	12.00 TB	0.00 GB	

The Logical tab is where you are edit, delete, and maintain your RAID configurations, as well as, adding drives to your spare pool. The logical tab has the following settings:

- Create Array
- Spare Pool
- Logical Device
- Rescan
- Beeper Mute

Create Array

Global View
Physical
Logical
Setting
Event
SHI
Recover
Help

Create Array

Spare Pool

Logical Device

Rescan

Beeper Mute

Create Array

Array Type:

Array Name:

Secure:

Initialization Method:

Cache Policy:

Block Size:

Number of RAID5 member disks:

	Location	Model	Capacity	Max Free
<input type="checkbox"/>	1/1	ST4000VN008-2DR166-WDH0Z88B	4.00 TB	0.00 GB
<input type="checkbox"/>	1/2	ST2000VX000-1CU164-W1E8N3QT	2.00 TB	0.00 GB
<input type="checkbox"/>	1/3	ST8000VX0002-126112-ZA10NEH8	8.00 TB	0.00 GB
<input type="checkbox"/>	1/4	ST4000VX007-2DT166-WDH2VYMQ	4.00 TB	0.00 GB
<input type="checkbox"/>	1/5	ST1000NM0033-92M173-Z1W5ZGPN	1.00 TB	0.00 GB
<input type="checkbox"/>	1/6	ST8000VX0002-126112-ZA10PMG7	8.00 TB	0.00 GB
<input type="checkbox"/>	1/7	WDC WD60EFRX-68RYMN1-WD-WX11D74RHV7A	6.00 TB	0.00 GB
<input type="checkbox"/>	1/8	ST12000NM0008-2H3101-ZH20C2PM	12.00 TB	0.00 GB

Available Disks:

Capacity: (According to the max free space on the selected disks) (MB)

An array is a collection of physical disks that will be seen as one virtual drive by your Operating System (OS). The RS6614V/RS6618V capable of creating the following array types

Array Type:

- JBOD – Just a Bunch of Disks
- RAID 0 - Striping
- RAID 1 - Mirroring
- RAID 5 – Rotating Parity bit
- RAID 10 – Striping of Mirrored Drives
- RAID 50 – Striping of Distributed Parity
- RAID 6 – Double Parity Bit

Note: RS6614V does not support RAID50.

Array Name:

The name that will be displayed in Logical Device Information (**Default:**RAID_<level>_<array number>)

Initialization Method:

- **Keep Old Data:** Opts to keep all the data on each drive untouched. Best for usersthat already have HighPoint RAID data on the selected drives.
- **Quick Init:** Grants immediate access to the array volume. This option will deleteprevious user data, but will not build parity. Recommended for testing purposesonly or when new disks are used. **Not recommended** for RAID 5, RAID 50, and RAID 6.

- **Foreground:** The array initialization process will be set at high priority. During this time array will be **non-accessible**, but initialization completion time will be shorter.
- **Background:** The array initialization process will have a lower priority. During this time array will be **accessible**, but initialization completion time will be longer.

Cache Policy (Default: Write Back)

- **Write Back** – Any data written to the array will be stored as cache, resulting in better I/O performance at the risk of data failures due to power outages. Data will be stored as cache before it is physically written to the disk; when a power outage occurs, any data in the cache will be lost.
- **Write Through** – Data written to an array is directly written onto the disk, meaning lower write performance for higher data availability. Without cache acting as a buffer, write performance will be noticeably slower but data loss due to power outages or other failures is significantly minimized.

Block Size (default: 64K)

- **[64K, 128K are the supported block sizes]**

This option allows you to specify the block size (also known as “stripe size”) for specific array types (RAID 0, 1, 5, 6, 10, and 50). Adjusting the block size allows you to tailor the array performance towards specific application. Consider the sizes of disk I/O data you are dealing with; as a general rule larger disk I/O may benefit from smaller block sizes, and smaller disk I/O may benefit from larger block sizes. A block size of 64 KB is recommended since it gives balanced performance for most applications.

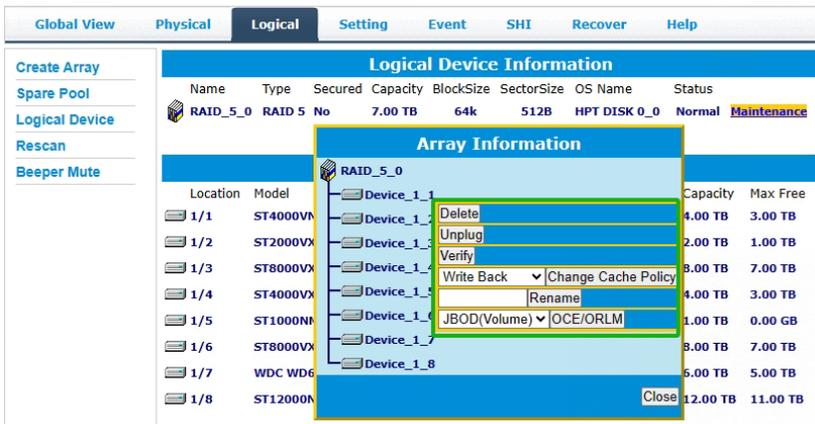
Capacity (Default: Maximum)

The total amount of space you want the RAID array to take up. When creating RAID levels, disk capacities are limited by the smallest disk. Therefore, RAID 5 capacity will be [SMALLEST DISK CAPACITY] * (number of disks – 1).

Sector Size (Default: 512B)

This option is irrelevant for Windows XP 64 and later. Current OS already support larger volumes, and introduce a partitioning method known as GPT (GUID partition table). This option, also known as VSS (Variable Sector Size) allows you to specify the sector size of the array, for use with older Windows Operating Systems.

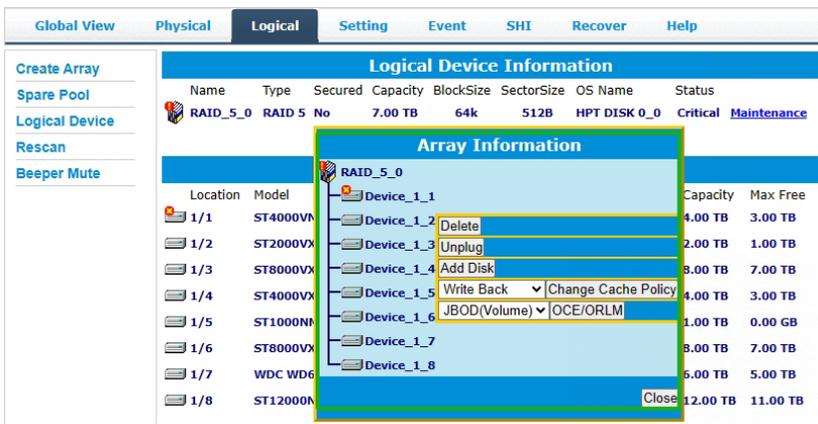
Normal Status



A Normal Status Array has the following options:

- **Delete** – deletes the selected RAID array
- **Unplug** – powers off the selected RAID array
- **Verify** – verifies the integrity of the RAID array
- **Change Cache Policy** – Toggles between Write through and Write back cache
- **Change Margin** – Adjust margin when DV mode is enabled
- **Rename** – renames the RAID array
- **OCE/ORLM** – Online Capacity Expansion / Online RAID Level Migration

Critical Status



A critical status array has all the normal status options except the following:

- The Array can no longer be renamed
- **Add disk** replaces the **verify disk** option

Once array status changes to critical, the faulty disk will be taken offline and you can either:

- Reinsert the same disk
- Insert new disk

Reinserting the same disk should trigger rebuilding status, since data on the disk would be recognized. If you insert a new disk, clicking **add disk** will give you the option to select that disk and add it to the array.

Disabled Status

The screenshot shows the 'Logical Device Information' section of the RocketStor management interface. The RAID array 'RAID_5_0' is in a 'Disabled' state with a 'Maintenance' link. An 'Array Information' dialog box is open, showing a tree view of the array's components and a context menu with 'Delete', 'Unplug', and 'Recover' options.

Name	Type	Secured	Capacity	BlockSize	SectorSize	OS Name	Status
RAID_5_0	RAID 5	No	7.00 TB	64k	512B		Disabled Maintenance

Location	Model	Secured	Capacity	Max Free
1/1	ST4000VN	No	4.00 TB	3.00 TB
1/2	ST2000VX	No	2.00 TB	1.00 TB
1/3	ST8000VX	No	8.00 TB	7.00 TB
1/4	ST4000VX	No	4.00 TB	3.00 TB
1/5	ST1000NM	No	1.00 TB	0.00 GB
1/6	ST8000VX	No	8.00 TB	7.00 TB
1/7	WDC WD6	No	6.00 TB	5.00 TB
1/8	ST12000N	No	12.00 TB	11.00 TB

A disabled status array means that your RAID level does not have enough disks to function.

- Your data will be inaccessible.
- Rebuilding will not trigger, since the RAID array does not have enough parity data to rebuild.

Your options in Maintenance are:

- **Delete** – will delete the array
- **Unplug** – will take array offline, making it safe to remove
- **Recover** – will attempt to recover the array using the list from the recover tab

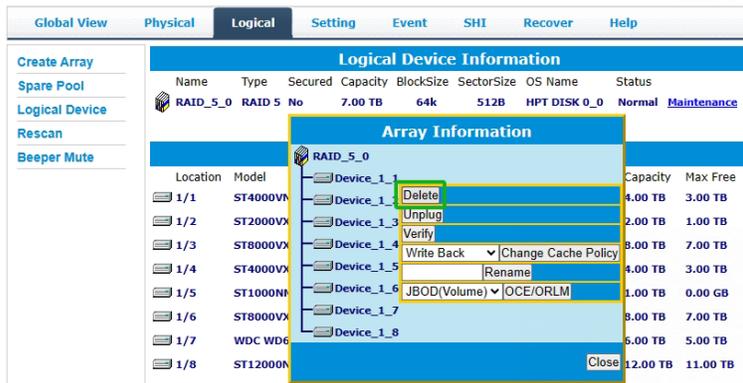
Delete Array

Used to delete a created Array.

1. Open the WebGUI.
2. Click the **Logical** tab → **Maintenance**.



3. Click **Delete** to delete the RAID array.



4. A pop-up box pops up on the page, click **OK** to confirm the RAID deletion.

localhost:7402 says

All data on the array you selected will be deleted. Do you want to continue?



5. There is no deleted RAID information at Logical Device Information, indicating that the RAID deletion operation is complete.

Notes:

When the RAID is in the rebuild, verify, foreground/background init status or be mounted, deleting the RAID will prompt in use.

When RAID is in rebuild, verify, foreground/background init status. If you want to delete the RAID, you can choose to stop the current operation and continue to delete the RAID.

When RAID is be mounted. If you want to delete the RAID, you can umount the RAID Array and continue to delete the RAID.

Logical Device Information

Logical Device Information							
Name	Type	Secured	Capacity	BlockSize	SectorSize	OS Name	Status
Device_1_1	Hard Disk	No	4.00 TB			HPT DISK 0_0	Legacy Maintenance
Device_1_2	Hard Disk	No	2.00 TB			HPT DISK 0_1	Legacy Maintenance
Device_1_3	Hard Disk	No	8.00 TB			HPT DISK 0_2	Legacy Maintenance
Device_1_4	Hard Disk	No	4.00 TB			HPT DISK 0_3	Legacy Maintenance
Device_1_5	Hard Disk	No	1.00 TB			HPT DISK 0_4	Legacy Maintenance
Device_1_6	Hard Disk	No	8.00 TB			HPT DISK 0_5	Legacy Maintenance
Device_1_7	Hard Disk	No	6.00 TB			HPT DISK 0_6	Legacy Maintenance
Device_1_8	Hard Disk	No	12.00 TB			HPT DISK 0_7	Legacy Maintenance

Logical device tab is the default page upon clicking the Logical tab of the WebGUI. This page contains information about your RAID arrays and individual disks your system detects.

Logical Device Information

Arrays you create and the properties associated with them will appear here.

Maintenance

Once an array has been created, click maintenance for options to manage your array.

Array Information

Clicking on the maintenance button will show you the Array information box. Different array statuses (Normal, critical, disabled) will have different maintenance options.

Physical Device Information

Physical Device Information					
Location	Model	Secured	Capacity	Max Free	
1/1	ST4000VN008-2DR166-WDH0Z88B	No	4.00 TB	0.00 GB	
1/2	ST2000VX000-1CU164-W1E8N3QT	No	2.00 TB	0.00 GB	
1/3	ST8000VX0002-1Z6112-ZA10NEH8	No	8.00 TB	0.00 GB	
1/4	ST4000VX007-2DT166-WDH2VYMQ	No	4.00 TB	0.00 GB	
1/5	ST1000NM0033-92M173-Z1W5ZGPN	No	1.00 TB	0.00 GB	
1/6	ST8000VX0002-1Z6112-ZA10PMG7	No	8.00 TB	0.00 GB	
1/7	WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A	No	6.00 TB	0.00 GB	
1/8	ST12000NM0008-2H3101-ZHZ0C2PM	No	12.00 TB	0.00 GB	

- **Location** – which Enclosure and port the drive is located in
- **Model** – model number of the drive connected
- **Capacity** – total capacity of the drive
- **Max Free** – total capacity that is not configured

Spare pool

Spare Pool		
Available Disks		
<input type="checkbox"/>	Device_1_1	ST4000VN008-2DR166-WDH0Z88B 4.00 TB
<input type="checkbox"/>	Device_1_3	ST8000VX0002-1Z6112-ZA10NEH8 8.00 TB
<input type="checkbox"/>	Device_1_4	ST4000VX007-2DT166-WDH2VYMQ 4.00 TB
<input type="checkbox"/>	Device_1_5	ST1000NM0033-9ZM173-Z1W5ZGPN 1.00 TB
<input type="checkbox"/>	Device_1_6	ST8000VX0002-1Z6112-ZA10PMG7 8.00 TB
<input type="checkbox"/>	Device_1_7	WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A 6.00 TB
<input type="checkbox"/>	Device_1_8	ST12000NM0008-2H3101-ZHZ0C2PM 12.00 TB

Spare disks are physical disks that will immediately replace critical disks in an array. Only redundant RAID arrays (RAID 1, 5, 6, 50, and 10) support spare drives.

Physical drives marked as a spare will automatically be added to an array whenever there is a disk failure. Having this feature minimizes the chances of a data loss by reducing the time an array is in critical status.

Add/Remove Spare Using WebGUI

1. Log in WebGUI.
2. Click **Logical**.
3. Click **Spare Pool**.

Spare Pool		
Available Disks		
<input type="checkbox"/>	Device_1_1	ST4000VN008-2DR166-WDH0Z88B 4.00 TB
<input type="checkbox"/>	Device_1_3	ST8000VX0002-1Z6112-ZA10NEH8 8.00 TB
<input type="checkbox"/>	Device_1_4	ST4000VX007-2DT166-WDH2VYMQ 4.00 TB
<input type="checkbox"/>	Device_1_5	ST1000NM0033-9ZM173-Z1W5ZGPN 1.00 TB
<input type="checkbox"/>	Device_1_6	ST8000VX0002-1Z6112-ZA10PMG7 8.00 TB
<input type="checkbox"/>	Device_1_7	WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A 6.00 TB
<input type="checkbox"/>	Device_1_8	ST12000NM0008-2H3101-ZHZ0C2PM 12.00 TB

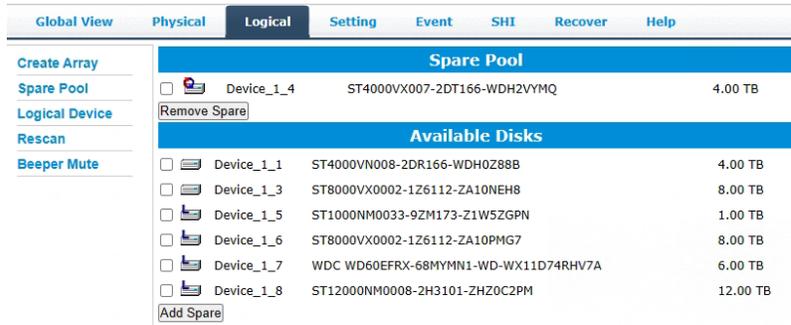
4. Check the box for the disk you want as a spare from **Available Disks**.
5. Click **Add Spare**. Then click **OK**

localhost:7402 says
1 disk(s) will be added to spare pool. Do you want to continue?

OK Cancel Help

Spare Pool		
Available Disks		
<input type="checkbox"/>	Device_1_1	ST4000VN008-2DR166-WDH0Z88B 4.00 TB
<input type="checkbox"/>	Device_1_3	ST8000VX0002-1Z6112-ZA10NEH8 8.00 TB
<input checked="" type="checkbox"/>	Device_1_4	ST4000VX007-2DT166-WDH2VYMQ 4.00 TB
<input type="checkbox"/>	Device_1_5	ST1000NM0033-9ZM173-Z1W5ZGPN 1.00 TB
<input type="checkbox"/>	Device_1_6	ST8000VX0002-1Z6112-ZA10PMG7 8.00 TB
<input type="checkbox"/>	Device_1_7	WDC WD60EFRX-68MYMN1-WD-WX11D74RHV7A 6.00 TB
<input type="checkbox"/>	Device_1_8	ST12000NM0008-2H3101-ZHZ0C2PM 12.00 TB

6. Disks that have been added to the Spare Pool are displayed in the Spare Pool.



Note: Disks added to the spare pool will show under **Spare Pool** and can be removed by checking the disk checkbox from **Spare Pool** > Click **Remove Spare**.

Rescan

Clicking rescan will force drivers to report array status. For any disk(s) you hot plug into the device, do not click rescan until all physical drives are detected and appear under Logical Device Information.

Beeper Mute

The Enclosure will beep when the following conditions occur.

- Array falls into **critical** status
- Array falls into **disabled** status
- You unplug a disk
- Your disk fails due to bad sectors
- SMART sensors anticipate drive failure

If device is currently beeping, clicking Beeper Mute will mute the sound immediately. **Note:** This button does not permanently mute the alarm. To permanently mute the alarm go to **Setting > Enable audible alarm > Disabled**.

Note: *Beeper off is permanently off.*

Appendix A-4: Setting Tab

● Windows Setting Tab

Global View	Physical	Logical	Setting	Event	SHI	Recover	Help
-------------	----------	---------	---------	-------	-----	---------	------

System	System Setting
Email	Enable auto rebuild. Enabled ▾ Enable Continue Rebuilding on error. Enabled ▾ Enable audible alarm. Enabled ▾ Set Spindown Idle Disk(minutes): Disabled ▾ Restrict to localhost access. Disabled ▾ Set Rebuild Priority: Medium ▾ Port Number: 7402 Enable collecting system logs. Disabled ▾ Temperature Unit: °F ▾ <input type="button" value="Submit"/>
	Password Setting
	Password: <input style="width: 100%;" type="password"/> Confirm: <input style="width: 100%;" type="password"/> <input type="button" value="Submit"/>

● Mac Setting Tab

Global View	Physical	Logical	Setting	Event	SHI	Recover	Logout	Help
-------------	----------	---------	---------	-------	-----	---------	--------	------

System	System Setting
Email	Enable auto rebuild. Enabled ▾ Enable Continue Rebuilding on error. Disabled ▾ Enable audible alarm. Enabled ▾ Set Spindown Idle Disk(minutes): Disabled ▾ Restrict to localhost access. Disabled ▾ Set Rebuild Priority: Medium ▾ Port Number: 7402 <input type="button" value="Submit"/>
	Password Setting
	Password: <input style="width: 100%;" type="password"/> Confirm: <input style="width: 100%;" type="password"/> <input type="button" value="Submit"/>

● Linux Setting Tab

Global View	Physical	Logical	Setting	Event	SHI	Recover	Help
-------------	----------	---------	---------	-------	-----	---------	------

System	System Setting
Email	Enable auto rebuild. Disabled ▾ Enable Continue Rebuilding on error. Enabled ▾ Enable audible alarm. Disabled ▾ Set Spindown Idle Disk(minutes): Disabled ▾ Restrict to localhost access. Disabled ▾ Set Rebuild Priority: Medium ▾ Port Number: 7402 <input type="button" value="Submit"/>
	Password Setting
	Password: <input style="width: 100%;" type="password"/> Confirm: <input style="width: 100%;" type="password"/> <input type="button" value="Submit"/>

Under this tab, user can

- Enable auto-rebuilding
- Enable rebuilding on error
- Turn audible alarm on/off
- Set spindown time for idle disks
- Restrict to localhost
- Set rebuild priority
- Change port number
- Collecting system log¹
- Change Temperature Unit¹
- Change WebGUI password

Note: ¹ Only Windows supports this feature.

System Settings

Enable auto rebuild (default: Enabled)

When a physical drive fails, the controller will take the drive offline. Once you re-insert or replace the disk, the controller will not automatically rebuild the array unless this option is enabled.

Enable continue rebuilding on error (default: Enabled)

When enabled, the rebuilding process will ignore bad disk sectors and continue rebuilding until completion. When rebuild is finished, the data may be accessible but data inconsistency due to ignored bad sectors may cause problems in the future. If this option is enabled, HighPoint recommends user to check the event log for bad sectors.

Enable audible alarm (default: Disabled)

When a physical disk fails, the controller will emit an audible sound signaling failure. This option mutes the alarm.

Set Spindown Idle Disk (minutes) (default: Disabled)

When set, physical drives will spindown a certain amount of time after disk activity ceases. Only 10, 20, 30, 60, 120, 180, 240 minutes setting are available.

Restrict to localhost access (default: Disabled)

Remote access to the controller will be restricted when **enabled**, other users in your network will be unable to remotely log in to the WebGUI.

Rebuild Priority (default: Medium)

You can specify the amount of system resources you want to dedicate to rebuilding the array. There are 5 levels of priority [Lowest, Low, Medium, High, Highest]

Port Number (default: 7402)

The default port that the HighPoint WebGUI listens on is 7402. You may change it to any open port.

Enable collecting system logs (default: Disabled)

You can set it to enabled to collect system logs at any time. The collected system logs are stored on the C:/Windows/hpt_diagdriver. The maximum capacity of the collected system log is 800MB, and

parts exceeding 800MB will be overwritten forward.

Temperature Unit (default: °F)

The default temperature unit is Fahrenheit, you can change it to Celsius.

Password Setting



The screenshot shows a web form titled "Password Setting" with a blue header. Below the header, there are two input fields: "Password:" and "Confirm:". Below the "Confirm:" field is a "Submit" button.

Changing your WebGUI password

Under **Password Setting** type your new password and confirm it, then click submit.

Recovering your HRM password

For Windows Users:

You can delete the file hptuser.dat. Then, restart the computer and open the WEBGUI to set a new password.

1. Open File Explorer.
2. Navigate to C:/Windows/
3. Delete hptuser.dat.
4. Reboot.

For Mac and Linux Users

After uninstalling the HighPoint RAID Management Software, re[install the HighPoint RAID Management Software](#).

Email Setting

The screenshot shows the 'Email Setting' page. At the top, there is a navigation bar with tabs: Global View, Physical, Logical, Setting (selected), Event, SHI, Recover, and Help. On the left, there is a 'System' menu with 'Email' selected. The main content area is divided into two sections: 'SMTP Setting' and 'Recipients'. The 'SMTP Setting' section includes a checkbox for 'Enable Event Notification', and input fields for 'Server Address (name or IP):', 'Mail From (E-mail address):', 'Login Name:', 'Password:', 'SMTP Port:' (with '25' entered), and 'Support SSL:' (checkbox). A 'Change Setting' button is located below these fields. The 'Recipients' section features a table with columns 'E-mail', 'Name', and 'Event Level', and an 'Add Recipient' button. Below the table, there are input fields for 'E-mail:', 'Name:', and 'Event Level:' (with checkboxes for 'Information', 'Warning', and 'Error'). An 'Add|Test' button is at the bottom left of the Recipients section.

The following topics are covered under email:

- SMTP Setting
- Adding Recipients

You can set the controller to send an email out to recipients of your choosing when certain events (refer to Event Tab) trigger.

SMTP settings

This is a close-up of the 'SMTP Setting' form. It features a blue header with the text 'SMTP Setting'. Below the header, there is a checkbox for 'Enable Event Notification'. The form contains several input fields: 'Server Address (name or IP):', 'Mail From (E-mail address):', 'Login Name:', 'Password:', 'SMTP Port:' (with the value '25' entered), and 'Support SSL:' (checkbox). A 'Change Setting' button is positioned at the bottom right of the form.

To set up email alerts:

1. Check the Enable Event Notification box.
2. Enter the ISP server address name or SMTP name.
3. Type in the email address of the **sender**. (email account that is going to **send** the alert)
4. Type in the account name and password of the sender.
5. Type in the SMTP port (default: **25**).
6. Check support SSL box if SSL is supported by your ISP (port value will change to **465**, refer to your ISP if you have a specific SMTP port).

Note: After you click 'Change Setting' the password box will become blank.

How to Add Recipients

Add Recipient

E-mail:

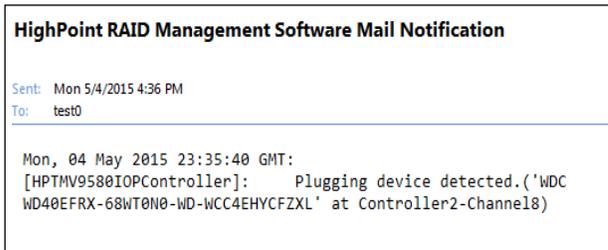
Name:

Event Level: Information Warning Error

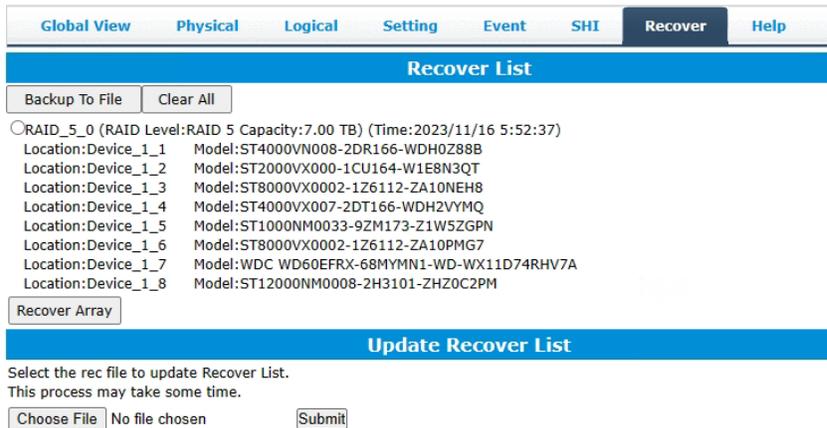
You can add multiple email addresses as receivers of a notice.

1. Type the email of the recipient in the **E-mail** text box.
2. Type the name of the recipient in the **Name** text box.
3. Check which type(s) of events will trigger an email in the respective **Event Level** check boxes.
4. **(Optional)** Click **test** to confirm settings are correct by sending out a test email.
5. Click **add** to add the recipient list.
6. The added recipient will display in under **Recipients**.
7. The email will send to your recipients the output recorded in the event log.

Example email message:



Appendix A-5: Recover Tab



Previously created arrays will be stored under this tab. Recovering an array from here will attempt to recover a “disabled” array and make it “normal”.

The Recover List will list all your previous and current created arrays. Each entry will list the following properties:

- Array name
- RAID level
- Array Capacity
- Time created (YYYY/MM/DD, HH/MM/SS, 24 hr clock format)
- Location of physical drives
- Model of physical drives

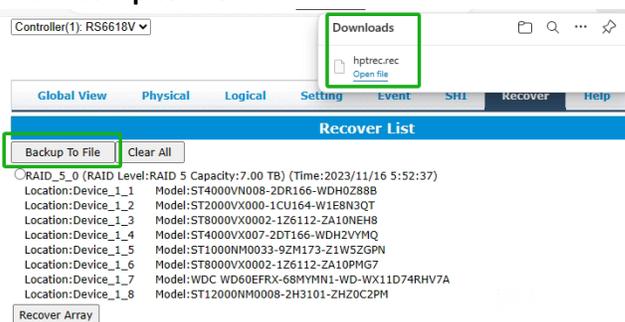
Important: When recovering an array, it is important to note the **location** and **model** of each physical drive because you can **only** recover using those **exact** positions and drive model.

How to Backup your Recover List

The recover list is a record of your previously created arrays containing the model and location information of your physical drives. Recovering from the list could help bring a **disabled** array back to **normal** status for emergency data retrieval.

To backup your recover list:

1. Log in to WebGUI.
2. Click **Recover Tab**.
3. Click **Backup to File**.



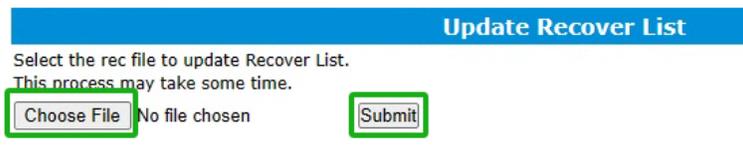
Note: The file will be saved as **hptrec.rec**.

How to Reload your Backup Recover List

In the case that you cleared the recover list or it does not appear for any reason, you can recover it if you saved the list beforehand.

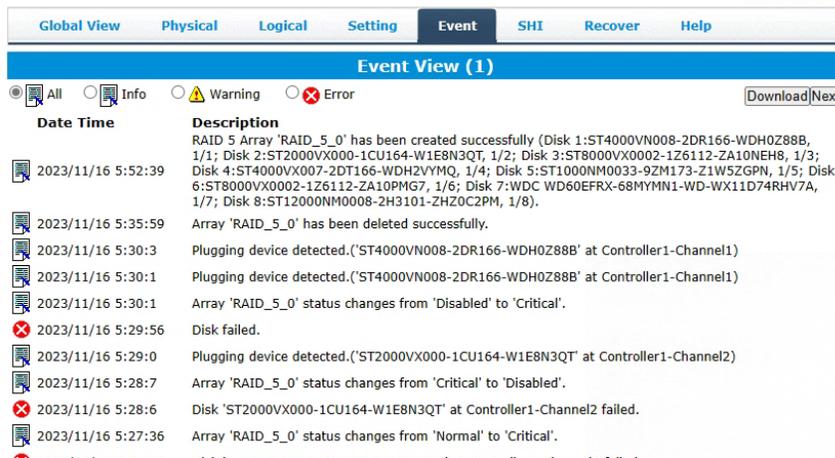
To reload your recover list:

1. Log in to WebGUI.
2. Click **Recover** Tab.
3. Under **Update Recover List**, click **Choose File**.



4. Locate your previously saved **hptrec.rec** file and select it.
Note: loading a backup recover list will completely replace the current recover list.
5. Click **Submit**.

Appendix A-6: Event Tab



In the event tab, you can see log entries associated with the HighPoint device. The event log provides useful information when troubleshooting your set up.

In the event tab, there are four options available:

- Download – Save the log file on your computer
- Prev – View previous log page
- Next – View next log page

Table 3. Event Log Icon Guide

Icon	Name	Definition
	Information	Includes general administrative tasks: <ul style="list-style-type: none"> ● Create/delete arrays ● Configuring spares ● Rebuilding arrays ● Configuring event notifications ● Configuring maintenance
	Warning	Alerts issued by the Host Adapter: <ul style="list-style-type: none"> ● High temperatures ● Sector errors ● Communication errors ● Verification errors



Error

Hardware related problems

- Hard disk failure
 - Broken errors
 - Memory failure
-

The event view is a basic error logging tool built into the HighPoint WebGUI.

Appendix A-7: SHI (Storage Health Inspector)

Global View Physical Logical Setting Event **SHI** Recover Help

[Schedule](#)

Storage Health Inspector(SHI)

Controller ID	Location#	Device Serial Number	RAID	°F	Bad Sectors Found & Repaired	S.M.A.R.T
1	1	WDH0Z88B	RAID_5_0	80	None	Detail
1	2	W1E8N3QT	RAID_5_0	91	16	Detail
1	3	ZA10NEH8	RAID_5_0	100	None	Detail
1	4	WDH2VYMQ	RAID_5_0	86	8	Detail
1	5	Z1W5ZGPN	RAID_5_0	96	None	Detail
1	6	ZA10PMG7	RAID_5_0	104	None	Detail
1	7	WD-WX11D74RHV7A	RAID_5_0	95	None	Detail
1	8	ZHZ0C2PM	RAID_5_0	87	None	Detail

HDD Temperature Threshold

Set harddisk temperature threshold : °F

- S.M.A.R.T Attributes
- HDD Temperature Threshold
- Storage Health Inspector Scheduling

The SHI outputs information collected using SMART (Self-Monitoring Analysis and Reporting Technology) Hard Drive Technology. The data provided on this tab helps you to anticipate any disk failures based on a variety of monitored hard disk properties.

[\(Refer to here\)](#)

Appendix A-8: Help



Online Help

Online Help redirects you to additional documentation concerning the HighPoint WebGUI. Diagnostic collect log information

Diagnostic View

1. **1-Click Self-Diagnostic Solution:** Diagnostic View provides a “1-click” information collection system for troubleshooting. It will gather all necessary hardware, software and storage configuration data and compile it into a single file, which can be transmitted directly to our FAE Team via our Online Support Portal.

Diagnostic View	
System	Product
OS: Microsoft Windows 11 Education	Controller: RocketStor 6618V
Kernel: 10.0.22000	Driver Name: rr3740a
CPU: Intel(R) Core(TM) i5-9600K CPU @ 3.70GHz	Driver Version: 1.1.7.0
MotherBoard: Gigabyte Technology Co., Ltd. Z390 AORUS XTREME-CF x.x	
BIOS: American Megatrends Inc. F4 ALASKA - 1072009	
Disk: Samsung SSD 860 PRO 256GB 238.467911GB	
Chipset: Intel	

Logs Location: Logs have not been saved Save Logs

2. You can also click “**Help**” → “**Diagnostic**” to enter the diagnostic view.

Global View	Physical	Logical	Setting	Event	SHI	Recover	Help
HBA Properties Host Adapter model: RocketStor 6618V Controller count: 1 Enclosure count: 0 Physical Drive: 8 Legacy Disk: 0 RAID Count: 1		Storage Properties  Total Capacity: 45005 GB Configured Capacity: 8000 GB Free Capacity: 37004 GB <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Configured 17.7% </div>					

Log Saving

1. Click the “Save Logs” button to create the diagnostic file.
2. “Logs Location” will display the location of the saving path.

The screenshot shows the 'Diagnostic View' window with a navigation bar at the top containing 'Global View', 'Physical', 'Logical', 'Setting', 'Event', 'SHI', 'Recover', and 'Help'. The main content is divided into two columns: 'System' and 'Product'.

System	Product
OS: Microsoft Windows 11 Education	Controller: RocketStor 6618V
Kernel: 10.0.22000	Driver Name: rr3740a
CPU: Intel(R) Core(TM) i5-9600K CPU @ 3.70GHz	Driver Version: 1.1.7.0
MotherBoard: Gigabyte Technology Co., Ltd. Z390 AORUS XTREME-CF x.x	
BIOS: American Megatrends Inc. F4 ALASKA - 1072009	
Disk: Samsung SSD 860 PRO 256GB 238.467911GB	
Chipset: Intel	

Below the 'Product' column, a green box labeled '1' highlights the 'Save Logs' button. Below the 'System' column, a green box labeled '2' highlights the 'Logs Location' text and the resulting file path: `C:\Program Files (x86)\HighPoint Technologies, Inc\HighPoint RAID Management\Service\webquiroot\HighPoint rr3740a 1.1.7.0 2023.11.16 06.03.zip`.

Appendix A-9: Logout

Logout of WebGUI, [set password](#) will appear.



Clicking **Logout** will safely exit "WebGUI".

Appendix B: WebGUI Icon Guide

	<p>Critical – missing disk A disk is missing from the array bringing it to ‘critical’ status. The array is still accessible but another disk failure could result in data loss.</p>
	<p>Verifying The array is currently running a disk integrity check.</p>
	<p>Rebuilding The array is currently rebuilding meaning you replaced a failed disk or added a new disk to a ‘critical’ state array.</p>
	<p>Critical – rebuild required The array has all disks, but one disk requires rebuilding.</p>
	<p>Disabled The icon represents a disabled array, meaning more than one disk failed and the array is no longer accessible</p>
	<p>Initializing The array is initializing. The two types of initialization is Foreground and Background. (See Initialization)</p>
	<p>Uninitialized The array initialization process has been interrupted, and the process is incomplete.</p>
	<p>Not Initialized Disk is not initialized yet, and needs to be initialized before use</p>
	<p>OCE/ORLM Array is performing a OCE/ORLM operation</p>
	<p>OCE/ORLM has stopped The array expansion process has been stopped.</p>
	<p>Legacy An existing file system has been detected on the disk. These disks are classified as legacy drives.</p>
	<p>Spare The device is a spare drive, it will automatically replace any failed drive part of an array.</p>
	<p>Normal The array status is normal</p>



Initializing
The array is initializing, either foreground or background initialization



Initialization Stopped
The initialization has been stopped. Current status is uninitialized.



Critical – Inconsistency
Data in the array is inconsistent and needs to be rebuilt.



Critical – missing disk
A disk has been removed or experienced failure, and user needs to reinsert disk or add a new disk.



Rebuilding
The array is currently rebuilding.



Verifying
The array is performing a data consistency check. Array status will show 'verifying'.



Disabled
The array does not have enough disks to maintain the RAID level. A disabled array is not accessible.



OCE/ORLM
Array is expanding its capacity or migrating to a different raid level. Status will display 'Expanding/Migrating'



OCE/ORLM stopped
The 'Expansion/Migrating' process has been stopped. The status will display 'Need Expanding/Migrating'



Critical – OCE/ORLM
A disk member is lost during the OCE/ORLM process.



Critical – OCE/ORLM - rebuild
The expanding/migrating array requires a rebuild.

Appendix C: RAID Level Reference Guide¹

Type	Description	Min. disks	Usable space	Advantage	Disadvantage	Application
JBOD	Just a bunch of disks	1	100%	Each drive can be accessed as a single volume	No fault tolerance - failure of one drive results in complete data loss	Backup
RAID0	Disk Striping	2	100%	Offers the highest performance	No fault tolerance – failure of one drive in the array results in complete data loss	Temporary file, performance driven application.
RAID1	Disk Mirroring	2	50%	Provides convenient low-cost data redundancy for smaller systems and servers. Can handle 1 disk failure.	Useable storage space is 50% of total available capacity.	Operating system, backup, and transaction database.
RAID5	Disk Striping with Rotating parity	3	67-88%	High read performance, and medium write performance with data protection with a single drive failure. Can handle 1 disk failure.	Not recommended for database applications that require frequent/heavy write sessions.	Data archives, and ideal for application that require data protection
RAID6	Disk Striping with dual rotating parity	4	50-75%	High read performance, and medium write performance with data protection in case of up to two drives failure	Not recommended for applications that require frequent/heavy write sessions.	Data archives and ideal for application that requires data protection
RAID10	Disk Mirroring followed by stripe	4	50%	High read performance and medium write performance with data protection for up to 2-drive failures	Useable storage capacity equals total capacity of all drives in the array minus two	Fast database and application servers which need performance and data protection
RAID 50	Disk Mirroring Followed by RAID5	6	67-75%	High read performance, and medium write performance for with data protection in case of up to two drives failure	Not recommended for applications that require frequent/heavy write sessions	Data archives and ideal for application that requires data protection

¹ Refer to the RAID controller product specifications for supported RAID levels.

HighPoint List of Recommended Hard Drives

HighPoint maintains a list of tested hard drives suitable for RAID applications. Since not every hard drive in the market can be tested, this list is meant to be a general guideline for selecting hard drives operating in a RAID environment. Regular, desktopgrade drives are highly not recommended for RAID use.

Compatibility List:

<https://www.highpoint-tech.com/rs661xv-series>

Resource

A variety of manuals, guides and FAQs are available for the RocketStor 6614V/6618V. In addition, we recommend visiting the Software Downloads webpage for the management interfaces, and installation guides.

Software Download:

<https://www.highpoint-tech.com/rs661xv-series>

FAQ & Troubleshooting:

<https://www.highpoint-tech.com/support-and-services>

Customer Support

If you encounter any problems while utilizing the RocketStor 6614V/6618V, or have any questions about HighPoint Technologies, Inc. products & solutions, feel free to contact our Customer Support Department.

Web Support:

<https://www.highpoint-tech.com/support-and-services>

HighPoint Technologies, Inc. websites:

<https://www.highpoint-tech.com>