HighPoint Technologies, Inc.

RocketStor 6614V & 6618V User Manual

V1.00- Nov 17, 2023

Trademarks
Companies and products mentioned in this manual are for identification purpose only. Productnames or brand names appearing in this manual may or may not be registered trademarks or copyrights of their respective owners. Backup your important data before using HighPoint's products and use at your own risk. In no event shall HighPoint be liable for any loss of profits, or for direct, indirect, special, incidental or consequential damages arising from any defect or error in HighPoint's products or manuals. Information in this manual is subject to change without notice and does not represent a commitment on the part of HighPoint.

Notice
Reasonable effort has been made to ensure that the information in this manual is accurate.HighPoint assumes no liability for technical inaccuracies, typographical, or other errors contained herein.

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 noguarantee 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 turningthe 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 tooperate 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 acceptany 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 thefollowing European directives:

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

Table of Contents

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 6118V 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. Forany 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:** • 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. • 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.

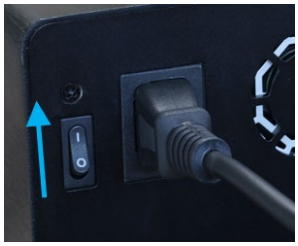
2. Carefully insert the SSD or HDD into the drive tray and secure it with the provided mounting screws.
   1). For 3.5-inch drive: use black screws to secure the drive to each side of the drive tray.

   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.

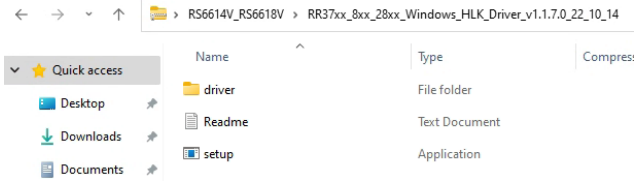
Note: *The RocketStor 6614V/6618V connects to the host system via a Thunderbolt™ cable. As a result, the RocketStor 6614V/6618V will automatically power on when the host system is powered on, and power off when the host system is powered off.*

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.

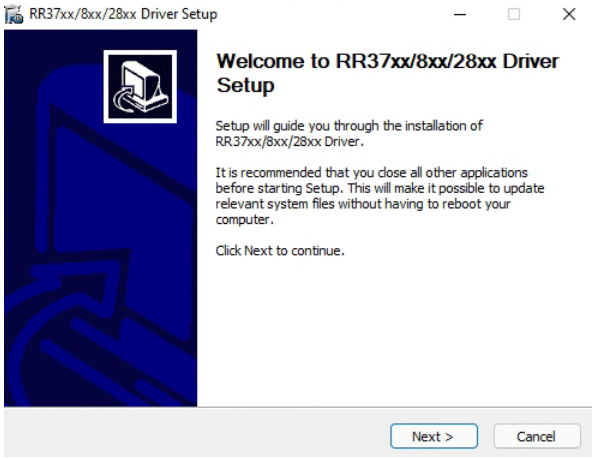
For Windows Users

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

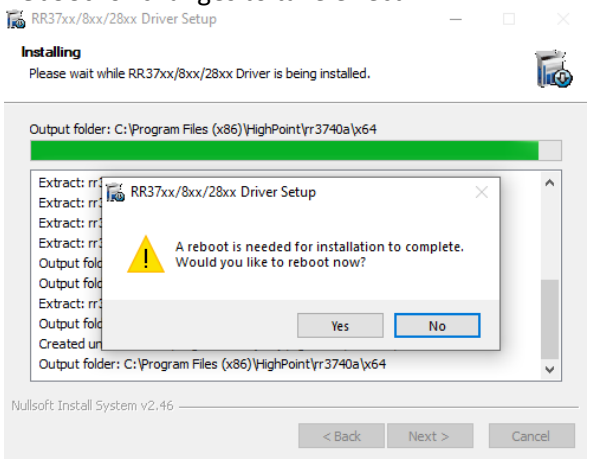


***Note:** The Driver Software revision shown in the screenshots may not correspond with current software releases. Please make sure to download the latest Driver Software updates from the product's Software Updates page.*

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.

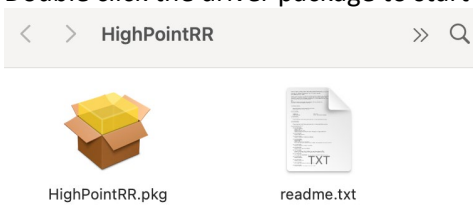


For Mac Users

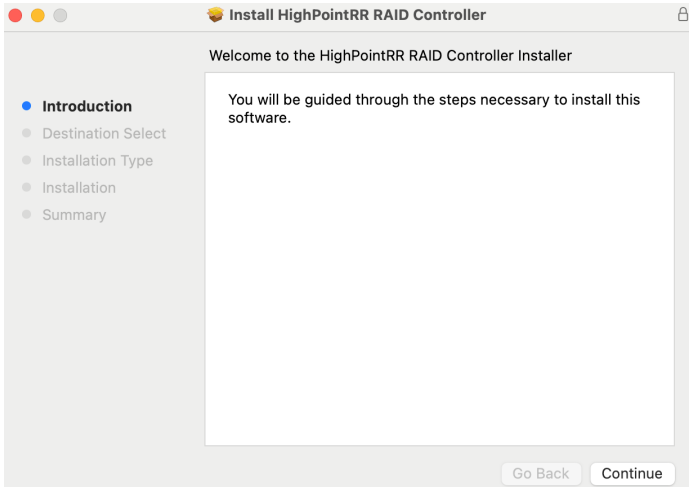
1. Download the latest driver files from our website and locate the download.

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.*

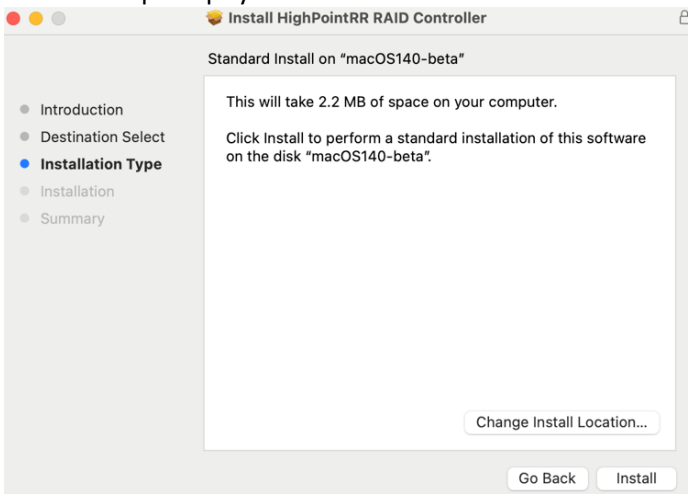
2. Double click the driver package to start installation (.pkg file).



3. Click the **Continue** button.

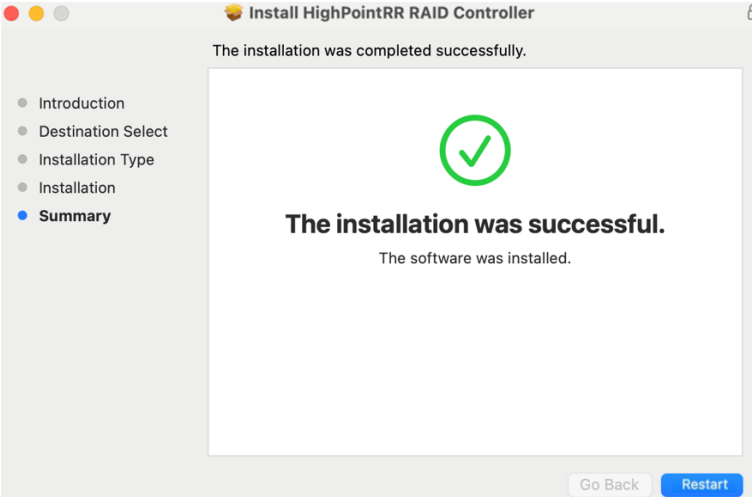


4. macOS will prompt you to install the driver. Click **Install** to proceed.



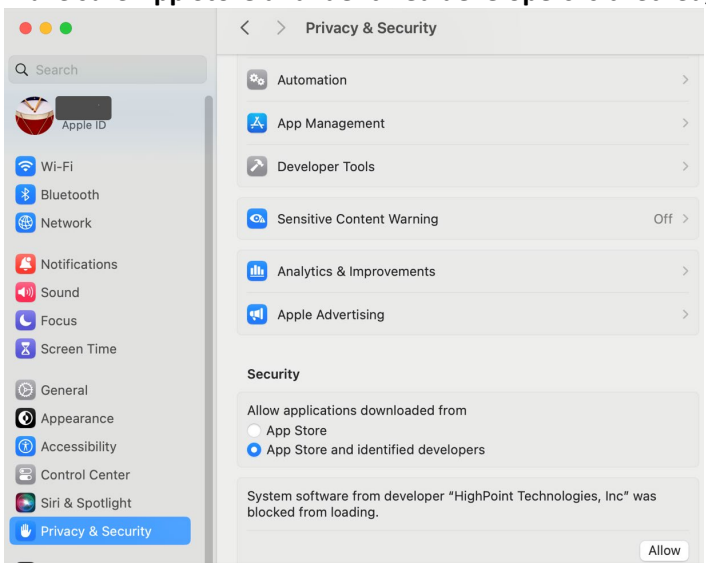
5. You will be prompted that installer is trying to install new software, enter the **Administrator Username and Password**. Once these have been entered, Click Install Software.

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

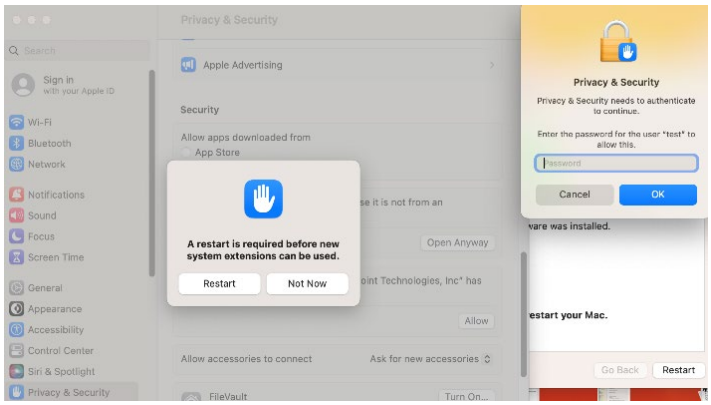


7. If you receive a popup window prompting you for permission, click **Open Security Preferences**.

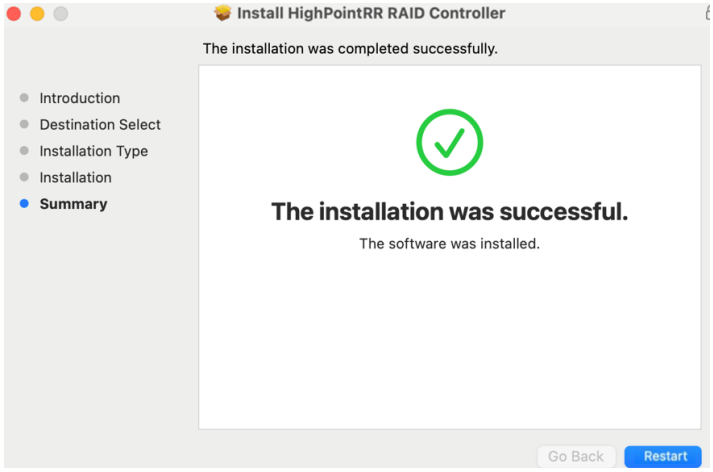
8. Make sure **App Store and identified developers** is checked, and then click **Allow**.



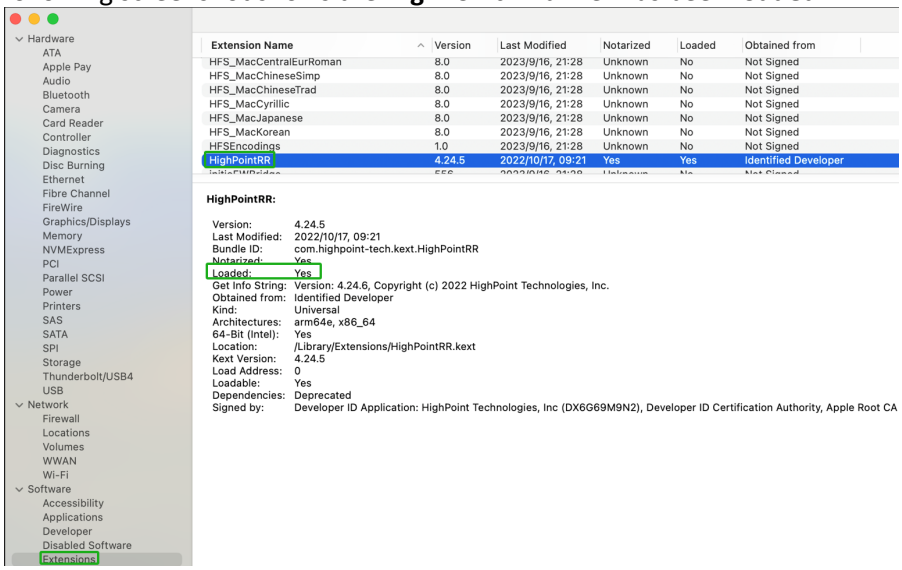
9. You will see a popup window, prompting you to restart. Enter the **Administrator** Username and Password and click **Restart**.



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**.

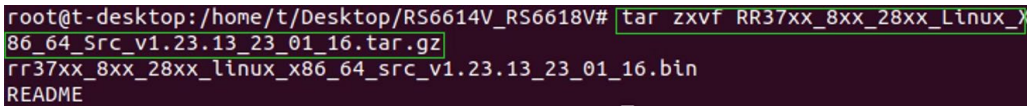


Note: *The driver revision shown in the screenshots may not correspond with current software releases. Please make sure to download the latest driver updates from the product's Software Updates page.*

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.

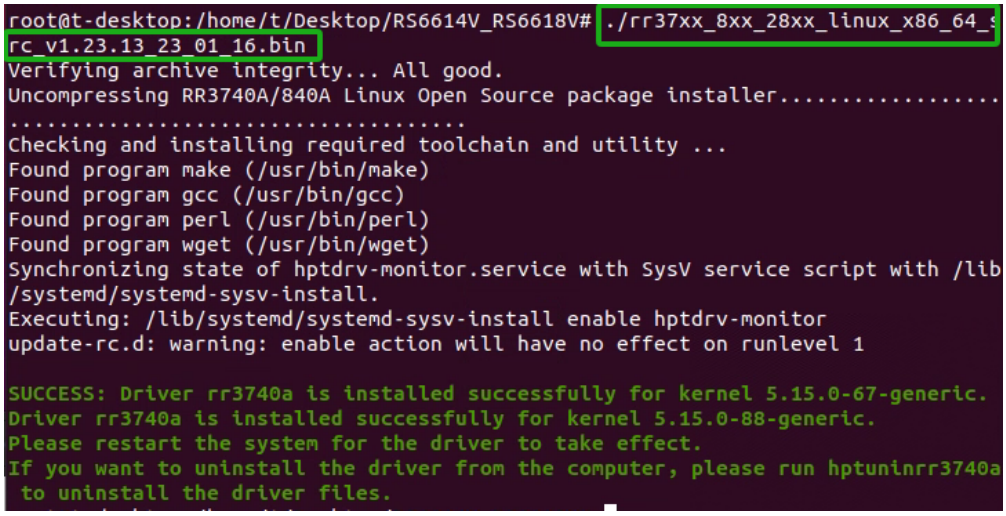
   # tar zxvf RR37xx_8xx_28xx_Linux_X86_64_Src_ vx.x.x_xx_xx_xx.tar.gz



   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



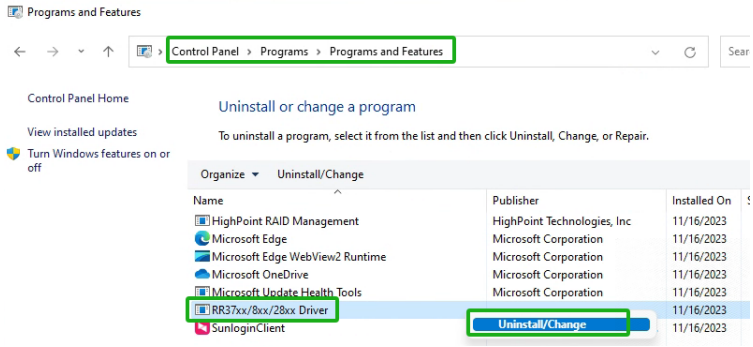
5. The driver will be loaded automatically after reboot.

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.*

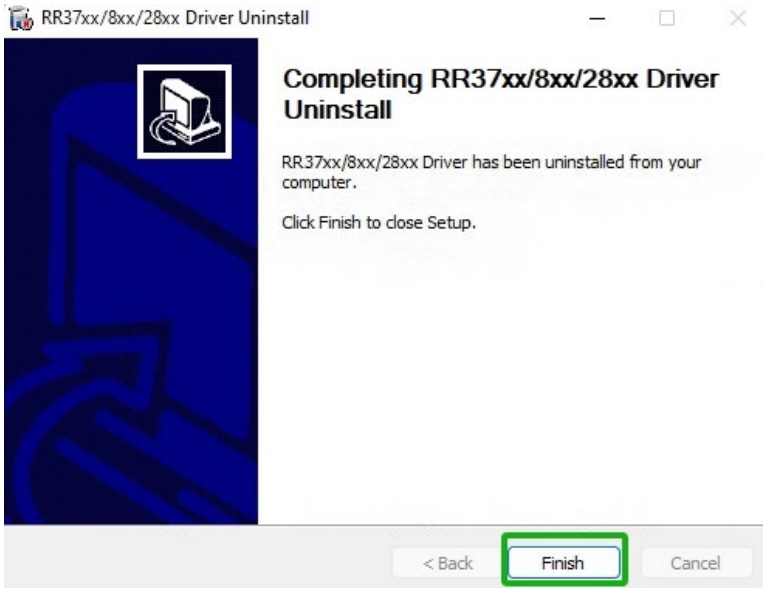
Uninstall Drivers

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.
```

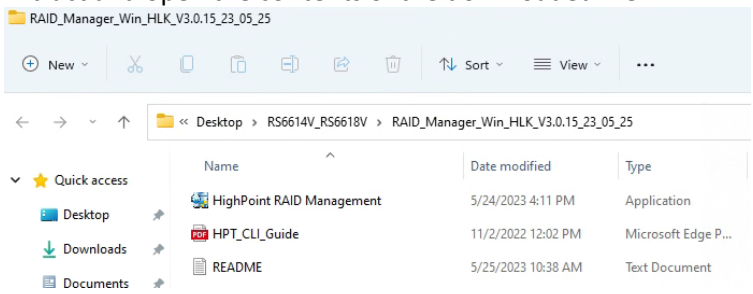
4. Restart your computer when prompted to complete the process of uninstalling the driver.

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 releaases. 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.

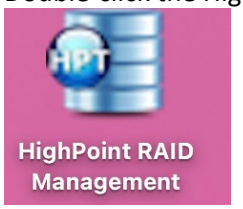
For Mac Users

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.*

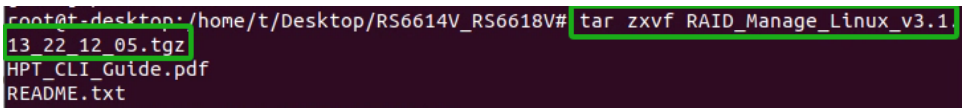
For Linux Users

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:

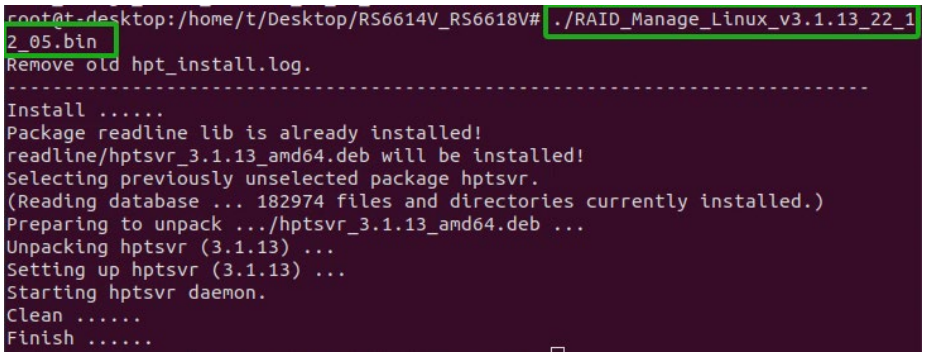
 # tar zxvf RAID_Manage_Linux_vx.x.x_xx_xx_xx.tar.gz



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:

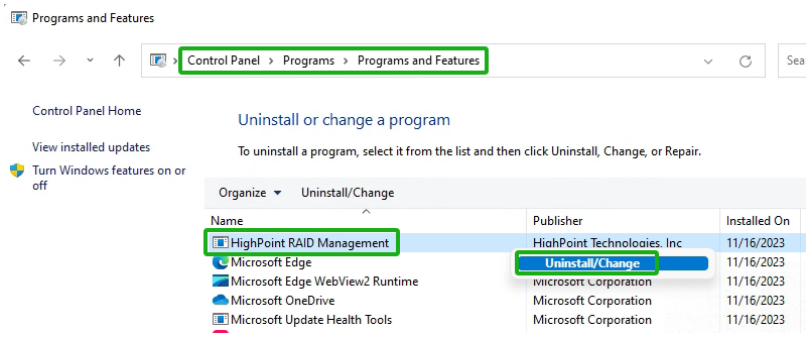
   #./RAID_Manage_Linux_vx.x.x_xx_xx_xx.bin



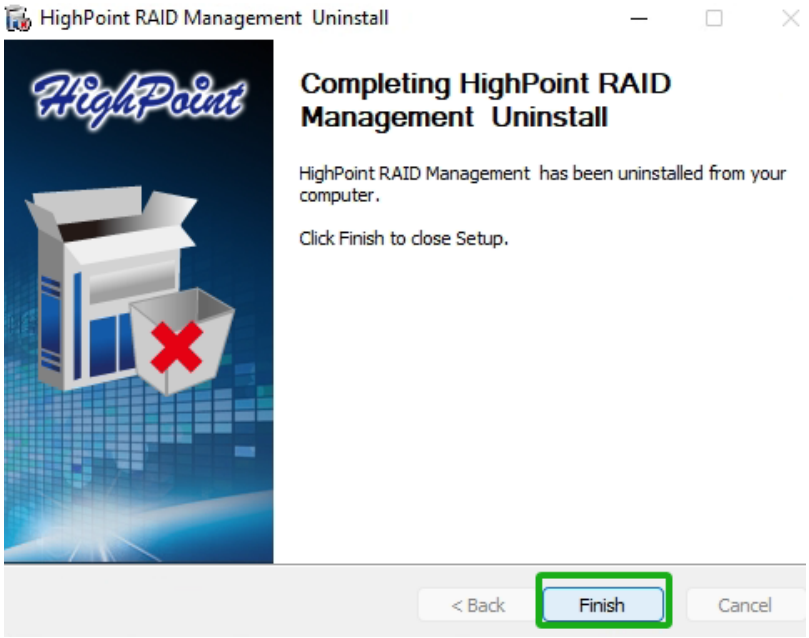
Uninstall HighPoint RAID Management (WebGUI & CLI)

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**.

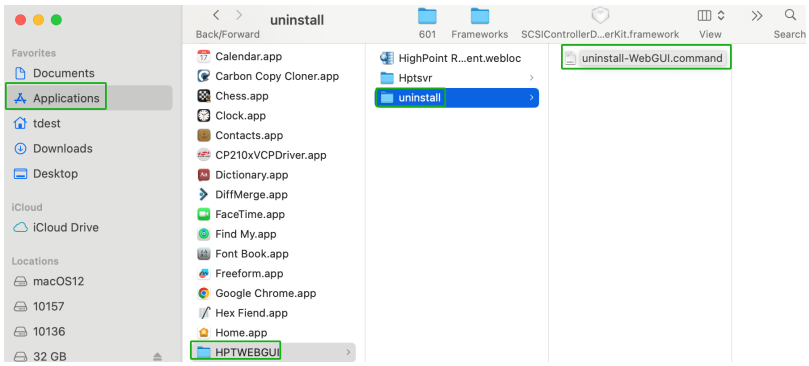


3. After uninstalling the HighPoint RAID Management, click **Finish.**

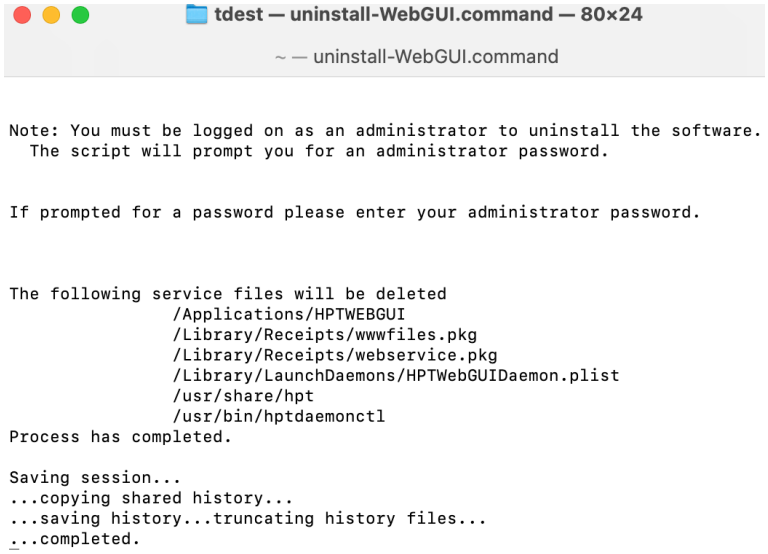


For Mac Users

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



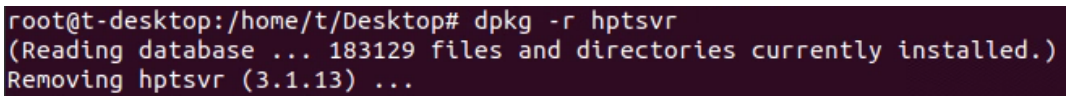
3. Type in the Administrator password when prompted.



For Linux Users

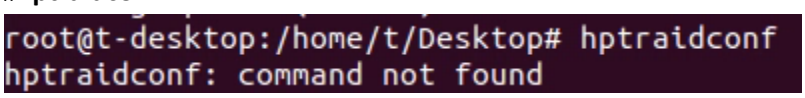
1. Open the system terminal with root privileges. Enter the following commands to uninstall the RAID Management:

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



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

   #hptraidconf



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.

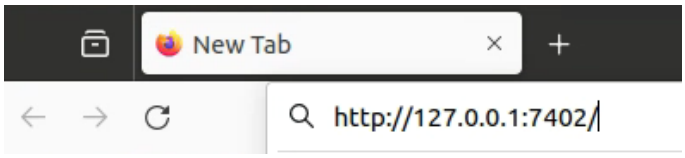
For Windows/Mac Users

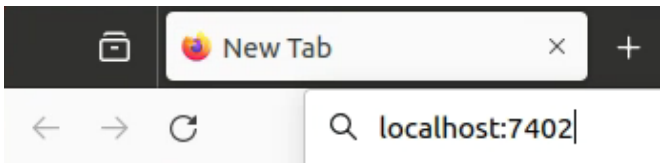
1. Double click the Desktop ICON to start the software using the system's default web browser. It will automatically log-in to the WebGUI.

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.





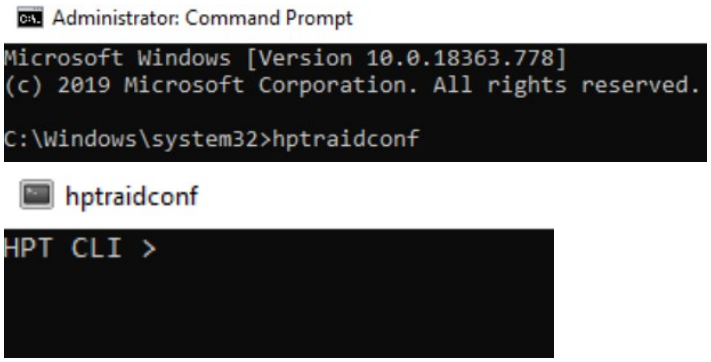
2. The password can be set after the first log-in. To change the password, select **Setting>Password Setting** from the menu bar.

Step 4B: Login CLI

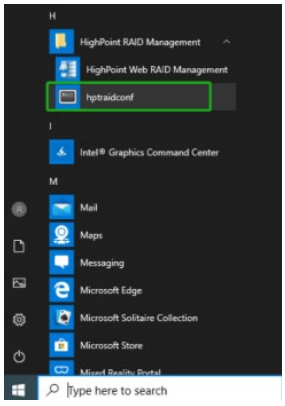
The CLI (command line interface) is a powerful, text-only management interface designed for advanced users and professional administrators. The universal command lines available for Windows /Linux operating systems, and are shared across our entire product line. Comprehensive user guides are available 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**.

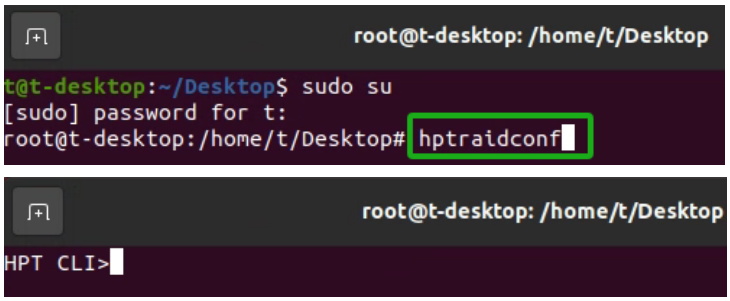


2. Method2:Click "**Start**" to find the **HighPoint RAID Management** folder, and click on **hptraidconf**.



For Linux Users

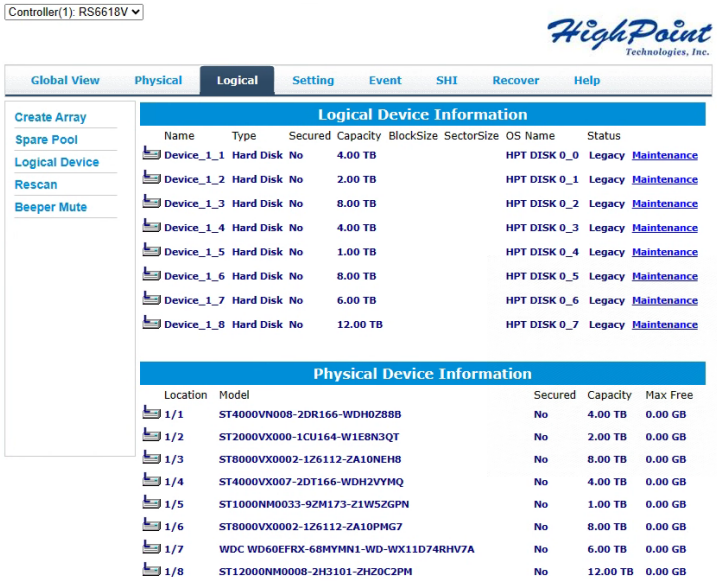
1. Open "**Terminal**" and enter root permissions.
2. Then execute the command "**hptraidconf**" to enter the CLI.



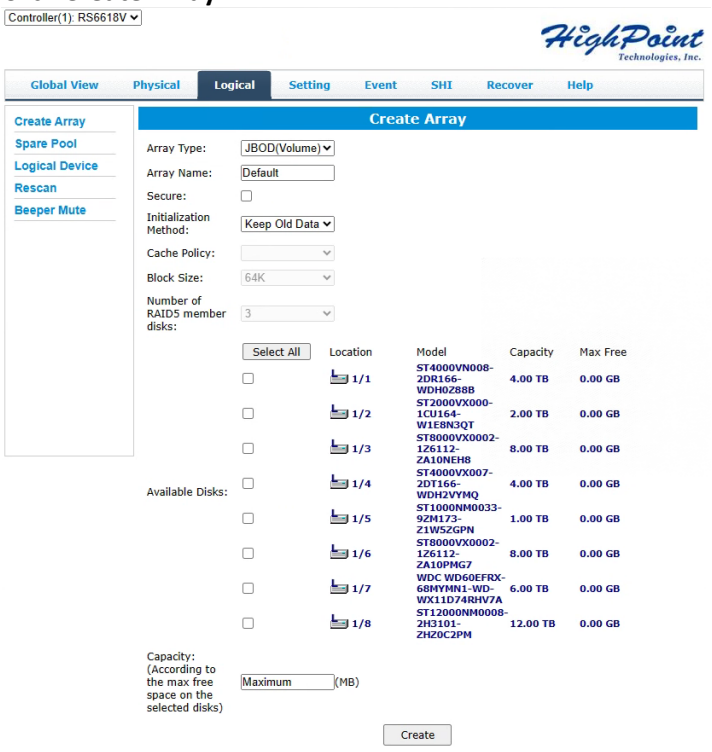
Step 5A: Create RAID Arrays using WebGUI

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.

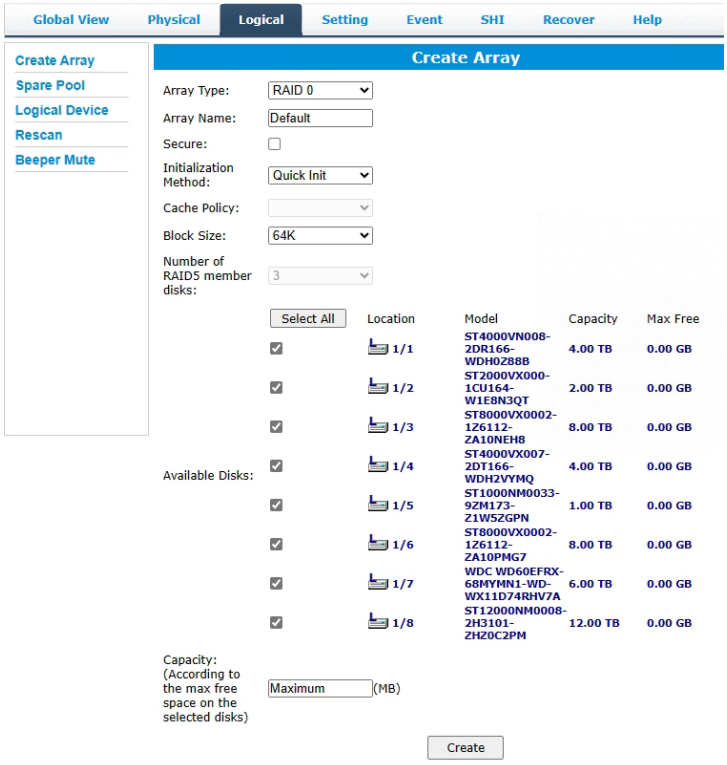


4. Click **Create Array**.

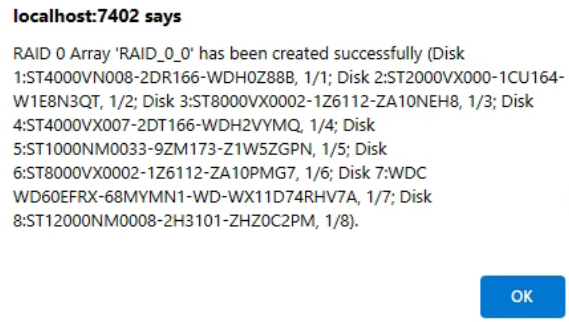


5. The RAID creation page provides many features, options, and settings.
6. Select **RAID 0** for Array Type.

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 immediateaccess 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 theirdefault values.
12. Click **Create.**



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



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

***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 willbe 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
```

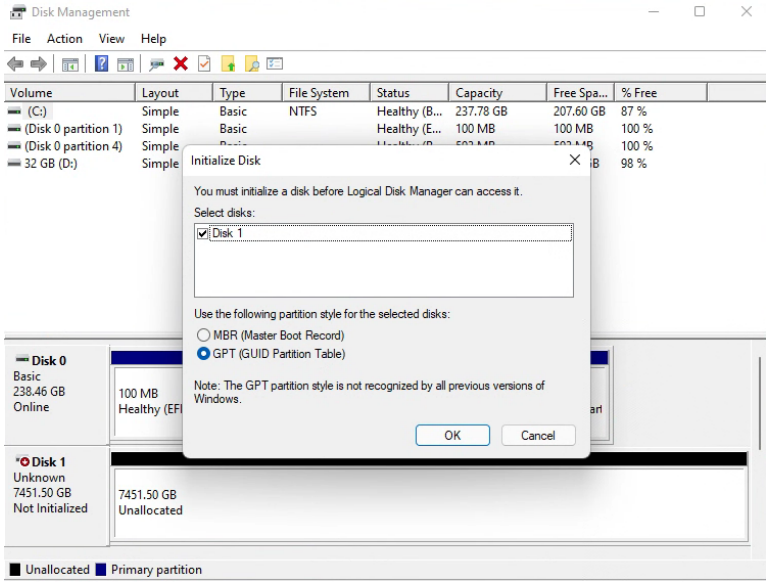
Note: *For more HighPoint CLI information type help in the command line or refer to thedocumentation included in the software package.*

Step 6: Initialize and format the RAID Array

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

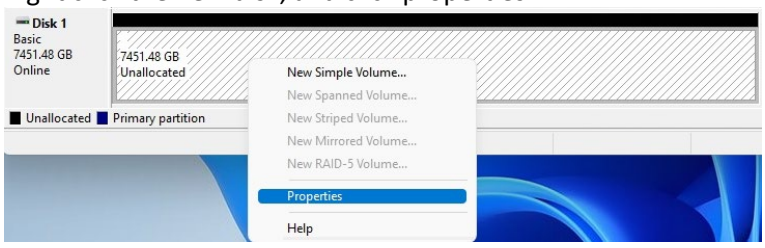
For Windows Users

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.

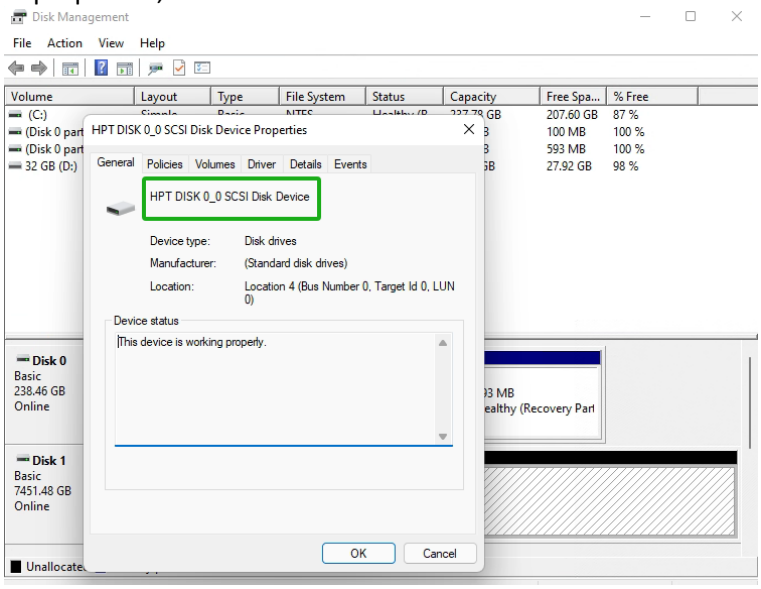


Note: *As a general rule,select MBR for disks less than 2TB and GPT for disks greater than 2TB.*

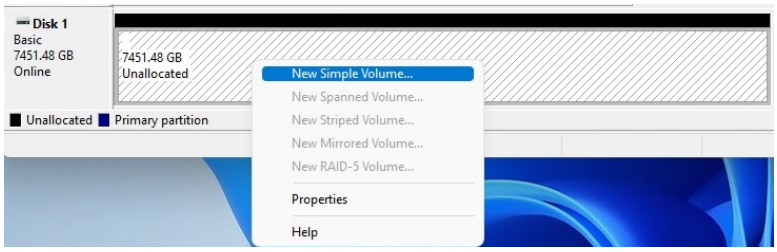
3. Right click the new disk, and click properties.



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



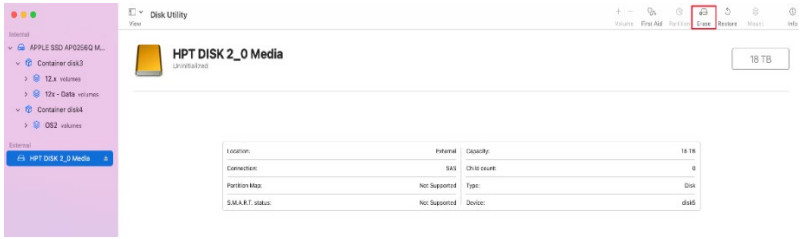
5. Once the disk has been confirmed, right click the unallocated space and click NewSimple Volume.



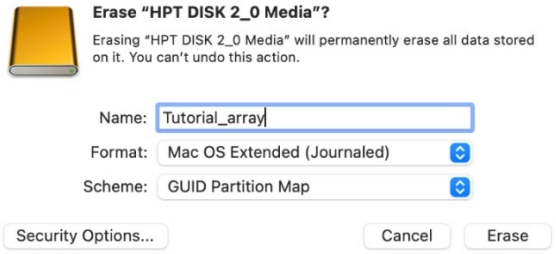
6. Follow the on-screen instructions to configure and format the drive.
7. Once finished, the new volume will receive a drive letter and be available for use.

For Mac Users

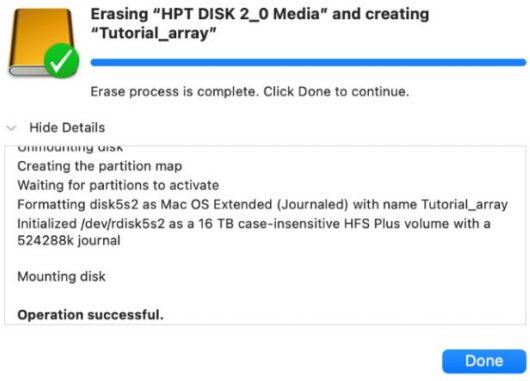
1. After creating a RAID array, click Initialize when prompted. (**Note**: If you ignoredthe prompt, simply open Disk Utility).



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



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



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

For Linux Users

1. Enter the terminal with root privileges.
2. 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
```

3. 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
```

4. Mount the partition to /mnt "**mount /dev/sda /mnt**".

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

5. 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:

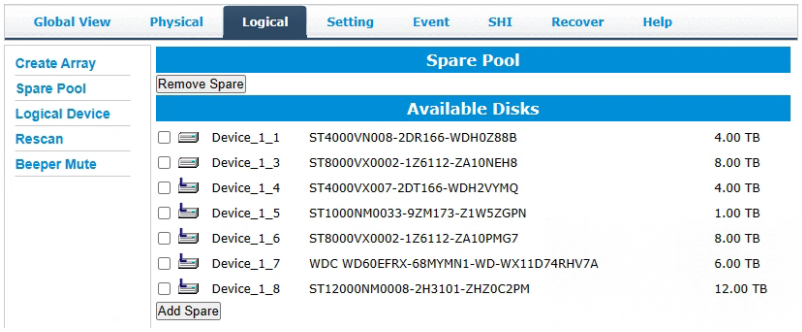
- Spare Pool
- Email Notifications
- WebGUI Remote Login
- Storage Health Inspector

RAID Spare Pool

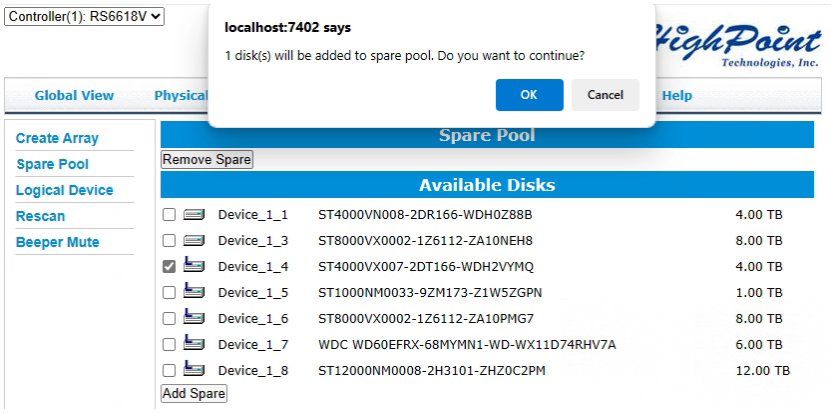
Physical drives marked as a spare will automatically be added to a redundant RAID array (RAID levels 1, 10, 5, 50 and 6) whenever there is a disk failure. Enabling this featureminimizes the chances of data loss since it reduces the time an array is in critical status.

Add/Remove Spare Using WebGUI

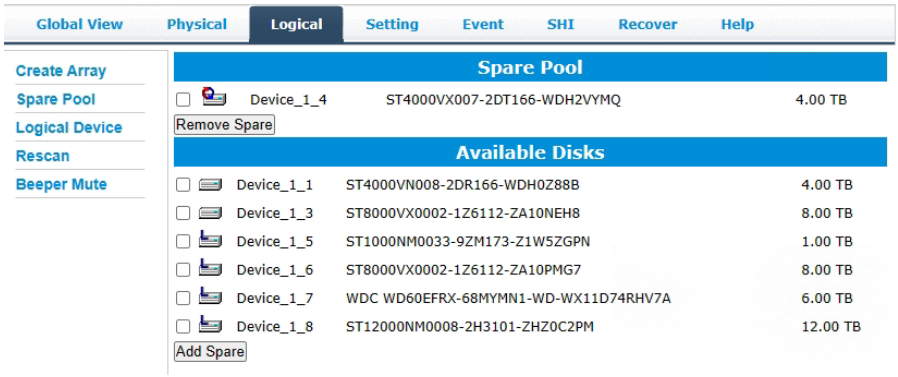
1. Log in WebGUI.
2. Click **Logical.**
3. Click **Spare Pool.**



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.



Note: *Disks added to the spare pool will show under* ***Spare Pool*** *and can be removed bychecking 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:

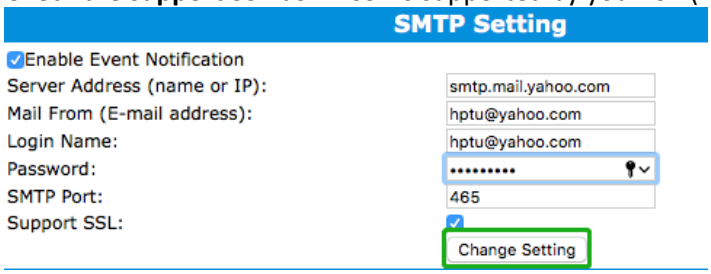
- SMTP Setting
- Adding Recipients

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**).



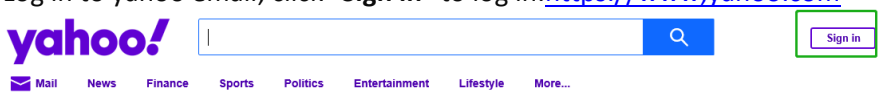
Email Precautions

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.

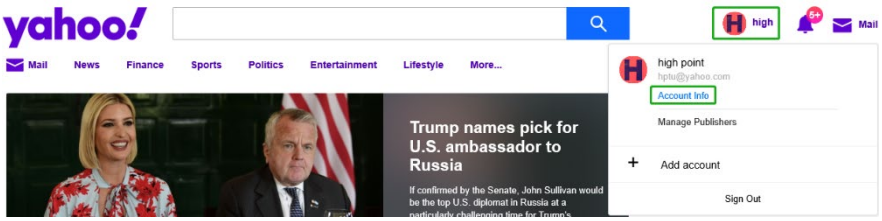
Yahoo Setting:

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

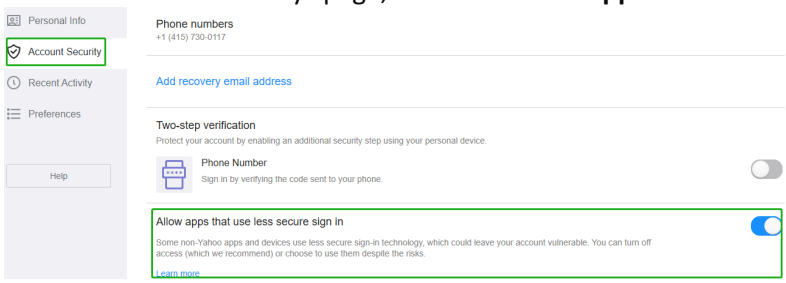


2. After a successful login, click "**Account Info**" under the user name.



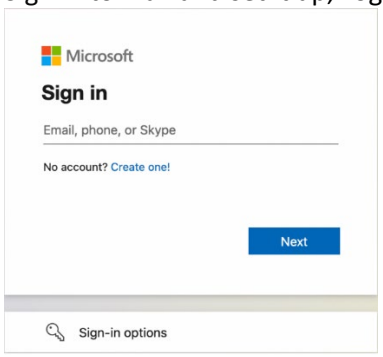
3. Go to the "**Account Info**" page, click "**Account Security**".

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

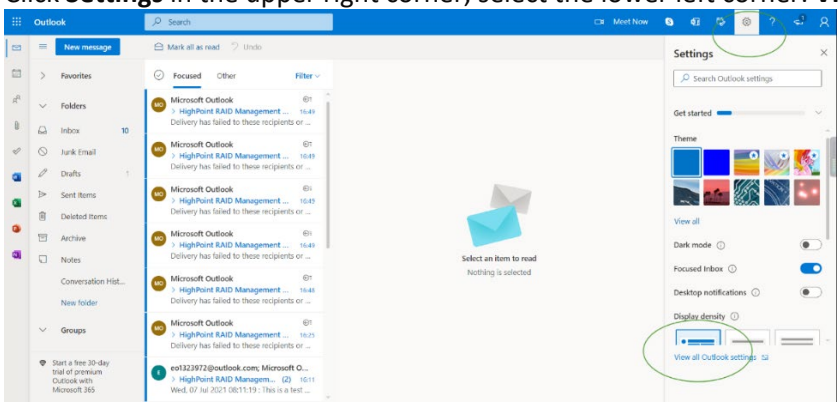


Outlook Setting:

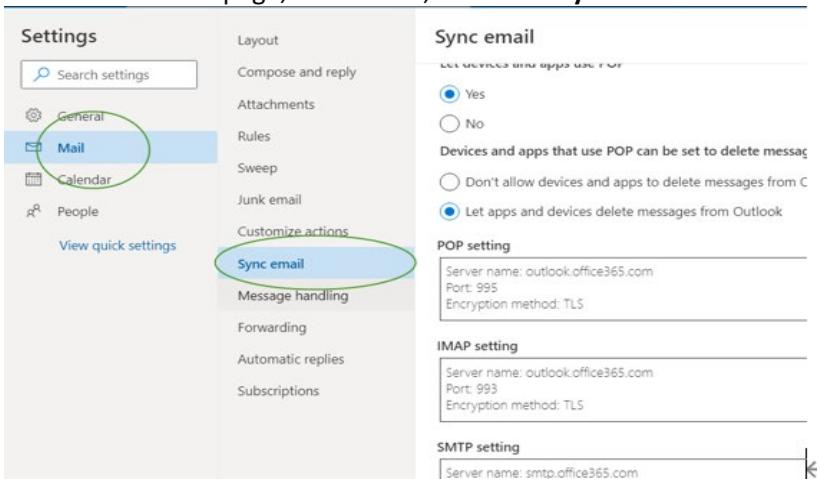
1. Sign in to mail and set it up, Login email address link: https://outlook.live.com/mail/inbox



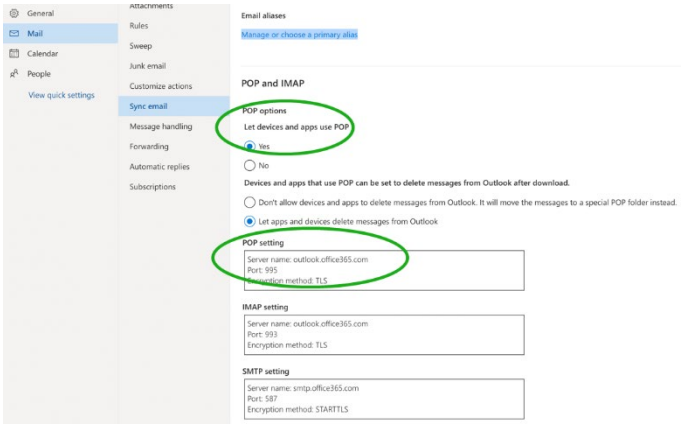
2. Click **Settings** in the upper right corner, select the lower left corner: **View all outlook settings**



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



4. Let devices and apps use pop select "**yes**".
5. Choose '**Let app and devices delete messages from Outlook**'



Notes:

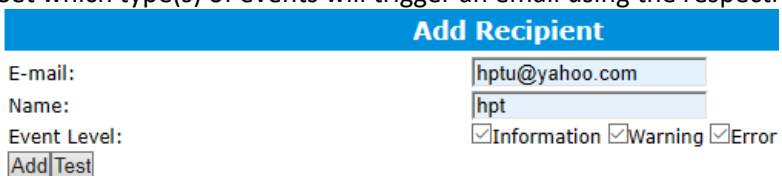
The screenshot below can be used as a reference. The POP setting is the mailbox server.

If you are having trouble configuring notification for your Email account, please contact our [Technical Support Department]

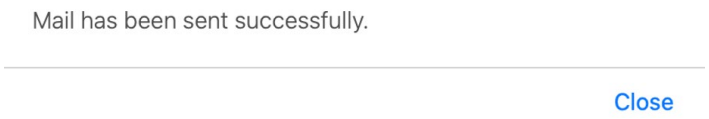
Adding Email Recipients

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

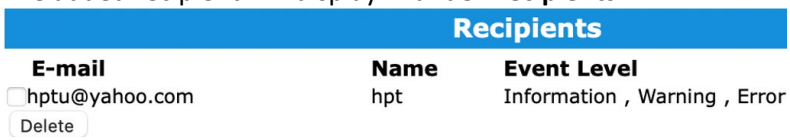
1. Type the email of the recipient in the **E-mail** text box.
2. Type the name of the recipient in the **Name** text box.
3. Set which type(s) of events will trigger an email using the respective **Event Level** check boxes.



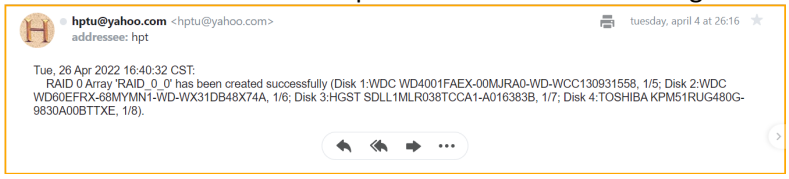
4. (**Optional**) Click **test** to confirm the settings are correct by sending out a test email.



5. Click **add** to add the "recipient to recipient" list.
6. The added recipient will display in under **Recipients.**



7. 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 IPaddress 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.

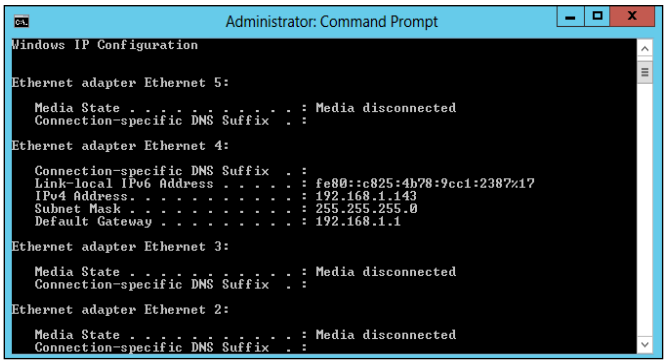


Figure. Example: The IPv4 address is under Ethernet adapter Ethernet 4 and is 192.168.1.143

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 yourlocal 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**:

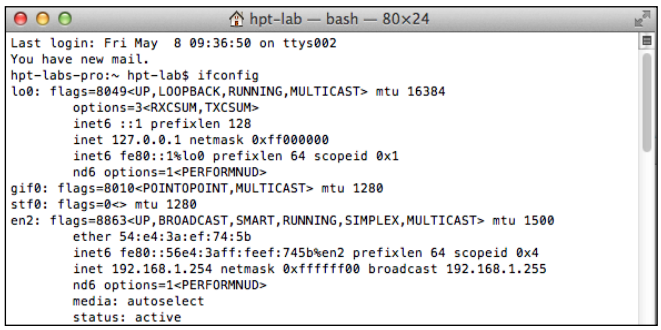
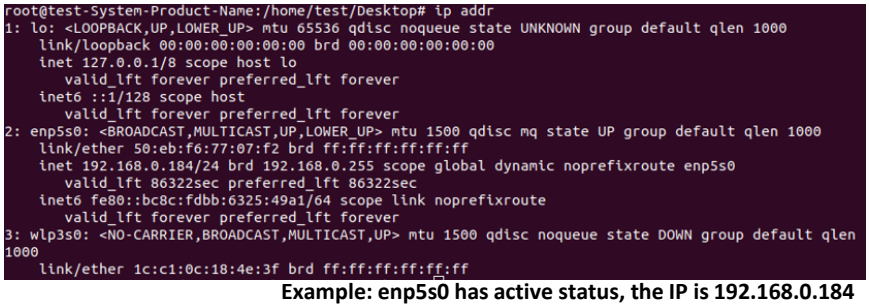


Figure. Example: en2 has active status, the IP is 192.168.1.254

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.



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 tosetting)*

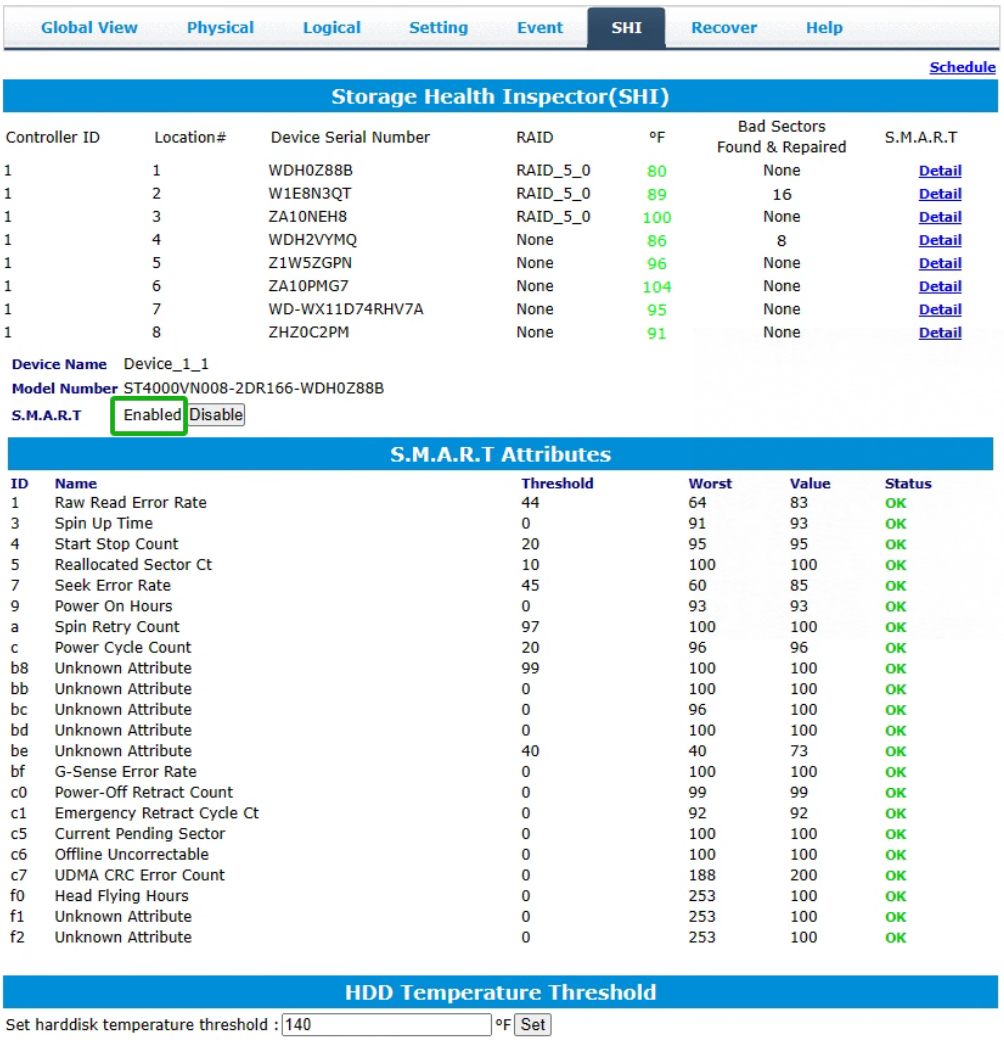
5. You can then remotely access the WebGUI using any other computer that is in your local network by opening any web browser and typing **http://{IP address of host computer}:7402** (default port is 7402).

Storage Health Inspection (SHI)

The Storage Health Inspector (SHI) monitors each individual disk's health. Monitoringdisk SMART attributes can prevent critical RAID failures from occurring.
This section covers the following:

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

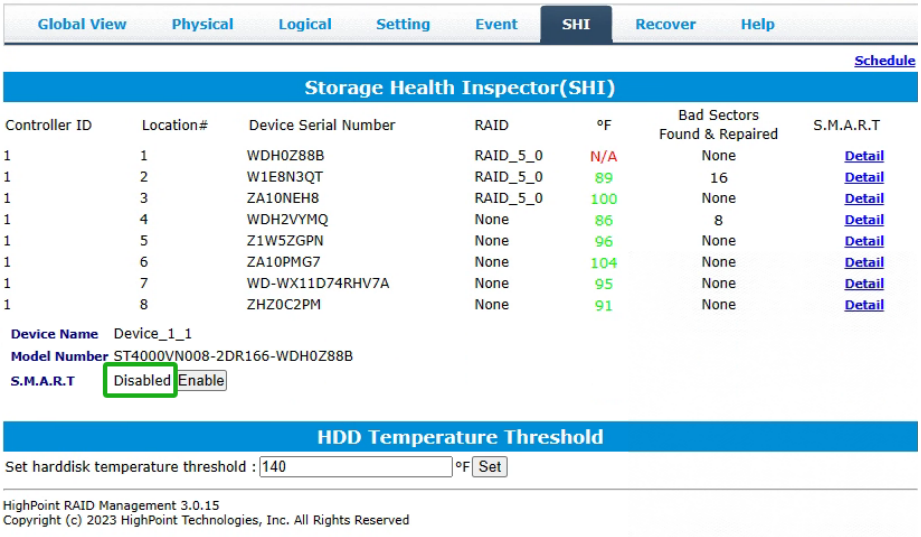
Enabling SMART Monitoring



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



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

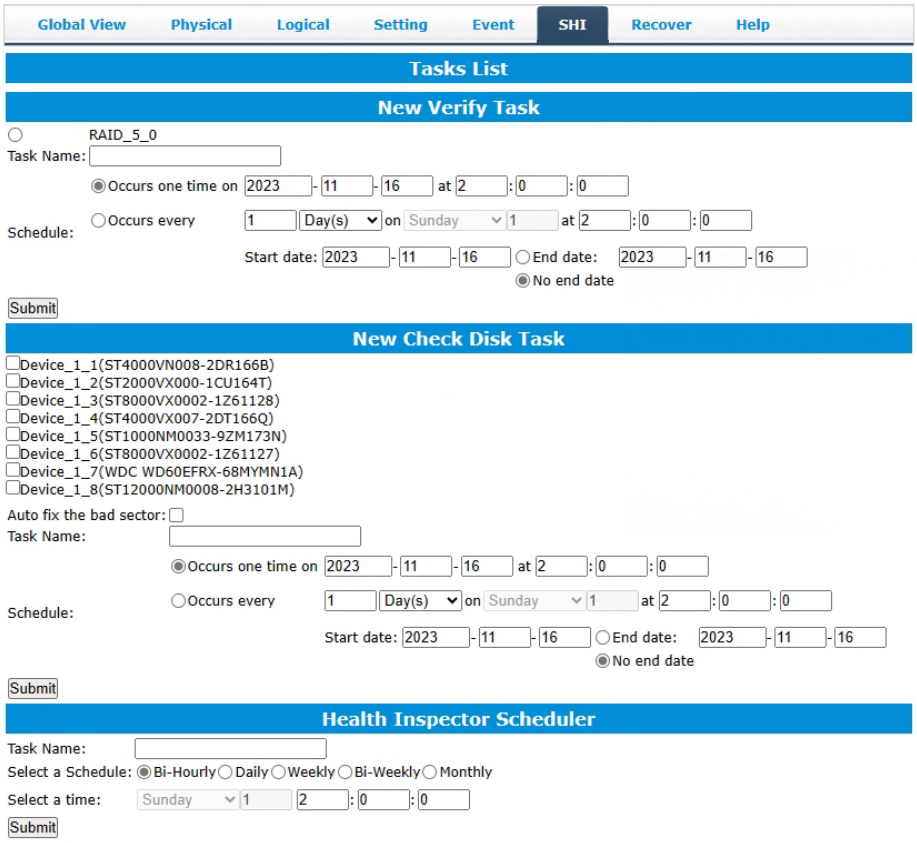
1. Select the proper controller using the drop down menu on the top left.
2. Click the **SHI** tab.
3. Click **SMART** on desired disk.
4. Click **Disabled.**

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

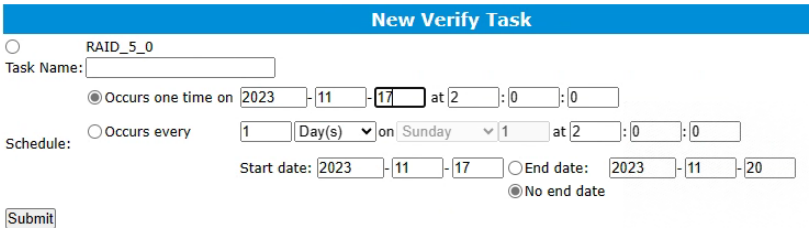
The Scheduler enables you to schedule disk/array checkups to ensure disks/array are functioning optimally.

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

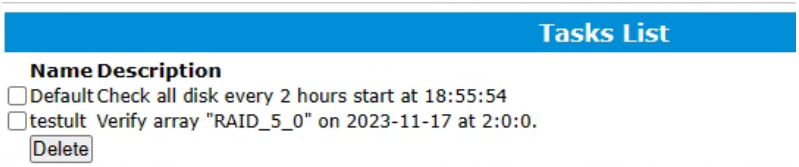


1. Select the proper controller from the top left drop down.
2. Click **SHI.**
3. Click **Schedule a task.**
4. Select the array you want to schedule the verify task.
5. Type the name in **Task Name** entry box.
6. Choose whether you want to schedule.
7. One time verify task on specific date (YYYY-MM-DD) 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.**



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



***Note**: New Verify Task box only appears if you have normal status arrays. If you have acritical 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

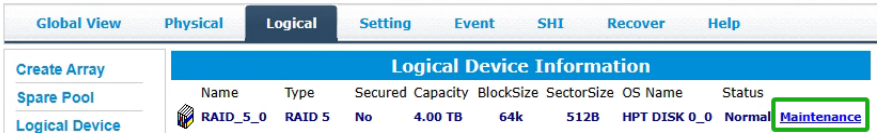
OCE allows you to add storage capacity to an existing RAID array while preserving your existing data. In most cases, this feature is used when adding one or more physical drives to an array (for example, expanding from a 3-drive RAID 5 configuration to a 7-drive RAID 5 configuration).

ORLM – Online RAID Level Migration

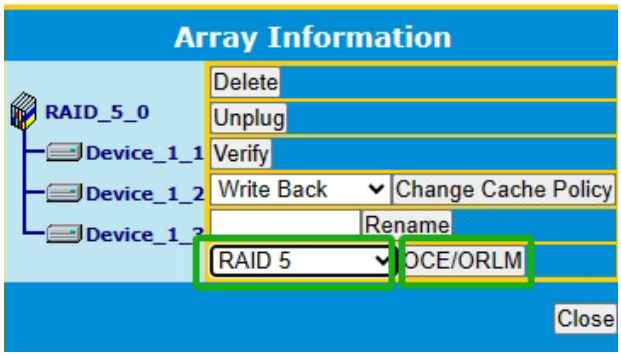
ORLM allows you to convert RAID levels for an existing RAID while preserving existing data. In most cases, this feature is used to convert one RAID level to another. (for example, converting from RAID 1 to RAID 10).

Take ORLM for example.

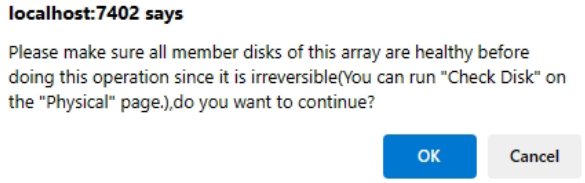
1. Start the WebGUI and click the **Logical** tab.
2. Locate the array you want to expand, and click the **Maintenance** option displayed to the far-right of the interface.



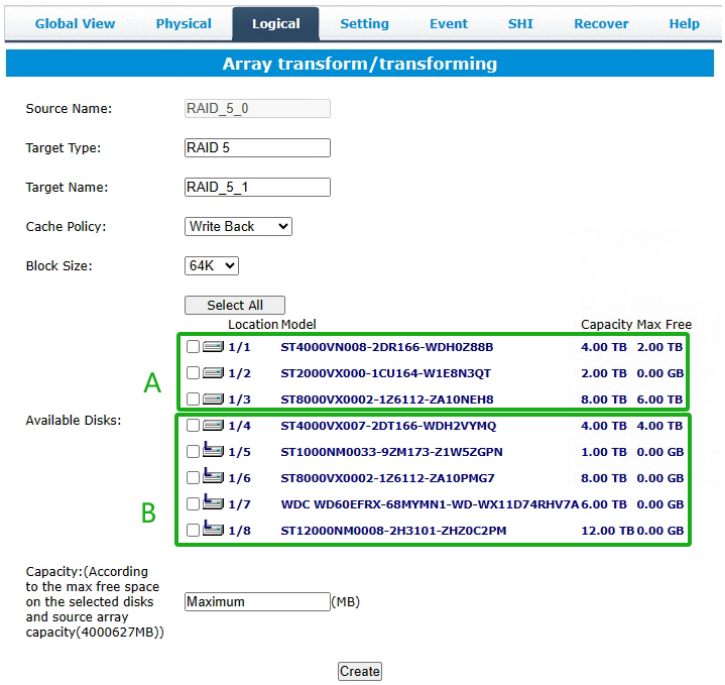
3. Under the "**JBOD/Volume**" drop-down menu, make sure you select **the array's current RAID level**. In this example, the target array is a RAID 5 configuration:



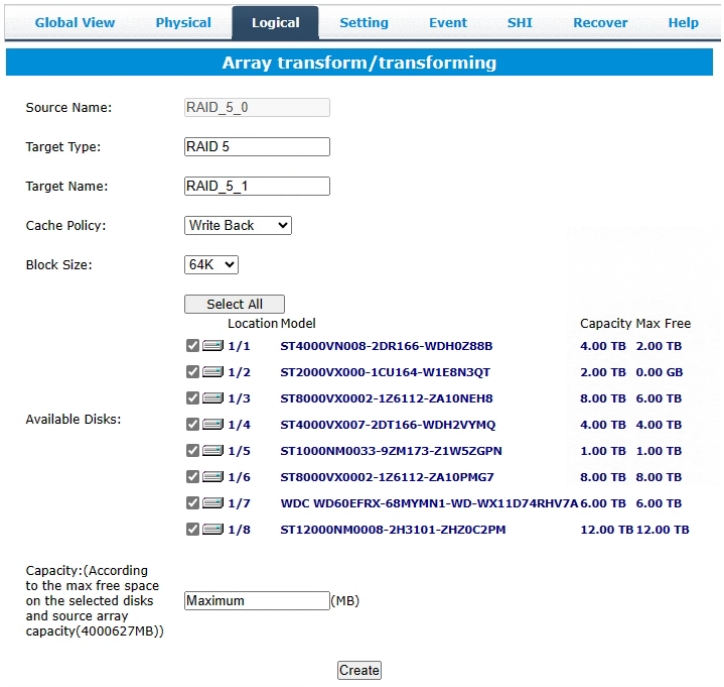
4. Click the "**OCE/ORLM**" button continue. The WebGUI will display the following warning message. Click **OK** if you wish to proceed.



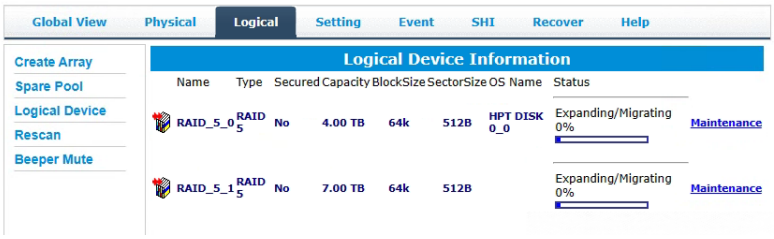
5. This will open the "**Array transform/transforming**" menu.



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.



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



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 enclosureand disk trays.

Table 1. LED Status Information

LED Type	Interpretation
Power LED	• SOLID BLUE (Normal Status)
Warning LED	• FLASH YELLOW. The enclosure's temperature has exceeded the warning threshold 55℃ or the fan speed is below normal operating levels 700rpm/min
Fail LED	• SOLID RED. The temperature is greater than 60℃; • FLASH RED. The fan speed is less than 500 rpm/min, the red light is flashing, and generates an audible alarm
UNLIT	• Unit is powered OFF • Disk tray is empty

Table 2. LED Diagrams

LED Location	Icon	Normal
Disk Tray Top LED		• SOLD BLUE: the disk tray is occupied, but the disk is not in use

Disk Tray Bottom LED		• FLASHING BLUE: the disk is in use (read/write I/O)
Power LED		• SOLID BLUE：the enclosure is powered on • UNLIT：the enclosure is not connected to an active host system
Fail LED		• SOLID RED. The temperature is greater than 60℃; • FLASH RED. The fan speed is less than 500 rpm/min, the red light is flashing, and generates an audible alarm
Warning LED		• FLASH YELLOW. The enclosure's temperature has exceeded the warning threshold 55℃ 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 aspossible to prevent any data loss.

1. 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.
2. Once disk has been identified press the disk tray blue tab and slide the failed driveout.
3. Replace the failed drive with a new drive.
4. If auto rebuild is **enabled**, the rebuild process should start immediately.
5. If auto rebuild is **disabled**, click **rescan** on the left panel to initiate rebuilding.

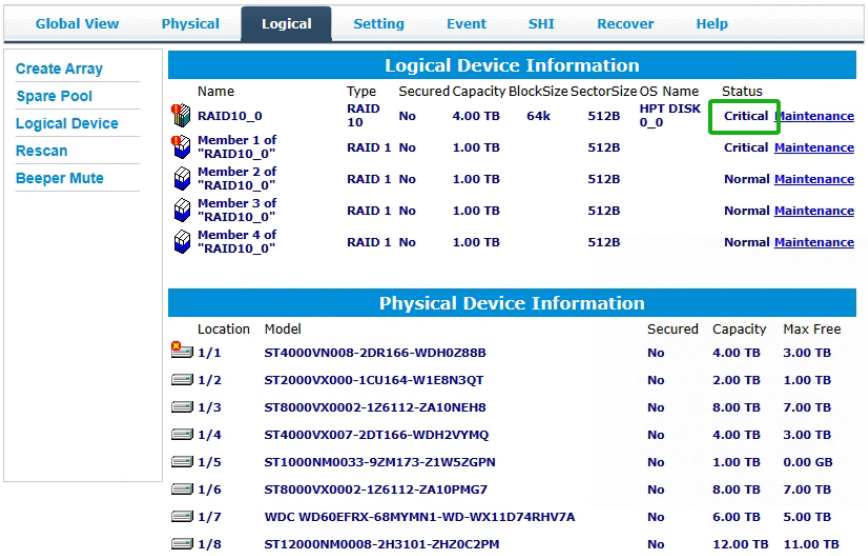
Troubleshooting - Software

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



When your disk is critical, that means your array as a whole is still accessible, but adisk or two is faulty (depending on your RAID level) is in danger of failing.

Common scenarios for criticalarray status	• Unplugging disk that is part of an array • Bad sector detected on a disk part of thearray • Unrecoverable data during rebuilding • Defective port or cable interrupts rebuildingprocess

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.

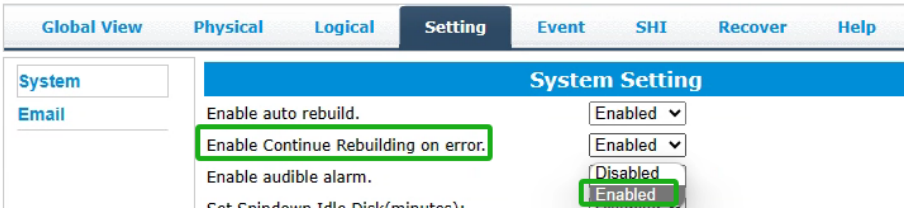
If the rebuild process does not start, click **Rescan**.

***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.**



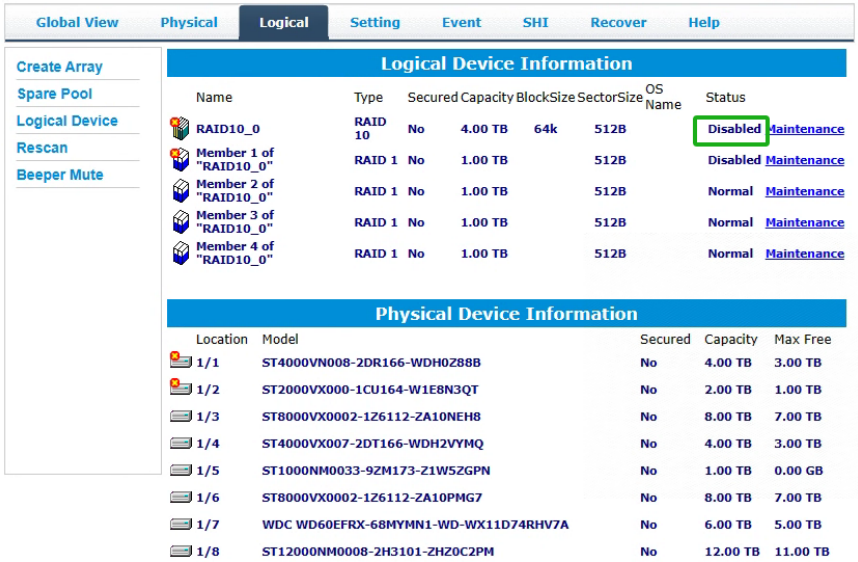
This option will enable Rebuild process to ignore bad sectors and attempt to make your dataaccessible. It is important to backup immediately after to rebuild is complete and replaceor repair any disk(s) with bad sectors.

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 removethe 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

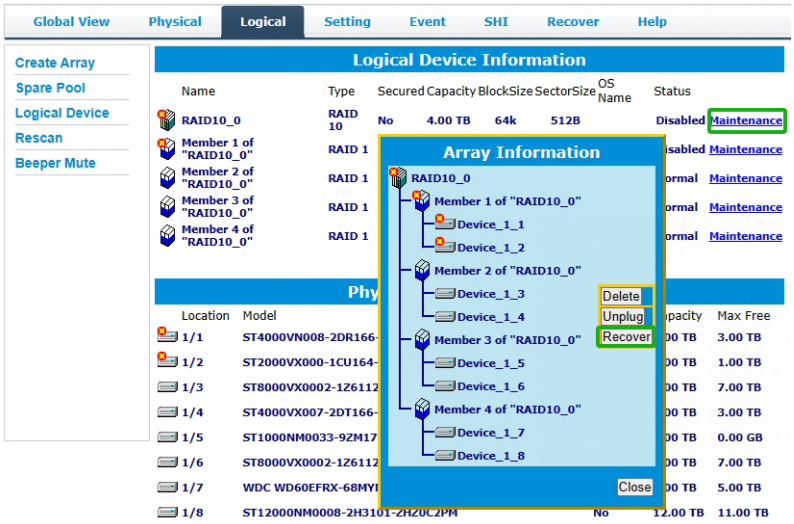


If two or more disks in your array go offline due to an error or physical disconnectionyour array will become **disabled**.

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 listedon 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

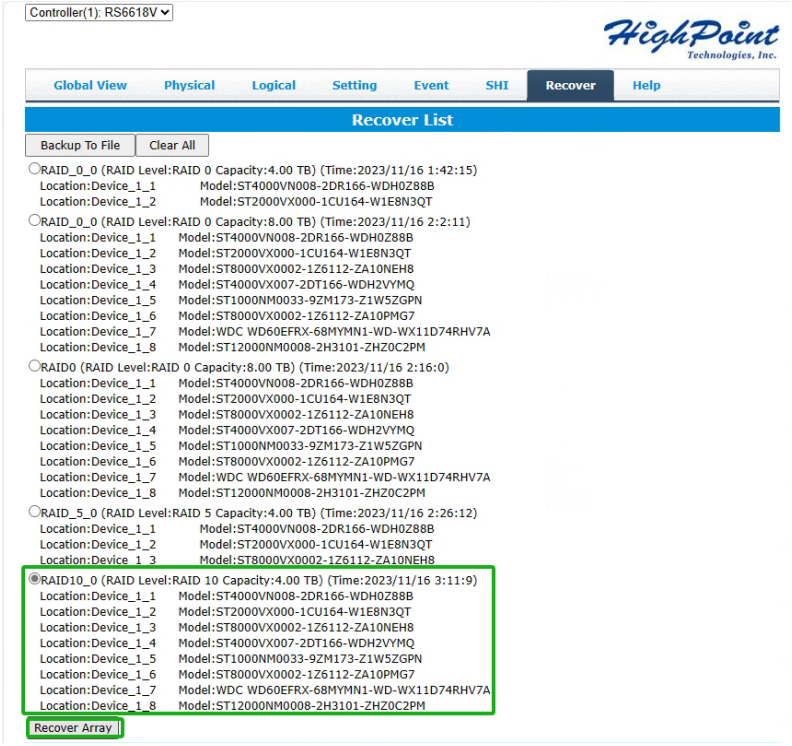
1. Log in to WebGUI.
2. Click **Maintenance** for the array that is disabled.
3. Click **Recover.**



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, proceedto 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.**



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.

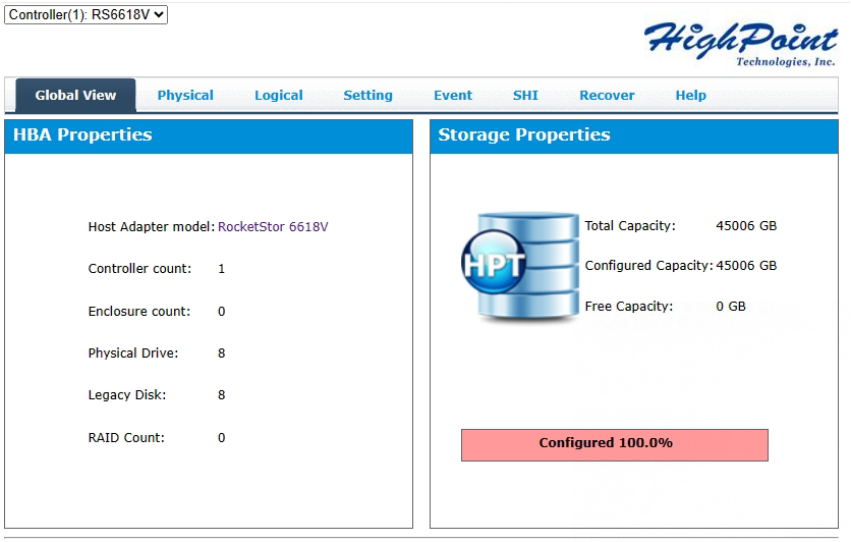
Note: *The prerequisite for using this feature is that both RAID Enclosures or RAID controllers are using the same type of driver.*

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).

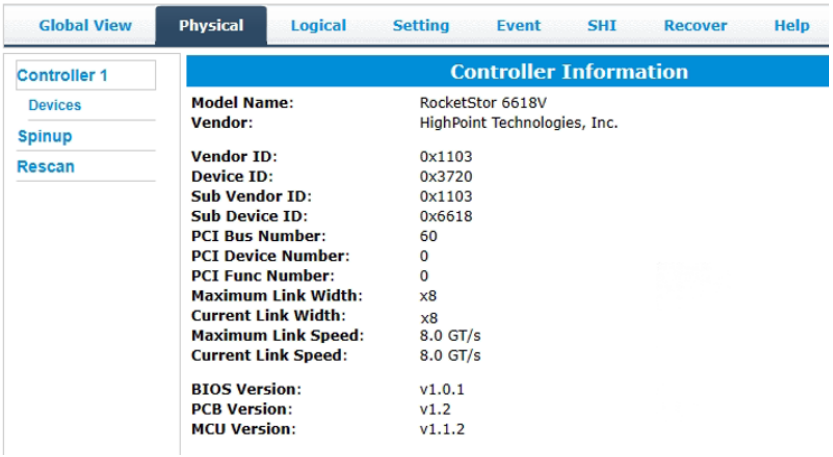
HBA Properties

- **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 drivesthat 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

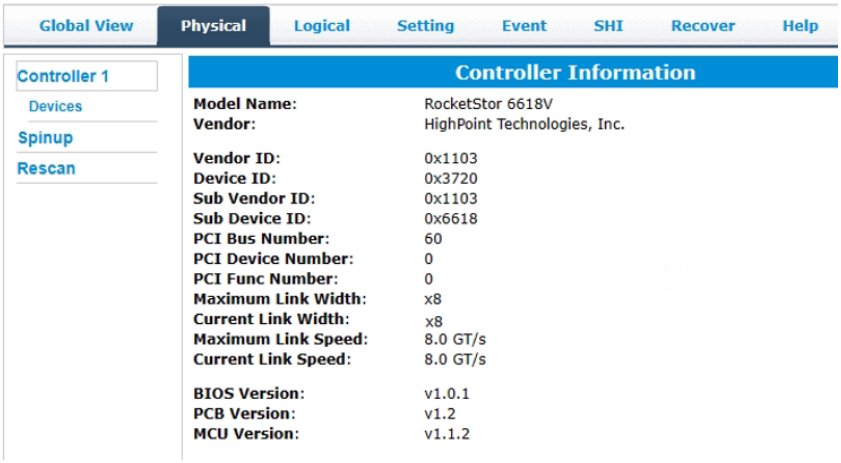


The physical tab shows general and extended information about the Enclosure you are using. Information about the MCU, BIOS, and PCB are all located here. This information is useful for identifying what Enclosure model you have and to make sure you have the most updated version available.

The physical tab contains the following information:

- Controller Information
- Physical Devices Information

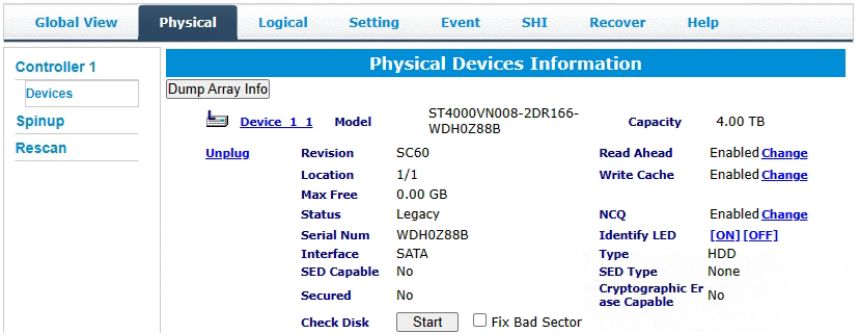
Controller Information



- 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.



- **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
- **Unplug[1] –** Safely ejects selected disk. Other methods of disk removal will triggeralarm if enabled.
- **Check Disk[1]** - Fix Bad Sector
- **Interface[1]** – interface of the physical disk
- **Type[1]** – 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 andloading 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 maximumefficiency.

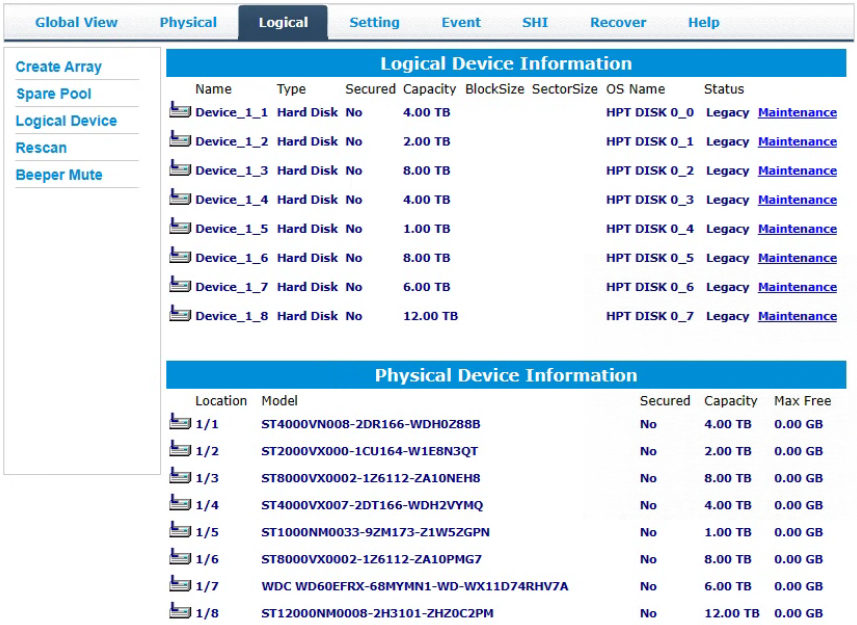
Identify LED

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 theconnection. Clicking this button will also stop any alarm if currently ringing.

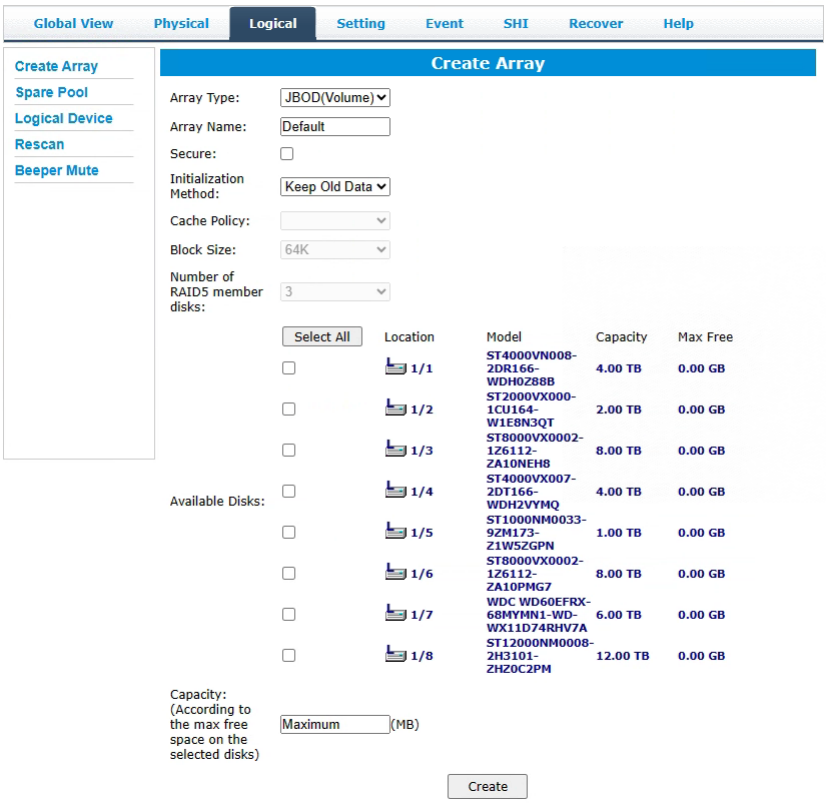
Appendix A-3: Logical Tab



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



An array is a collection of physical disks that will be seen as one virtual drive by yourOperating 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. Duringthis time array will be **non-accessible**, but initialization completion time will beshorter.

- **Background**: The array initialization process will have a lower priority. Duringthis 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 ascache 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 otherfailures 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 specificarray types (RAID 0, 1, 5, 6, 10, and 50). Adjusting the block size allows you to tailor thearray 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.

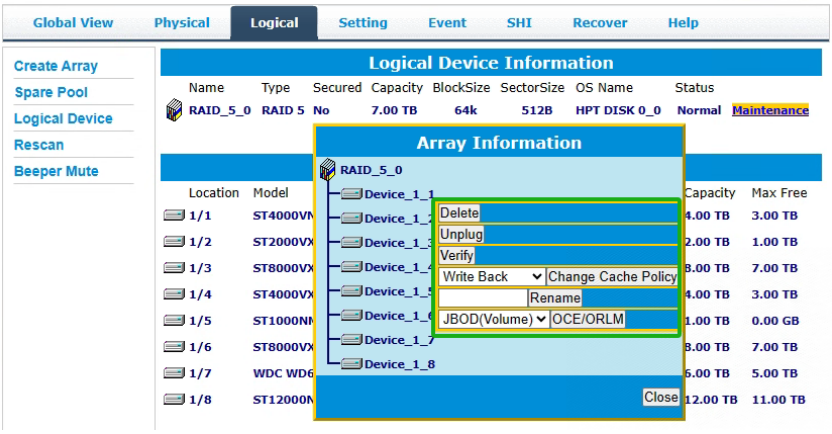
Capacity (Default: Maximum)

The total amount of space you want the RAID array to take up. When creating RAIDlevels, 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 thesector size of the array, for use with older Windows Operating Systems.

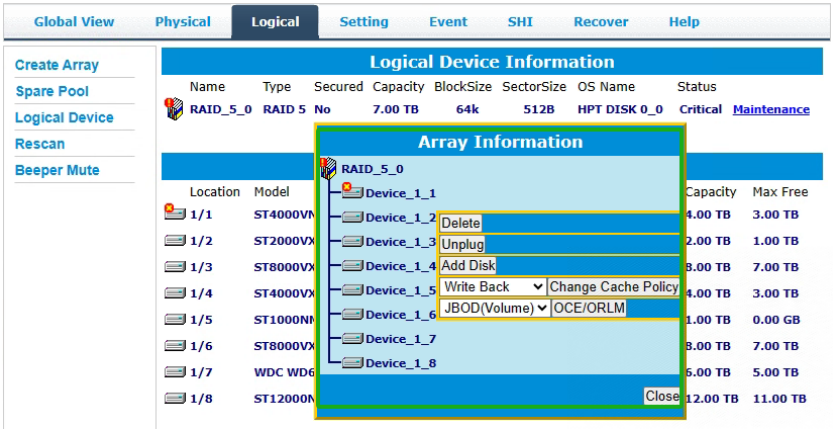
Normal Status



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** – **O**nline **C**apacity **E**xpansion / **O**nline **R**AID **L**evel **M**igration

Critical Status



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

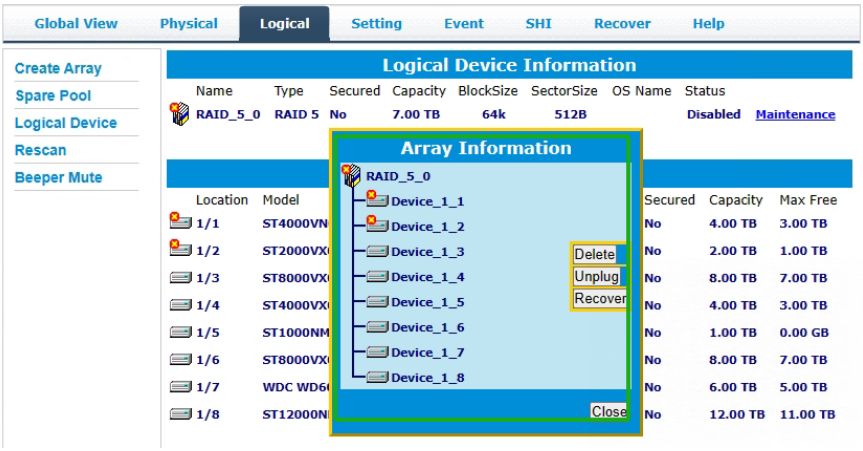
- The Array can no longer be renamed
- **Add disk** replaces the **verify disk** option

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

- Reinsert the same disk
- Insert new disk

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

Disabled Status



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

- 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:

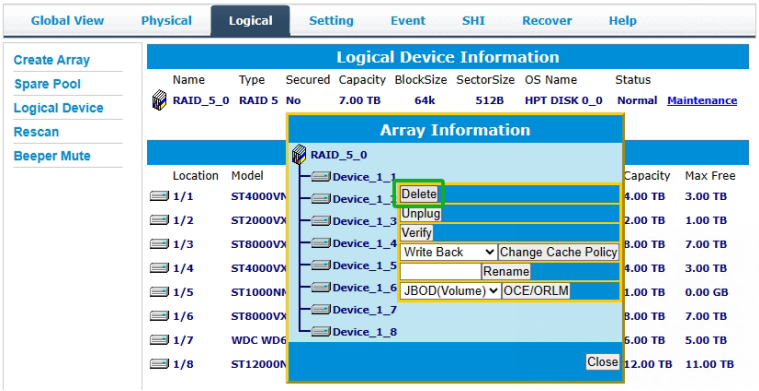
- **Delete** – will delete the array
- **Unplug** – will take array offline, making it safe to remove
- **Recover** – will attempt to recover the array using the list from the recover tab

Delete Array

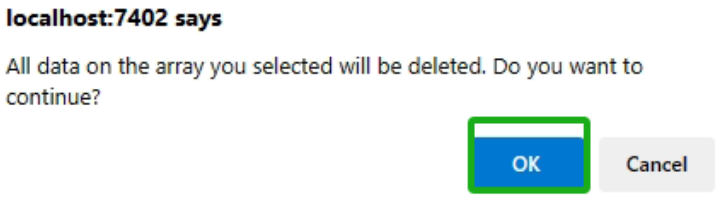
Used to delete a created Array.

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

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.



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

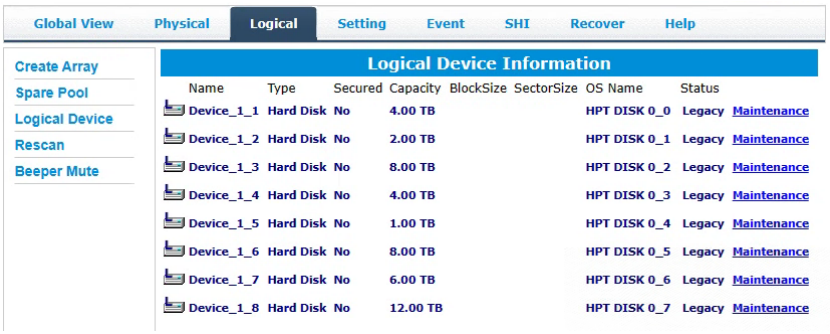
Notes:

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 tab is the default page upon clicking the Logical tab of the WebGUI. Thispage 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.

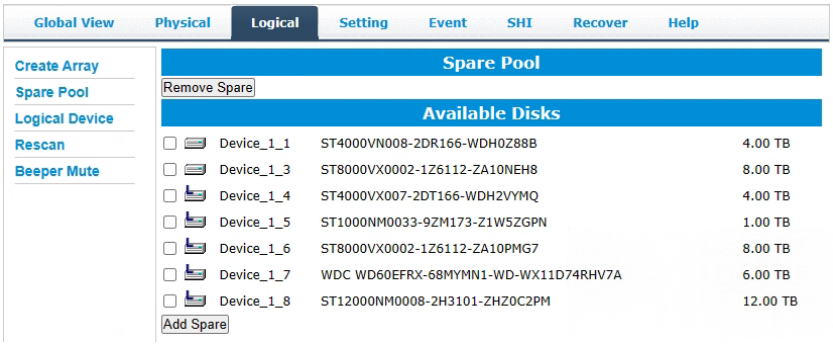
Maintenance
Once an array has been created, click maintenance for options to manage your array.

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

- **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

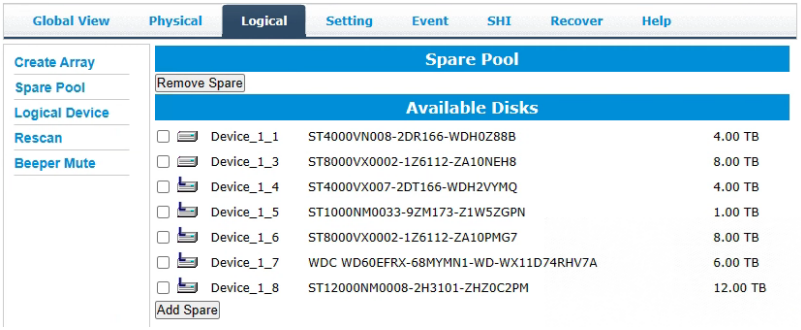


Spare disks are physical disks that will immediately replace critical disks in an array.Only redundant RAID arrays (RAID 1, 5, 6, 50, and 10) support spare drives.

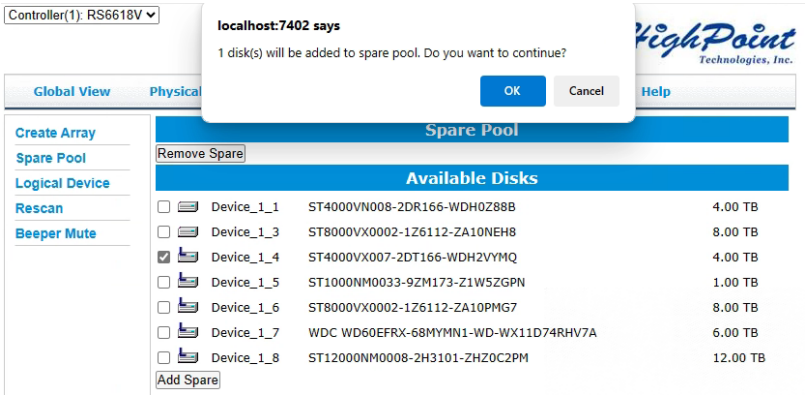
Physical drives marked as a spare will automatically be added to an array wheneverthere is a disk failure. Having this feature minimizes the chances of a data loss by reducing the time an array is in critical status.

Add/Remove Spare Using WebGUI

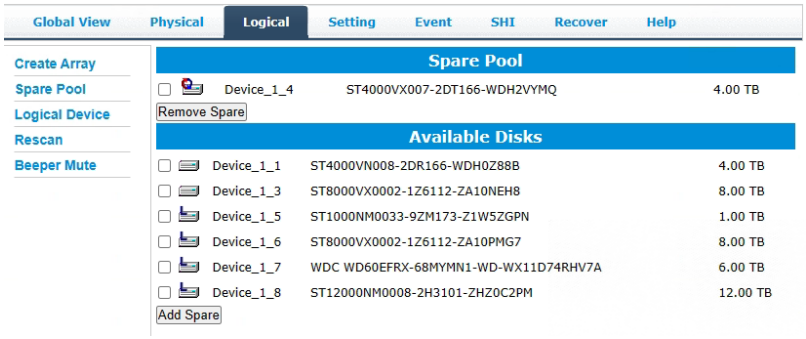
1. Log in WebGUI.
2. Click **Logical.**
3. Click **Spare Pool.**



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.



Note: *Disks added to the spare pool will show under* ***Spare Pool*** *and can be removed bychecking 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 pluginto the device, do not click rescan until all physical drives are detected and appearunder Logical Device Information.

Beeper Mute

The Enclosure will beep when the following conditions occur.

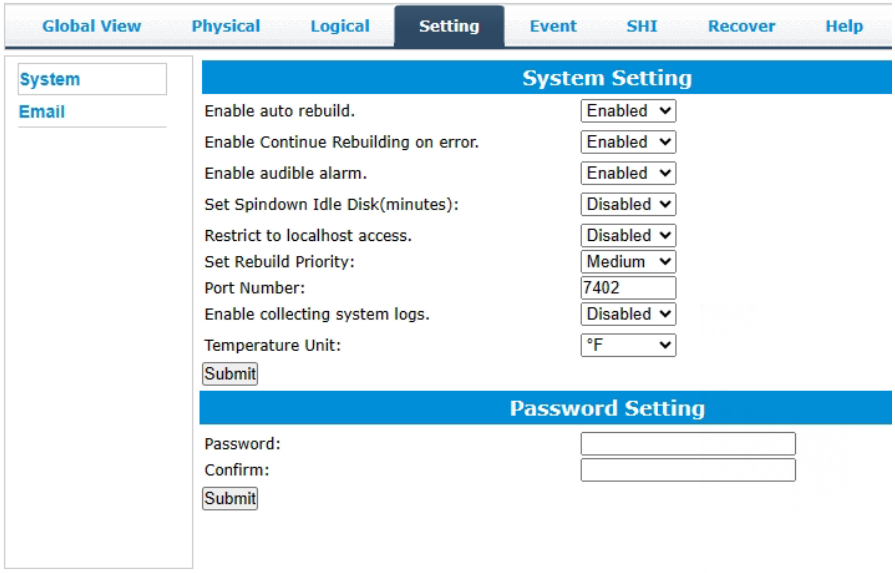
- Array falls into **critical** status
- Array falls into **disabled** status
- You unplug a disk
- Your disk fails due to bad sectors
- SMART sensors anticipate drive failure

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**.

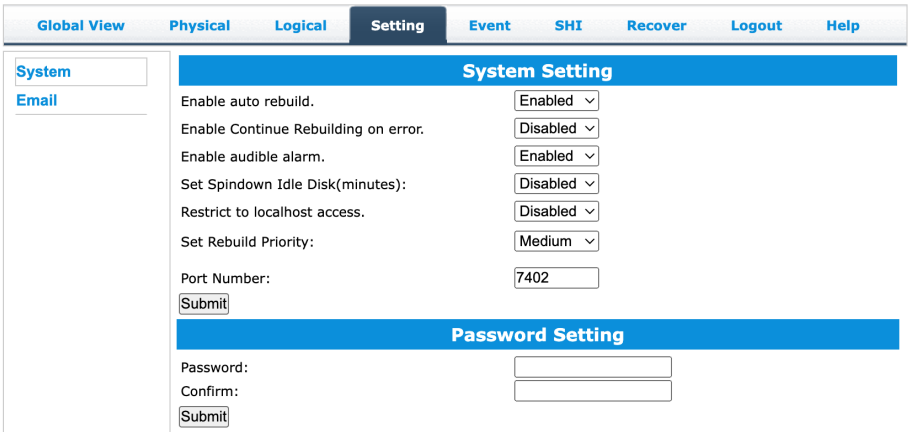
Note: *Beeper off is permanently off.*

Appendix A-4: Setting Tab

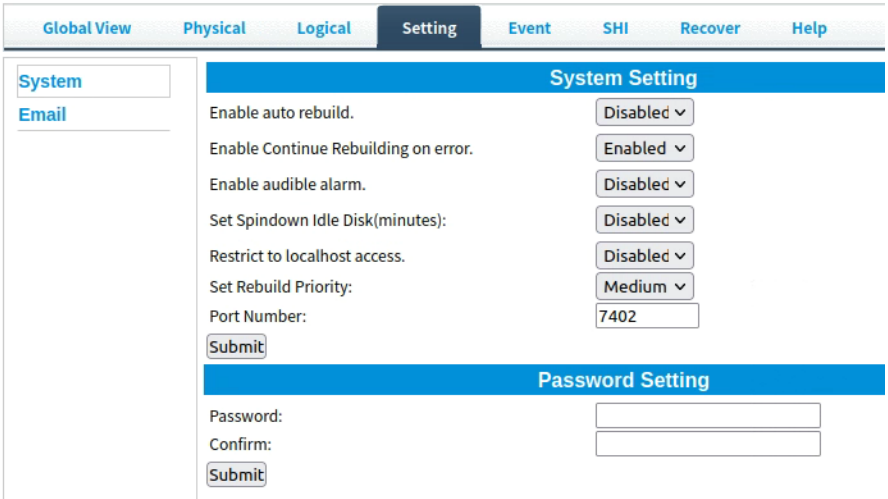
- **Windows Setting Tab**



- **Mac Setting Tab**



- **Linux Setting Tab**



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 log[1]
- Change Temperature Unit[1]
- 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 butdata 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 toany 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

Changing your WebGUI password

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

Recovering your HRM password

For Windows Users:

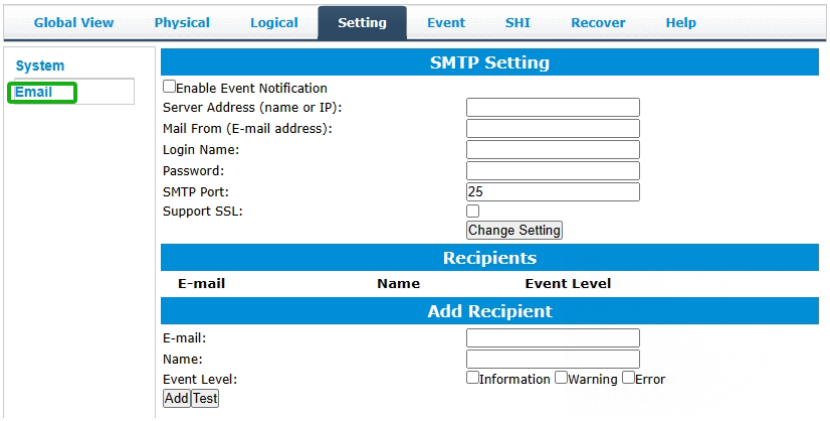
You can delete the file hptuser.dat. Then, restart the computer and open the WEBGUI to set a new password.

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, reinstall the HighPoint RAID Management Software.

Email Setting

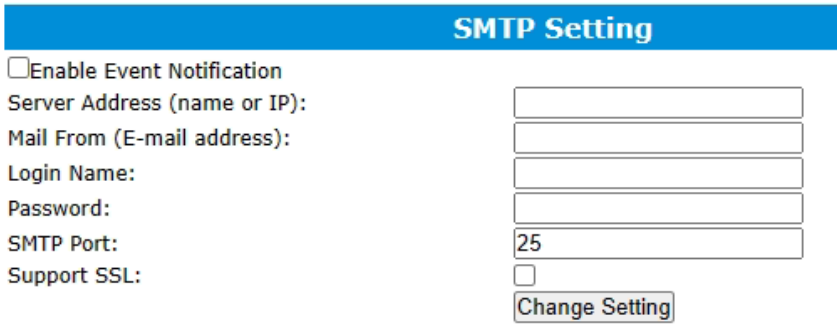


The following topics are covered under email:

- SMTP Setting
- Adding Recipients

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

SMTP settings

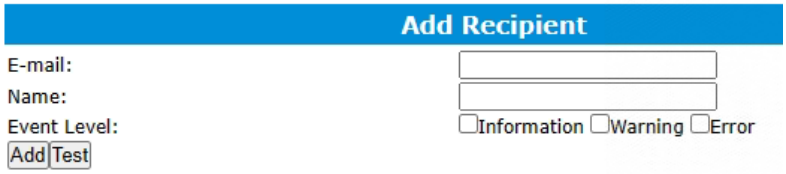


To set up email alerts:

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** thealert)
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.

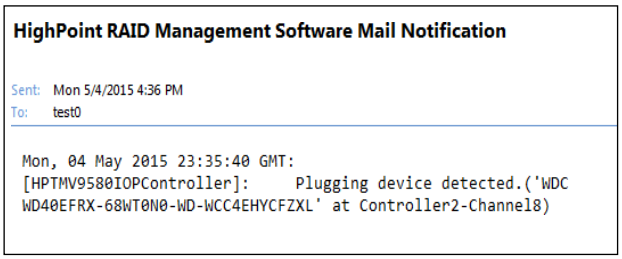
Note: *After you click 'Change Setting' the password box will become blank.*

How to Add Recipients

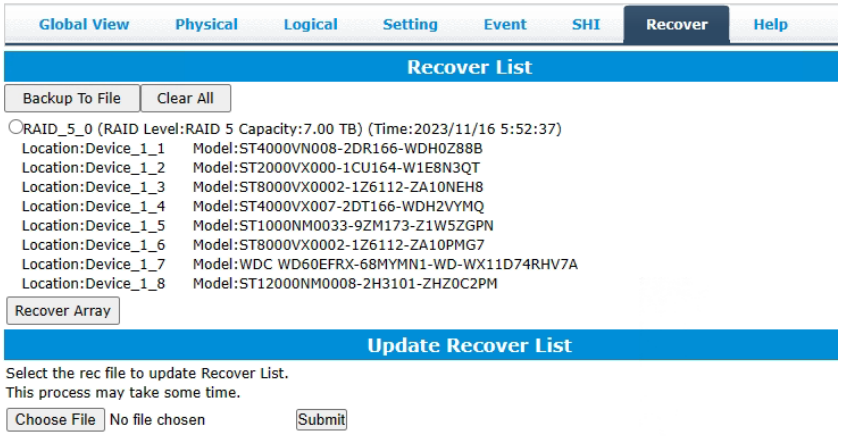


You can add multiple email addresses as receivers of a notice.

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 herewill attempt to recover a "**disabled"** array and make it "**normal"**.

The Recover List will list all your previous and current created arrays. Each entry willlist 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

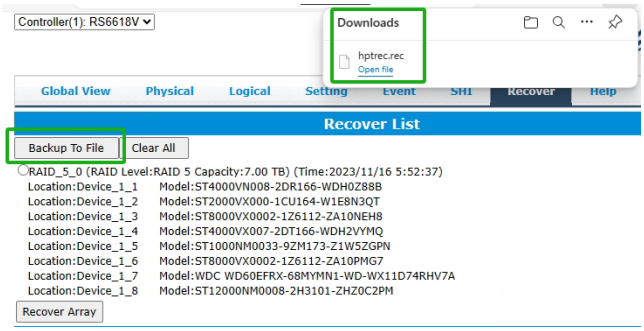
Important: When recovering an array, it is important to note the **location** and **model** of each physical drive because you can **only** recover using those **exact** positions and drivemodel.

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 bringa **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.**



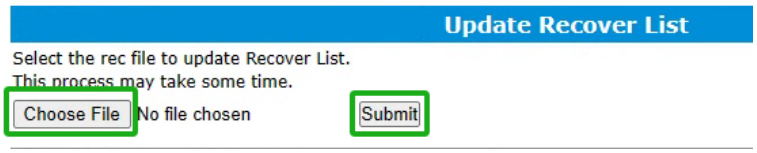
Note**: The file will be saved as **hptrec.rec.

How to Reload your Backup Recover List

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

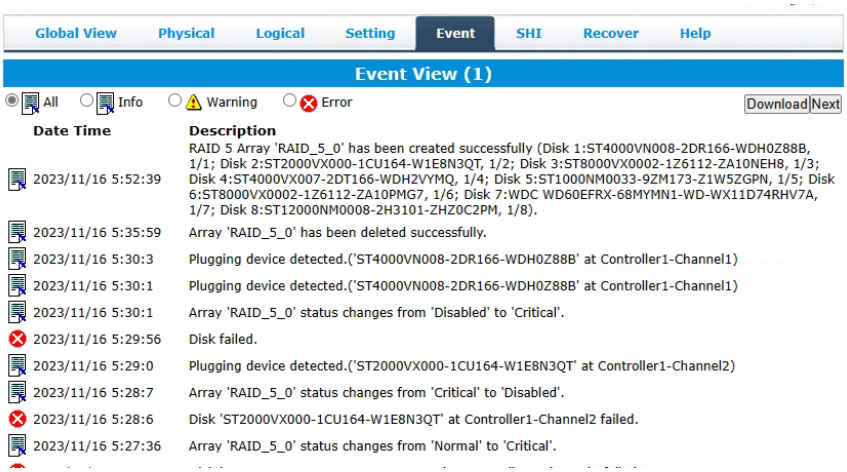
To reload your recover list:

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. Theevent 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

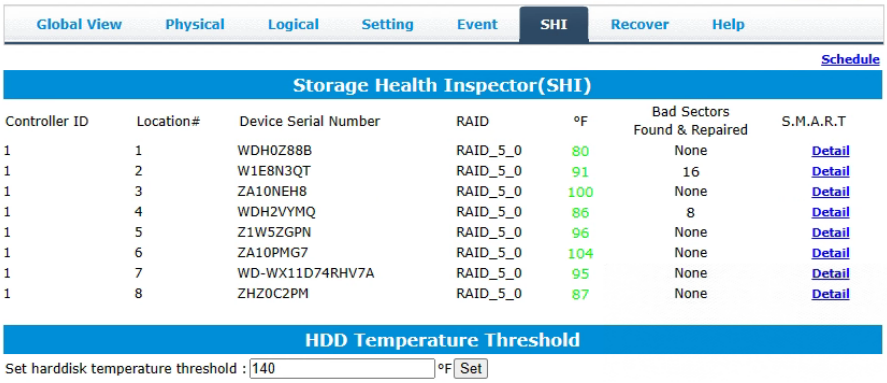
Table 3. Event Log Icon Guide

Icon	Name	Definition
	Information	Includes general administrative tasks: • Create/delete arrays • Configuring spares • Rebuilding arrays • Configuring event notifications • Configuring maintenance
	Warning	Alerts issued by the Host Adapter: • 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.

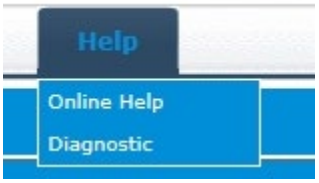
Appendix A-7: SHI (Storage Health Inspector)



- 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 youto anticipate any disk failures based on a variety of monitored hard disk properties.
(Refer to here)

Appendix A-8: Help

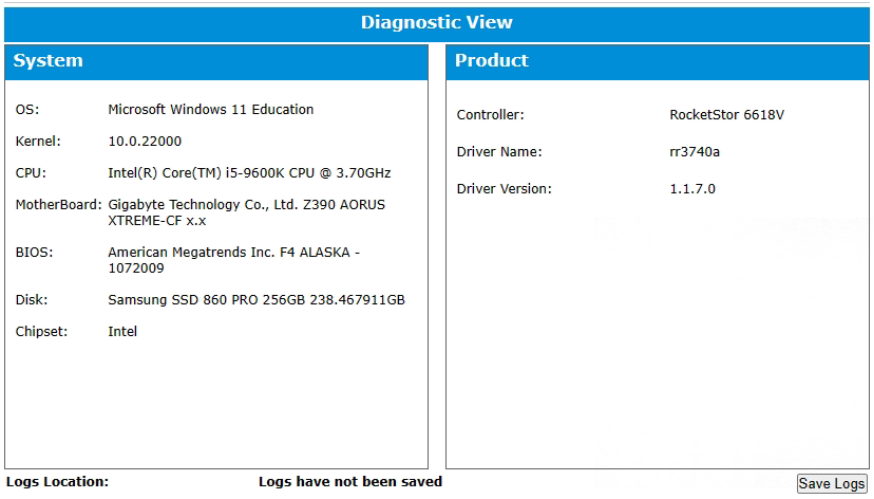


Online Help

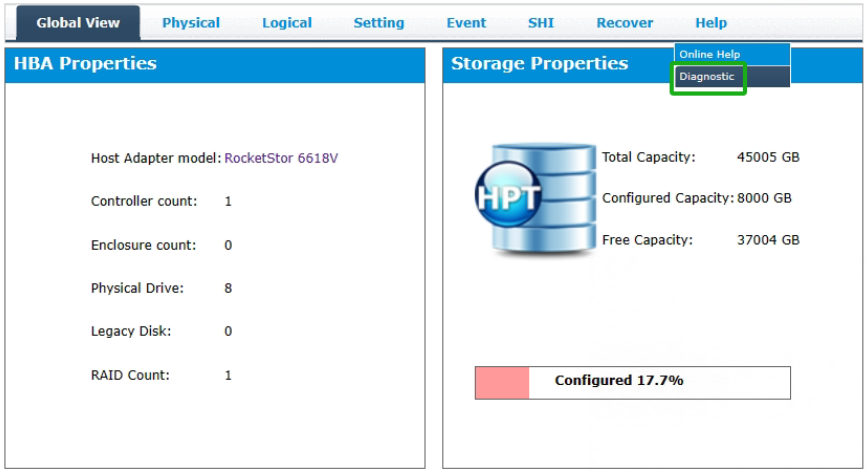
Online Help redirects you to additional documentation concerning the HighPoint WebGUI.
Diagnostic collect log information

Diagnotic 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.

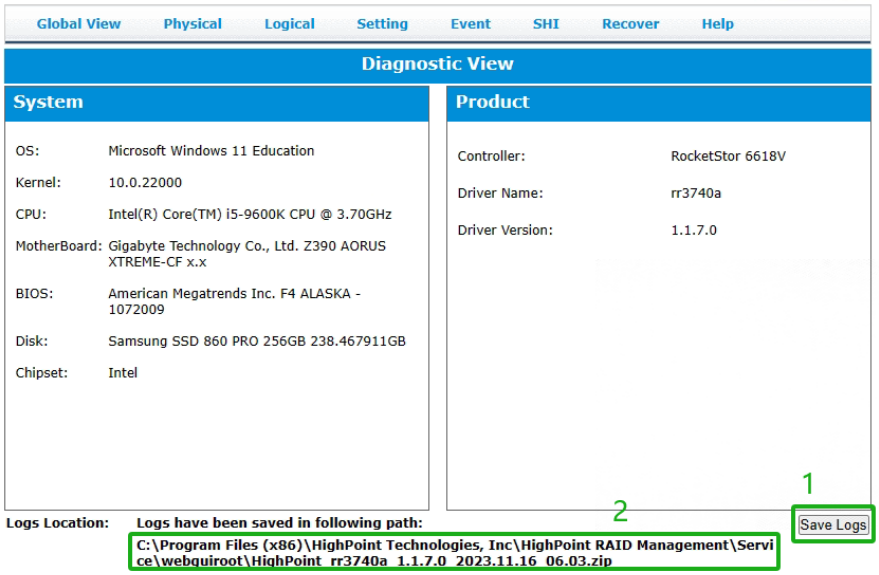


2. You can also click "**Help"→"Diagnostic**" to enter the diagnostic view.



Log Saving

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



Appendix A-9: Logout

Logout of WebGUI, set password will appear.

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

Appendix B: WebGUI Icon Guide

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

	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 reinsertdisk 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. Adisabled array is not accessible.
	OCE/ORLM Array is expanding its capacity or migrating to a different raid level. Statuswill display ‘Expanding/Migrating’
	OCE/ORLM stopped The ‘Expansion/Migrating’ process has been stopped. The status willdisplay ‘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 datalose	Temporary file, performance driven application.
RAID1	Disk Mirroring	2	50%	Provides convenient low-cost data redundancy for smaller systems and servers. Can handle1 disk failure.	Useable storage space is 50% of total available capacity.	Operating system, backup, and transaction database.
RAID5	Disk Stripingwith Rotatingparity	3	67-88%	High read performance, and medium write performance with data protection with a single drive failure. Can handle1 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 upto two drives failure	Not recommended for applications that require frequent/heavy write sessions.	Data archives and ideal for applicationthat requires data protection
RAID10	Disk Mirroring followed by stripe	4	50%	High read performance and medium write performance with dataprotection for up to 2-drive failures	Useable storage capacity equals total capacity of alldrives in the array minus two	Fast database and application serverswhich 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