

HighPoint NVMe G5 Data RAID Installation Guide (Windows)

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Overview

This guide includes important hardware/software requirements, installation & upgrade procedures, and troubleshooting tips for using NVMe products with a Windows operating system.

The following is a list of supported NVMe products usi	na Windowa C5 duiman
The following is a list of supported in vivie products list	ng windows (r) driver

Supported Controller	SSD7202
~~~rr	SSD7105
	SSD7502
	SSD7505
	SSD7540
	SSD7580A
	SSD7580B
	SSD7749M
	SSD7749E
	RocketAIC 7505HW Series
	RocketAIC 7540HW Series
	RocketAIC 7749EW Series
Supported Enclosure	SSD6780A

## Prerequisites

This section describes the base hardware and software requirements for the NVMe products.

## **Driver Installation**

This section covers driver installation, driver upgrade and driver uninstallation procedures for NVMe products.

## **Management Software Installation**

This section explains how to download and install RAID Management Software Suite for Windows operating systems. The download includes both the Web RAID Management Interface (WebGUI), and the CLI (Command Line Interface).

## Troubleshooting

Please consult this section if you encounter any difficulties installing or using the NVMe products. It includes descriptions and solutions for commonly reported technical issues.

## Appendix

A selection of useful information and web links for the NVMe products.

## **Prerequisites for a Data-RAID Configuration**

The NVMe products can support Data-RAID arrays. In order to configure a Data-RAID array, you will need the following:

1. **An NVMe SSD must be installed**. You must have at least one NVMe SSD installed into the NVMe products.

*Note:* The RocketAIC 7505HW series, RocketAIC 7540HW series and RocketAIC 7749EW series NVMe drives already include pre-configured SSDs.

- 2. A PCIe 3.0/4.0/5.0 slot with x8 or x16 lanes.
- 3. **Make sure any non-HighPoint drivers are uninstalled for any SSDs hosted by the NVMe products.** 3rd party software and manufacturer provided drivers may prevent the NVMe products from functioning properly.

#### Warnings:

- 1) Failing to remove the controller and SSDs when uninstalling the driver may result in data loss.
- 2) Always make sure the HighPoint Windows driver is installed before moving a NVMe product & RAID array to another Windows system.

Windows operating systems will always load the default NVMe support after the HighPoint Windows driver has been uninstalled, or if it detects the present of a card when no driver has been loaded – this driver will only recognize the NVMe SSDs as separate disks.

If the SSDs are recognized separately, any data they contain may be lost – this includes RAID configuration data.

## **Driver Installation**

## **Installing the Device Driver**

The following section discusses driver installation for a non-bootable NVMe configuration.

1. Install NVMe products and disks into the system

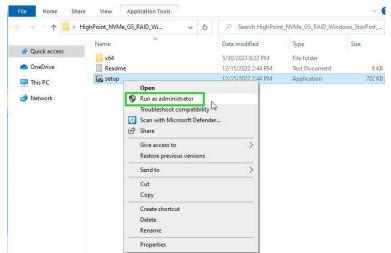
After installing the NVMe products and disks into the system, power on the motherboard.

#### 2. Download the Device Driver

Download the appropriate driver from the NVMe products's Software Downloads webpage.

#### 3. Install the Device Driver

- 1) Locate the driver download and open the file.
- 2) Double-click setup.



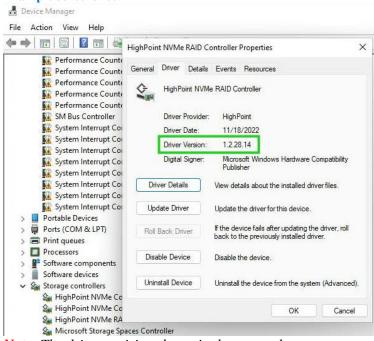
*Note:* if installation does not start, you may have to manually start setup using Administrator *Privileges. Right-click setup*, *select Run as Administrator from the menu, and confirm the pop-up window to proceed.* 

3) After driver installation is complete, click **Finish** to proceed.

HighPoint NVMe RAID Co	ntroller Driver Setup Completing HighF Controller Driver		RAID	×
	HighPoint NVMe RAID Contro your computer.	ller Driver has bee	en installed	on
	Click Finish to dose Setup.			
	< Back	Finish	Canc	el

- 4) Reboot Windows.
- 5) Once Windows has rebooted, open **Device Manager** to check the status of the driver.

Expand **Storage controllers** and click on the **HighPoint NVMe RAID Controller** entry. View the properties and click the **Driver** tab: Example screenshot



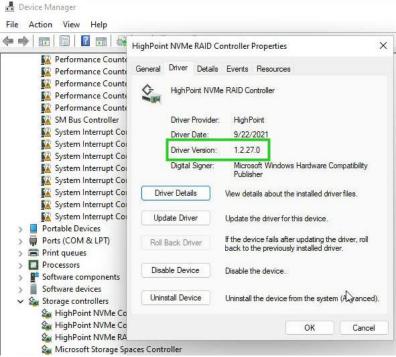
*Note:* The driver revision shown in the screenshots may not correspond with current software releases. Please make sure to download the latest driver updates from the product's Software Updates page.

## **Updating the Device Driver**

*Note1:* before attempting to update the driver entry, ensure that the NVMe products are installed into the motherboard.

*Note2: This driver can be installed directly without uninstalling the driver.* 

 Open Device Manager to check the current driver version. Expand Storage controllers and click on the HighPoint NVMe RAID Controller entry. View the properties and click the Driver tab: Example screenshot



2. Download the Device Driver

Download the latest driver from the Software Download section of the product category webpages.

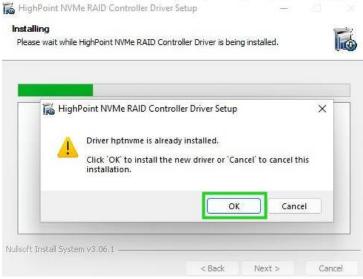
- 3. Update the Device Driver.
  - 1) Locate the driver download and open the file.
  - 2) Double-click setup.

⊢ → ~ ↑ <mark>.</mark> •	HighPoint_NVMe_G5_RAID_Wi v さ	Search HighPoin	t_NVMe_G5_RAID_Wind	dows_StorPort
4.0.1	Name	Date modified	Туре	Size
📌 Quick access	x64	5/30/2023 8:22 PM	File folder	
ConeDrive OneDrive	Readme	12/15/2022 2:44 PM	Text Document	6 KE
This PC	isetup	12/15/2022 2:44 PM	Application	702 KE

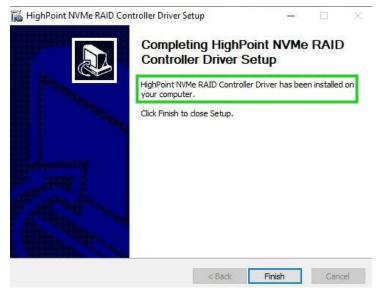
*Note:* if the update does not start, you may have to manually start setup using Administrator *Privileges. Right-click setup*, select *Run as Administrator* from the menu, and confirm the pop-up window to proceed.

$\rightarrow \rightarrow \downarrow \uparrow$	HighPoint_NVMe_G	5_RAID_Wi ∨ Č	<ul> <li>Search HighPoi</li> </ul>	nt_NVMe_G5_RAID_Wind	dows_StorPort
Quick access OneDrive	Name	^	Date modified 5/30/2023 8:22 PM 12/15/2022 2:44 PM	Type File folder Text Document	Size 6 K
	i setup		12/15/2022 2:44 PM	Application	702 Ki
This PC		Open		Contraction of the Contraction of the	
💣 Network		Run as administrator	N		
	-	Troubleshoot compatibilit	y bo		
	E	Scan with Microsoft Defer	ider		
	E	🖻 Share			
		Give access to	>		
		Restore previous versions			
		Send to	>		
		Cut			
		Сору			
		Create shortcut			
		Delete			

3) Windows will notify you that the driver is already installed. Click **OK** to install the new driver:



4) Once complete, click **Finish**.



5) Reboot Windows.

6) Once Windows has rebooted, open **Device Manager** to check the status of the driver. Expand **Storage controllers** and click on the **HighPoint NVMe RAID Controller** entry. View the properties and click the **Driver** tab:

#### **Example screenshot**

*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.

Image: Image	HighPoint	t NVMe RAID C	ontroller	Properties	>
<ul> <li>Performance Counte</li> <li>Performance Counte</li> <li>Performance Counte</li> <li>Performance Counte</li> <li>Performance Counte</li> <li>SM Bus Controller</li> <li>System Interrupt Co</li> </ul>	General	Driver Details HighPoint NVM Driver Provider Driver Date: Driver Version: Digital Signer:	le RAID Co HighF 11/18 1.2.2	^N oint 3/2022 3.14 soft Windows Hardware Compatibility	r
System Interrupt Co System Interrupt Co System Interrupt Co System Interrupt Co		ver Details	1000	ails about the installed driver files.	
<ul> <li>Portable Devices</li> <li>Ports (COM &amp; LPT)</li> <li>Print queues</li> </ul>	Roll E	Back Driver		vice fails after updating the driver, rol the previously installed driver.	I
Processors     Foftware components     Software devices	Disal	ble Device	Disable t	he device.	
<ul> <li>Storage controllers</li> <li>Storage controllers</li> <li>HighPoint NVMe Co</li> <li>HighPoint NVMe Co</li> </ul>	Unins	stall Device	Uninstall	the device from the system (Advanc	

7) Open the WebGUI and make sure the SSD's arrays are properly recognized.

Note: make sure the WebGUI has been installed (<u>Install WebGUI</u>).

A Properties	6	Storage Properties
Host Adapter mode Controller count: Enclosure count: Physical Drive:	el: HighPoint NVMe RAID Controller 1 1	Total Capacity: 2000 GB Configured Capacity: 2000 GB Free Capacity: 0 GB
Legacy Disk: RAID Count:	0	Configured 100.0%

## **Uninstalling the Device Driver**

1. Power down the system and remove the NVMe products from the motherboard.

*Note1:* Failing to remove the NVMe products from the motherboard during the uninstall process may result in data loss.

**Note2:** Whenever the driver is uninstalled, Windows will attempt to install the default NVMe support, which may corrupt the RAID configurations and any data stored on SSD's hosted by the NVMe produ cts.

- 2. Power on the system and boot Windows.
- 3. Access Control Panel and select Programs → Programs and Features, and click on the HighPoint NV Me RAID Controller Driver entry.
- 4. Click Uninstall/Change.

5.

🗧 🔶 👻 🛧 🖸 > Contro	I Panel > Programs > Programs and Features	~	Q	Search Progr	rams and F
Control Panel Home	Uninstall or change a program				
View installed updates	To uninstall a program, select it from the list	and then	click Ur	install, Chang	e, or Repair
Turn Windows features on or					· · ·
off	Organize 👻 Uninstall/Change				
	Name		Publis	her	
	HighPoint NVMe RAID Controller Driver				
	III HighPoint RAID Managen Uninstall/Cha	ange		int Technolo	gies, Inc
	C Microsoft Edge		Micro	soft Corporatio	on
	Microsoft OneDrive		Micro	soft Corporatio	on
	Microsoft Update Health Tools		Micro	soft Corporatio	on
	NVIDIA Graphics Driver 456.71		NVIDI	A Corporation	
CONTRACTOR OF TAXABLE AND ADDRESS OF TAXABLE AND ADDRESS OF TAXABLE ADDRESS OF TAX	g the driver, click <b>Finish</b> . AID Controller Driver Uninstall		-		×
	Completing HighPo Controller Driver Ur			e RAID	•
	9			complete the	

al	Reboot now     I want to manually reboot	t later	
	< Back	Finish	Cancel

- 6. Reboot Windows to complete the uninstall procedure.
- After Windows has rebooted, access Device Manager Storage Controllers and Control Panel to make sure the driver has been uninstalled. If there are no HighPoint entries present, the driver has been successfully uninstalled

<ul> <li>Keyboards</li> <li>Mice and other pointing devices</li> </ul>	Programs and Features	S			-
<ul> <li>Monitors</li> <li>Network adapters</li> </ul>	← → ~ ↑ 🖬 > Control F	anel > Programs > Programs and Features	~	õ	
	Control Panel Home View installed updates Turn Windows features on or off	Uninstall or change a program To uninstall a program, select it from the list a Organize 💌	and then	click Uninstal	ll, Change, or Rep
<ul> <li>Storage controllers</li> <li>Microsoft Storage Spaces Controller</li> </ul>		Name		Publisher	
Standard NVM Express Controller		HighPoint RAID Management     Microsoft Edge			Technologies, Inc
Standard NVM Express Controller		WICrosoft Edde		IVIICFOSOTE C	Corporation

# Installing the HighPoint RAID Management Software (WebGUI & CLI)

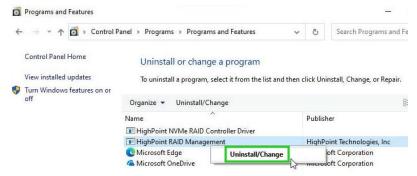
The HighPoint RAID Management Software (WebGUI and CLI utilities) are used to configure and monitor NVMe SSDs hosted by the NVMe products. Download the latest software package from the Hig hPoint website.

- 1. Extract the package and double-click the HighPoint RAID Management program to install the software.
- 2. Once installed, locate the Management icon on the desktop and double-click to start the WebGUI interface.

ntroller(1): HighPoint				
ilobal View	Physical Logical Setting	Event SHI Help		
A Properties		Storage Properties		
Host Adapter mode	el: HighPoint NVMe RAID Controller	Total Capacity: 2776 GE Configured Capacity: 2776 GE		
Enclosure count:	1	Free Capacity: 0 GB		
Physical Drive:	4			
Legacy Disk:	4			
RAID Count:	0	Configured 100.0%		

## **Uninstalling the HighPoint RAID Management Software** (WEBGUI & CLI)

- 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.

HighPoint RAID Management has been uninstalled from your computer.
Click Finish to dose Setup.

## Troubleshooting

*Note:* When troubleshooting your NVMe products. make sure all of the Prerequisites have been met before proceeding.

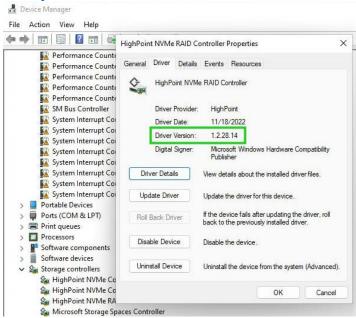
## The WebGUI will not start after double-clicking the desktop icon.

$\bigcirc$	Hmmmcan't reach this page Try this
0	<ul> <li>Make sure you've got the right web address: http://localhost:7402</li> </ul>
	Search for "http://localhost:7402" on Bing
	Refresh the page
	Details
	Report this issue
	Privacy statement

1. This is often the result of a missing driver or improperly installed driver. Open **Device Manager** and check under **Storage Controllers**.

If the Driver is properly installed, you should see a **HighPoint NVMe Controller** entry for each NVMe SSD hosted by the NVMe products, followed by single **HighPoint NVMe RAID Controller** entry.

**Example screenshot** 



*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.

2. You should also check to make sure **hptsvr** is running under **Task Management**  $\rightarrow$  **Services**. If the status of **hptsvr** process is **Stopped**, right-click on this entry and select Start from the menu:

Processes Performance App H	nistory	Startup Users Details Services		
Name A hidserv	PID 2004	Description Human Interface Device Service	Status Running	Group LocalSystemN
Sk hptsvr		HighPoint RAID Management Service	Stopped	0.4
G HvHost		HV Host Service	Stopped	Start
🖓 icssvc		Windows Mobile Hotspot Service	Stopped	Stop
🔍 igccservice	5016	Intel(R) Graphics Command Center	Running	Restart
🔍 igfxCUIService2.0.0.0		Intel(R) HD Graphics Control Panel S	Stopped	Open Services
🔍 IKEEXT		IKE and AuthIP IPsec Keying Modules	Stopped	
🚵 InstallService		Microsoft Store Install Service	Stopped	Search online
🛸 Intel(R) Capability Licensin		Intel(R) Capability Licensing Service	Stopped	Go to details
🕼 Intel(R) TPM Provisioning S	5052	Intel(R) TPM Provisioning Service	Running	
🗟 iphlpsvc	4852	IP Helper	Running	NetSvcs
🔍 lpxlatCfgSvc		IP Translation Configuration Service	Stopped	LocalSystemN
🤹 jhi_service	5412	Intel(R) Dynamic Application Loader	Running	
🔍 Keylso	1376	CNG Key Isolation	Running	2
🔍 KtmRm		KtmRm for Distributed Transaction C	Stopped	NetworkServic
🗟 LanmanServer	5304	Server	Running	netsvcs
🔍 LanmanWorkstation	4516	Workstation	Running	NetworkService
🔍 lfsvc		Geolocation Service	Stopped	netsvcs
LicenseManager		Windows License Manager Service	Stopped	LocalService
🔍 lltdsvc		Link-Layer Topology Discovery Map	Stopped	LocalService
🔍 Imhosts		TCP/IP NetBIOS Helper	Stopped	LocalServiceN
LSM	1672	Local Session Manager	Running	DcomLaunch
C InnSuc		Language Experience Service	Stonned	netsurs

Fewer details | 🌼 Open Services

## **BSOD (Blue Screen of Death)**

There are three scenarios in which a BSOD may occur with:

1. Windows displays a BSOD when NVMe products are installed.

	ur PC ran into a problem and needs to restart. We're just collecting some error info, and en we'll restart for you.
59	6 complete
	For more information about the sourie and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and possible fixes, left https://www.inidoest.com/stopcode  For source information about the source and poss

If you are running Windows 10, please make sure that **Quick Shutdown** is disabled – these features can cause a BSOD when NVMe products are installed into or removed from your motherboard. BSODs can be avoided by **completely powering off** your system.

#### How to Turn off Quick Shutdown for Windows

a. Use administrator privileges to enter cmd in the system;

<b>P</b> N=	Command Prompt					recompiled Set
01	Control Panel	-⇔ Pin to	Start			etup Informatio
		More		>	뭐	Pin to taskbar
Let.	File Explorer			J4	5	Run as administrator
	Run		Microsoft Store	Washington	n	Open file location
-			-		4-1	

b. Enter the command in cmd to close the quick shutdown; **powercfg / h off** 

Administrator: Command Prompt	dministrator: Command Prompt					
Microsoft Windows [Version 10.0.18363.778] (c) 2019 Microsoft Corporation. All rights r	reserved.					
C:\Windows\system32>powercfg /h off						

c. Enter the command to check that the quick shutdown is turned off; **nowercfg / a** 

20	weieig / a
	windows∖system32>powercfg /a following sleep states are available on this system: Standby (S3)
The	following sleep states are not available on this system: Standby (S1) The system firmware does not support this standby state. Standby (S2) The system firmware does not support this standby state.
	Hibernate Hibernation has not been enabled.
	Standby (S0 Low Power Idle) The system firmware does not support this standby state.
	Hybrid Sleep Hibernation is not available.
	Fast Startup Hibernation is not available.

- d. Shut down the computer and remove the NVMe products from the motherboard;
- e. Restart the system and open the NVMe products's driver download.
- f. Double-click **Setup** to reinstall the driver; if you are prompted to uninstall the driver, you will need to follow the prompts and restart; after rebooting, double-click Setup once more to install the driver.
- g. After the driver installation is complete, shut down the computer. Connect/install the NVMe SSDs to I changed to NVMe products, and insert it into the motherboard PCIe slot.
- h. Power on; boot Windows and access the WebGUI; if the WebGUI can't connect, you need to restart again.
- i. If it fails to start the second time, please access our Online Support portal and submit a support ticket.

#### 2. A BSOD is encountered when installing the driver:

If you experience a BSOD during driver installation, please collect the log information refer to: <u>How to Collect Diagnostic Logs</u> and submit a new support ticket via our Online Support Portal.

#### 3. If Windows reports that driver installation has failed:

Please collect these log information refer to: <u>How to Collect Diagnostic Logs</u> *Note:* If you experience a BSOD or error when installing the driver, please ensure that any **Quick** *Shutdown* options are *not enabled* – Quick shutdown can cause a BSOD when removing the NVMe products from your motherboard, and plugging it back in. BSODs can be avoided by *completely powering off* your system:

## **Controller and Drive Detection Issues**

- 1. If your motherboard or Windows is unable to detect the NVMe products or NVMe SSD, please shutd own the system and try moving the controller to another PCIe slot.
- 2. Make sure any unrelated NVMe devices are removed from the motherboard while troubleshooting the NVMe products.

## Appendix

When submitting s support ticket via our Online Support Portal, the following information will help out Support Department diagnose and resolve your issue as quickly and efficiently as possible.

## How to Collect Diagnostic Logs in WEBGUI

We have provided a detailed video on log collection methods: <u>link</u>

1. Start the WEBGUI, Diagnostic view will appear when Driver or HPT card does not effect, you can see the system information and HPT Product information in this view.

System		Product	
OS: Kernel: CPU: MotherBoard BIOS: Disk: Chipset:	Microsoft Windows 10 Education 10.0.19045 Intel(R) Xeon(R) Silver 4214 CPU @ 2.20GHz Supermicro X11DPH-T 1.10 American Megatrends Inc. 3.6 SUPERM - 1072009 Samsung SSD 850 PRO 256GB 238.467911GB Intel	Controller: Driver Name: Driver Version:	HighPoint NVMe RAID Controller hptnvme 1.3.3.0
ogs Locatio	n: Logs have been saved in following path	1:	Save L

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

							High Point Technologies, Inc.
Global View	Physical	Logical	Setting	Event	SHI	Help	
Controller				Contr	oller Info	Online Help Diagnostic	
Rescan	Model N Vendor:			ghPoint NVMe ghPoint Techr		rouer	

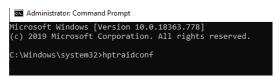
3. Enter the Diagnostic view, click 'Save Logs', your log information will be collected. 'Logs Location' will display the location of the saving path.

**Note:** You need to wait until the log location shows "Logs have been saved in following path:"

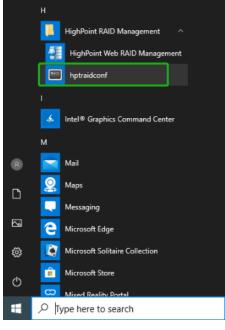
	Di	agnostic View			
System		Product	Product		
	Microsoft Windows 10 Education 10.0.19045 Intel(R) Xeon(R) Silver 4214 CPU @ 2.200 rd: Supermicro X11DPH-T 1.10	Controller: Driver Name: GHz Driver Version:	HighPoint NVMe RAID Controller hptnvme 1.3.3.0		
BIOS: Disk: Chipset:	American Megatrends Inc. 3.6 SUPERM - 1072009 Samsung SSD 850 PRO 256GB 238.46791 Intel	1GB			
ogs Locati	ion: Logs have been saved in following	) path:	Save Lo		

## How to Collect Diagnostic Logs in CLI

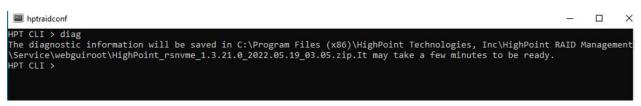
1. Run 'Command Prompt' as Administrator and enter hptraidconf and press Enter.



or Click 'Start' to find the HighPoint RAID Management folder, and click on hptraidconf



2. Execute the command 'diag' in CLI, your log information will be collected.



If you have problems in use, please submit the log to our online service Link.