

HighPoint NVMe G5 Data RAID Installation Guide (Windows)

V1.16-Jan 29, 2024

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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:

Supported AIC	SSD7202
11	SSD7105
	SSD7502
	SSD7505
	SSD7540
	SSD7580A
	SSD7580B
	SSD7580C
	SSD7749E
	SSD7749M
	SSD7749M2
	RocketAIC 7505HW Series
	RocketAIC 7540HW Series
	RocketAIC 7749EW Series
	RocketAIC 7502HW Series
	RocketAIC 7105HW Series
	RocketAIC 7749MW Series

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 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 an 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 presence 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.

 Quick access OneDrive 	Name x64 Readme	Open Run as administrator	Date modified 5/30/2023 8:22 PM 12/15/2022 2:44 PM 12/15/2022 2:44 PM	Type File folder Text Document Application	Size 6 KE 702 KE
inis PC	In setup		2215/2022 2:44 PM	Application	702 KI
💣 Network	•				
	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)				
		Restore previous versions			
		Send to	>		
		Cut Copy			
		Create shortcut Delete Rename			

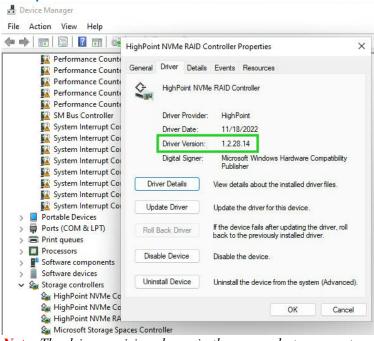
Note: if installation does not start, you may have to manually start setup using Administrator Privileges. Right-click **setup**, select **Run as Administrator** from the menu and confirm the pop-up window to proceed.

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

📸 HighPoint NVMe RAID Co	ontroller Driver Setup	2242		\times
	Completing HighP Controller Driver S		RAID)
	HighPoint NVMe RAID Controlle your computer.	er Driver has bee	en installed	on
	Click Finish to close Setup.			
	< Back	Finish	Can	tel

- 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



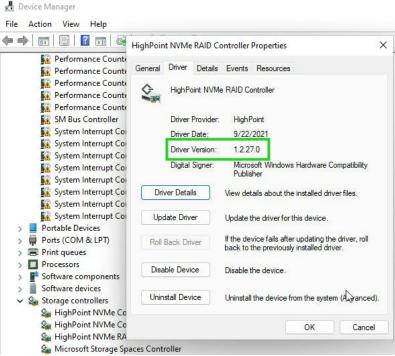
Note: The driver revision shown in the screenshots may not correspond with current software releases. Please make sure to download the latest driver updates from the product's Software Updates page.

Updating the Device Driver

Note 1: before attempting to update the driver entry, ensure that the NVMe products are installed into th e motherboard.

Note 2: 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.

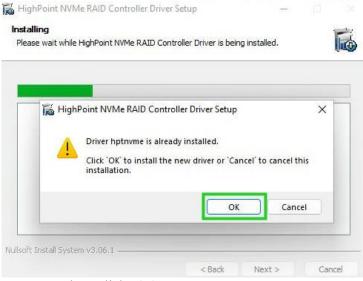
- 3. Update the Device Driver.
 - 1) Locate the driver download and open the file.
 - 2) Double-click setup.

M	^			
Ouick access	ame	Date modified	Туре	Size
	х64	5/30/2023 8:22 PM	File folder	
🙆 OneDrive	Readme	12/15/2022 2:44 PM	Text Document	6 KE
This PC	setup	12/15/2022 2:44 PM	Application	702 KE

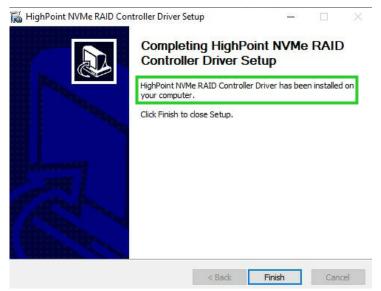
Note: if the update does not start, you may have to manually start setup using Administrator *Privileges. Right-click* setup, select **Run as Administrator** from the menu and confirm the pop-up window to proceed.

$\vdash \rightarrow \neg \uparrow \square$	HighPoint_NVMe_G5	5_RAID_Wi ∨ Ö	Ø Search HighPoin	t_NVMe_G5_RAID_Wind	dows_StorPort
📌 Quick access	Name	<u>^</u>	Date modified 5/30/2023 8:22 PM	Type File folder	Size
OneDrive	Readme		12/15/2022 2:44 PM	Text Document	6 KI
🛄 This PC	😹 setup		12/15/2022 2:44 PM	Application	702 K
inis PC		Open			
Network		Run as administrator			
		Troubleshoot compatibility	8		
	E	🚽 Scan with Microsoft Defende	r		
	e	🕈 Share			
	-	Give access to	>		
		Restore previous versions			
	-	Send to	>		
		Cut			
		Сору			
		Create shortcut			
		Delete			
		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.

🔶 🖬 🛅 📓 🖬 🛶	HighPoin	t NVMe	RAID Co	ontroller	Properties	3
Performance Counte	General	Driver	Details	Events	Resources	
Performance Counte		HighPo	oint NVMe	e RAID Co	ntroller	
SM Bus Controller		Driver	Provider:	HighP	oint	
🚺 System Interrupt Co		Driver	Date:	11/18	/2022	
System Interrupt Co		Driver	Version:	1.2.28	3.14	
System Interrupt Co		Digital	Signer:	Micro: Publis	soft Windows Hardware Compatil her	oility
System Interrupt Co	Driv	ver Detai	ils	View det	ails about the installed driver files	
System Interrupt Co	Upo	date Driv	er	Update t	he driver for this device.	
> 🛱 Ports (COM & LPT) > 🚍 Print queues	Roll	Back Dri	ver		vice fails after updating the driver he previously installed driver.	, roll
 Processors Software components 	Disa	ble Devi	ce	Disable t	he <mark>d</mark> evice.	
 Software devices Storage controllers 	Unin	stall Dev	ice	Uninstall	the device from the system (Adv	anced).
Sa HighPoint NVMe Co Sa HighPoint NVMe Co Sa HighPoint NVMe RA					ОК	Cancel

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>).

	Physical Logical Setting	Event SHI Help
A Properties		Storage Properties
Host Adapter mode	al: HighPoint NVMe RAID Controller	Total Capacity: 2000 GB
Controller count:	1	Configured Capacity: 2000 GB
Enclosure count:	1	Free Capacity: 0 GB
Physical Drive:	4	
Legacy Disk:	0	
RAID Count:	1	Configured 100.0%

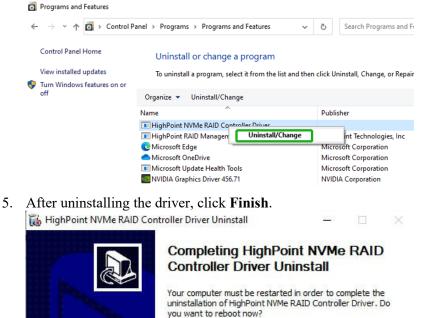
Uninstalling the Device Driver

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

Note 1: Failing to remove the NVMe products from the motherboard during the uninstall process may result in data loss.

Note 2: 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 SSDs 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.



Completing HighPoint NVMe RAID Controller Driver Uninstall
Your computer must be restarted in order to complete the uninstallation of HighPoint NVMe RAID Controller Driver. D you want to reboot now?
Reboot now
○ I want to manually reboot later

< Back

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

Finish

Cancel

> 🧱 Keyboards	Programs and Features				
 > ∭ Mice and other pointing devices > ↓ Monitors > ↓ Network adapters > ↓ ↓ Portable Devices ↓ ↓ Ports (COM & LPT) > ↓ Pint queues > ↓ Processors ↓ Software devices 	 ← → ~ ↑ □ → Control I Control Panel Home View installed updates ♥ Turn Windows features on or off 	Canel > Programs > Programs and Features Uninstall or change a program To uninstall a program, select it from the list Organize -	✓ and then c	ව lick Unin	stall, Change, or Rep
V Storage controllers		Name		Publishe	r
Standard NVM Express Controller 🖓 🌆		HighPoint RAID Management		HighPoir	nt Technologies, Inc
Standard NVM Express Controller		💽 Microsoft Edge		Microsof	t Corporation
Standard NVM Express Controller		Microsoft OneDrive		Microsof	ft Corporation

Installing the HighPoint RAID Management Software (WebGUI & CLI)

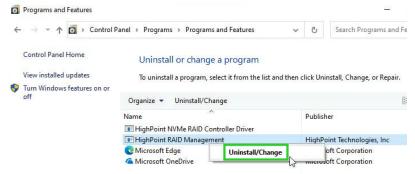
The HighPoint RAID Management Software (WebGUI and CLI utilities) is used to configure and monitor NVMe SSDs hosted by the NVMe products. Download the latest software package from the Hig hPoint website.

- 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.

ample scre roller(1): HighPoint		HighPe
Global View	Physical Logical Setting	Event SHI Help Storage Properties
Host Adapter mode	al: HighPoint NVMe RAID Controller	Total Capacity: 2776 GB
Controller count:	1	Configured Capacity: 2776 GB
		Free Capacity: 0 GB
Enclosure count:	1	Pree Capacity. 0 06
Enclosure count: Physical Drive:	1 4	Free Capality: 0 08
		Free Capacity. 0 08

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.

Management Uninstall
HighPoint RAID Management has been uninstalled from your computer.
Click Finish to close Setup.
3

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
Ū	 Make sure you've got the right web address: http://localhost:7402
	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 a single **HighPoint NVMe RAID Controller** entry.

Example screenshot - Device Manager File Action View Help 🖛 🔿 📅 📴 🛙 🖬 🔤 HighPoint NVMe RAID Controller Properties X Reformance Count Reneral Driver Details Events Resources Performance Counte HighPoint NVMe RAID Controller 5 Performance Counte Reformance Counte SM Bus Controller Driver Provider: HighPoint System Interrupt Co Driver Date: 11/18/2022 System Interrupt Co Driver Version: 1.2.28.14 System Interrupt Col Digital Signer: Microsoft Windows Hardware Compatibility System Interrupt Co Publisher System Interrupt Co System Interrupt Co Driver Details View details about the installed driver files. System Interrupt Co System Interrupt Co Update Driver Update the driver for this device Portable Devices > If the device fails after updating the driver, roll back to the previously installed driver. Ports (COM & LPT) Roll Back Driver Print queues Processors > Disable Device Disable the device Software components Software devices Uninstall Device 🗸 🍇 Storage controllers Uninstall the device from the system (Advanced). Sa HighPoint NVMe Co 🔄 HighPoint NVMe Co Cancel OK LighPoint NVMe RA 🔄 Microsoft Storage Spaces Controller

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	history	Startup Users Details Services		
Name A hidserv	PID 2004	Description Human Interface Device Service	Status Running	Group /
🔍 hptsvr		HighPoint RAID Management Service	Stopped	
G HvHost icssvc igccservice igfxCUIService2.0.0.0	5016	HV Host Service Windows Mobile Hotspot Service Intel(R) Graphics Command Center Intel(R) HD Graphics Control Panel S	Stopped Stopped Running Stopped	Stop Restart
(KEEXT) InstallService Install(R) Capability Licensin		IKE and AuthIP IPsec Keying Modules Microsoft Store Install Service Intel(R) Capability Licensing Service	Stopped Stopped Stopped	Open Services Search online Go to details
Intel(R) TPM Provisioning S 5052 Intel(R) TPM Provisioning Service piphpsvc 4852 IP Helper Ip Intel(R) TPM Provisioning Service Ip Translation Configuration Service Siph_service 5412 Intel(R) Dynamic Application Loade			Running Running Stopped Running	NetSvcs LocalSystemN
Keylso KtmRm LanmanServer	1376 5304	CNG Key Isolation KtmRm for Distributed Transaction C Server	Running Stopped Running	NetworkServic netsvcs
& LanmanWorkstation fsvc LicenseManager Itdsvc	4516	Workstation Geolocation Service Windows License Manager Service Link-Layer Topology Discovery Map	Running Stopped Stopped Stopped	NetworkService netsvcs LocalService LocalService
🧟 Imhosts 🧟 LSM 💁 LxpSvc	1672	TCP/IP NetBIOS Helper Local Session Manager Language Experience Service	Stopped Running Stopped	LocalServiceN DcomLaunch netsvcs

🔿 Fewer details | 🍓 Open Services

BSOD (Blue Screen of Death)

There are three scenarios in which a BSOD may occur:

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

Your PC ran into a problem and needs to restart. We're just collecting some error info, and then we'll restart for you.	
5% complete	
For more information about this soure and possible fixes, viel https://www.andows.com/dopcode 4	

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

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

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

μv	wereig / 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 I changed to NVMe products, and inserted 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 this 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 shut d 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 our 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: link

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

Diagnostic 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: C:\Program Files (x86)\HighPoint Techno		Save L				

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

Controller(1): High	Point V						High Point Technologies, Inc.
Global View	Physical	Logical	Setting	Event	SHI	Help	
Controller				Contro	oller Info		
Rescan	Model N Vendor:			ghPoint NVMe ghPoint Techr	RAID Cont		

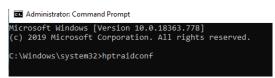
3. Enter the Diagnostic view, and click 'Save Logs', your log information will be collected. 'Logs Location' will display the location of the saving path.

Note: You need to wait until the log location shows "Logs have been saved in the following path:" Global View Physical Logical Setting Event SHI Help

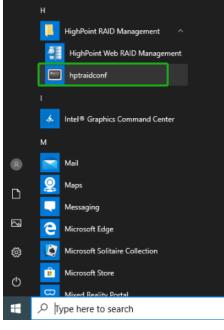
	Diagn	ostic View	
System		Product	
OS: Kernel: CPU: MotherBoar BIOS: Disk: Chipset:	Microsoft Windows 10 Education 10.0.19045 Intel(R) Xeon(R) Silver 4214 CPU @ 2.20GHz d: Supermicro X11DPH-T 1.10 American Megatrends Inc. 3.6 SUPERM - 1072009 Samsung SSD 850 PRO 256GB 238.467911GB Intel	Controller: Driver Name: Driver Version:	HighPoint NVMe RAID Controller hptnvme 1.3.3.0
.ogs Locati	on: Logs have been saved in following path C:\Program Files (x86)\HighPoint Tecl		Save Lo.

How to Collect Diagnostic Logs in CLI

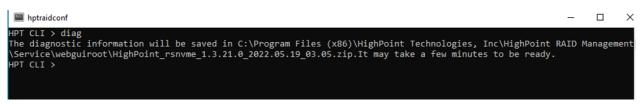
1. Run 'Command Prompt' as Administrator enter hptraidconf and press Enter.



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.