HighPoint NVMe Data RAID Installation Guide (macOS)

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Contents

Overview

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

The following is a list of supported NVMe products.

Supported AIC	SSD7540
	SSD7505
	SSD7502
	SSD7140A
	SSD7204
	SSD7104
	SSD7104F
	SSD7101A-1
	SSD7105
	SSD7749M
	SSD7749M2
	SSD7749E
	SSD7120
	RocketAIC 7505HM Series
	RocketAIC 7540HM Series
	RocketAIC 7749EM Series
	RocketAIC 7204HM Series
	RocketAIC 7202HM Series
	RocketAIC 7140AM Series
	RocketAIC 7105HM Series
	RocketAIC 7749MM Series
Supported Enclosure	SSD6540
	SSD6540M
	SSD6444

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

Driver Installation
This section covers driver installation, driver upgrade, and driver uninstallation procedures for NVMe products in a macOS environment.

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

Appendix
This section describes how to collect troubleshooting information for support cases you have submitted via our Online Support Portal.

Prerequisites

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 product.

   Note: The RocketAIC 7505HM series, RocketAIC 7540HM series, RocketAIC 7749EM series, RocketAIC 7204HM series, RocketAIC 7202HM series, RocketAIC 7140AM series and RocketAIC 7105HM series NVMe drives already include pre-configured SSDs.

2. **A PCIe 3.0/4.0/5.0 slot with x8 or x16 lanes.**

   Note: If you are using the RocketStor 6661A-NVMe or an SSD7000 NVMe RAID controller via the RocketStor 6661A adapter, the RocketStor unit must be plugged into a Thunderbolt™ 3 port.

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.

4. Operating System Support: macOS 10.13 or later.

5. Before installing the driver and RAID Management software, you should log into the system as a System Administrator.

6. Identify the system as either T2 or Non-T2 based – if the system has a T2 chip, make sure to follow section 1 before attempting to install any software for the HighPoint NVMe device.

7. If you're using the **Apple M1 & M2** Platform, make sure to follow section 3 before attempting to install any software for the HighPoint NVMe device.

1. Disabling macOS Secure Boot for T2 Systems

Customers working with Mac platforms manufactured in 2018 or later that feature a T2 security chip, will need to disable the **Secure Boot** to load drivers for third-party devices.
HighPoint NVMe products are affected by this requirement.

For a list of products with the T2 Security Chipset, please visit the following website:
Mac computers that have the Apple T2 Security Chip

Disabling Secure Boot

To use these products with T2 systems, Secure Boot must be disabled. To disable this feature, select "**No Security**" from the Startup Security Utility interface. You can access this menu by pressing the **Command (⌘)-R** keys after the Apple logo first appears during the boot-up process.
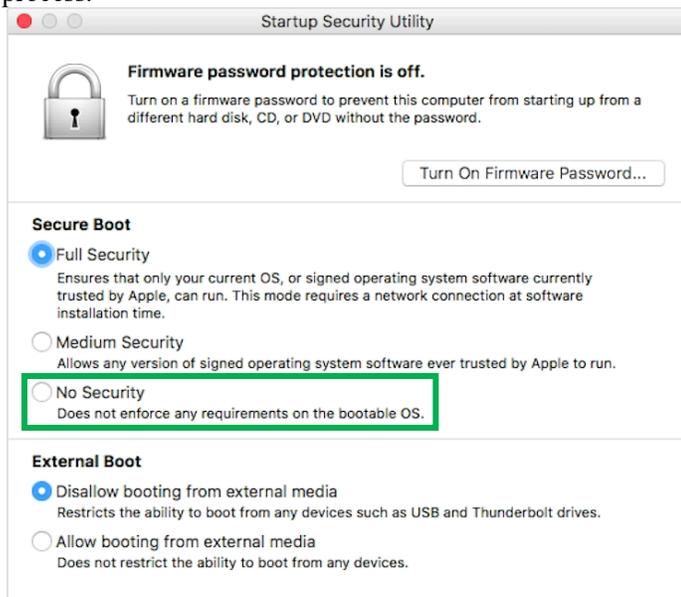
Instructions are available from Apple's website:
About Secure Boot

2. Disabling SIP for macOS 10.13x and earlier

macOS 10.13x and earlier may require that **SIP** (System Integrity Protection) be disabled. If enabled, older versions of macOS may prevent the NVMe drivers from loading. HighPoint NVMe products are affected by this requirement.

Check SIP status

While macOS is running, open a terminal window to confirm whether the System Integrity Protection (SIP) status is disabled. Enter the command: **csrutil status**

Note: The example screenshot shown above indicates that SIP is enabled.

Disabling SIP

If enabled, you will need to manually disable the setting. Follow the steps below.

1. Restart the computer and hold down the "**Command + R**" buttons. Continue to hold these keys until macOS enters System **Recovery** mode.

Note: If you are unable to enter Recovery Mode to disable SIP. Make sure you are using a wired keyboard and mouse for this procedure. Wireless devices may not be recognized or function properly when booting into this mode.

3. Click on Utilities in the upper left corner and select Terminal:

4. Set SIP to disabled in using Terminal. Enter the following command:

    csrutil disable

5. Click the **Apple** logo in the upper left-hand corner of the desktop, and select **Restart** to reboot the system.
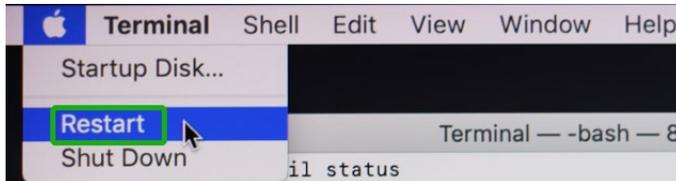
6. After rebooting, confirm that SIP is disabled. Open the terminal and type the following command:
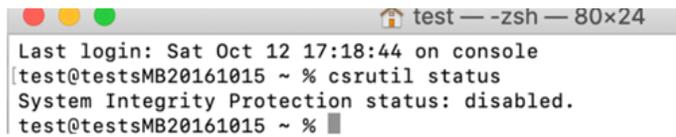
    csrutil status

If the status is now reported as **disabled**, you can install the HighPoint NVMe macOS driver.

3. Reduced Security Policy – For Apple M1 & M2 Platforms

Customers working with Apple M1 & M2 Platforms will need to **reduce the Security Policy** to load drivers for third-party devices.
HighPoint NVMe products are affected by this requirement.

Mac computers with Apple M1 & M2 chips, please visit the following website:
Mac computers that have the Apple M1 & M2 Chip

Check Security Policy

Check the system's Security Policy settings to determine if they need to be changed. If Secure Boot is set to "**Full Security**", please change this to "**Reduced Security**":

System Information -> Hardware -> Controller -> Boot Policy
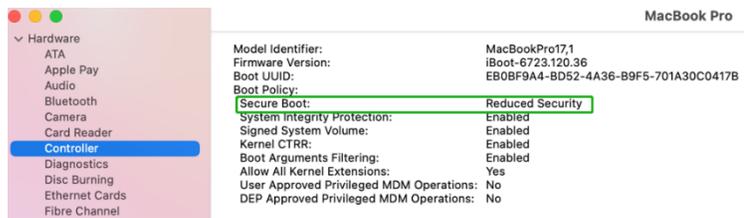
Reduced Security Policy

You can access this menu by:
Shut down the system, **pressing and holding the Power Button** until you see **Loading Startup Options**.

Instructions are available from Apple's website:

About Secure Boot for M1 & M2

4. Installing the Device Driver

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

macOS 10.13/10.14/10.15/11.x /12.x/13.x Driver Installation Procedure

1. Locate the download and double-click the **HighPointNVMe.pkg** package to start the installer. Click the **Continue** button.

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

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

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

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

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

7. You will see a popup window, prompting you to restart. Click **Restart**.

8. If you receive the permission prompt for the second time, click "**Open Security Preferences**" again.
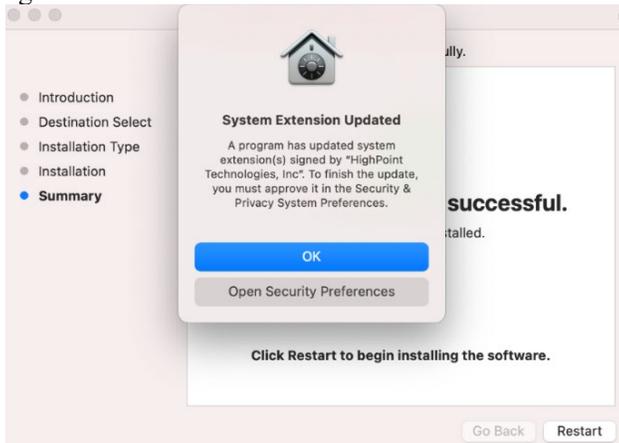
9. Make sure the **App Store and identified developers** is checked, and then click **Allow**.

10. You will see a popup window, prompting you to restart. Enter the *Administrator* Username and Password and click **Restart**.
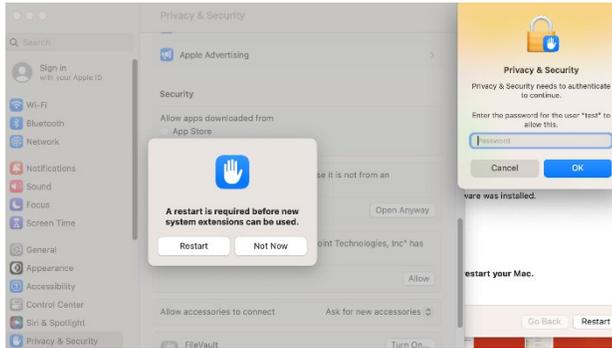
11. Return to the driver installation window. Click **Restart** to restart the system.
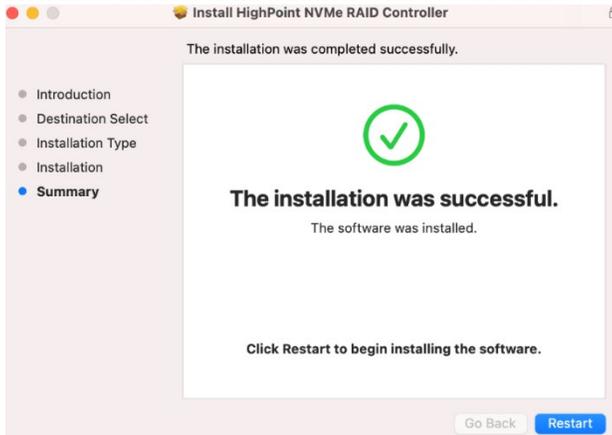
12. After the system restarts, the driver's status can be viewed under **System Information→ Extensions**; The following screenshot shows the **HighPointNVMe** driver has been **loaded**:
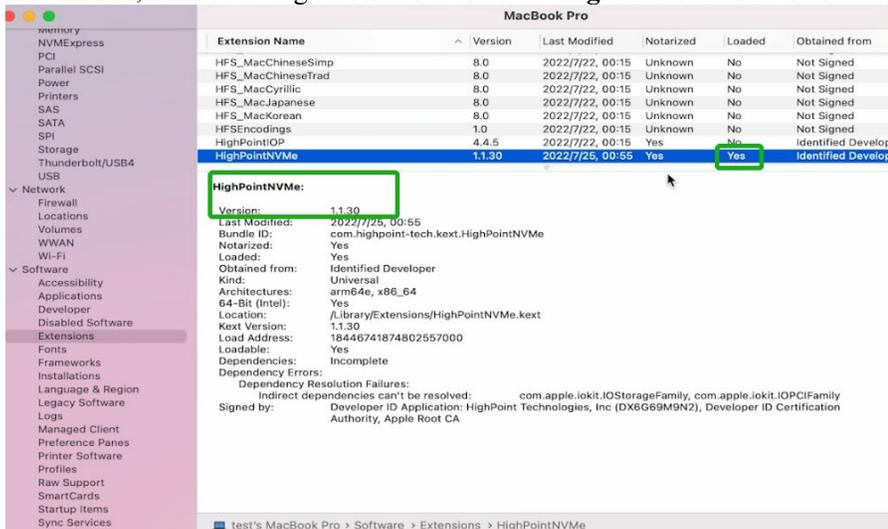
Note: The driver revision shown in the screenshots may not correspond with current software releases. Please make sure to download the latest driver updates from the product's Software Updates page.

5. Updating the Device Driver

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

Note 1: before attempting to update the driver entry, ensure that the NVMe products are installed into the Mac platform.

Note 2: This driver can be installed directly without uninstalling the driver.

Updating the Device Driver for macOS 10.13/10.14/10.15/11.x/12.x/13.x

1. Locate the download and double-click the **HighPointNVMe.pkg** package to start the installer. Click the **Continue** button.
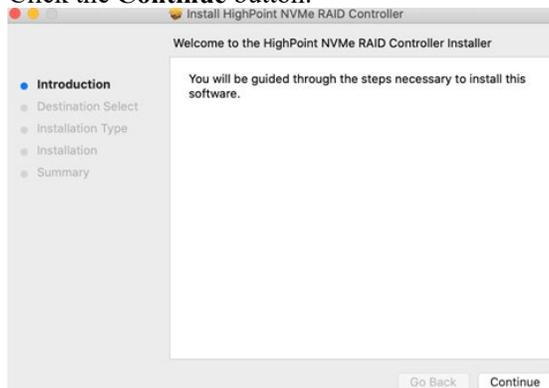
2. macOS will prompt you to install the driver. Click **Install** to proceed.
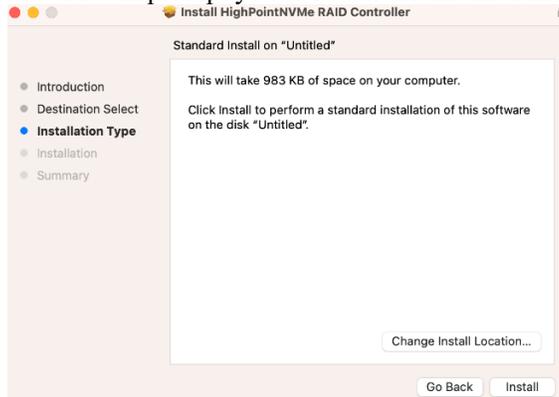
3. You will be prompted that the installer is trying to install new software, enter the *Administrator* Username and Password. Once these have been entered, Click **Install Software**.

4. If no pop-ups appear, please proceed to the next step of installation. Click **Restart.**
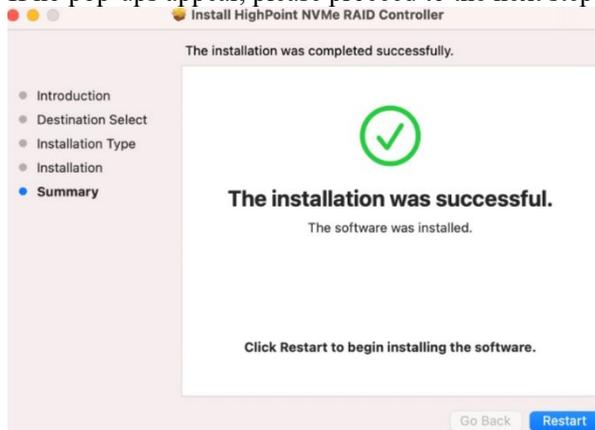
5. If you receive a popup window prompting you for permission, click **Open Security Preferences**.
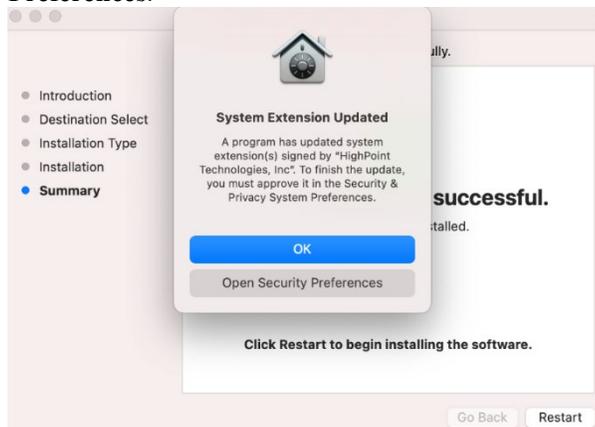
6. Make sure the **App Store and identified developers** is checked, and then click **Allow**.
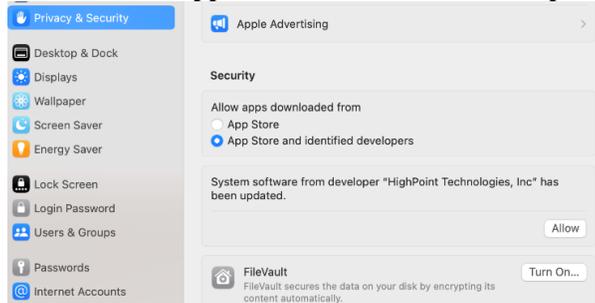
7. You will receive a popup window, prompting you to restart. Click **Restart**.
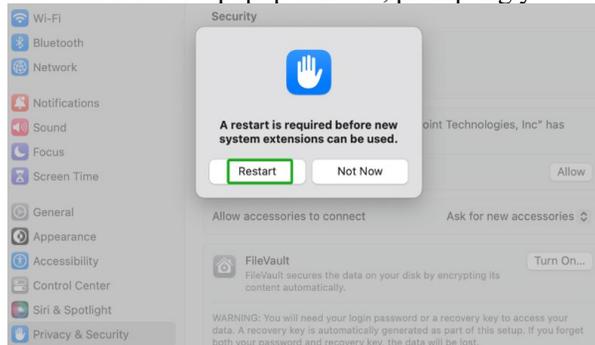
8. After clicking, the following page will appear，wait a moment.
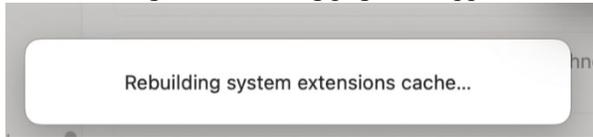
9. Return to the driver installation window. Click **Restart** to restart the system.
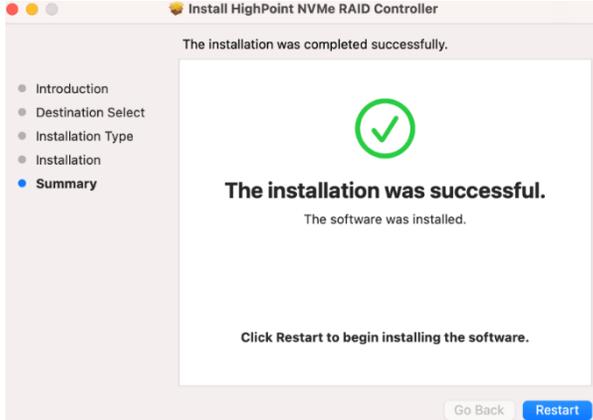
10. After the system restarts, the driver's status can be viewed under **System Information→ Extensions**; The following screenshot shows the **HighPointNVMe** driver has been **loaded**:
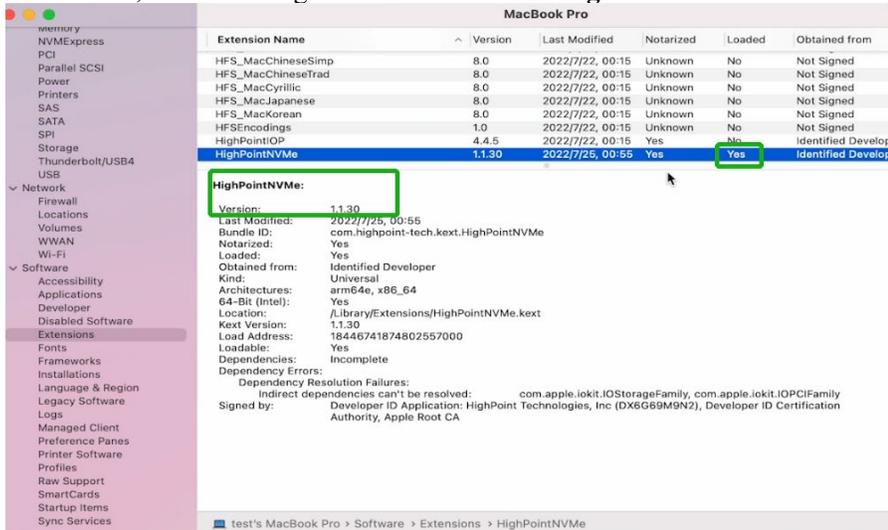
Note: The driver revision shown in the screenshots may not correspond with current software releases. Please make sure to download the latest driver updates from the product's Software Updates page.

6. Uninstalling the Device Driver

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

Uninstalling the Device driver for macOS 10.13 /10.14 /10.15/ 11.x /12.x /13.x

1. Power off the system and remove the NVMe product from the motherboard.
    Note 1: Failing to remove the NVMe product and SSDs when uninstalling the driver may result in data loss.

    Note 2: The macOS will load the default NVMe support after the HighPoint driver has been uninstalled – this driver will only recognize the NVMe SSDs as separate disks.

2. To uninstall the NVMe driver, you will need to open the terminal window and enter the f ollowing command:

    sudo rm -rf /Library/Extensions/HighPointNVMe.kext

    sudo kextcache –i /

```
test@testsMB01610152 ~ % sudo rm -rf /Library/Extensions/HighPointNVMe.kext
Password:
test@testsMB01610152 ~ % sudo kextcache -i /
kextcache -i /
kextcache -arch x86_64 -local-root -all-loaded -kernel /System/Library/Kernels/k
ernel -prelinked-kernel /Library/Apple/System/Library/PrelinkedKernels/prelinked
kernel -volume-root / /Library/Extensions /AppleInternal/Library/Extensions /Lib
rary/Apple/System/Library/Extensions /System/Library/Extensions
KernelCache ID: 91AFAAB6216EDD61055A39A8E77A483C
test@testsMB01610152 ~ %
```

3. After uninstalling the driver, manually reboot the system.

7. Installing the RAID Management Software

The following section discusses RAID Management Software installation for NVMe products.

Installing the WebGUI for macOS 10.13/10.14/10.15/11.x/12.x/13.x

1. Double-click the package named **HighPointWebGUI.pkg** to start the installer. When the window appears, click the **Continue** button.
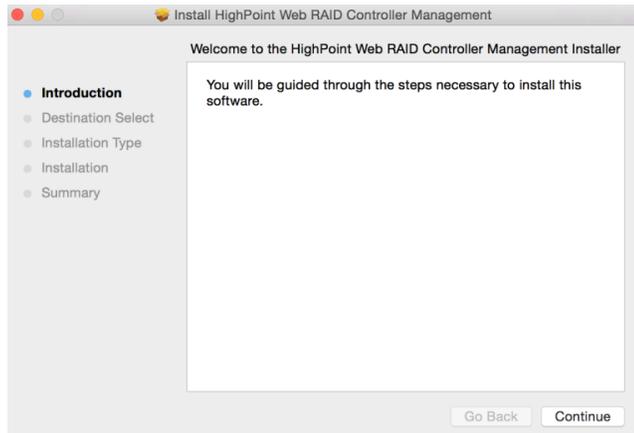
2. You will be promoted to click the **Install** button. Click **Install** to continue.
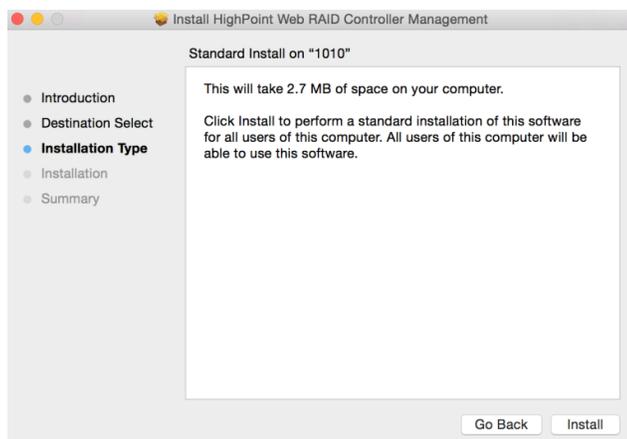
3. You will then be prompted to enter the *Administrator* Username and Password. Once these have been entered, click **Install Software** to continue.
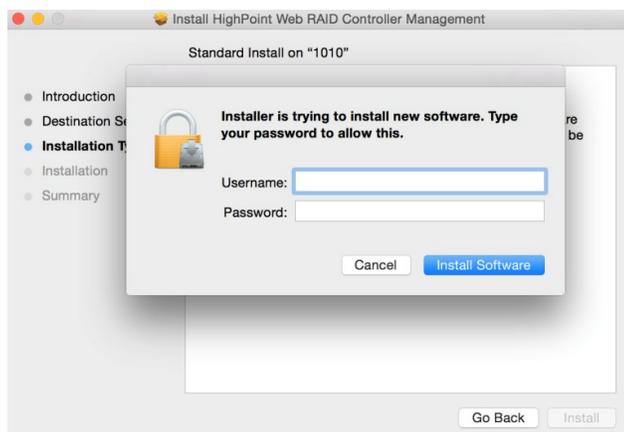
4. The WebGUI Management software has been installed. Click **Close** to complete the procedure.
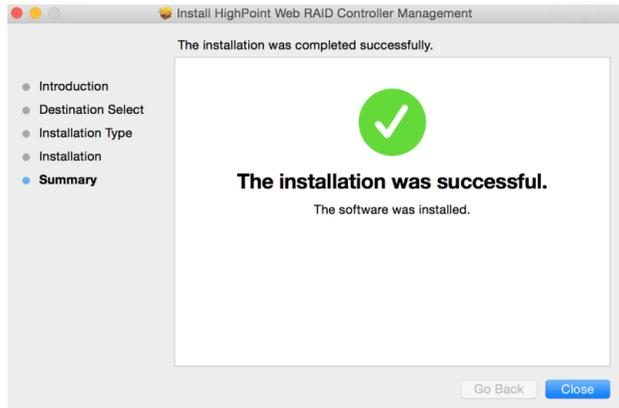
8. Updating the RAID Management Software

The following section discusses RAID Management Software updates for NVMe products.

Updating the WebGUI for macOS 10.13/10.14/10.15/11.x/12.x/13.x

1. First, uninstall the current RAID Management Software. Please refer to **Uninstalling the RAID Management Software.**
2. After uninstalling the RAID Management Software, reboot macOS.
3. Once the system has rebooted, download the latest version of the RAID Management Software from the appropriate Software Downloads webpage.
4. Locate the download and double-click the package named **HighPointWebGUI.pkg** to start the installer. Please refer to **Installing the RAID Management Software** for more information.

9. Uninstalling the RAID Management Software

Uninstalling the WebGUI for macOS 10.13/10.14/10.15/11.x/12.x/13.x

To uninstall the RAID Management Software, access Applications, click on HPTWEBGUI, select uninstall, and double-click the uninstall-WEBGUI.command. The uninstall command will automatically open a terminal and uninstall the software:
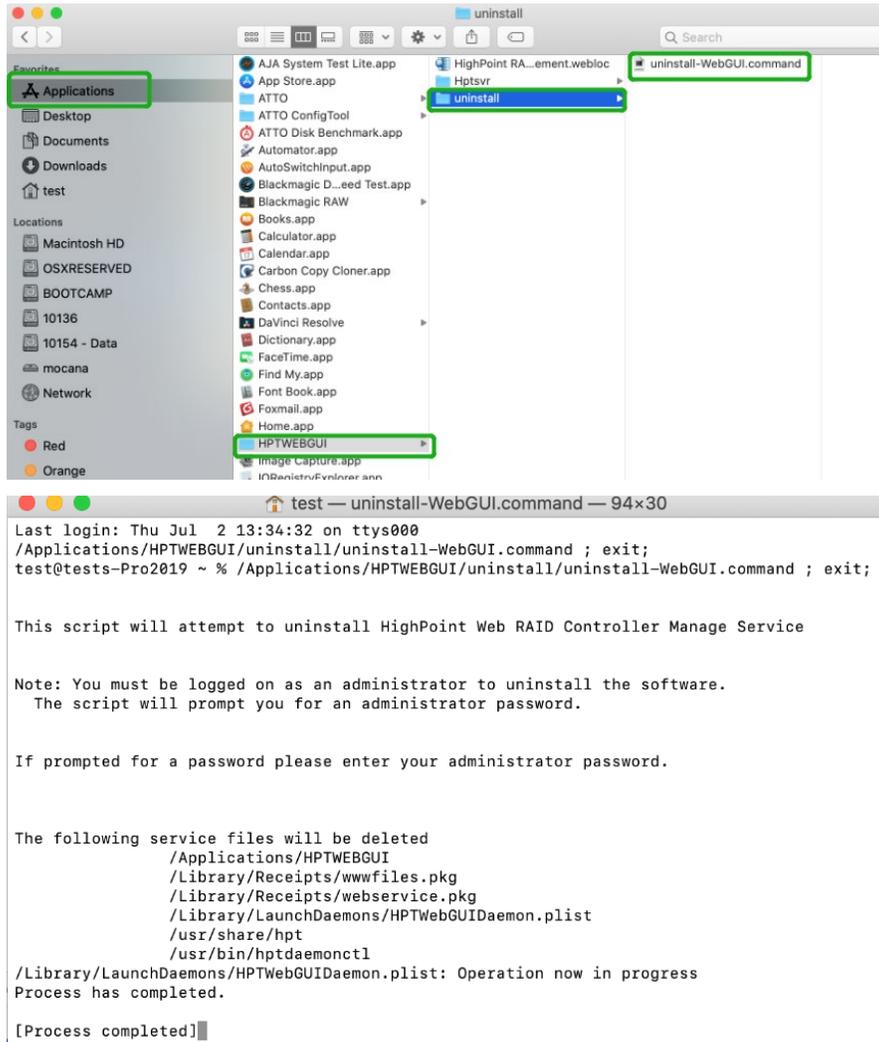
10 Trouble shooting

No controller detected

Enter the WebGUI and prompt **no controller detected.**

This error can be triggered by the following issues:

1. The HighPoint NVMe hardware is not recognized by macOS.

Solution:

Verifying the HighPoint NVMe hardware

1. Please refer to the **Appendix – Verifying Product Installation** to make sure the HighPoint NVMe device is properly recognized by macOS.

2. If the NVMe product is not recognized, try again with a different slot.

3. If you are using the RocketStor 6661A-NVMe and the RocketStor 6661A entry is not displayed, this may be related to a connection problem – move the RS6661A to another Thunderbolt™ 3 port or replace the cable and recheck the entry.

If the controller is still not detected, please submit the log to our online service Link.

No driver detected

Enter the WebGUI and prompt **no driver detected.**

This error can be triggered by one of the following issues:

1. The HighPoint NVMe device driver is not installed or is not loading properly.

2. The system's SIP status is incorrect.
3. If you are using a T2 system; Secure Boot may not be disabled.
4. If you are using the Apple M1 & M2 system, the Security Policy may not be 'Reduced'.

Solutions:

1. **Make sure the HighPoint NVMe Driver is loaded**

   Please refer to the **Appendix - Checking the Driver status and Version** to make sure the HighPoint NVMe driver is installed properly.

   1) If the HighPoint NVMe driver is not loading, refer to **Appendix-Check the security & privacy status**. If HighPoint software is blocked in the permission, you need to click Allow.

2. **Check the SIP status**

   1) Please refer to the **Appendix - Checking the SIP Status** .
   2) If the settings are not correct for your system, please refer to the driver installation manual for each system to reset the SIP status.

3. **For T2 Systems: Make sure Secure Boot is disabled**

   Please refer to the **Appendix - Systems with T2 chipsets – Secure Boot status** . If the setting is incorrect, you will need to reboot the system to change the setting.

4. **For Apple M1 & M2 Platform: Make sure the Security Policy is reduced**

   Please refer to the **Appendix-Reduced Security Policy** . If the setting is incorrect, you will need to shut down the system to change the setting.

If the driver is still not detected, please submit the log to our online service Link.

The WebGUI can't connect to a remote system

If you can't connect to a remote system, make sure **raidman-httpsd** is running on the target system, and confirm that you can access the remote system via a TCP/IP connection. If you have a firewall configured, make sure TCP port 7402 is not blocked.

Appendix

Checking the macOS version

1. Click on the Apple logo located near the upper left-hand portion of the Desktop Then the version number of the system will all be displayed.

Check the security & privacy

1. Check if there is HighPoint software blocked in the permission, if it is blocked, you need to click "**Allow**".
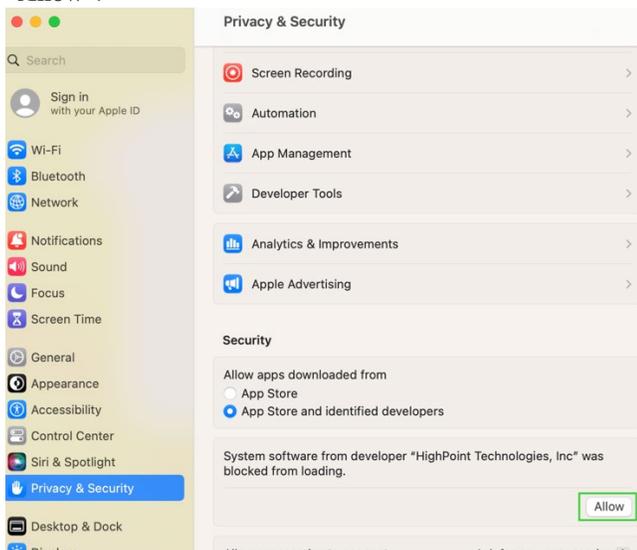
Verifying Product Installation

1. Click on the **Apple** logo located near the upper left-hand portion of the Desktop, and select "**About this Mac**".

    1) RocketStor 6661A-NVMe (Thunderbolt entry):
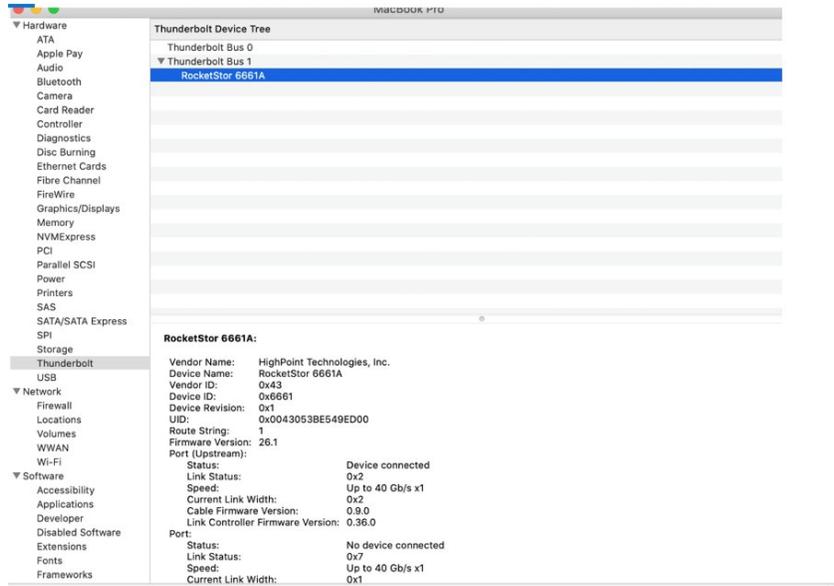
    2) If you are using NVMe products, check under **Hardware**, **PCI**.

    Example screenshot: SSD7505
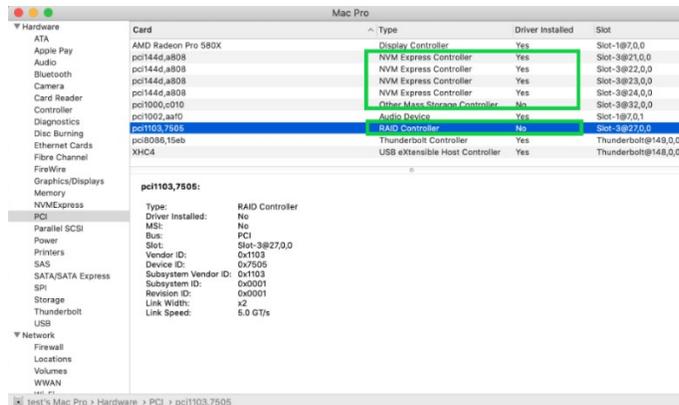
Checking the SIP Status

Open a Terminal window and enter the following command:

csrutil status

Please take a screenshot of the output, and attach it to a support case (see example below):
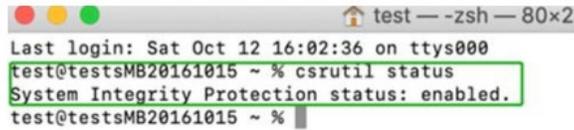
The status will vary depending on which version of macOS you are using.

Please refer to **Disabling SIP (for macOS13x and earlier)**

MacOS Version	SIP Status	Driver Status
10.13.x	Disable	Loaded
10.14.x	Enable	Loaded
10.15.x	Enable	Loaded
11.x	Enable	Loaded
12.x	Enable	Loaded
13.x	Enable	Loaded

Systems with T2 chipsets – Secure Boot status

You will need to reboot the system and enter Recovery Mode to check the Secure Boot status. This setting should remain disabled.

Please refer to **Disabling Secure boot.**

Apple M1 & M2 Platform – Reduced security policy

Check if **Secure Boot** is **Reduced Security**.

System Information -> Hardware -> Controller -> Boot Policy
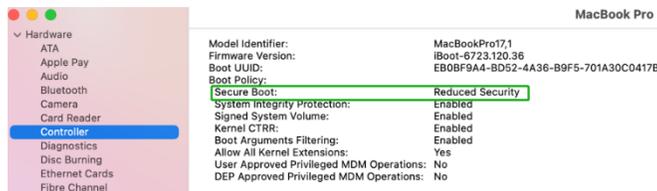
Secure Boot must be **reduced Security** to load drivers for third-party devices, if change please refer to: **Reduced Security Policy**

Checking the Driver status and Version

1. Click on the **Apple** logo located near the upper left-hand portion of the Desktop, and select "**About this Mac**".
2. Click on **Extensions**, and then click on **HighPoint NVMe** entry – please take a screenshot and attach it to this support case (see the example below):

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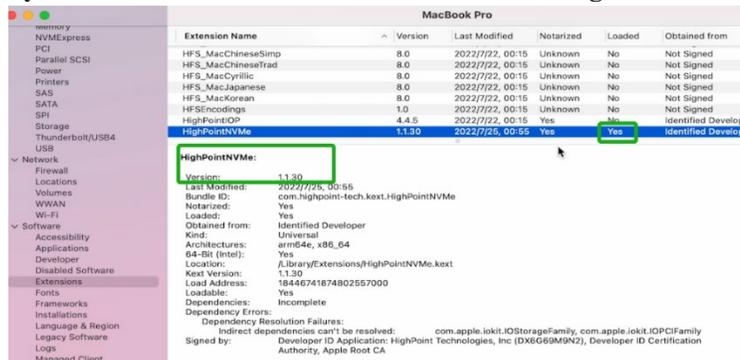
Note: The driver revision shown in the screenshots may not correspond with current software releases. Please make sure to download the latest driver updates from the product's Software Updates page.

How to Collect Diagnostic Logs

We have provided a detailed video on log collection methods: link

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.

3. Click the "Save Logs" button to create the diagnostic file. Note, that this process may take several minutes to complete.
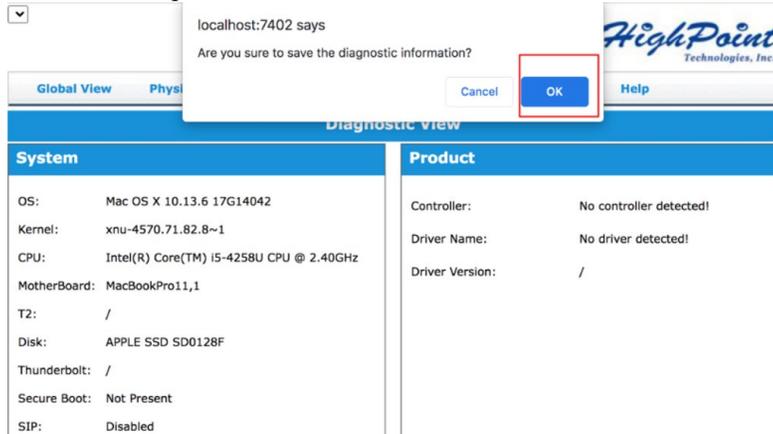
4. **'Logs Location'** will display the location of the saving path.
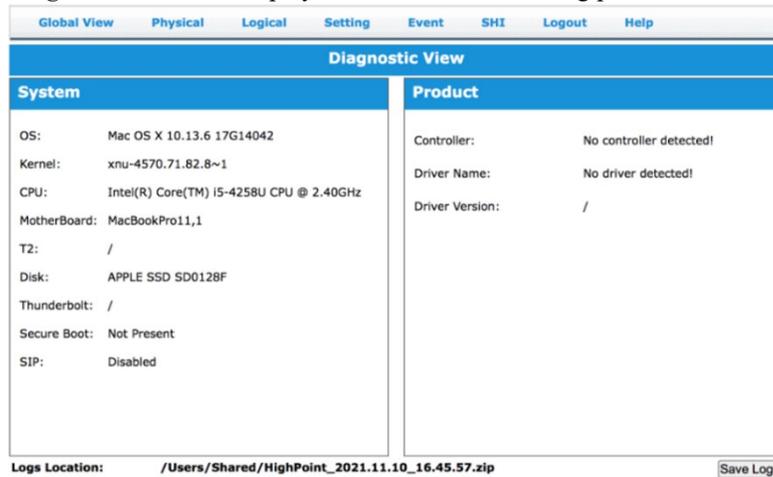
Please submit the log file to our Support Department using our online services:
(https://www.highpoint-tech.com/support-and-services).