# SSD7000 Series NVMe RAID Solutions Mac Installation Guide

# **Contents**

Ove	erview	1
Pre	requisites	2
1.	Disabling macOS Secure boot and SIP for T2 Systems	3
	Disabling Secure Boot	3
	Disabling SIP (for macOS 10.13x and earlier)	4
2.	Installing the Device Driver	6
	macOS High Sierra 10.13 Driver Installation Procedure	6
	macOS Mojave10.14 and macOS Catalina 10.15 Driver Installation Procedure	8
3.	Updating the Device Driver	11
	Updating the Device Driver (for macOS 10.13/10.14/10.15)	11
4.	Uninstalling the Device Driver	13
	Uninstalling the Device driver for macOS 10.13 and 10.14	13
	Uninstalling the Device Driver for macOS 10.15	14
5.	Installing the RAID Management Software (WebGUI)	15
	Installing the WebGUI for macOS 10.13/10.14/10.15	15
6.	Updating the WEBGUI for macOS 10.13/10/14/10.15	16
7.	Uninstalling the WebGUI for macOS 10.13/10.14/10.15	17
8.	Trouble shooting	18
	Unable to connect to the WebGUI	18
	The WebGUI can't connect to a remote system	19
Apj	pendix	20
	Check the security & privacy	20
	Verifying Product Installation	20
	WEBGUI service restart	23
	Checking the SIP Status	23
	Systems with T2 chipsets – Secure Boot status	24
	Checking the Driver status and Version	24
	How to Collect Diagnostic Logs	25

## Overview

This guide includes important hardware/software requirements, installation & upgrade procedures, and troubleshooting tips for using SSD7000 NVMe RAID controllers, the RocketStor 6661A-NVMe Thunderbolt<sup>TM</sup> 3 NVMe RAID solution, and SSD6540/6540M RAID enclosures with a macOS operating system.

## **Prerequisites**

This section describes the base hardware and software requirements for SSD7000 series NVMe RAID controllers & enclosures.

#### **Driver Installation**

This section covers driver installation, driver upgrade and driver uninstallation procedures for SSD7000 series NVMe RAID controllers & enclosures in a macOS environment.

## **Troubleshooting**

Please consult this section if you encounter any difficulties installing or using SSD7000 series NVMe RAID controllers or enclosures. It includes descriptions and solutions for commonly reported technical issues.

## **Appendix**

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

# **Prerequisites**

- Make sure at least one NVMe SSDs has been installed into the HighPoint NVMe controller or enclosure. The driver will not install properly unless NVMe SSDs are detected by the hardware environment.
- 2) The SSD7101A-1/7120/6540/6540M/7103/7104/7140/7505/7502/7540 NVMe device must installed into a PCIe 3.0 slot with x16 dedicated lanes. The SSD7204 can be installed into a PCIe 3.0 x8 or x16 slot.
  - If you are using the RocketStor 6661A-NVMe or a SSD7000 NVMe RAID controller via the RocketStor 6661A adapter, the RocketStor unit must be plugged into a Thunderbolt<sup>TM</sup> 3 port.
- 3) Operating System Support: macOS 10.13 or later
- 4) Before installing the driver and RAID Management software, you should log into the system as a System Administrator.
- 5) Identify the system as either T2 or Non-T2 based if the system has a T2 chip, make sure to follow section 3 before attempting to install any software for the HighPoint NVMe device.

# 1. Disabling macOS Secure boot and SIP for T2 Systems

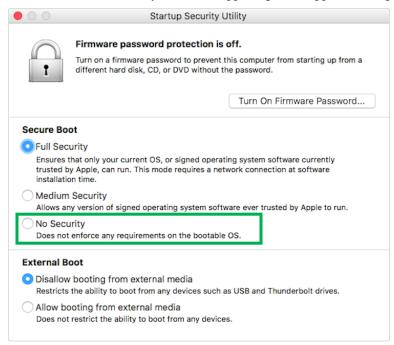
Customers working with Mac platforms manufactured in 2018 or later that feature a T2 security chip, will need to disable the **Secure Boot** in order to load drivers for third party devices. In addition, macOS 10.13x and earlier may require that **SIP** (System Integrity Protection) be disabled. If enabled, older versions of macOS may prevent the NVMe drivers from loading.

HighPoint products affected by this requirement include our NVMe RAID product lines (SSD7100 and SSD7500 Series RAID Controllers and SSD6540 series NVMe RAID Enclosures).

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**

In order 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.



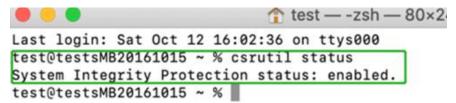
Instructions are available from Apple's website: About Secure Boot

## Disabling SIP (for macOS 10.13x and earlier)

While macOS is running, open a terminal window to confirm whether System Integrity Protection (SIP) status is disabled.

If enabled, you will need to manually disable the setting. Open a terminal, and then enter the following command:

#### csrutil status



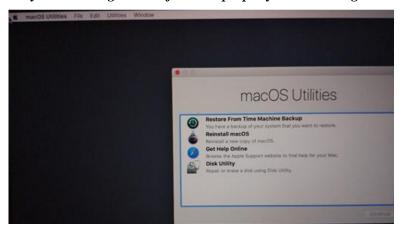
The example screenshot shown above indicates that SIP is enabled.

#### To disable SIP

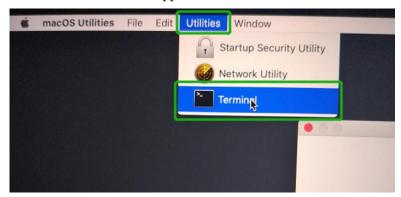
1) Restart the computer and hold down the "Command + R" buttons. Continue to hold these keys until macOS enters System Recovery mode.



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.



2) Click on Utilities in the upper left corner and select Terminal:



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

## csrutil disable

```
Terminal — -bash — 80x24

[-bash-3.2# csrutil status
System Integrity Protection status: enabled (Apple Internal).

-bash-3.2# csrutil disable
Successfully disabled System Integrity Protection. Please restart the machine for the changes to take effect.

-bash-3.2#
```

4) Click the **Apple** logo in the upper left-hand corner of the desktop, and select **Restart** to reboot the system.



5) After rebooting, confirm that SIP is disabled. Open terminal and type the following command:

## csrutil status

```
Last login: Sat Oct 12 17:18:44 on console [test@testsMB20161015 ~ % csrutil status System Integrity Protection status: disabled. test@testsMB20161015 ~ %
```

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

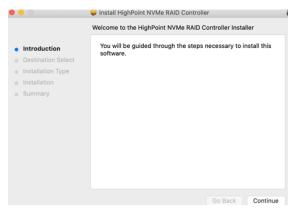
# 2. Installing the Device Driver

Current drivers can be downloaded from each product's **Software Downloads** webpage.

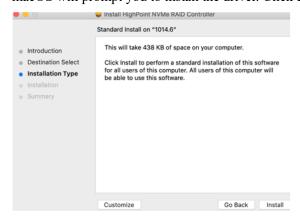
Product	Download Page
SSD7101A-1	https://www.highpoint-tech.com/USA_new/series-ssd7101a-1-download.htm
SSD7120	https://highpoint-tech.com/USA_new/series-ssd7120-download.htm
SSD7204	https://highpoint-tech.com/USA new/series-ssd7204-download.htm
SSD7104	https://highpoint-tech.com/USA_new/series-ssd7104-download.htm
SSD6540M	https://highpoint-tech.com/USA_new/series-ssd6540m-download.htm
SSD6540	https://highpoint-tech.com/USA_new/series-ssd6540-download.htm
SSD7103	https://highpoint-tech.com/USA_new/series-ssd7103-download.htm
SSD7140	https://highpoint-tech.com/USA_new/series-ssd7140-download.htm
RS6661A-NVMe	https://highpoint-tech.com/USA_new/series-rs6661a-nvme-download.htm
SSD7505	https://highpoint-tech.com/USA new/series-ssd7500-download.htm
SSD7502	https://www.highpoint-tech.com/USA new/series-ssd7502-overview.html
SSD7540	https://highpoint-tech.com/USA new/series-ssd7500-download.htm

## macOS High Sierra 10.13 Driver Installation Procedure

1) Start the driver installation procedure. Locate the download and double click the package to start the installer. Click the **Continue** button:



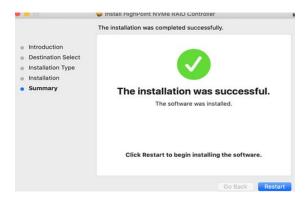
2) macOS will prompt you to install the driver. Click Install to proceed.



3) You will be prompted that a reboot is needed to install the software. Click **Continue Installation**.



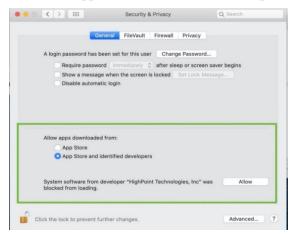
4) If no pop-ups appear, please proceed to the next step of installation. Click **Restart**.



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



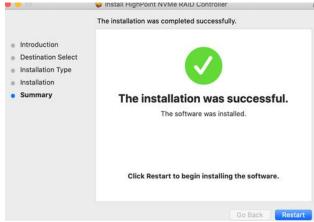
6) Make sure App Store and identified developers is checked, and then click Allow.



7) You will receive a popup window, prompting you to restart. Click **OK**.



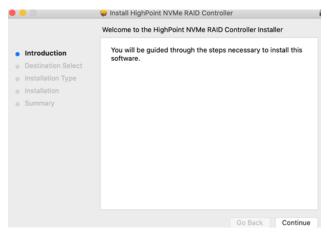
8) Return to the driver installation window. Click **Restart** to restart the system.



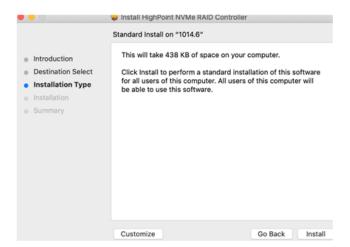
9) After restarting the system, install HighPoint RAID management.

## macOS Mojave10.14 and macOS Catalina 10.15 Driver Installation Procedure

1) Locate the download and double click the package to start the installer. Click the **Continue** button:



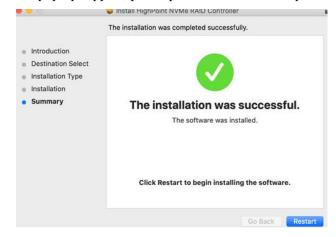
2) macOS will prompt you to install the driver. Click Install to proceed.



3) You will be prompted that a reboot is needed to install the software. Click **Continue Installation**.



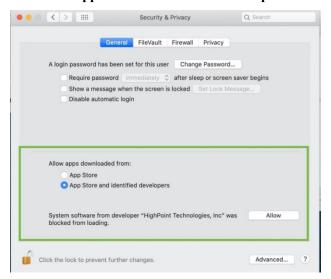
4) If no pop-ups appear, please proceed to the next step of installation. Click **Restart**.



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



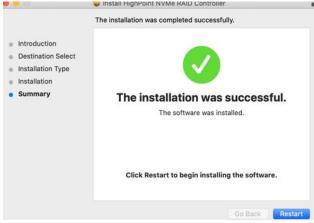
6) Make sure App Store and identified developers is checked, and then click Allow.



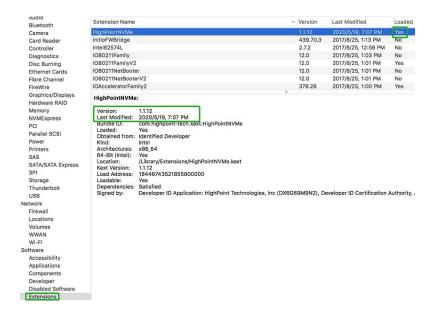
7) You will receive a popup window, prompting you to restart. Click **OK**.



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



9) After the system restarts, the driver's status can be viewed under **System Information**; The following screenshot shows the 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.

# 3. Updating the Device Driver

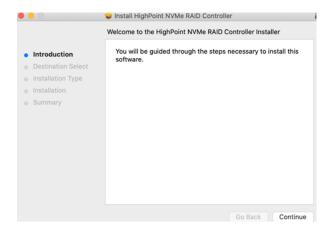
Note: Update the driver, please make sure the RAID controller is connected to the host.

Current drivers can be downloaded from each product's **Software Downloads** webpage.

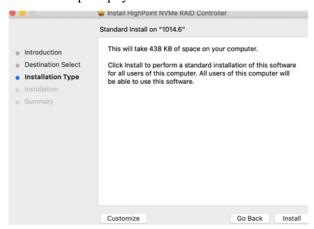
Product	Download Page
SSD7101A-1	https://www.highpoint-tech.com/USA_new/series-ssd7101a-1-download.htm
SSD7120	https://highpoint-tech.com/USA_new/series-ssd7120-download.htm
SSD7204	https://highpoint-tech.com/USA_new/series-ssd7204-download.htm
SSD7104	https://highpoint-tech.com/USA_new/series-ssd7104-download.htm
SSD6540M	https://highpoint-tech.com/USA new/series-ssd6540m-download.htm
SSD6540	https://highpoint-tech.com/USA new/series-ssd6540-download.htm
SSD7103	https://highpoint-tech.com/USA_new/series-ssd7103-download.htm
SSD7140	https://highpoint-tech.com/USA_new/series-ssd7140-download.htm
RS6661A-NVMe	https://highpoint-tech.com/USA_new/series-rs6661a-nvme-download.htm
SSD7505	https://highpoint-tech.com/USA_new/series-ssd7500-download.htm
SSD7502	https://www.highpoint-tech.com/USA_new/series-ssd7502-overview.html
SSD7540	https://highpoint-tech.com/USA_new/series-ssd7500-download.htm

# **Updating the Device Driver (for macOS 10.13/10.14/10.15)**

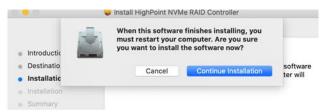
1) Locate the download and double click the package to start the installer. Click the **Continue** button:



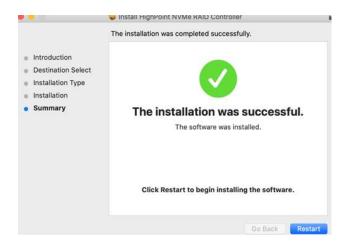
2) macOS will prompt you to install the driver. Click Install to proceed.



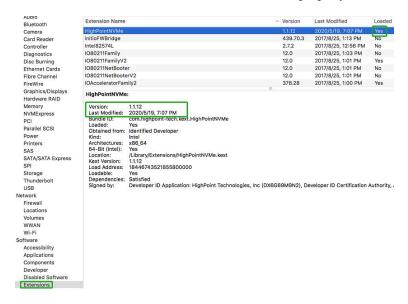
3) You will be prompted that a reboot is needed to install the software. Click **Continue Installation**.



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



5) After the system restarts, the driver's status can be viewed under **System Information**; the screenshot below shows that the driver has loaded properly.



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.

# 4. Uninstalling the Device Driver

# Uninstalling the Device driver for macOS 10.13 and 10.14

To uninstall the NVMe driver, you will need to open a **Terminal** window and enter the following command:

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

```
test — -zsh — 80×24

Last login: Fri Dec 20 19:34:31 on ttys004

[test@testsMB01610152 ~ % sudo rm -rf /Library/Extensions/HighPointNVMe.kext

[Password:
test@testsMB01610152 ~ %
```

## **Uninstalling the Device Driver for macOS 10.15**

To uninstall the NVMe driver, you will need to open a Terminal window and enter the following command:

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

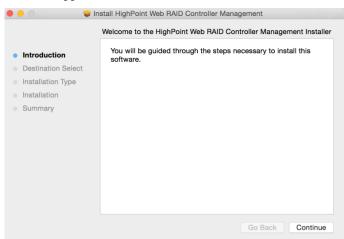
#### sudo kextcache -i /

```
[test@testsMB01610152 ~ % sudo rm -rf /Library/Extensions/HighPointNVMe.kext
[Password:
[test@testsMB01610152 ~ % sudo kextcache -i /
kextcache -i /
kextcache -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 ~ %
```

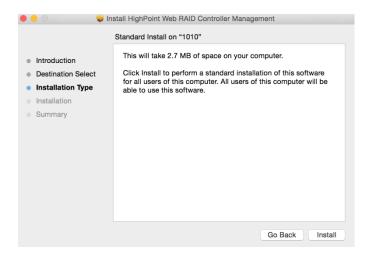
# 5. Installing the RAID Management Software (WebGUI)

# Installing the WebGUI for macOS 10.13/10.14/10.15

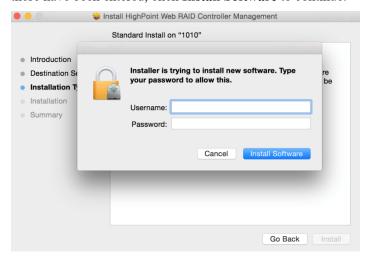
1) Double click the package named **HighPointWebGUI.pkg** to start the installer. When the window appears, click the **Continue** button.



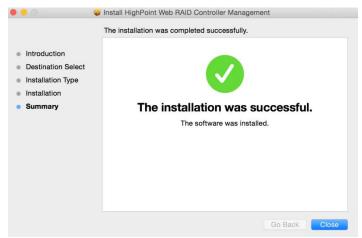
2) You will be promoted to click the **Install** button. Click **Install** to continue.



3) You will then be promoted 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.

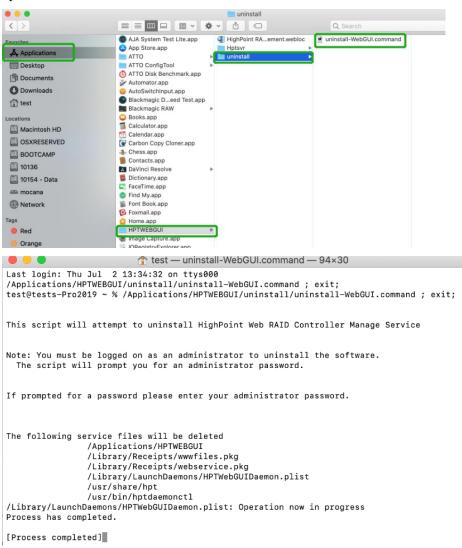


# 6. Updating the WEBGUI for macOS 10.13/10/14/10.15

- 1) First, uninstall the current WebGUI. Please refer to <u>Uninstalling the WebGUI</u>.
- 2) After uninstalling the WebGUI, reboot macOS.
- 3) Once the system has rebooted, download the latest version of the WebGUI 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 <u>WebGUI for macOS 10.13/10.14/10.15</u> for more information.

# 7. Uninstalling the WebGUI for macOS 10.13/10.14/10.15

To uninstall the WebGUI, 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:



# 8. Trouble shooting

## Unable to connect to the WebGUI

After the driver and management software are installed, the management software displays a "Connection Failure" warning when attempting to start the interface:



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

- 01. The HighPoint NVMe hardware is not recognized by macOS
- 02. The HighPoint NVMe device driver is not installed or is not loading properly.
- 03. WEBGUI service is not running.
- 04. The system's SIP status is incorrect.
- 05. If you are using a T2 system; Secure Boot may not be disabled

#### 01. Verifying the HighPoint NVMe hardware

Please refer to the <u>Appendix – Verifying Product Installation</u> to make sure the HighPoint NVMe device is properly recognized by macOS.

**Note**: If you are using the RocketStor 6661A-NVMe:

- If you are using the RocketStor 6661A-NVMe (RS6661A-NVMe), or another SSD7000 series controller via our RocketStor 6661A adapter and a Thunderbolt<sup>TM</sup> 3 connection, refer to the <u>first screenshot</u> displayed under - **Appendix – Verifying Product Installation**. If the RS6661A entry is present, proceed to screenshot #2.
- 2) If the RocketStor 6661A entry is not displayed, this may be related to a connection problem move the RS6661A to another Thunderbolt<sup>TM</sup> 3 port or replace the cable and recheck the entry.

## 02. Make sure the HighPoint NVMe Driver is loaded

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

- If the HighPoint NVMe driver is not loading, proceed to step 2 <u>Check the security & privacy status</u>. If HighPoint software is blocked in the permission, you need to click Allow.
- 2) If the driver is loading properly, but the WebGUI is still unable to start, please try to restart the WEBGUI service. Please refer to <u>Appendix WEBGUI service restart</u> make settings.

If WEBGUI is still not connected, please contact our <u>Support Department</u> to open a support ticket. Please make sure to include any screenshots and system information you are able to collect (see the Appendix for more information).

## 03. Check the SIP status

- 1) Please refer to the **Appendix Checking the SIP Status** (page 27).
- 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.

## 04. For T2 Systems: Make sure Secure Boot is disabled

1) Please refer to the <u>Appendix - Systems with T2 chipsets - Secure Boot status</u>. If the setting is incorrect, you will need to reboot the system to change the setting.

If you encounter any problems while checking items 01-05, please refer to the <u>Appendix</u> to collect information about your system and configuration, and submit a support ticket to our Customer Support department using our Online Support Portal: <a href="https://www.highpoint-tech.com/websupport/main.php">https://www.highpoint-tech.com/websupport/main.php</a>

# The WebGUI can't connect to a remote system

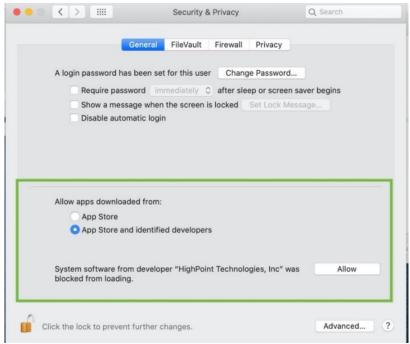
If you can't connect to a remote system, make sure **raidman-httpsd** is running on the target system, and confirm that you can access the remote system via a TCP/IP connection. If you have a firewall configured, make sure TCP port 7402 is not blocked.

# **Appendix**

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.

# Check the security & privacy

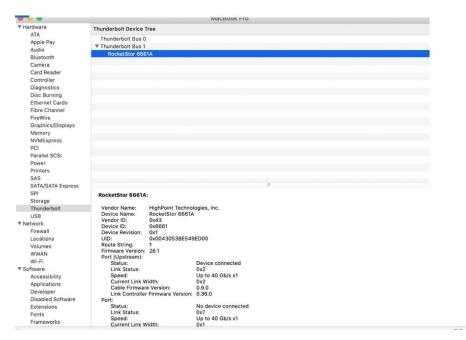
1) Check if there is HighPoint software blocked in the permission, if it is blocked, you need to click "Allow".



## **Verifying Product Installation**

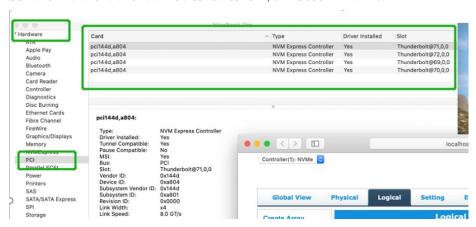
1) Click on the **Apple** logo located near the upper left-hand portion of the Desktop, and select "**About** this Mac".

RocketStor 6661A-NVMe (Thunderbolt entry):

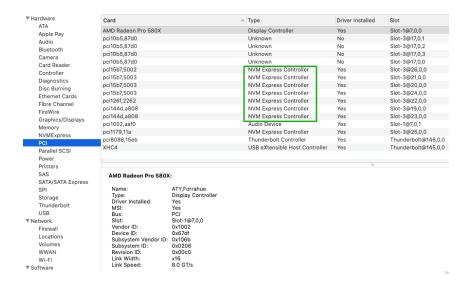


2) If you are using a SSD7000 series NVMe RAID controller, check under **Hardware**, **PCI**. Reference screenshots for each product are show below.

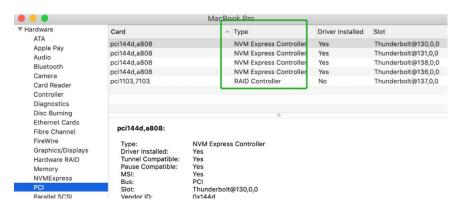
SSD7101A / 7104 / 7204 / 7120 / 6540 / 6540M, or RS6661A-NVMe:



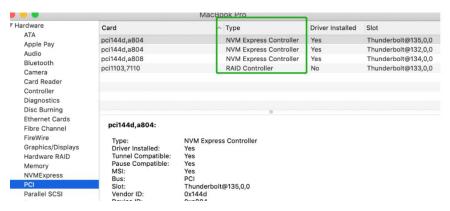
SSD7140



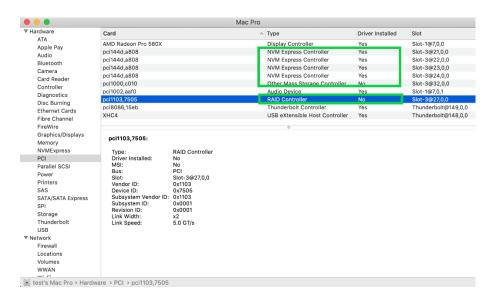
#### SSD7103:



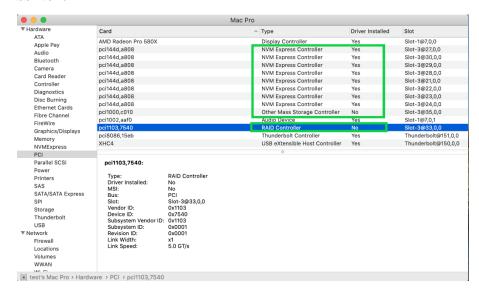
#### SSD7110:



## SSD7505:



#### SSD7540



#### **WEBGUI** service restart

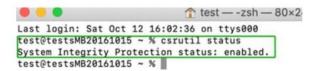
If you can't connect to the WebGUI, please check if a process named raidman-httpsd is running on the system. If it is not running, you can start it manually by opening a terminal window and running the command: "sudo hptdaemonctl restart".

## **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

## Systems with T2 chipsets – Secure Boot status

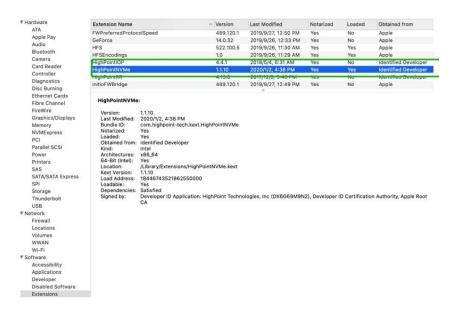
You will need reboot the system and enter Recovery Mode to check the Secure Boot status. This setting should remain disabled.

Please refer to **Disabling Secure boot**.

# **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 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

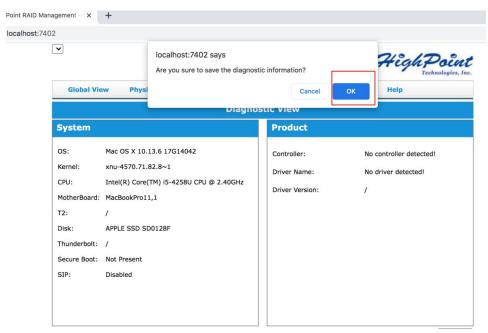
1) Start the WEBGUI, Diagnostic view will appear when Driver or HPT card does not effect, you can see the system information and HPT Product information in this view.



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



3) Enter the Diagnostic view, click 'Save Logs', your log information will be collected. You need to click 'OK' and wait a few minutes.



4) 'Logs Location' will display the location of the saving path.



If you have problems in use, please submit the log to our online service (<a href="https://www.highpoint-tech.com/websupport/">https://www.highpoint-tech.com/websupport/</a>).