Contents

SSD7101A_SSD7204_SSD7104_SSD7120_SSD6540_SSD6540M_SSD7180_SSD7184_SSD7140_SSD7540L Driver & Management Software Installation Guide

This guide includes important hardware/software requirements, installation & upgrade procedures, and troubleshooting tips for using SSD7101A-1/SSD7204/SSD7104/SSD7120/SSD6540/SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L NVMe RAID controllers with a Windows operating system.

Prerequisites

This section describes the base hardware and software requirements for the SSD7101 A-1 /SSD7204/SSD7104/SSD7120/SSD6540/SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L PCIe 3.0 NVMe RAID controllers.

Driver Installation

This section covers driver installation, driver upgrade and driver uninstallation procedures for SSD7101-A/SSD7204/SSD7104/SSD7120/SSD6540/SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L NVMe RAID controllers.

Management Software Installation

This section explains how to download and install the SSD7101A-1/SSD7204/SSD7104/SSD7120/ SSD6540/SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L 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 SSD7101A-1 /SSD7204/SSD7104/SSD7120/SSD6540/SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L NVMe RAID controller. It includes descriptions and solutions for commonly reported technical issues.

Appendix

A selection of useful information and web links for the SSD7101A-1/SSD7204/SSD7104/SSD7120 /SSD6540/SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L NVMe RAID controllers.

Prerequisites for a Data-RAID Configuration

The SSD7101A-1/SSD7204/SSD7104/SSD7120/SSD6540/SSD6540M/SSD7180/SSD7184 /SSD7140/SSD7540L controllers 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 SSD7101A-1/SSD7204/SSD7104/SSD7120/SSD6540/SSD6540M/SSD7180/SSD7184/ SSD7140/SSD7540L controller.
2. **A PCIe 3.0/4.0 slot with x8 or x16 lanes.** The SSD7101A-1/SSD7104/SSD7120/SSD6540/ SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L must be installed into a PCIe 3.0/4.0 slot with x16 dedicated lanes, The SSD7204 can be installed into a PCIe 3.0/4.0 x8 or x16 slot.
3. **Make sure any non-HighPoint drivers are uninstalled for any SSD's hosted by the SSD7000 series RAID controllers**. 3rd party software and manufacturer provided drivers may prevent the SSD7000 from functioning properly.

Warnings:

1) **Failing to remove the controller and SSD's when uninstalling the driver may result in data loss.**
2) **Always make sure the SSD7000 driver is installed before moving a SSD7000 series NVMe RAID controller & RAID array to another Windows system.**

Windows operating systems will always load the default NVMe support after the SSD7000 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 SSD's as separate disks.

If the SSD's 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.

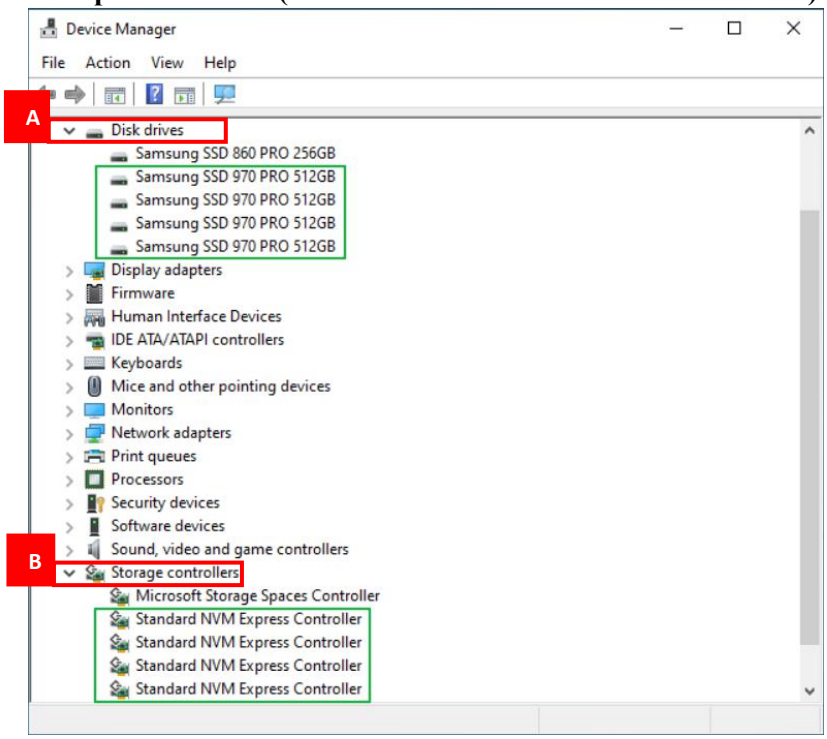
1. Verify that Windows recognizes the controller

After installing the SSD7000 controller into the motherboard, power on the computer, boot the Windows operating system, and open **Device Manager**.

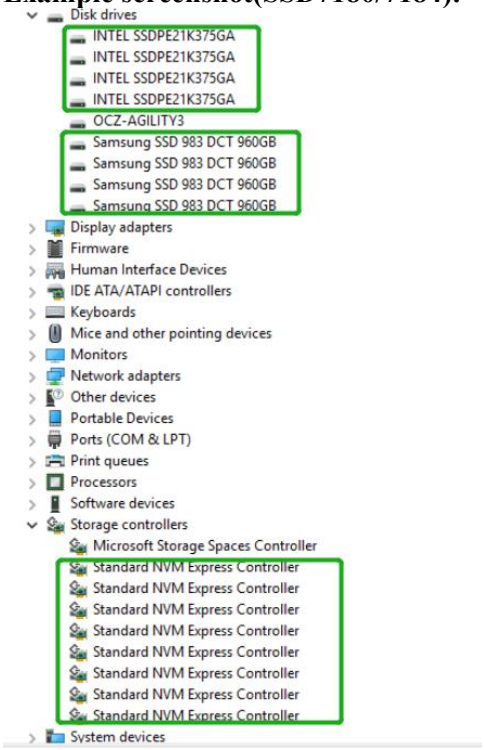
A. Expand the **Disk drives** tab. Each NVMe SSD's installed into the SSD7101A-1 /SSD7120/SSD7204/SSD7104/SSD6540/SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L controller should be displayed here.

B. Expand the **Storage Controllers** tab. You should see a "**Standard NVM Express Controller**" entry for each NVMe SSD that is installed into the SSD7101A1/SSD7204/SSD7104/SSD7120/ SSD6540/SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L controller.

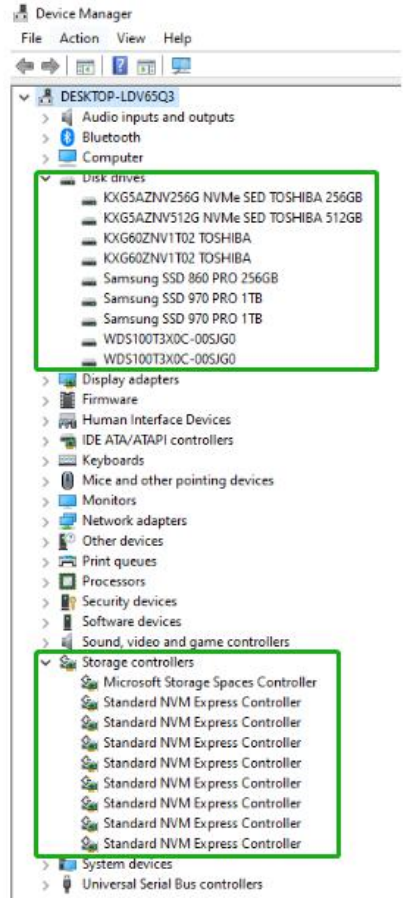
Example screenshot (SSD7101A-1/7104/7204/7120/6540/6540M):



Example screenshot(SSD7180/7184):



Example screenshot(SSD7140/SSD7540L):



2. Download the Device Driver

Download the appropriate SSSD7000 driver from the controller's Software Downloads webpage.

SSD7101A-1:

https://highpoint-tech.com/USA_new/series-ssd7101a-1-download.htm

SSD7104：

https://highpoint-tech.com/USA_new/series-ssd7104-download.htm

SSD7204:

https://highpoint-tech.com/USA_new/series-ssd7204-download.htm

SSD7120:

https://highpoint-tech.com/USA_new/series-ssd7120-download.htm

SSD6540:

https://highpoint-tech.com/USA_new/series-ssd6540-download.htm

SSD6540M:

https://highpoint-tech.com/USA_new/series-ssd6540m-download.htm

SSD7180:

https://highpoint-tech.com/USA_new/series-hpc-download.htm

SSD7184:

https://highpoint-tech.com/USA_new/series-hpc-download.htm

SSD7140:

https://highpoint-tech.com/USA_new/series-ssd7140-download.htm

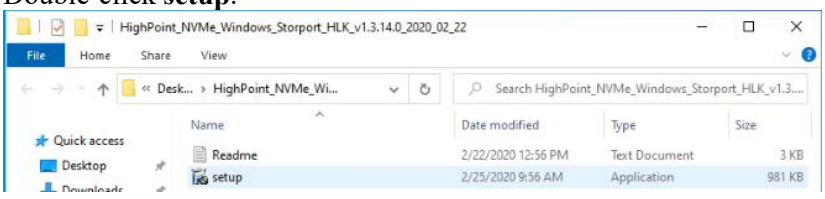
SSD7540L:

https://highpoint-tech.com/USA_new/series-ssd7500-download.htm

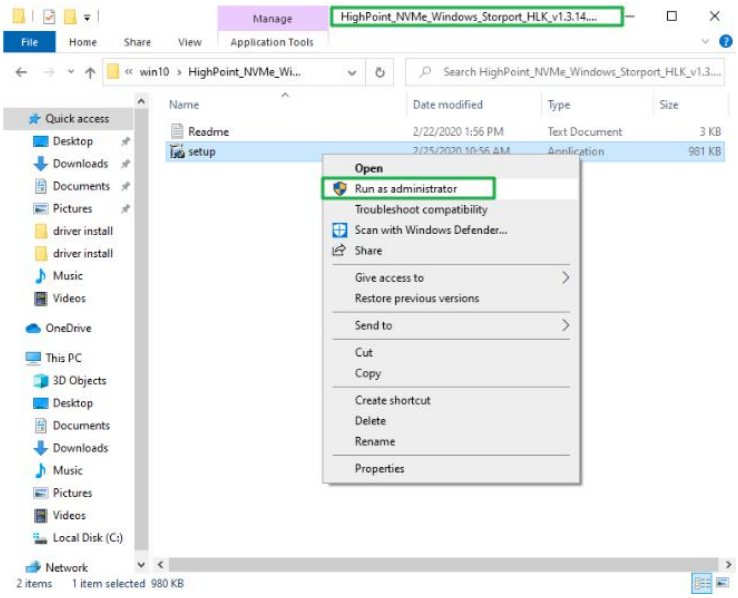
3. Install the Device Driver

A. Locate the driver download and open the file.

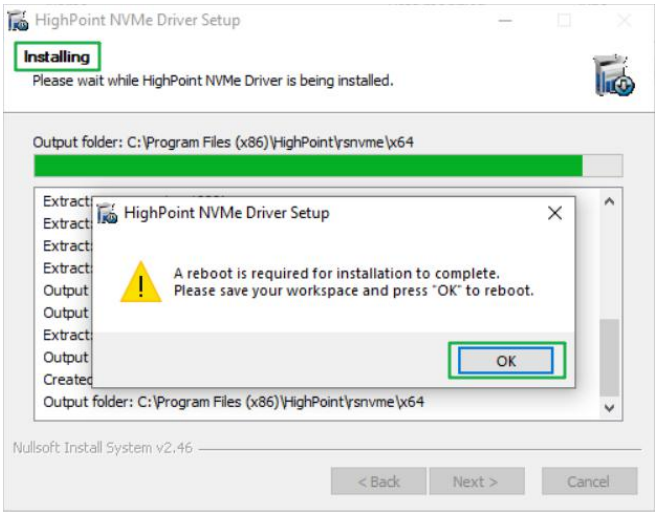
B. Double-click **setup**.



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.

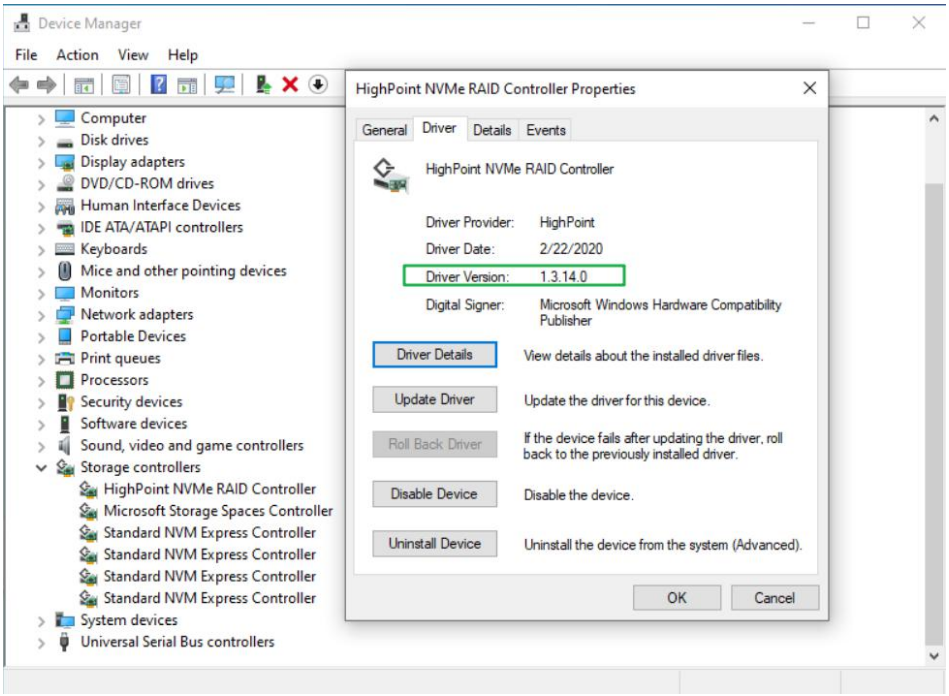


After driver installation is complete, click **OK** to reboot.

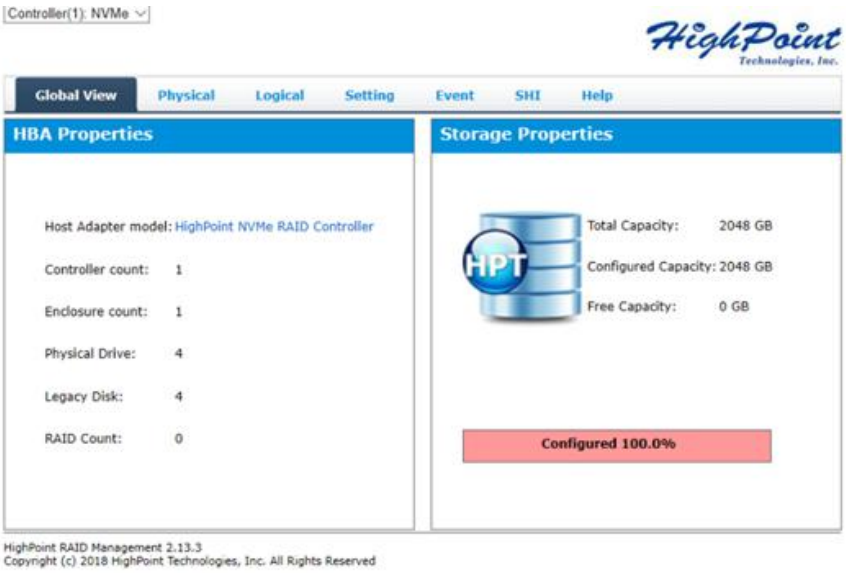


C. Once Windows has rebooted, open **Device Manager** to check the status of the driver. Expand **Storage controllers** and click on the **HighPoint NVMe RAID Controller** entry**.** View the properties and click the **Driver** tab:

Example screenshot (SSD7101A-1/7120/7104/7204/6540/6540M)



D. First, make sure the WebGUI has been installed (see page 17). Open the WebGUI and make sure the SSD.'s / arrays are properly recognized.



Note: Please refer to Appendix A to verify that your Device Manager entries correspond with the driver version you have installed.

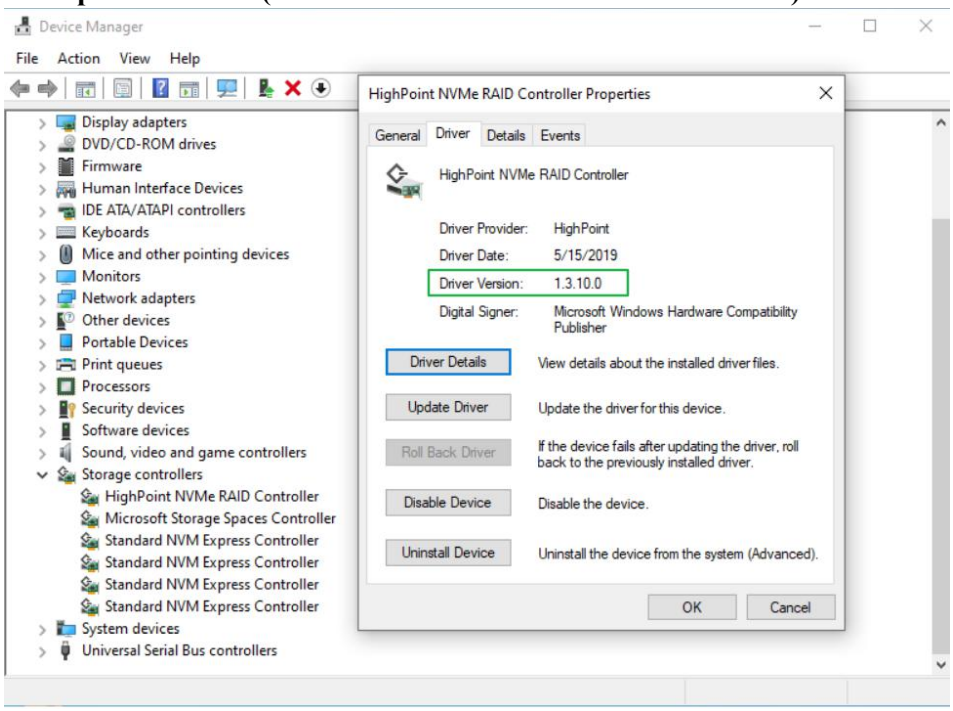
Updating the Device Driver

Note: Before attempting to update the driver entry, ensure that the SSD7101A-1/SSD7204/ SSD7104/SSD7120/SSD6540/SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L is removed from the motherboard.

1. Check the Driver version

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 (SSD7101A-1/7120/7104/7204/6540/6540M)



2. Download the Device Driver

Download the latest driver from the controller's Software Downloads webpage.

SSD7101A-1:

https://highpoint-tech.com/USA_new/series-ssd7101a-1-download.htm

SSD7104：

https://highpoint-tech.com/USA_new/series-ssd7104-download.htm

SSD7204:

https://highpoint-tech.com/USA_new/series-ssd7204-download.htm

SSD7120:

https://highpoint-tech.com/USA_new/series-ssd7120-download.htm

SSD6540:

https://highpoint-tech.com/USA_new/series-ssd6540-download.htm

SSD6540M:

https://highpoint-tech.com/USA_new/series-ssd6540m-download.htm

SSD7180:

https://highpoint-tech.com/USA_new/series-hpc-download.htm

SSD7184:

https://highpoint-tech.com/USA_new/series-hpc-download.htm

SSD7140:

https://highpoint-tech.com/USA_new/series-ssd7140-download.htm

SSD7540L:

https://highpoint-tech.com/USA_new/series-ssd7500-download.htm

3. Shutdown and Remove the Device

A. Power down the system and remove the SSD7101A-1/SSD7204/SSD7104/ SSD7120/ SSD6540/SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L RAID controller from the motherboard.

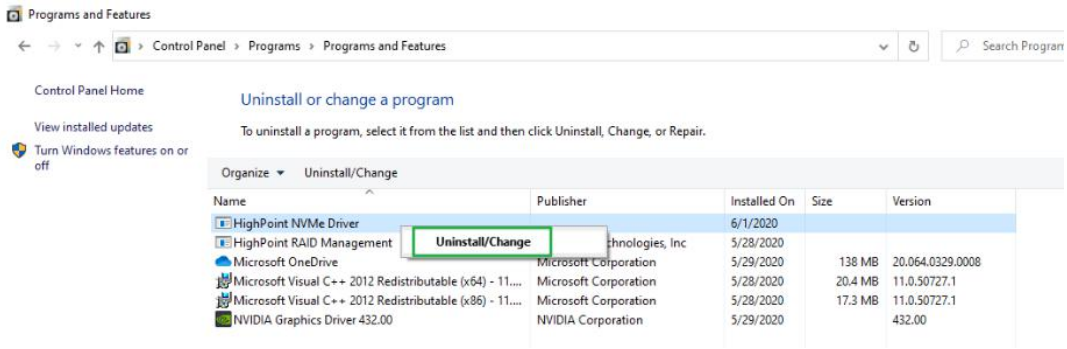
Note: Failing to remove the SSD7000 controller from the motherboard during the uninstall process may result in data loss. Whenever the driver is uninstalled, Windows will attempt to install the default NVMe support, which may corrupt the RAID configurations and any data stored on SSD's hosted by the SSD7000 controller.

B. Power on the system and boot Windows.

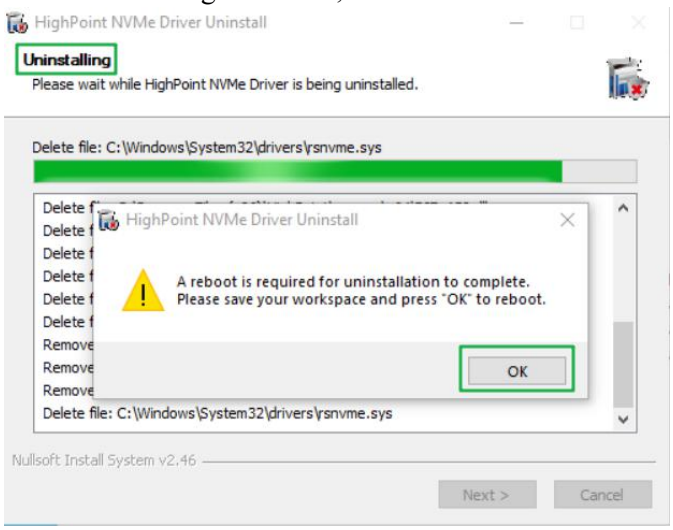
4. Uninstall the old Device Driver

A. Access **Control Panel** and select **Programs→ Programs and Features, and click on the HighPoint NVMe Driver** entry**.**

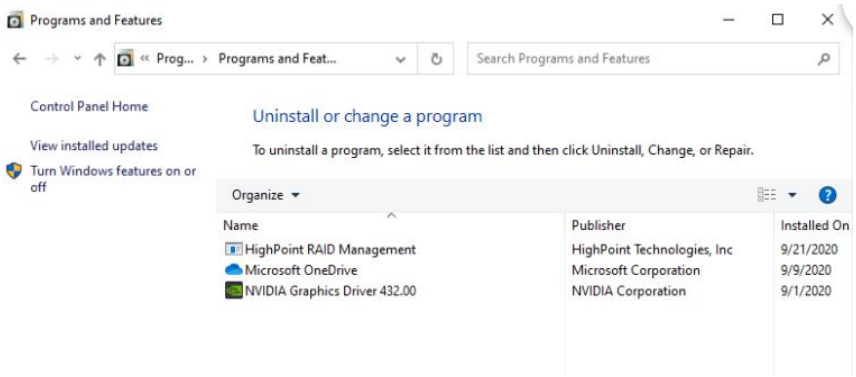
B. Click **Uninstall/Change**



C. After uninstalling the driver, click **OK** to reboot.



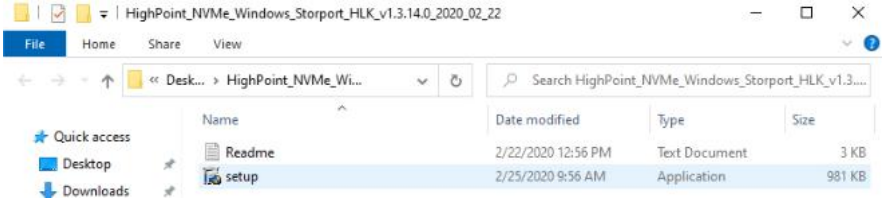
D. After Windows has rebooted, access **Control Panel** to make sure the driver has been uninstalled. If there are no HighPoint NVMe RAID/Driver entries present, the driver has been successfully uninstalled:



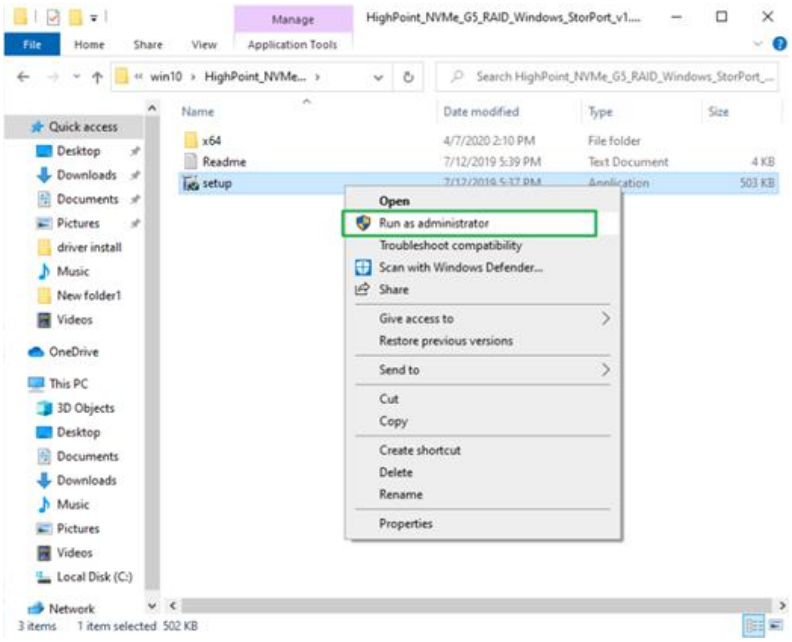
5. Install the new Device Driver

E. Locate the driver download and open the file.

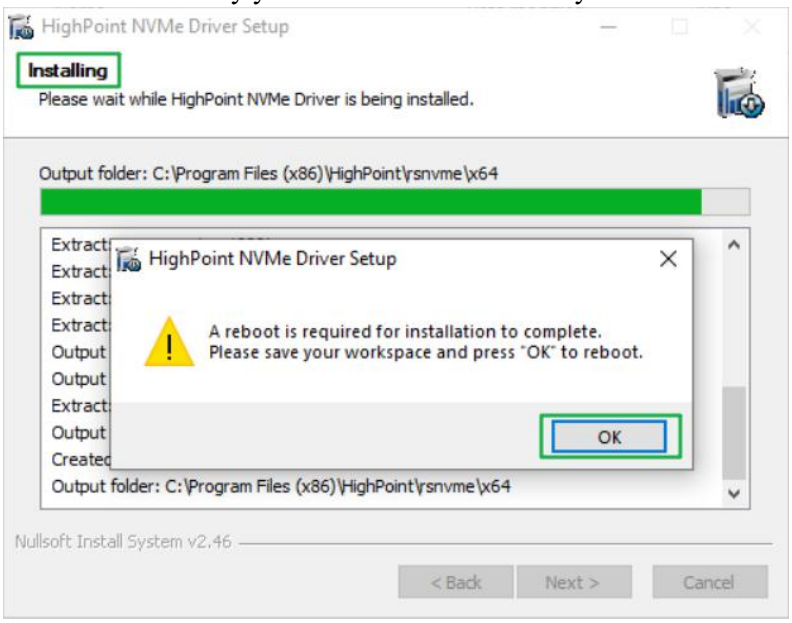
F. Double-click **setup**.



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.



G. Windows will notify you that the driver is already installed. Click **OK** to reboot.

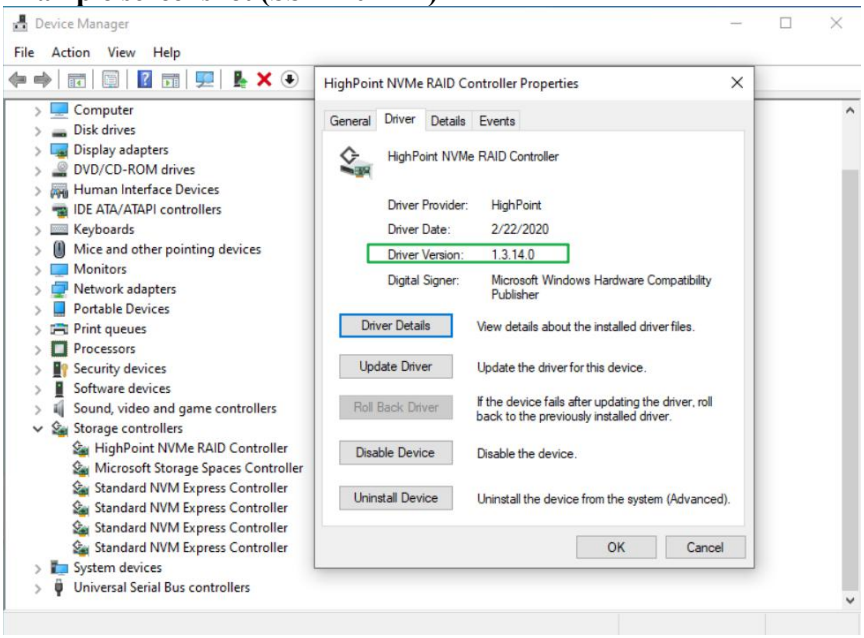


H. After entering the system, **shut down** the system. In the shutdown state, connect the SSD7000 controller to the motherboard.

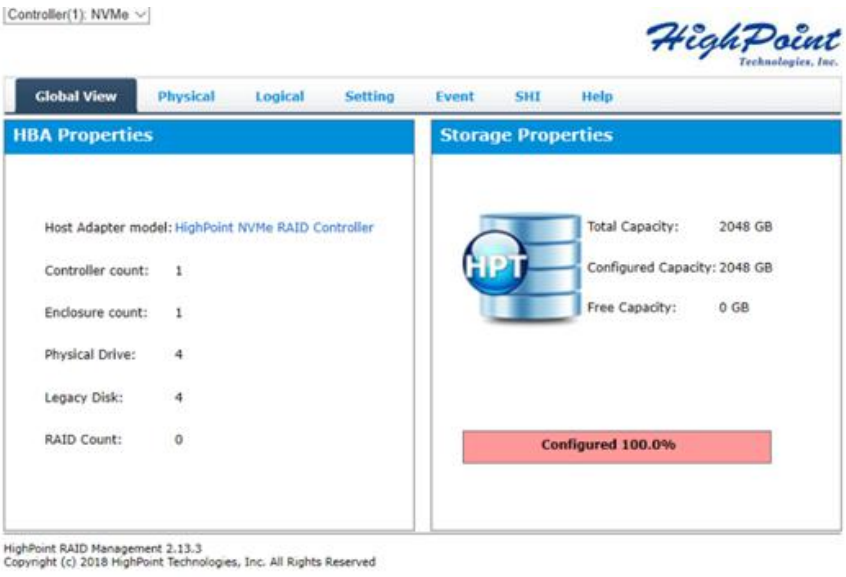
I. Boot into the system.

J. 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 (SSD7101A-1)



K. First, make sure the WebGUI has been installed (see page 17). Open the WebGUI and make sure the SSD.'s / arrays are properly recognized.

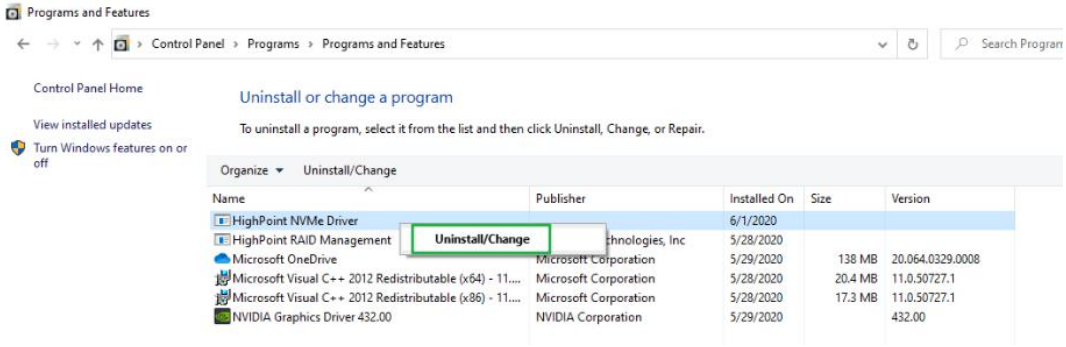


Uninstalling the Device Driver

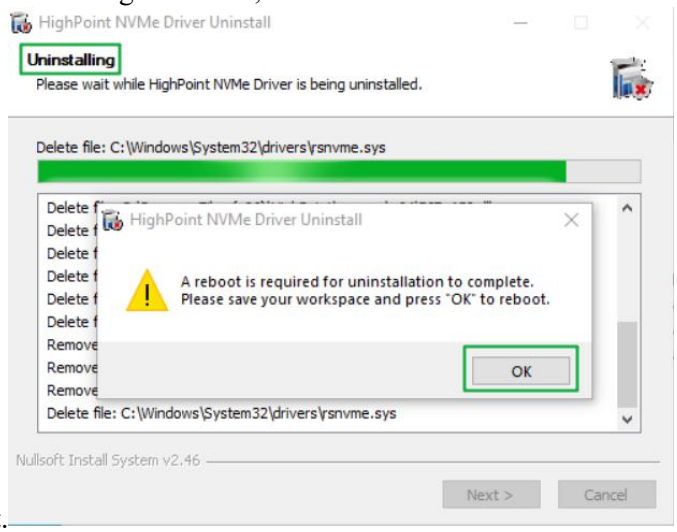
1. Power down the system and remove the SSD7101A-1/SSD7204/SSD7104/SSD7120/SSD6540/ SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L RAID controller from the motherboard.

   Note: Failing to remove the SSD7000 controller from the motherboard during the uninstall process may result in data loss. 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 SSD7000 controller.

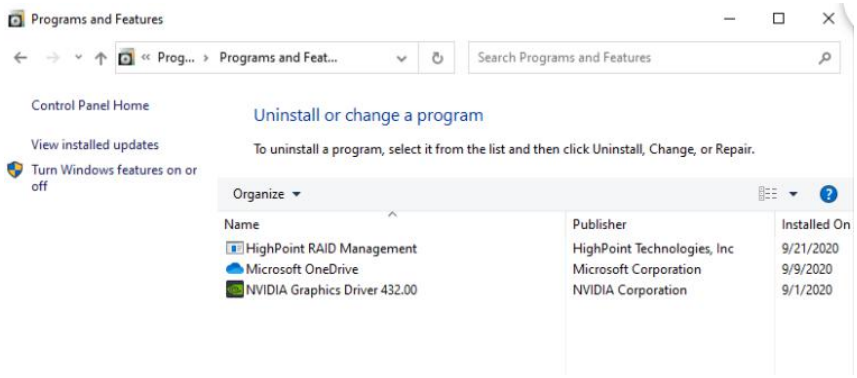
2. Power on the system and boot Windows.
3. Access **Control Panel** and select **Programs→ Programs and Features, and click on the HighPoint NVMe Driver** entry**.**
4. Click **Uninstall/Change**



5. After uninstalling the driver, click **OK** to reboot.



6. After Windows has rebooted, access **Control Panel** to make sure the driver has been uninstalled. If there are no HighPoint NVMe RAID/Driver entries present, the driver has been successfully uninstalled



Installing the HighPoint RAID Management Software (WebGUI & CLI)

The HighPoint RAID Management Software (WebGUI and CLI utilities) are used to configure and monitor NVMe SSD's hosted by the SSD7101A-1/SSD7204/SSD7104/SSD7120/SSD6540/SSD6540M SSD7180/SSD7184/SSD7140/SSD7540L RAID controller. Download the latest software package from the HighPoint website:

SSD7101A-1:

https://highpoint-tech.com/USA_new/series-ssd7101a-1-download.htm

SSD7104：

https://highpoint-tech.com/USA_new/series-ssd7104-download.htm

SSD7204:

https://highpoint-tech.com/USA_new/series-ssd7204-download.htm

SSD7120:

https://highpoint-tech.com/USA_new/series-ssd7120-download.htm

SSD6540:

https://highpoint-tech.com/USA_new/series-ssd6540-download.htm

SSD6540M:

https://highpoint-tech.com/USA_new/series-ssd6540m-download.htm

SSD7180:

https://highpoint-tech.com/USA_new/series-hpc-download.htm

SSD7184:

https://highpoint-tech.com/USA_new/series-hpc-download.htm

SSD7140：

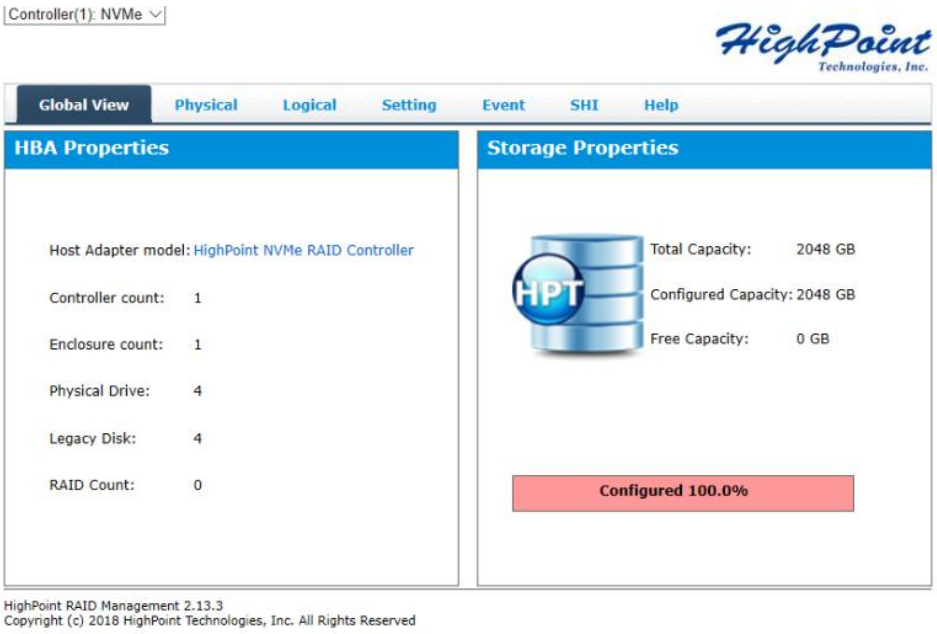
https://highpoint-tech.com/USA_new/series-ssd7140-download.htm

SSD7540L：

https://highpoint-tech.com/USA_new/series-ssd7500-download.htm

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.

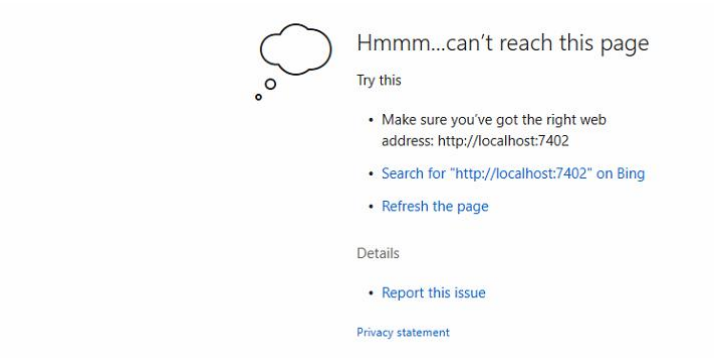
Example screenshot (SSD7101A-1)



Troubleshooting

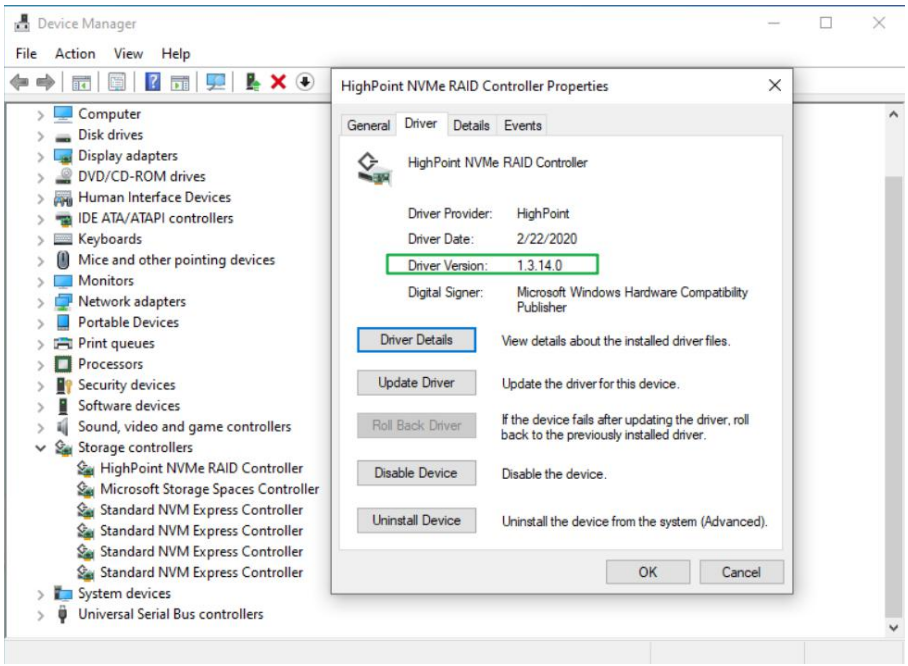
Note: When troubleshooting your SSD7101A-1/SSD7204/SSD7104/SSD7120/SSD6540/ SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L NVMe RAID controller, make sure all of the Prerequisites have been met before proceeding.

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

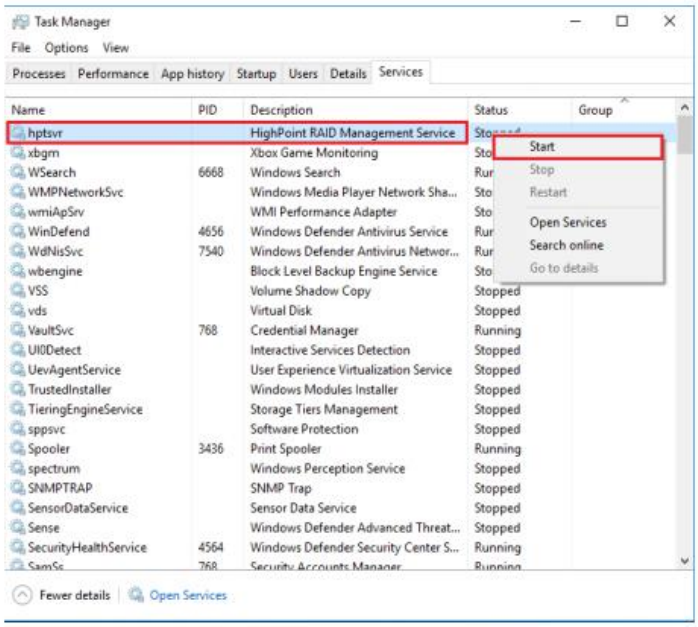


1. This is often the result of a missing driver or improperly installed driver. Open **Device Manager** and check under **Storage Controllers**.
   If the Driver is properly installed, you should see a **HighPoint NVMe Controller** entry for SSD7101A-1/SSD7204/SSD7104/SSD7120/SSD6540/SSD6540M/SSD7180/SSD7184/ SSD7140/SSD7540L controller, followed by **HighPoint NVMe RAID Controller** entry:

   ### Example screenshot (SSD7101A-1)



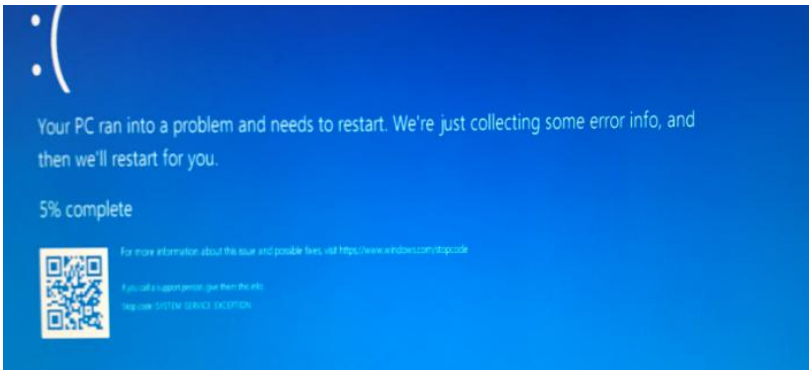
2. You should also check to make sure **hptsvr** is running under **Task Management → Services**. If the status of **hptsvr** process is **Stopped**, right-click on this entry and select Start from the menu:



BSOD (Blue Screen of Death)

There are three scenarios in which a BSOD may occur with SSD7101A-1/SSD7204/SSD7104/SSD7120/SSD6540/SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L:

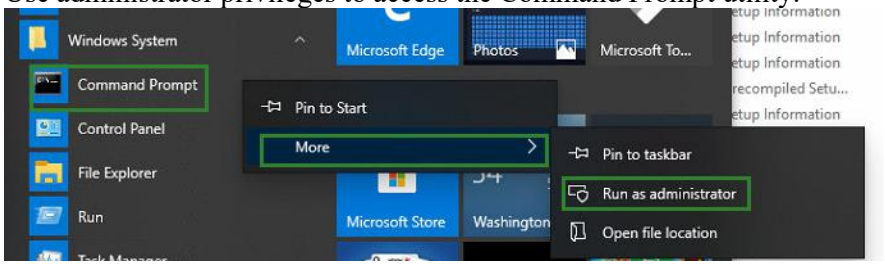
1. **Windows displays a BSOD when the SSD7101A-1/SSD7204/SSD7104/SSD7120/SSD6540 /SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L is installed.**



If you are running Windows 10, please make sure that any **Quick Shutdown** options are disabled – these features can cause a BSOD when the SSD7101A-1 /SSD7204 /SSD7104 / SSD7120 /SSD6540 /SSD6540M /SSD7180 /SSD7184 /SSD7140/SSD7540L is installed into or removed from your motherboard. BSODs can be avoided by **completely powering off** your system.

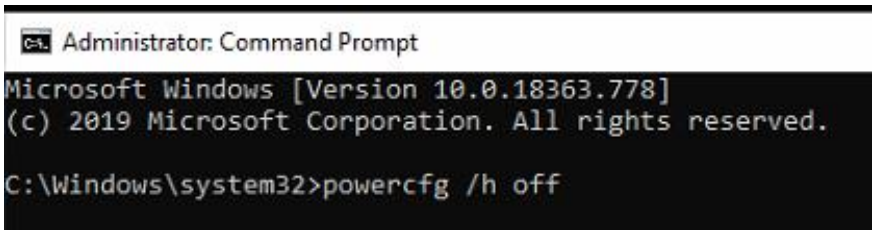
How to Turn off Quick Shutdown for Windows

a. Use administrator privileges to access the Command Prompt utility:



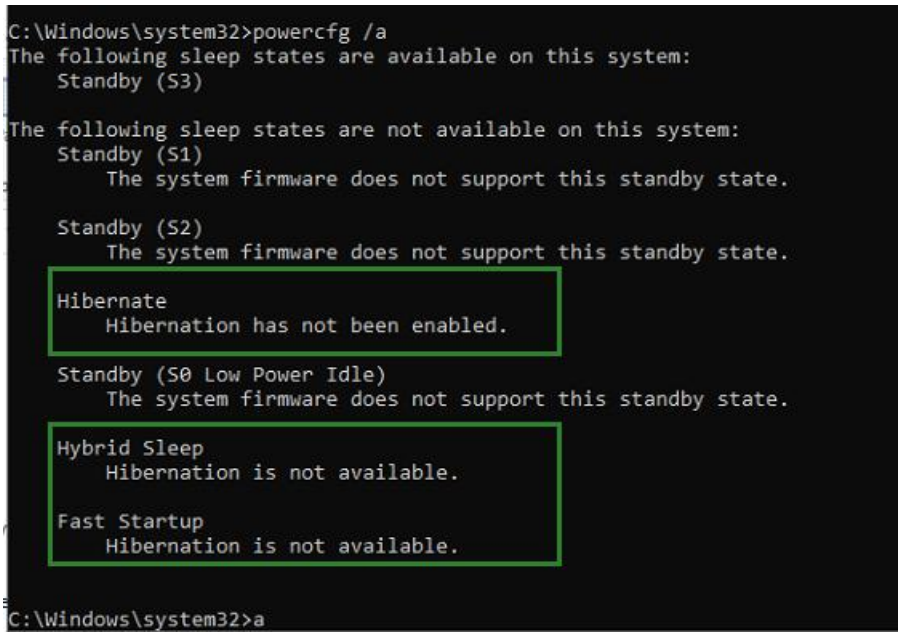
b. Enter the following command and press Enter:

powercfg / h off



c. To make sure the setting has been disabled, enter the following command and press Enter:

powercfg / a



d. Shut down the computer and remove the SSD7101A-1 /SSD7204 /SSD7104 /SSD7120 /SSD6540 /SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L from the motherboard;

e. Restart the system and open the SSD7101A-1/SSD7204 /SSD7104 /SSD7120 /SSD6540 /SSD6540M/SSD7180/SSD7184/SSD7140/SSD7540L 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 the NVMe SSD's to the SSD7101A-1/SSD7204/SSD7120/SSD6540/SSD6540M/SSD7180/ SSD7184 /SSD7140/SSD7540L and insert it into the motherboard PCIe slot.
h. Power on the system, 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.

Note: If you are running a Server version of windows, and encounter a BSOD at bootup, please collect the following information: Windows version & build numbers, Memory Dump and System event Log

2. **A BSOD is encountered when installing the driver:**
If you experience a BSOD during driver installation, please collect the following information: Memory Dump, INF log, Debug Log, System Event log, and submit a new support ticket via our Online Support Portal.

3. **If Windows reports that driver installation has failed:**
   a. Please collect these debugging information: INF log, Debug Log, Device Manager/Storage Controller screen shot, System Event log

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 SSD7101A-1/SSD7204/SSD7120/SSD6540/SSD6540M/SSD7180/SSD7184/SSD7140/ SSD7540L from your motherboard, and plugging it back in. BSODs can be avoided by **completely powering off** your system:

Controller and Drive Detection Issues

- If your motherboard or Windows is unable to detect the SSD7101A-1/SSD7204/SSD7104/SSD7120/SSD6540/SSD6540M/SSD7180/SSD7184 /SSD7140/SSD7540L RAID controller or NVMe SSD's, please shutdown the system and try moving the SSD7101A1/SSD7204/SSD7104/SSD7120/SSD6540/SSD6540M/SSD7180/ SSD7184/SSD7140/SSD7540L to another PCIe slot.
- Make sure any unrelated NVMe devices are removed from the motherboard while troubleshooting the SSD7101A-1/SSD7204/SSD7104/SSD7120/SSD6540/SSD6540M /SSD7180/SSD7184/SSD7140/SSD7540L controller.

Appendix

How to Collect Debug View Logs

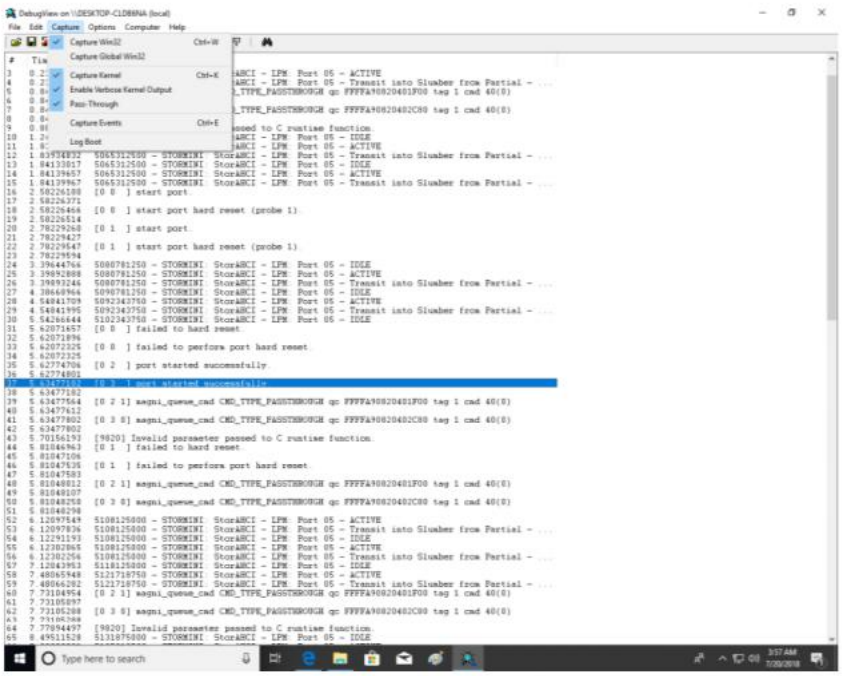
If other troubleshooting steps fail to solve the problem, we suspect that the driver and management software cannot establish a connection with the

SSD7101A-1/SSD7204/SSD7104/SSD7120/SSD6540/SSD6540M/SSD7180/SSD7184/SSD7140/

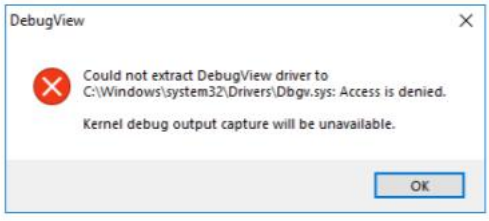
SSD7540L controller. We will provide you with a Debug version of the driver to collect information about the problem you are experiencing.

To install the Debug driver, follow the standard driver installation procedure (please refer to the SSD7101A-1/SSD7204/SSD7104/SSD7120/SSD6540/SSD6540M/SSD7180/SSD7184/SSD7140/ SSD7540L RAID controller User Guide). After installing the driver, follow the steps below:

1. Download the DebugView utility from https://download.sysinternals.com/files/DebugView.zip.
2. Unzip, right-click on the icon, and run DebugView with administrator privileges. Select Capture Win32, Capture Kernel, Enable Verbose Kernel Output, and Pass in the Capture toolbar.



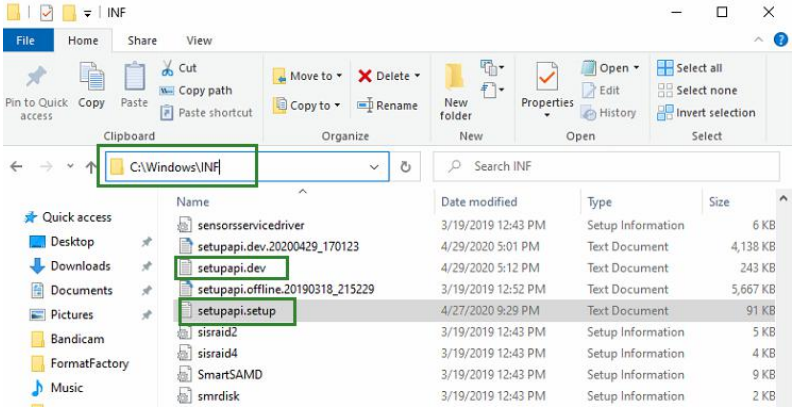
3. If the utility displays an “access denied” message, rename the following file: C:\Windows\System32\drivers\Dbgv.sys For example, rename it to “Dbgv.sys1”, i.e change the file type.



4. Save the information printed by DebugView and send this to our support department.
5. If required, we will provide management software information collection tools for the NVMe RAID Manager interface.

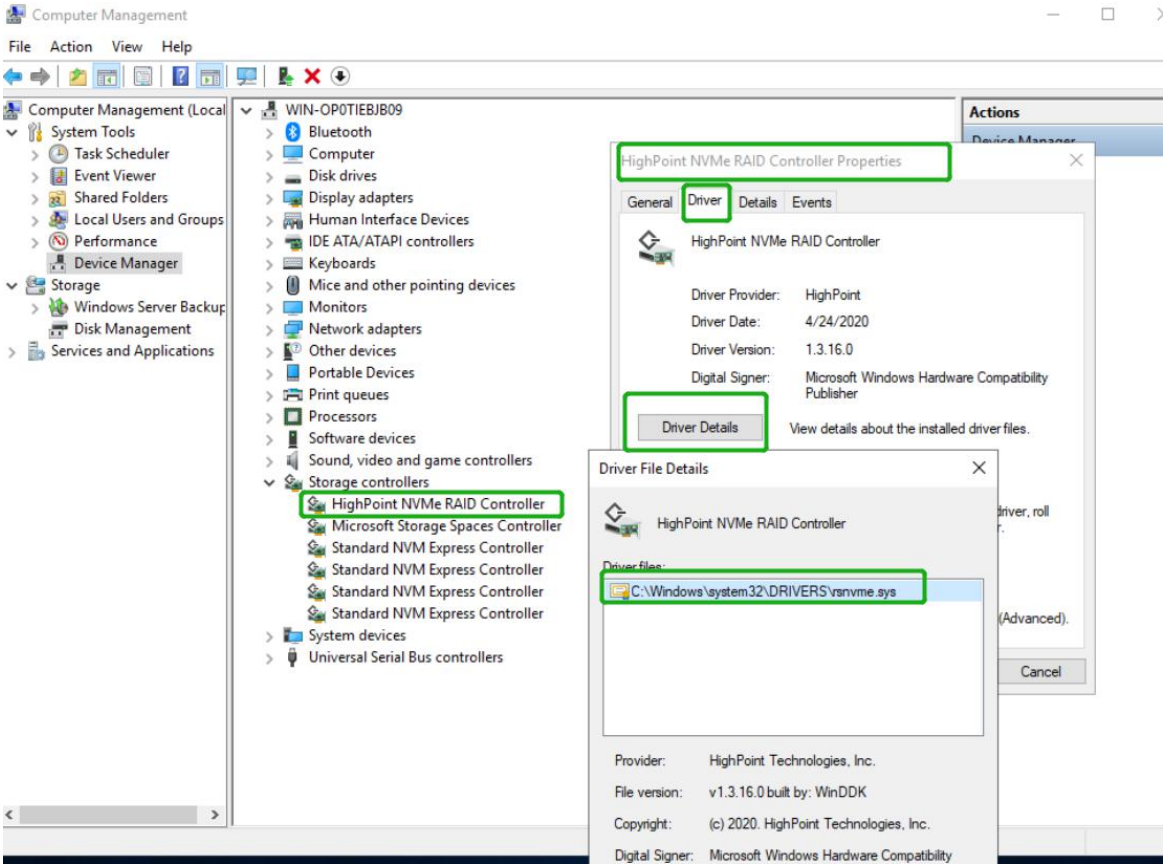
How to Collect INF Logs:

1. Go to drive C→ Windows→ INF, and locate the **setuppapi.dev** and **setupapi.setup** logs:



INF logs can be used to check what kind of software has been installed into the Windows systems.

2. Please access Device Manager, Storage Controllers, and check the properties for the HighPoint entry. Click on Driver Details and take a screenshot – include this with the log files you submit for your support case.

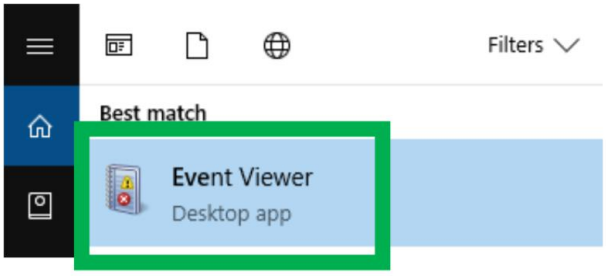


How to Collect System Logs:

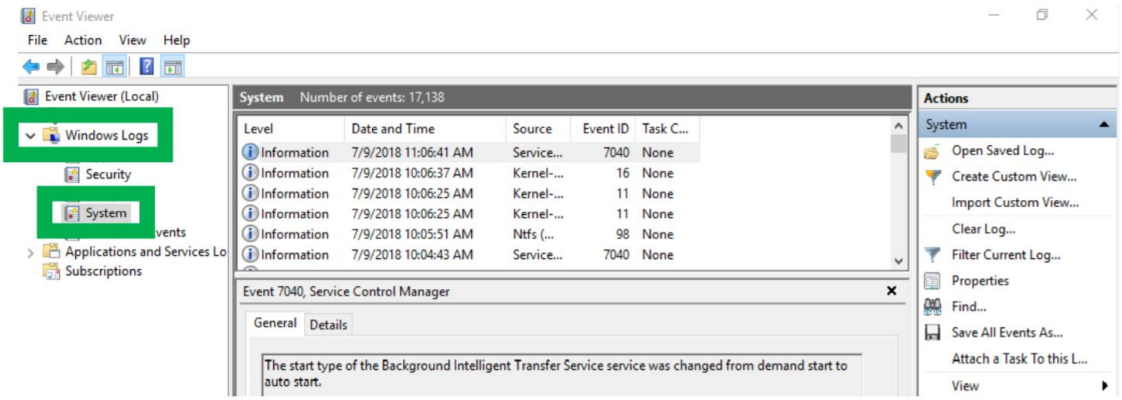
In addition to DebugView logs, System Logs can aid our Support department diagnose and resolve the support issues you have submitted. The System Log typically records errors, device failures, and software or driver related incidents. This information can help our engineers narrow down or even identify the source of the problem you are experiencing.

System Log

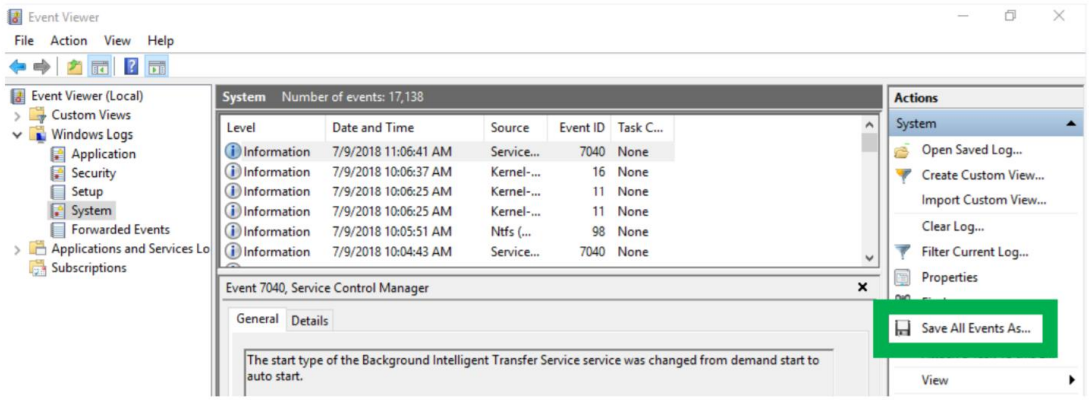
1. Click the **Windows** button towards the bottom left-hand corner of your desktop, and click on the Search field.
2. Type **Event Viewer** and click the icon as shown below:



3. Expand the Windows Log folder and select **System**:



4. Select **Save All Events as…** and save the **.evtx** file in an easy to find location.



Collecting Windows Dump Files

Windows Dump files are snap shots that show which processes were running at the time of the event or failure. If possible, locate and upload the following files to your support case:

- Memory.dmp
- Minidump.dmp

To locate the dump files, check the C:\Windows directory and search for Memory.dmp and Minidump.dmp: