



# Using HighPoint NVMe RAID AICs with the Supermicro X11DPi-NT

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825TQC-R1K03LPB/ SuperChassis 825TQC-R802LPB/ SuperChassis	
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## 1. Supermicro X11DPi-NT Introduction

This document provides guidelines and procedures for installing HighPoint NVMe AICs into the Supermicro X11DPi-NT. The guide examines the performance capabilities of each PCIe slot, and provides recommended hardware configurations that can be used to optimize NVMe storage configurations for maximum throughput and capacity.

### 1.1 Chassis

Supermicro X11DPi-NT Chassis list:

Chassis	Model
2U	SuperChassis 213AC-R1K23LPB <sup>1</sup>
	SuperChassis LA25TQC-R609LP (OEM) <sup>2</sup>
	SuperChassis 825TQC-R1K03LPB <sup>1</sup>
	SuperChassis 825TQC-R802LPB <sup>2</sup>
3U	SuperChassis 835TQC-R1K03B <sup>2</sup>
	SuperChassis 835TQC-R802B <sup>2</sup>
4U	SuperChassis 842TQC-865B <sup>2</sup>
	SuperChassis 745BAC-R1K28B <sup>2</sup>

**Notes:**

1= Optimized SuperServer Chassis

2= Compatible Chassis

### 1.2 Servers

Supermicro X11DPi-NT Servers list:

Server	Model
2U	SuperServer 2029P-C1RT
	SuperServer 6029P-TRT
4U	SuperServer 7049P-TRT

### 1.3 Chipset

Supermicro X11DPi-NT Chipset: Intel C622

## 1.4 Processor Types

Supermicro X11DPi-NT processor types:

- Intel® Xeon® Scalable Processors
- 2nd Gen Intel® Xeon® Scalable Processors

## 1.5 Memory

Memory slot: 16 DIMM slots

Memory Capacity:

- Up to 2TB Intel® Optane™ Persistent Memory 200 Series, DDR4-2666MHz
  - Up to 4TB 3DS ECC LRDIMM, DDR4-2933MHz; Up to 4TB 3DS ECC RDIMM, DDR4-2933MHz
  - Up to 2TB Intel® Optane™ DC Persistent Memory in memory mode
- Memory type: 2933/2666/2400/2133 MT/s ECC DDR4 LRDIMM (3DS), RDIMM (3DS)

DIMM Sizes: LRDIMM: 128GB/ RDIMM: 64GB

Memory Voltage: 1.2V

## 1.6 PCIe slots

Supermicro X11DPi-NT PCIe Expansion Slot Configuration:

Slot	CPU	Height	Length	Width	Link width	Slot width
1	1	Full Height	Full Length	Single Width	x8	x8
2	1	Full Height	Full Length	Single Width	x16	x16
3	1	Full Height	Full Length	Single Width	x8	x8
4	2	Full Height	Full Length	Single Width	x16	x16
5	2	Full Height	Full Length	Single Width	x16	X16
6	2	Full Height	Full Length	Single Width	x16	x16

**Note:** Supermicro 2U chassis or servers are only available in Half Height.

## 1.7 GPU

Supermicro X11DPi-NT Graphics controller: ASPEED 2500 BMC (BaseBoard Management Controller).

**Note:** ASPEED 2500 BMC is an integrated graphics card and will not take up a PCIe slot.

## 1.8 Other PCIe devices

The Supermicro X11DPi-NT is available with optional PCIe devices.

The following table provides a list of PCIe device accessories available for the Supermicro X11DPi-NT and which slot they are typically associated with.

PCIe devices type	Slot priority
Intel Ethernet Network Adapter X722	1, 3

**Note:** Supermicro platforms are typically shipped with an array of pre-installed PCIe devices. Please note, one or more PCIe slots may be unavailable for use with HighPoint NVMe AICs.

## 2. HighPoint NVMe RAID AIC compatibility with the Supermicro X11DPi-NT

HighPoint NVMe RAID AICs	Slot1 PCIe 3.0 x8	Slot2 PCIe 3.0 x16	Slot3 PCIe 3.0 x8	Slot4 PCIe 3.0 x16	Slot5 PCIe 3.0 x16	Slot6 PCIe 3.0 x16
<b>Gen3 AICs</b>						
SSD6202	√ <sup>1</sup>	√	√ <sup>1</sup>	√	√	√
SSD6202A	√ <sup>1</sup>	√	√ <sup>1</sup>	√	√	√
SSD6204A	√ <sup>1,2</sup>	√ <sup>2</sup>	√ <sup>1,2</sup>	√ <sup>2</sup>	√ <sup>2</sup>	√ <sup>2</sup>
SSD7101A-1	X	√ <sup>2</sup>	X	√ <sup>2</sup>	√ <sup>2</sup>	√ <sup>2</sup>
SSD7104	X	√ <sup>2</sup>	X	√ <sup>2</sup>	√ <sup>2</sup>	√ <sup>2</sup>
SSD7105	X	√ <sup>2</sup>	X	√ <sup>2</sup>	√ <sup>2</sup>	√ <sup>2</sup>
SSD7140A	X	√ <sup>2</sup>	X	√ <sup>2</sup>	√ <sup>2</sup>	√ <sup>2</sup>
SSD7202	√ <sup>1</sup>	√	√ <sup>1</sup>	√	√	√
SSD7204	√ <sup>1,2</sup>	√ <sup>2</sup>	√ <sup>1,2</sup>	√ <sup>2</sup>	√ <sup>2</sup>	√ <sup>2</sup>
RocketAIC 7105HW	X	√ <sup>2</sup>	X	√ <sup>2</sup>	√ <sup>2</sup>	√ <sup>2</sup>
RocketAIC 7140AW	X	√ <sup>2</sup>	X	√ <sup>2</sup>	√ <sup>2</sup>	√ <sup>2</sup>
<b>Gen4 AICs</b>						
SSD7502	X	√ <sup>2</sup>	X	√ <sup>2</sup>	√ <sup>2</sup>	√ <sup>2</sup>
SSD7505	X	√ <sup>2</sup>	X	√ <sup>2</sup>	√ <sup>2</sup>	√ <sup>2</sup>
SSD7540	X	√ <sup>2</sup>	X	√ <sup>2</sup>	√ <sup>2</sup>	√ <sup>2</sup>
RocketAIC 7502HW	X	√ <sup>2</sup>	X	√ <sup>2</sup>	√ <sup>2</sup>	√ <sup>2</sup>
RocketAIC 7505HW	X	√ <sup>2</sup>	X	√ <sup>2</sup>	√ <sup>2</sup>	√ <sup>2</sup>
RocketAIC 7540HW	X	√ <sup>2</sup>	X	√ <sup>2</sup>	√ <sup>2</sup>	√ <sup>2</sup>

**Notes:**

√ means that the HighPoint NVMe RAID AIC can be used normally in this slot.

√<sup>1</sup> means that the HighPoint NVMe RAID AIC can be used normally in this slot if you do not have other PCIe devices installed in this slot.

√<sup>2</sup> means that the HighPoint NVMe RAID AIC can be used normally in this slot if you use the Full Height chassis or server.

X means that the HighPoint NVMe RAID AIC is not compatible with this slot.

## 3. Installing HighPoint NVMe RAID AICs into the Supermicro X11DPi-NT

### 3.1 Install hardware

#### 3.1.1 Recommended tools

- a. Screwdriver (system cover require a screwdriver to open)
- b. Wired ESD wrist strap (to prevent electrostatic accidents)

#### 3.1.2 Installing the Hardware into 2U and 3U Chassis: SuperChassis 213AC-R1K23LPB/ SuperChassis LA25TQC-R609LP (OEM)/ SuperChassis 825TQC-R1K03LPB/ SuperChassis 825TQC-R802LPB/ SuperChassis 835TQC-R1K03B/ SuperChassis 835TQC-R802B

For PCIe slot recommendations, please refer to this [table](#).

The following installation procedure applies to these chassis:

Chassis	Model
2U	SuperChassis 213AC-R1K23LPB
	SuperChassis LA25TQC-R609LP (OEM)
	SuperChassis 825TQC-R1K03LPB
	SuperChassis 825TQC-R802LPB
3U	SuperChassis 835TQC-R1K03B
	SuperChassis 835TQC-R802B

- a. Use a wired ESD wrist strap that is properly grounded.
- b. Shut down the system.
- c. Insert a screwdriver to remove the screws and on the sides of the chassis.



- d. Press both release tabs simultaneously to release the cover from the locked position.



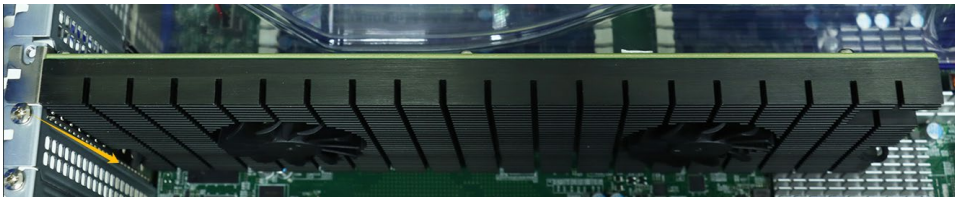
- e. Lift the cover up and off the chassis.
- f. Remove the screw securing the PCI shield.



- g. Remove the PCI shield pre-installed in the expansion slot.

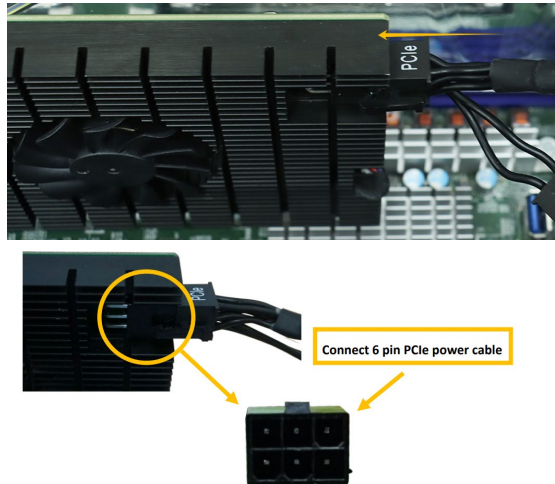


- h. Holding the edge of the HighPoint NVMe RAID AIC, align the HighPoint NVMe RAID AIC connector with the expansion slot and insert it downward.



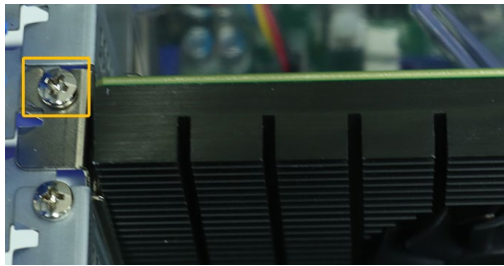
Using HighPoint NVMe RAID AICs with the Supermicro X11DPi-NT

- i. If you are using the SSD7140A, SSD7540, RocketAIC 7140AW, or RocketAIC 7540HW, you will need to connect the power cable to the 6-pin power connector on the side of the HighPoint NVMe RAID AICs.



**Note:** If you are not using SSD7140A, SSD7540, RocketAIC 7140AW, or RocketAIC 7540HW, you can safely move to the next step.

- j. Install the screw securing the HighPoint NVMe RAID AIC bracket.



- k. Align the cover with the chassis in the locked position.



- l. Insert a screwdriver and install the screws removed in step c to secure the chassis and cover.

### 3.1.3 Installing the Hardware into the SuperChassis 842TQC-865B

For PCIe slot recommendations, please refer to this [table](#).

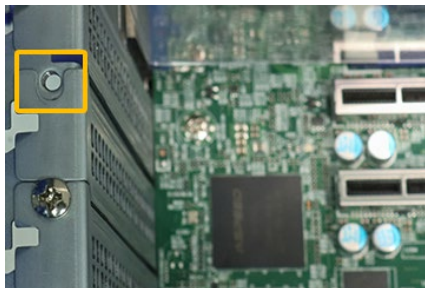
The following installation procedure applies to these chassis:

Chassis	Model
4U	SuperChassis 842TQC-865B

- a. Use a wired ESD wrist strap that is properly grounded.
- b. Shut down the system.
- c. Insert a screwdriver to remove the screws at the rear of the chassis and on the sides of the cover.
- d. Lift the cover up and off the chassis.



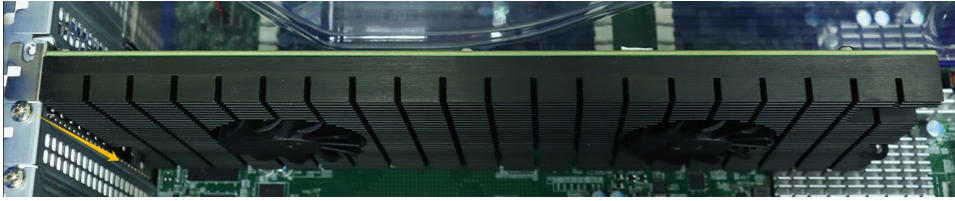
- e. Remove the screw securing the PCI slot cover.



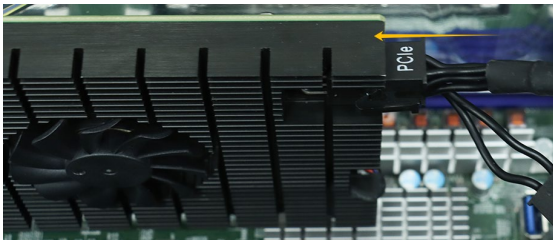
- f. Remove the PCI slot cover pre-installed in the expansion slot.



- g. Holding the edge of the HighPoint NVMe RAID AIC, align the HighPoint NVMe RAID AIC connector with the expansion slot and insert it downward.

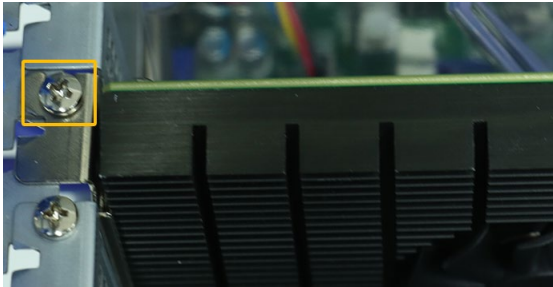


- h. If you are using the SSD7140A, SSD7540, RocketAIC 7140AW, or RocketAIC 7540HW, you will need to connect the power cable to the 6-pin power connector on the side of the HighPoint NVMe RAID AICs.



**Note:** If you are not using SSD7140A, SSD7540, RocketAIC 7140AW, or RocketAIC 7540HW, you can safely move to the next step.

- i. Install the screw securing the HighPoint NVMe RAID AIC bracket.



- j. Align the cover with the chassis.



- k. Insert a screwdriver and install the screws removed in step c to secure the chassis and cover.

### 3.1.4 Installing the Hardware into the SuperChassis 745BAC-R1K28B2

For PCIe slot recommendations, please refer to this [table](#).

The following installation procedure applies to these chassis:

Chassis	Model
4U	SuperChassis 745BAC-R1K28B2

- a. Use a wired ESD wrist strap that is properly grounded.
- b. Shut down the system.
- c. Locate the latch on the cover, press where it says "Push" and lift the latch to release the cover.



- d. In the rear of the chassis, push on the PCI shield lock, then lift up on the lock.



- e. Remove the screw securing the PCI shield.

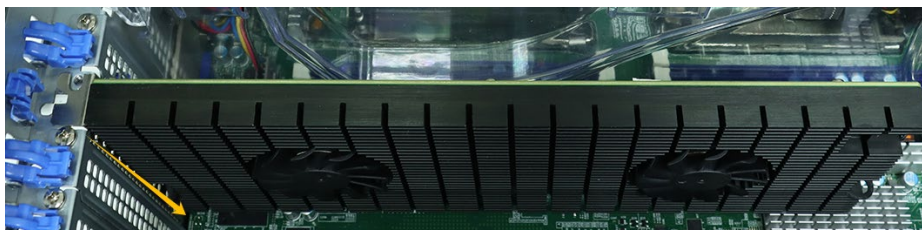


- f. Remove the PCI shield.

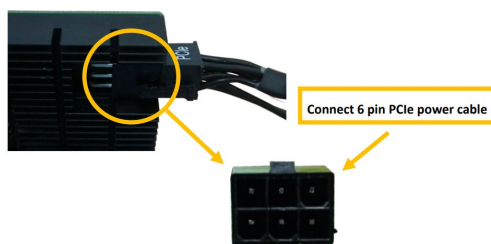
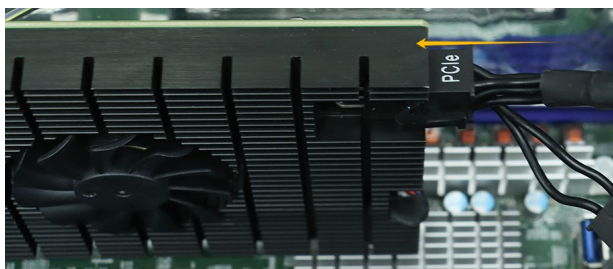




- g. Holding the edge of the HighPoint NVMe RAID AIC, align the HighPoint NVMe RAID AIC connector with the expansion slot and insert it downward.



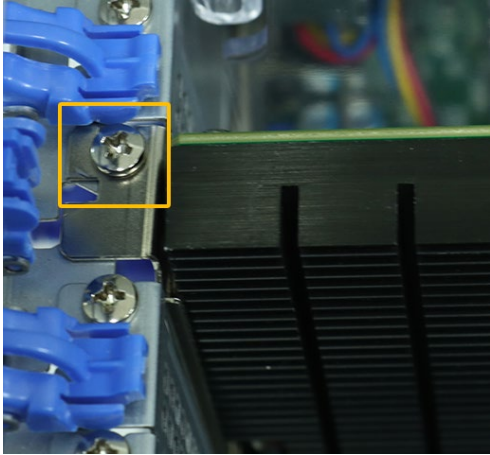
- h. If you are using the SSD7140A, SSD7540, RocketAIC 7140AW, or RocketAIC 7540HW, you will need to connect the power cable to the 6-pin power connector on the side of the HighPoint NVMe RAID AICs.



**Note:** If you are not using SSD7140A, SSD7540, RocketAIC 7140AW, or RocketAIC 7540HW, you can safely move to the next step.

- i. Install the screw securing the HighPoint NVMe RAID AIC bracket.

Using HighPoint NVMe RAID AICs with the Supermicro X11DPi-NT



- j. Secure the HighPoint NVMe RAID AIC bracket onto the rear of the chassis with the PCI shield lock.



- k. Align the cover with the chassis in the locked position.



## 3.2 System BIOS Setting

The following is a list of Supermicro X11DPi-NT system BIOS settings required for each NVMe RAID AIC.

Please refer to the following sections for system BIOS settings setup procedures.

[3.2.1 Disable Secure boot](#)

[3.2.2 Boot mode to UEFI](#)

HighPoint NVMe RAID AICs	System BIOS Settings (Boot RAID configurations)	
	Secure Boot	Boot mode
SSD6202	✓	✓
SSD6202A	✓	✓
SSD6204A	✓	✓
SSD7105	✓ <sup>1</sup>	✓
SSD7202	✓ <sup>1</sup>	✓
SSD7502	✓ <sup>1</sup>	✓
SSD7505	✓ <sup>1</sup>	✓
SSD7540	✓ <sup>1</sup>	✓
RocketAIC 7105HW	✓ <sup>1</sup>	✓
RocketAIC 7502HW	✓ <sup>1</sup>	✓
RocketAIC 7505HW	✓ <sup>1</sup>	✓
RocketAIC 7540HW	✓ <sup>1</sup>	✓

HighPoint NVMe RAID AICs	System BIOS Settings (Data RAID configurations)
	Secure Boot
SSD6202	✓
SSD6202A	✓
SSD6204A	✓
SSD7101A-1	✓ <sup>1</sup>
SSD7104	✓ <sup>1</sup>
SSD7105	✓ <sup>1</sup>
SSD7140A	✓ <sup>1</sup>
SSD7202	✓ <sup>1</sup>
SSD7204	✓ <sup>1</sup>
SSD7502	✓ <sup>1</sup>
SSD7505	✓ <sup>1</sup>
SSD7540	✓ <sup>1</sup>
RocketAIC 7105HW	✓ <sup>1</sup>
RocketAIC 7140AW	✓ <sup>1</sup>
RocketAIC 7502HW	✓ <sup>1</sup>



RocketAIC 7505HW	✓ <sup>1</sup>
RocketAIC 7540HW	✓ <sup>1</sup>

**Notes:**

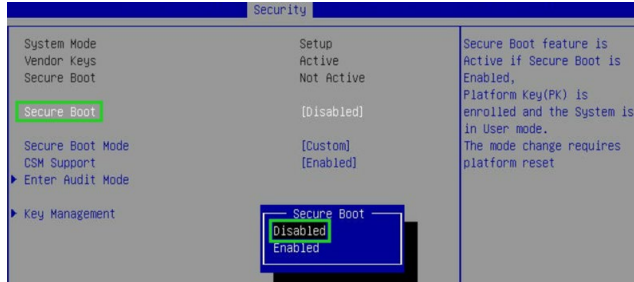
✓ means that the HighPoint NVMe RAID AIC support this BIOS setting.

✓<sup>1</sup> means that the HighPoint NVMe RAID AIC support this BIOS setting if you are not using the Linux or the unsigned UEFI utility.

### 3.2.1 Disable Secure boot

**Note:** If you are using the SSD7000/7500 series NVMe RAID AICs or RocketAICs in Linux or the unsigned UEFI utility, Secure Boot must be disabled. If you are using the SSD6200 series NVMe RAID AICs, Secure Boot can be enabled.

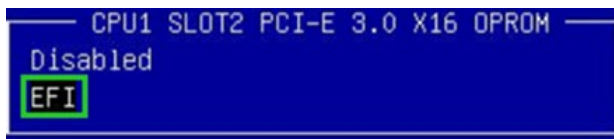
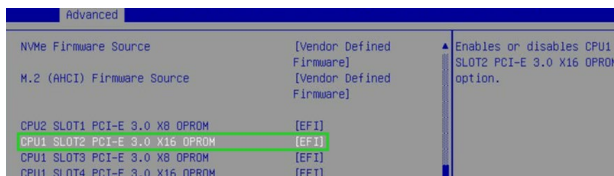
- a. Power up the system.
- b. Press <Delete> to enter BIOS.
- c. Find **Security**→**Secure Boot**, select **Disabled**.



- d. Save configuration and restart system.

### 3.2.2 Boot mode to UEFI

- a. Power up the system.
- b. Press <Delete> to enter BIOS.
- c. Find **Advanced**→**PCIe/PCI/PnP Configuration**→**CPU SLOT PCI-E OPROM**, select **EFI**.



- d. Save configuration and restart system.

## **3.3 Install software**

### **3.3.1 Installing HighPoint NVMe RAID AICs into the Supermicro X11DPi-NT (Data RAID configurations)**

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

#### **3.3.1.1 Installing the Windows Driver & Management Software**

Please refer to the [Data RAID Installation Guide \(Windows\)](#) to install the Windows Device Driver and Management Software.

#### **3.3.1.2 Installing the Linux Driver & Management Software**

Please refer to the [Data RAID Installation Guide \(Linux\)](#) to install the Linux Device Driver and Management Software.

### **3.3.2 Installing HighPoint NVMe RAID AICs into the Supermicro X11DPi-NT (Boot RAID configurations)**

The following section discusses HighPoint NVMe RAID AIC driver installation for a bootable NVMe configuration.

#### **3.3.2.1 Installing a Windows OS to a bootable RAID configuration**

Windows BootRAID:

Please refer to [HighPoint Windows Boot RAID Windows installation Guide](#).

#### **3.3.2.2 Installing Linux to a bootable RAID configuration**

Debian BootRAID:

Please refer to [Linux Debian On HighPoint NVMe RAID Controller Installation Guide](#).

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RHEL BootRAID:

Please refer to [Linux RHEL On HighPoint NVMe RAID Controller Installation Guide](#).

Ubuntu BootRAID:

Please refer to [Linux Ubuntu On HighPoint NVMe RAID Controller Installation Guide](#).

Rocky Linux BootRAID:

Please refer to [Linux Rocky Linux On HighPoint NVMe RAID Controller Installation Guide](#)

## 4. Benchmarking HighPoint NVMe RAID AICs

### 4.1 Performance Testing

#### 4.1.1 Recommended Hardware Configuration

- **Supermicro X11DPi-NT:**  
 CPU: Intel(R) Xeon(R) CPU E5-2650 v3 @ 2.30GHz  
 Memory: 32768 MB  
 PCIe Slot: CPU1 SLOT1 PCI-E 3.0 X8/ CPU2 SLOT4 PCI-E 3.0 X16

- **HighPoint NVMe RAID AICs:**

<b>Gen3 HighPoint NVMe RAID AICs</b>	SSD6202 SSD6202A SSD6204A SSD7101A-1 SSD7104 SSD7105 SSD7140A SSD7202 SSD7204
<b>Gen4 HighPoint NVMe RAID AICs</b>	SSD7502 SSD7505 SSD7540

- **Disk:**  
 Samsung 980 Pro 2TB  
*Note: Samsung 980 Pro 2TB Disk spec.*

<b>Performance</b>	<b>Sequential Read</b> Up to 7,000 MB/s * Performance may vary based on system hardware & configuration	<b>Sequential Write</b> Up to 5,100 MB/s * Performance may vary based on system hardware & configuration
	<b>Random Read (4KB, QD32)</b> Up to 1,000,000 IOPS * Performance may vary based on system hardware & configuration	<b>Random Write (4KB, QD32)</b> Up to 1,000,000 IOPS * Performance may vary based on system hardware & configuration
	<b>Random Read (4KB, QD1)</b> Up to 22,000 IOPS * Performance may vary based on system hardware & configuration	<b>Random Write (4KB, QD1)</b> Up to 60,000 IOPS * Performance may vary based on system hardware & configuration

## 4.1.2 Test tool

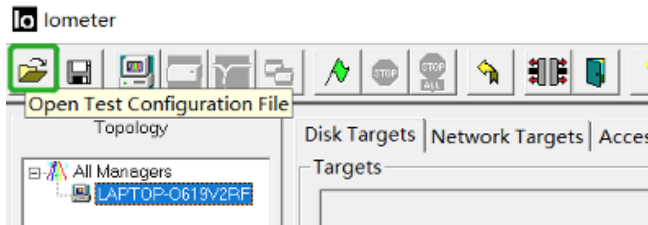
Benchmark Tool: Iometer/ CrystalDiskMark

- **Iometer script setting:**

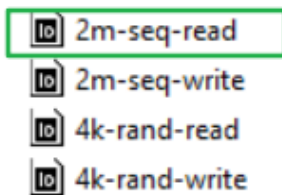
The Iometer script can be downloaded [here](#).

**Note:** If you use the SSD6200 series NVMe RAID AICs, you will need to download another [Iometer script](#).

- The “**2m-seq-read.icf**” script tests the Sequential read performance of 2M large data blocks.
  - The “**2m-seq-write.icf**” script tests the Sequential write performance of 2M large data blocks.
  - The “**4k-rand-read.icf**” script tests the Random read performance of 4k small data blocks.
  - The “**4k-rand-write.icf**” script tests the Random write performance of 4k small data blocks.
- a. Open Iometer with administrator rights.
  - b. Click the folder icon to open the script, then select the script to be configured.

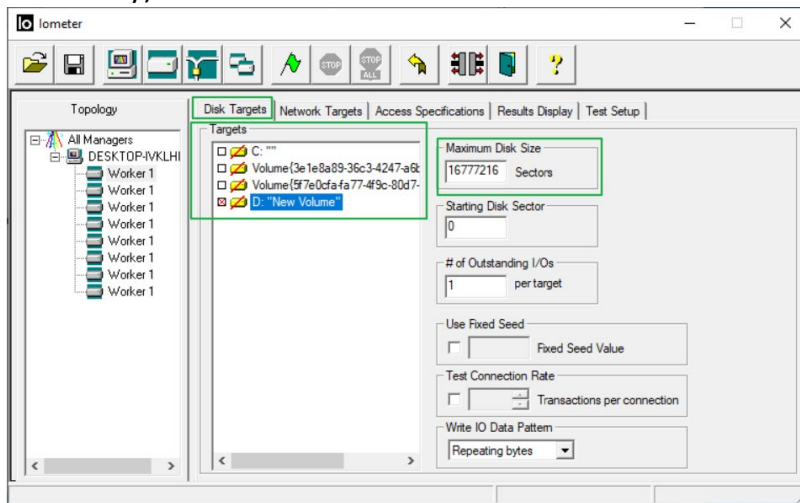


- c. Select **2M-seq-read**.

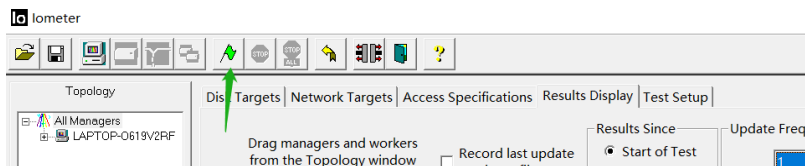


Using HighPoint NVMe RAID AICs with the Supermicro X11DPi-NT

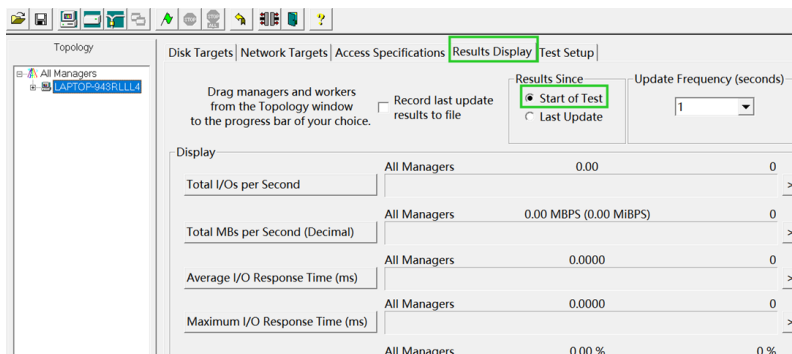
- d. The **Disk Targets** page will change, the **Target** should be the test disk (the RAID array). The **Maximum Disk Size** should be set to **16777216** Sectors.



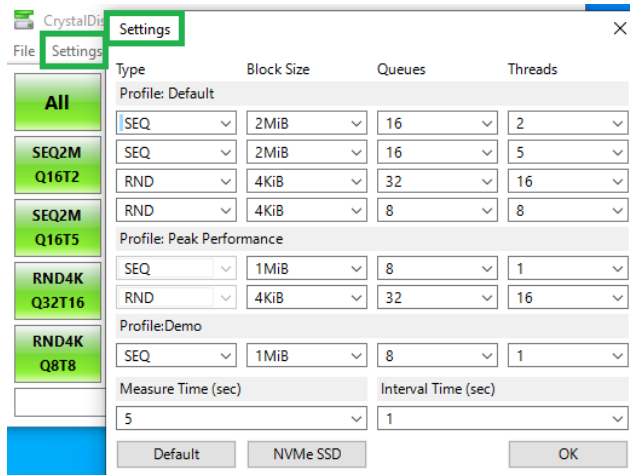
- e. After confirming the settings, click the green mark to start the performance test.



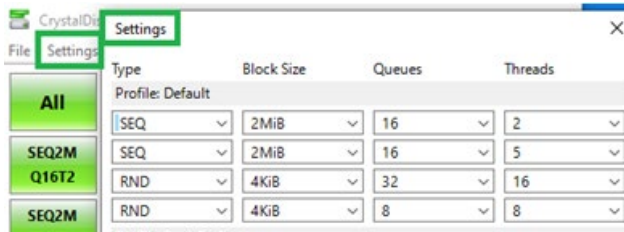
- f. **Result Display** will be automatically configured as **Start of Test**.



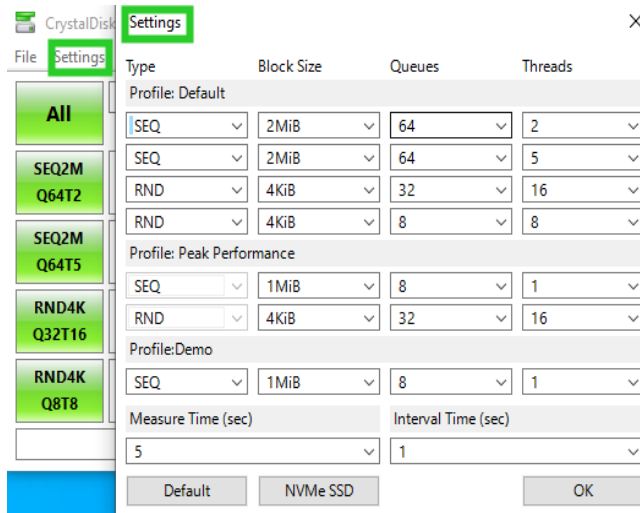
- **CrystalDiskMark script setting:**



- Open CrystalDiskMark with administrator rights.
- Click **Settings**.

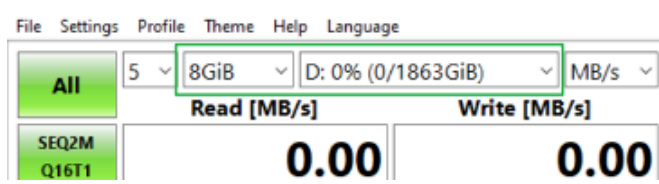


**Note1:** Please refer to the following Screenshot for recommended settings.

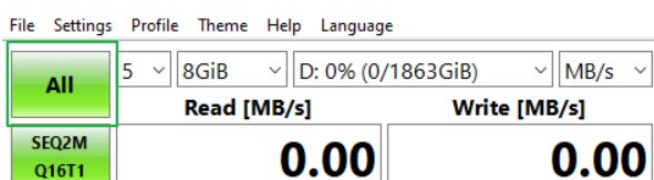


**Note2:** The above recommended setting will meet the needs of most NVMe RAID AICs and achieve optimal performance in testing. In testing, you can also choose to adjust the settings in the script yourself for optimal performance.

- c. **Test Size:** set to 8GiB; **Test Drive:** set to the RAID Volume.



- d. After confirming the settings, click **ALL** to start the performance test.





### 4.1.3 Gen3 HighPoint NVMe RAID AIC test results

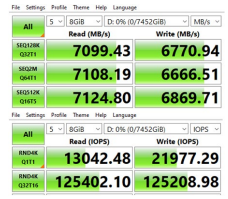
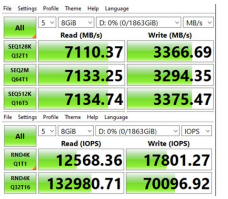
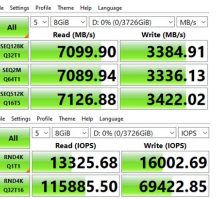
- **Iometer**

(script setting)	Gen3 RAID AIC	Legacy	RAID0	RAID1	RAID10
2m-Seq-Read (MiB/s)	SSD6202	3,570	7,012	7,015	/
	SSD6202A	3,521	7,066	7,022	/
	SSD6204A	1,752	6,942	3,502	/
	SSD7101A-1	3,521	13,839	7,004	13,805
	SSD7104	3,580	14,002	7,046	13,902
	SSD7105	3,499	14,193	7,139	13,995
	SSD7140A	3,522	14,222	7,034	14,209
	SSD7202	3,570	7,048	7,059	/
	SSD7204	3,579	7,039	7,089	7,066
2m-Seq-Write (MiB/s)	SSD6202	3,521	6,098	3,235	/
	SSD6202A	3,410	6,012	3,215	/
	SSD6204A	1,708	6,144	1,686	/
	SSD7101A-1	3,510	13,482	3,510	6,683
	SSD7104	3,508	12,530	3,378	6,573
	SSD7105	3,450	11,929	3,500	6,717
	SSD7140A	3,510	12,946	3,481	6,828
	SSD7202	3,501	6,901	3,365	/
	SSD7204	3,505	6,852	3,366	3,403
4k-Rand-Read (IOPS)	SSD6202	725,396	840,140	780,423	/
	SSD6202A	724,156	796,379	745,285	/
	SSD6204A	140,082	788,490	804,160	/
	SSD7101A-1	780,410	128,710	143,513	112,069
	SSD7104	715,563	116,108	117,289	116,617
	SSD7105	592,013	627,009	613,398	604,146
	SSD7140A	720,111	117,546	109,401	111,696
	SSD7202	720,064	125,028	118,901	/
	SSD7204	732,860	116,228	112,244	116,216
4k-Rand-Write (IOPS)	SSD6202	619,048	624,961	607,072	/
	SSD6202A	595,150	615,079	576,076	/
	SSD6204A	94,677	608,414	604,014	/
	SSD7101A-1	663,333	124,665	101,548	70,794
	SSD7104	590,145	104,770	65,177	55,465
	SSD7105	414,012	582,412	520,196	510,212
	SSD7140A	582,121	112,303	66,014	67,413
	SSD7202	560,190	106,128	69,041	/
	SSD7204	590,189	111,664	63,512	61,184

● **CrystalDiskMark**

(script setting)	Gen3 RAID AIC	RAID0	RAID1	RAID10
2m-Seq (MB/s)	SSD6202			/
	SSD6202A			/
	SSD6204A			/
	SSD7101A-1			
	SSD7104			
	SSD7105			
	SSD7140A			
	SSD7202			/

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	SSD7204			
--	---------	---	--	---

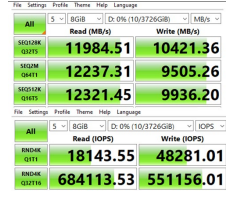
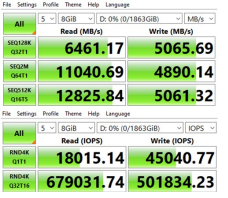
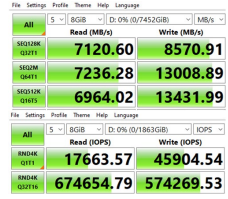
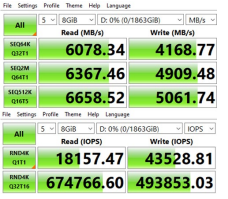
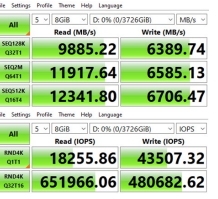
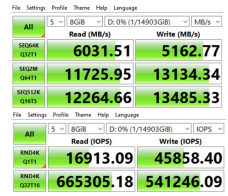
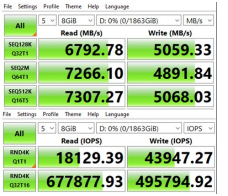
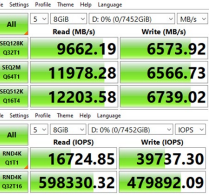
**Note:** / means that this AIC does not support the creation of RAID10.

### 4.1.4 Gen4 HighPoint NVMe RAID AIC test results

- **Iometer**

(script setting)	Gen4 RAID AIC	Legacy	RAID0	RAID1	RAID10
2m-Seq-Read (MiB/s)	SSD7502	6,669	14,068	11,896	/
	SSD7505	6,819	14,115	11,250	14,115
	SSD7540	6,980	13,925	10,985	14,118
2m-Seq-Write (MiB/s)	SSD7502	4,965	10,502	5,008	/
	SSD7505	4,868	10,236	5,003	6,786
	SSD7540	5,023	11,615	5,004	6,799
4k-Rand-Read (IOPS)	SSD7502	651,659	682,505	694,421	/
	SSD7505	666,655	650,403	652,103	642,982
	SSD7540	682,277	646,965	672,329	658,310
4k-Rand-Write (IOPS)	SSD7502	553,491	551,422	502,709	/
	SSD7505	565,354	541,686	490,676	492,301
	SSD7540	552,145	526,533	501,240	482,301

- **CrystalDiskMark**

(script setting)	Gen4 RAID AIC	RAID0	RAID1	RAID10
2m-Seq (MB/s)	SSD7502			/
	SSD7505			
	SSD7540			

**Note:** / means that this AIC does not support the creation of RAID10.

## 5. Uninstalling HighPoint NVMe RAID AICs from the Supermicro X11DPi-NT

### 5.1 Uninstall hardware

#### 5.1.1 Recommended tools

- a. Screwdriver (system cover require a screwdriver to open)
- b. Wired ESD wrist strap (to prevent electrostatic accidents)

#### 5.1.2 Uninstalling the Hardware from 2U and 3U Chassis: SuperChassis 213AC-R1K23LPB/ SuperChassis LA25TQC-R609LP (OEM)/ SuperChassis 825TQC-R1K03LPB/ SuperChassis 825TQC-R802LPB/ SuperChassis 835TQC-R1K03B/ SuperChassis 835TQC-R802B

The following procedure applies to these chassis:

Chassis	Model
2U	SuperChassis 213AC-R1K23LPB
	SuperChassis LA25TQC-R609LP (OEM)
	SuperChassis 825TQC-R1K03LPB
	SuperChassis 825TQC-R802LPB
3U	SuperChassis 835TQC-R1K03B
	SuperChassis 835TQC-R802B

- a. Use a wired ESD wrist strap that is properly grounded.
- b. Shut down the system.
- c. Insert a screwdriver to remove the screws and on the sides of the chassis.
- d. Press both release tabs simultaneously to release the cover from the locked position.

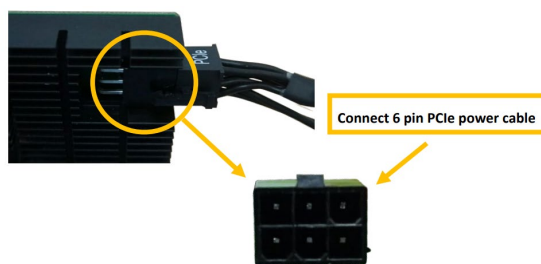
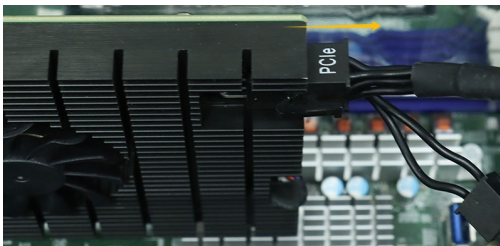
- e. Lift the cover up and off the chassis.



- f. Remove the screw securing the HighPoint NVMe RAID AIC bracket.

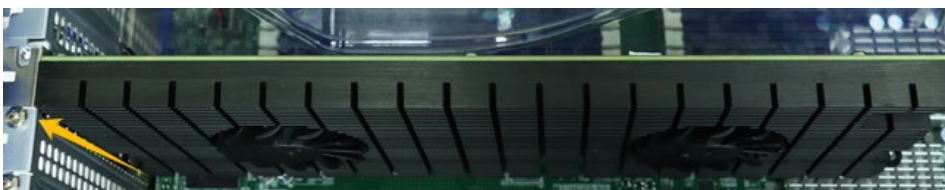


- g. If you are using the SSD7140A, SSD7540, RocketAIC 7140AW, or RocketAIC 7540HW, you will need to disconnect the power cable to the 6-pin power connector on the HighPoint NVMe RAID AICs.



**Note:** If you are not using SSD7140A, SSD7540, RocketAIC 7140AW, or RocketAIC 7540HW, you can safely move to the next step.

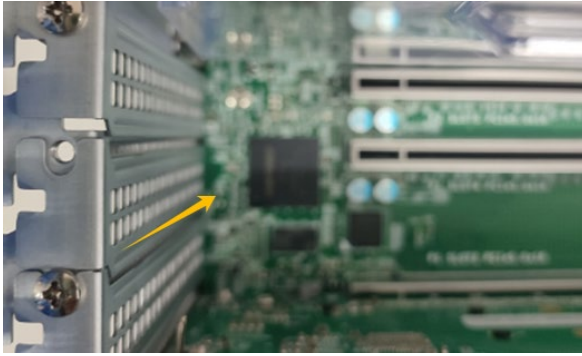
- h. Holding the edge of the HighPoint NVMe RAID AIC, lift up to remove the HighPoint NVMe RAID AIC connector from the expansion slot.





Using HighPoint NVMe RAID AICs with the Supermicro X11DPi-NT

- i. Install the PCI shield into the expansion slot.



- j. Install the screw securing the PCI shield.



- k. Align the cover with the chassis.



- l. Insert a screwdriver and install the screws removed in step c to secure the chassis and cover.

### 5.1.3 Uninstalling the Hardware from the SuperChassis 842TQC-865B

The following procedure applies to these chassis:

Chassis	Model
4U	SuperChassis 842TQC-865B

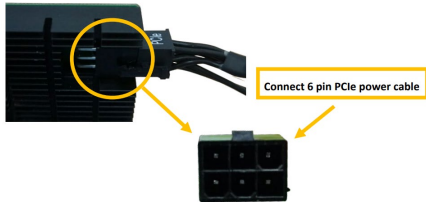
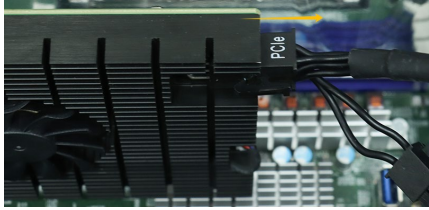
- a. Use a wired ESD wrist strap that is properly grounded.
- b. Shut down the system.
- c. Insert a screwdriver to remove the screws at the rear of the chassis and on the sides of the cover.
- d. Lift the cover up and off the chassis.



- e. Remove the screw securing the the HighPoint NVMe RAID AIC bracket.

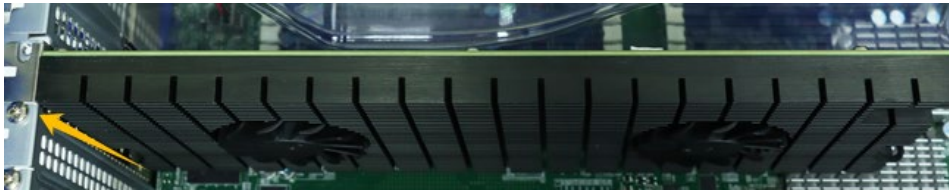


- f. If you are using the SSD7140A, SSD7540, RocketAIC 7140AW, or RocketAIC 7540HW, you will need to disconnect the power cable to the 6-pin power connector on the HighPoint NVMe RAID AICs.

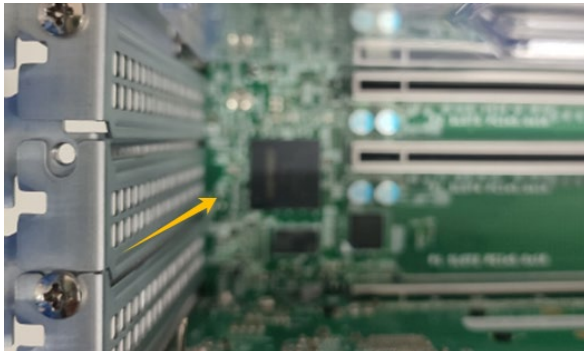


**Note:** If you are not using SSD7140A, SSD7540, RocketAIC 7140AW, or RocketAIC 7540HW, you can safely move to the next step.

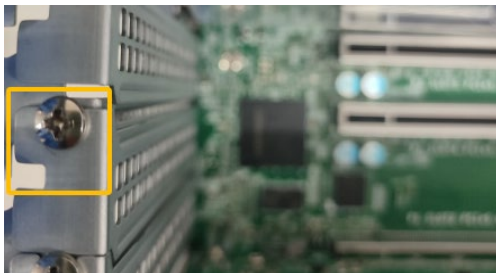
- g. Holding the edge of the HighPoint NVMe RAID AIC, lift up to remove the HighPoint NVMe RAID AIC connector from the expansion slot.



- h. Install the PCI slot cover into the expansion slot.



- i. Install the screw securing the PCI slot cover.





Using HighPoint NVMe RAID AICs with the Supermicro X11DPi-NT

- j. Align the cover with the chassis.



- k. Insert a screwdriver and install the screws removed in step c to secure the chassis and cover.

## 5.1.4 Uninstalling the Hardware from the SuperChassis

### 745BAC-R1K28B2

The following procedure applies to these chassis:

Chassis	Model
4U	SuperChassis 745BAC-R1K28B2

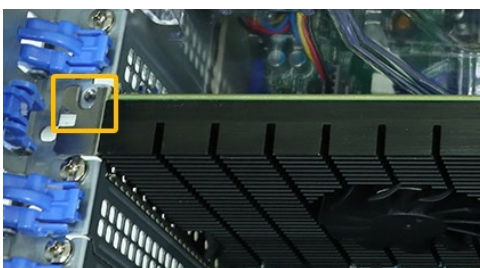
- Use a wired ESD wrist strap that is properly grounded.
- Shut down the system.
- Locate the latch on the cover, press where it says "Push" and lift the latch to release the cover.



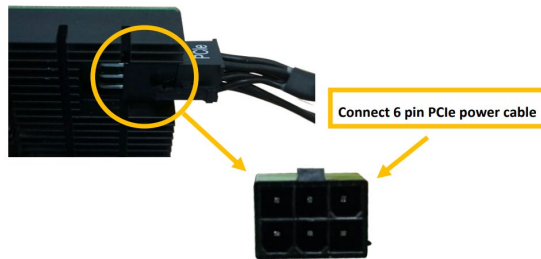
- In the rear of the chassis, push on the PCI shield lock, then lift up on the lock.



- Remove the screw securing the HighPoint NVMe RAID AIC bracket.

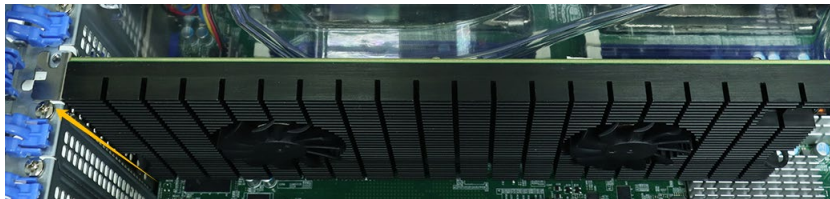


- f. If you are using the SSD7140A, SSD7540, RocketAIC 7140AW, or RocketAIC 7540HW, you will need to disconnect the power cable to the 6-pin power connector on the HighPoint NVMe RAID AICs.



**Note:** If you are not using SSD7140A, SSD7540, RocketAIC 7140AW, or RocketAIC 7540HW, you can safely move to the next step.

- g. Holding the edge of the HighPoint NVMe RAID AIC, lift up to remove the HighPoint NVMe RAID AIC connector from the expansion slot.

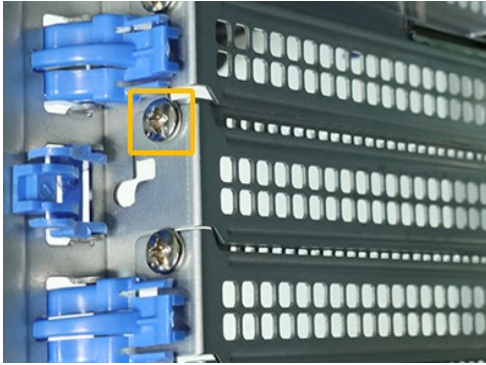


- h. Install the PCI shield into the expansion slot.



Using HighPoint NVMe RAID AICs with the Supermicro X11DPi-NT

- i. Install the screw securing the PCI shield.



- j. Secure the PCI shield onto the rear of the chassis with the PCI shield lock.



- k. Align the cover with the chassis in the locked position.



## 5.2 Uninstalling the HighPoint Software

### 5.2.1 Uninstall the HighPoint NVMe RAID AIC for Windows

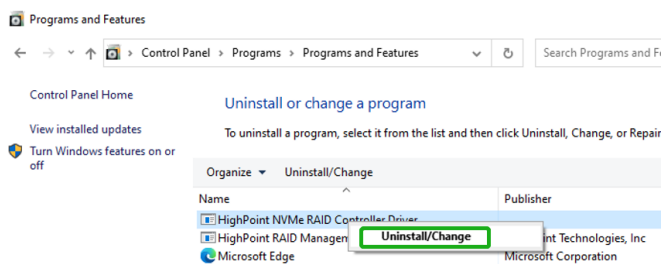
#### 5.2.1.1 Uninstall the driver

- a. Power down the system and remove the HighPoint NVMe RAID AIC from the system.

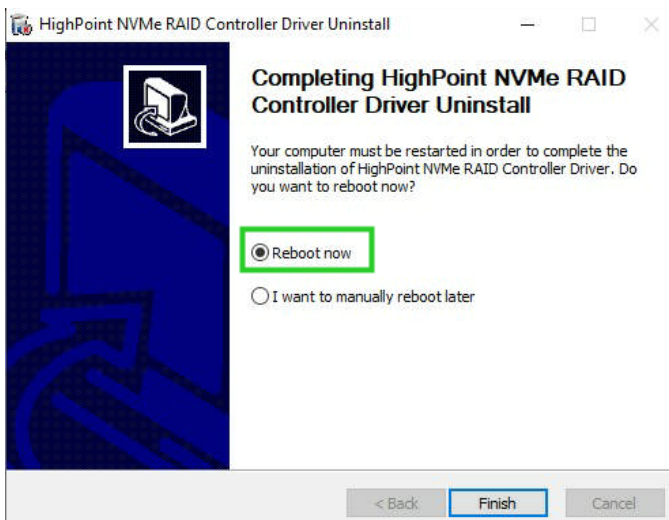
**Note1:** Failing to remove the HighPoint NVMe RAID AIC from the system during the uninstall process may result in data loss.

**Note2:** Whenever the driver is uninstalled, Windows will attempt to install the default NVMe support, which may corrupt the RAID configurations and any data stored on SSDs hosted by the HighPoint NVMe RAID AIC.

- b. Power on the system and boot Windows.
- c. Access **Control Panel** and select **Programs** → **Programs and Features**, and click on the **HighPoint NVMe RAID Controller Driver** entry.
- d. Click **Uninstall/Change**.



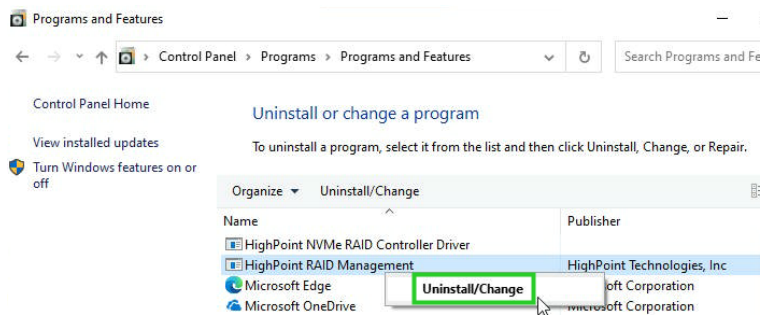
- e. After uninstalling the driver, click Finish.



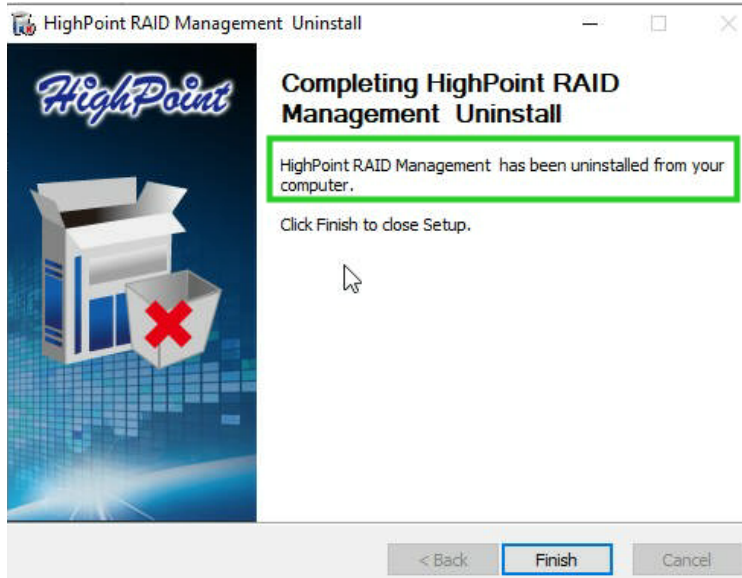
- f. Reboot Windows to complete the uninstall procedure.

### 5.2.1.2 Uninstall the RAID Management Software

- a. Access **Control Panel** and select **Programs**→ **Programs and Features**.
- b. Click on the **HighPoint RAID Management** entry.
- c. Click **Uninstall/Change**.



- d. After uninstalling the HighPoint RAID Management, click **Finish**.





## 5.2.2 Uninstall the HighPoint NVMe RAID AIC for Linux

### 5.2.2.1 Uninstall Driver

- Open the system terminal with root privileges.
- Enter the following commands to uninstall the driver: **hptuninhptnvme**.
- Press 'Y' to confirm.

```
[root@localhost Downloads]# hptuninhptnvme
Are you sure to uninstall the driver hptnvme from system? (Y/n): y
Removed symlink /etc/systemd/system/default.target.wants/hptdrv-monitor.service.
Removed symlink /etc/systemd/system/sysinit.target.wants/systemd-hptdrv.service.
All files installed have been deleted from the system.
[root@localhost Downloads]#
```

- After uninstalling the driver, manually reboot the system.
- After the system has rebooted, open the system terminal with root privileges. And enter the following command to check the driver status:  
**lsmod |grep hptnvme**

#### Before uninstalling:

```
[root@localhost test]# lsmod | grep hptnvme
hptnvme                235401  0
```

#### After uninstalling:

```
[root@localhost test]# lsmod | grep hptnvme
[root@localhost test]#
```

- If the system does not display information about “hptnvme”, the driver has been successfully uninstalled.

### 5.2.2.2 Uninstall the RAID Management Software

- Open the system terminal with root privileges.
- Enter the following commands to uninstall the RAID Management.  
**# dpkg -r hptsvr (or rpm -e hptsvr-https)**

```
root@testlu-Super-Server:/home/testlu/Desktop# dpkg -r hptsvr
(Reading database ... 183888 files and directories currently installed.)
Removing hptsvr (3.1.12) ...
```

- Enter the following command to check if the RAID Management has been removed successfully.

#### #hptraidconf

After uninstall:

```
root@testlu-Super-Server:/home/testlu/Desktop# hptraidconf
bash: /usr/bin/hptraidconf: No such file or directory
```