

## Using HighPoint NVMe RAID AICs with the Supermicro H11DSi

## V1.00-Jan 3,2024

Copyright 2024 HighPoint Technologies, Inc. All rights reserved

ľ	T	a	b	e	(	D	f	(	0	1	t	e	l	1	t	S

1. Supermicro H11DSi Introduction	4
1.1 Chassis	4
1.2 Chipset	4
1.3 Processor Types	4
1.4 Memory	5
1.5 PCIe slots	5
1.6 GPU	6
1.7 Other PCIe devices	6
2. HighPoint NVMe RAID AIC compatibility with the Supermicro H11DSi	7
3. Installing HighPoint NVMe RAID AICs into the Supermicro H11DSi	8
3.1 Install hardware	8
3.1.1 Recommended tools	8
3.1.2 Installing the Hardware into 2U and 4U Chassis:	SuperChassis
213AC-R1K23LPB/ SuperChassis 216BE1C4-R1K23LPB/	SuperChassis
846BE1C-R1K23B	8
3.1.3 Installing the Hardware into 2U and 3U Chassis:	SuperChassis
825TQC-R802LPB/ SuperChassis 826BE1C4-R1K23LPB/	SuperChassis
829HE1C4-R1K62LPB/ SuperChassis 836BE1C-R1K23B	11
3.1.4 Installing the Hardware into the SuperChassis 745BAC-R1K28B2	14
3.2 System BIOS Setting	17
3.2.1 Disable Secure boot	18
3.2.2 Boot mode to UEFI	18
3.3 Install software	19
3.3.1 Installing HighPoint NVMe RAID AICs into the Supermicro H11D	)Si (Data RAID
configurations)	19
3.3.1.1 Installing the Windows Driver & Management Software	19
3.3.1.2 Installing the Linux Driver & Management Software	19
3.3.2 Installing HighPoint NVMe RAID AICs into the Supermicro H11D	Si (Boot RAID
configurations)	19
3.3.2.1 Installing a Windows OS to a bootable RAID configuration	า19
3.3.2.2 Installing Linux to a bootable RAID configuration	19
4. Benchmarking HighPoint NVMe RAID AICs	21
4.1 Performance Testing	21
4.1.1 Recommended Hardware Configuration	21
4.1.2 Test tool	22
4.1.3 Gen3 HighPoint NVMe RAID AIC test results	26
4.1.4 Gen4 HighPoint NVMe RAID AIC test results	28
5. Uninstalling HighPoint NVMe RAID AICs from the Supermicro H11DSi	29
5.1 Uninstall hardware	29
5.1.1 Recommended tools	29
5.1.2 Uninstalling the Hardware from 2U and 4U Chassis:	SuperChassis
213AC-R1K23LPB/ SuperChassis 216BE1C4-R1K23LPB/	SuperChassis

	846BE	1C-R1K23B									29
	5.1.3	Uninstalling	the	Hardware	from	2U	and	3U	Chassis:	Sup	erChassis
	825TC	C-R802LPB/	S	uperChassis	8	26BE	1C4-F	R1K23	BLPB/	Sup	erChassis
	829HE	1C4-R1K62LP	B/ Su	perChassis 8	336BE1	C-R1	K23B				32
	5.1.4 l	Jninstalling th	ne Har	dware from	the Su	iperC	hassis	5 745	BAC-R1K2	28B2	35
5.2	Uninsta	Illing the High	Point	Software						•••••	
	5.2.1 l	Jninstall the H	lighPo	oint NVMe F	RAID AI	C for	Wind	ows.		•••••	
	5	.2.1.1 Uninsta	ll the	Driver						•••••	
	5	.2.1.2 Uninsta	ll the	RAID Mana	gemen	t Sof	tware			•••••	39
	5.2.2 เ	Jninstall the H	lighPo	oint NVMe F	RAID AI	C for	Linux			•••••	40
	5	.2.2.1 Uninsta	ll the	Driver						•••••	40
	5	.2.2.2 Uninsta	ll the	RAID Mana	gemen	t Sof	tware				40

## 1. Supermicro H11DSi Introduction

This document provides guidelines and procedures for installing HighPoint NVMe AICs into the Supermicro H11DSi. 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 H11DSi Chassis list:

Chassis	Model
2U	SuperChassis 213AC-R1K23LPB
	SuperChassis 216BE1C4-R1K23LPB
	SuperChassis 825TQC-R802LPB
	SuperChassis 826BE1C4-R1K23LPB
	SuperChassis 829HE1C4-R1K62LPB
3U	SuperChassis 836BE1C-R1K23B
4U	SuperChassis 745BAC-R1K28B2
	SuperChassis 846BE1C-R1K23B

## **1.2 Chipset**

Supermicro H11DSi Chipset: System on Chip

## **1.3 Processor Types**

Supermicro H11DSi processor type: Dual EPYC 7001/7002\* Series Processors, in Socket SP3. (\*AMD EPYC 7002 series drop-in support requires board revision 2.x)

## 1.4 Memory

Memory Capacity: 16 DIMM slots

Supports up to 2TB Registered ECC DDR4 2666MHz SDRAM in 16 DIMMs

Supports up to 4TB Registered ECC DDR4 3200MHz SDRAM (Board revision 2.x required)

8-channel memory bus

Memory type: DDR4 2666 MHz Registered ECC, 288-pin gold-plated DIMMs

DDR4 3200 MHz Registered ECC, 288-pin gold-plated DIMMs (Board revision 2.x required)

**DIMM Sizes:** 8GB, 16GB, 32GB, 64GB, 128GB, 256GB **Memory Voltage:** 1.2V

## **1.5 PCIe slots**

Supermicro H11DSi PCIe Expansion Slot Configuration:

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

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

## 1.6 GPU

Supermicro H11DSi Graphic:

Slot priority
N/A
N

Notes:

The ASPEED AST2500 BMC is an integrated graphics card and will not take up a PCIe slot.

## **1.7 Other PCIe devices**

The Supermicro H11DSi is available with optional PCIe devices.

The following table provides a list of PCIe device accessories available for the Supermicro H11DSi and which slot they are typically associated with.

PCIe devices type	Slot priority
Intel i350 on LAN Controller	1, 3, 5

**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 H11DSi

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

Notes:

 $\mathbf{v}^{1}$  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.

 $\sqrt{2}$  means that the HighPoint NVMe RAID AIC can be used normally in this slot if you use the Full Height chassis.

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

# **3.** Installing HighPoint NVMe RAID AICs into the Supermicro H11DSi

## 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 4U Chassis: SuperChassis

#### 213AC-R1K23LPB/ SuperChassis 216BE1C4-R1K23LPB/ SuperChassis

#### 846BE1C-R1K23B

For PCIe slot recommendations, please refer to this <u>table</u>. The following installation procedure applies to these chassis:

Chassis	Model
2U	SuperChassis 213AC-R1K23LPB
	SuperChassis 216BE1C4-R1K23LPB
4U	SuperChassis 846BE1C-R1K23B

- a. Use a wired ESD wrist strap that is properly grounded.
- b. Shut down the system.
- c. Press both release tabs simultaneously to release the cover from the locked position.



d. Lift the cover up and off the chassis.

e. Remove the screw securing the PCI shield.



f. Remove the PCI shield 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 in the locked position.



### 3.1.3 Installing the Hardware into 2U and 3U Chassis: SuperChassis

#### 825TQC-R802LPB/ SuperChassis 826BE1C4-R1K23LPB/ SuperChassis

#### 829HE1C4-R1K62LPB/ SuperChassis 836BE1C-R1K23B

For PCIe slot recommendations, please refer to this <u>table</u>. The following installation procedure applies to these chassis:

Chassis	Model
2U SuperChassis 825TQC-R802LPB	
	SuperChassis 826BE1C4-R1K23LPB
	SuperChassis 829HE1C4-R1K62LPB
3U	SuperChassis 836BE1C-R1K23B

- 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.



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.



I. 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 <u>table</u>. 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.



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 H11DSi 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	System BIOS Settings (Boot RAID configurations)					
RAID AICs	Secure Boot	Boot mode				
SSD6202	V	V				
SSD6202A	V	V				
SSD6204A	V	V				
SSD7105	<b>√</b> <sup>1</sup>	V				
SSD7202	<b>V</b> <sup>1</sup>	V				
SSD7502	<b>√</b> <sup>1</sup>	V				
SSD7505	<b>V</b> <sup>1</sup>	V				
SSD7540	<b>V</b> <sup>1</sup>	V				
RocketAIC 7105HW	<b>V</b> <sup>1</sup>	V				
RocketAIC 7502HW	<b>V</b> <sup>1</sup>	V				
RocketAIC 7505HW	<b>√</b> <sup>1</sup>	V				
RocketAIC 7540HW	V <sup>1</sup>	V				

HighPoint NVMe	System BIOS Settings (Data RAID configurations)
RAID AICs	Secure Boot
SSD6202	$\checkmark$
SSD6202A	V
SSD6204A	$\checkmark$
SSD7101A-1	V <sup>1</sup>
SSD7104	V <sup>1</sup>
SSD7105	V <sup>1</sup>
SSD7140A	V <sup>1</sup>
SSD7202	V <sup>1</sup>
SSD7204	V <sup>1</sup>
SSD7502	V <sup>1</sup>
SSD7505	٧ <sup>1</sup>
SSD7540	V <sup>1</sup>
RocketAIC 7105HW	V <sup>1</sup>
RocketAIC 7140AW	V <sup>1</sup>
RocketAIC 7502HW	v <sup>1</sup>

RocketAIC 7505HW	v <sup>1</sup>
RocketAIC 7540HW	V <sup>1</sup>

#### Notes:

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

 $\mathbf{v}^1$  means that the HighPoint NVMe RAID AIC support this BIOS setting if you are not using the Linux.

### 3.2.1 Disable Secure boot

**Note:** If you are using the SSD7000/7500 series NVMe RAID AICs or RocketAIC series NVMe Drives in Linux, 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→PCle/PCl/PnP Configuration→CPU SLOT PCI-E OPROM, select EFI.

Advanced		
NVMe Firmware Source	[Vendor Defined	Enables or disables CPU1
	Firmware]	SLOT2 PCI-E 3.0 X16 OPROM
M.2 (AHCI) Firmware Source	[Vendor Defined	option.
	Firmware]	
CPU2 SLOT1 PCI-E 3.0 X8 OPROM	[EFI]	
CPU1 SLOT3 PCI-E 3.0 X8 OPROM	[EFI]	
CPU1 SLOT4 PCI-E 3.0 X16 OPROM	[EFI]	
CPU1 SLOTS PCI-E 3.0 X8 OPROM	[EFI]	
M.2 PCIe x2 OPROM CPU1	SLOT2 PCI-E 3.0 X16 OPROM	
Onboard LAN1 Option ROM Disabled		
Onboard LAN1 Option ROM		
P2_NVMe0 OPROM		
P2_NVMe1 OPROM		
Onboard Video Option ROM	[EFI]	

d. Save configuration and restart system.

## 3.3 Install software

#### 3.3.1 Installing HighPoint NVMe RAID AICs into the Supermicro H11DSi

#### (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 <u>Data RAID Installation Guide (Windows)</u> to install the Windows Device Driver and Management Software.

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

Please refer to the <u>Data RAID Installation Guide (Linux)</u> to install the Linux Device Driver and Management Software.

## 3.3.2 Installing HighPoint NVMe RAID AICs into the Supermicro H11DSi

#### (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 <u>HighPoint Windows Boot RAID Windows installation Guide</u>.

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

Debian BootRAID: Please refer to <u>Linux Debian On HighPoint NVMe RAID Controller Installation</u> <u>Guide</u>.

RHEL BootRAID:

Please refer to <u>Linux RHEL On HighPoint NVMe RAID Controller Installation</u> <u>Guide</u>.

Ubuntu BootRAID:

Please refer to <u>Linux Ubuntu On HighPoint NVMe RAID Controller Installation</u> <u>Guide</u>.

Rocky Linux BootRAID:

Please refer to <u>Linux Rocky Linux On HighPoint NVMe RAID Controller Installation</u> <u>Guide</u>

## 4. Benchmarking HighPoint NVMe RAID AICs

## 4.1 Performance Testing

#### 4.1.1 Recommended Hardware Configuration

 Supermicro H11DSi: CPU: AMD EPYC 7282 16-Core Processor Memory: 32 GB
 PCIe Slot: CPU1 SLOT3 PCI-E 3.0 X8/ CPU1 SLOT2 PCI-E 3.0 X16

#### • HighPoint NVMe RAID AICs:

Gen3 HighPoint NVMe RAID AICs	SSD6202
	SSD6202A
	SSD6204A
	SSD7101A-1
	SSD7104
	SSD7105
	SSD7202
	SSD7204
	SSD7502
Gen4 HighPoint NVMe RAID AICs	SSD7505
	SSD7540

#### Disk:

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

Performance

Sequential Read Up to 7,000 MB/s \* Performance may vary based on system hardware & configuration

> Random Read (4KB, QD32) Up to 1,000,000 IOPS \* Performance may vary based on system hardware & configuration

Random Read (4KB, QD1) Up to 22,000 IOPS \* Performance may vary based on system hardware & configuration Sequential Write Up to 5,100 MB/s \* Performance may vary based on system hardware & configuration

Random Write (4KB, QD32) Up to 1,000,000 IOPS \* Performance may vary based on system hardware & configuration

Random Write (4KB, QD1) Up to 60,000 IOPS \* Performance may vary based on system hardware & configuration

#### 4.1.2 Test tool

Benchmark Tool: Iometer/ CrystalDiskMark

#### • lometer script setting:

The lometer script can be downloaded <u>here</u>.

**Note:** If you use the SSD6200 series NVMe RAID AICs, you will need to download another <u>iometer script</u>.

- 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 lometer with administrator rights.
- b. The system has two CPUs, so you need to specify the CPU node for performance testing.
  - a) open Task Manager and find Dynamo.exe in Details.
  - b) Right-click and select **Set affinity** to specify the CPU node (the CPU corresponding to the SLOT inserted in the HighPoint NVMe RAID AICs).

Processes Performance	App histo	ory Startup	U	End process tree					
Name	PID	Status	-	Provide feedback		Memory (a	UAC virtualizat		
E ApplicationFrameHo	10952	Running		Set priority	>	5,528 K	Disabled		
conhost.exe	2316	Running		Set offinity		6,152 K	Not allowed		
conhost.exe	7968	Running		Set annity		3,480 K	Not allowed		
CSrss.exe	1316	Running		Analyze wait chain		1,228 K	Not allowed		
🗉 csrss.exe	1400	Running		UAC virtualization		1,192 K	Not allowed		
Ctfmon.exe	6412	Running		Create dump file		3,864 K	Disabled		
📧 dasHost.exe	8180	Running				4,268 K	Not allowed		
dllhost.exe	9876	Running		Open file location		996 K	Enabled		
📧 dllhost.exe	2652	Running		Search online		3,952 K	Disabled		
🗉 dwm.exe	1928	Running		Properties		Properties		43,052 K	Disabled
Dynamo.exe	10200	Running		Go to service(s)		16,420 K	Not allowed		
explorer.exe	5308	Running		LCSL UV		100 10 50.100(3)		56,312 K	Disabled
fontdrvhost.exe	1720	Running		UMFD-0	00	976 K	Disabled		
O lOmeter.exe	2456	Running		test	00	7,552 K	Not allowed		

c. Click the folder icon to open the script, then select the script to be configured.



d. Select 2M-seq-read.



e. 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.

Topology       Disk Targets       Network Targets       Access Specifications       Results Display       Test Setup         Image: DESKTOP-IVKLH       Image: DESKTOP-IVKL

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

lo lometer	
Topology	Dis Targets Network Targets Access Specifications Results Display Test Setup
BM All Managers BB LAPTOP-0619V2RF	Drag managers and workers from the Topology window Record last update for the Topology window I are the formation of the form

g. Result Display will be automatically configured as Start of Test.

28 9 7 7 7	/ • 👷 🐴 👭 関 📍			
Topology	Disk Targets Network Targets Access	Specifications Results D	isplay Test Setup	
B-M All Managers	Drag managers and workers from the Topology window to the progress bar of your choice.	Record last update results to file	Results Since U • Start of Test C Last Update	pdate Frequency (seconds)
	Display	All Managore	0.00	0
	Total I/Os per Second		0.00	>
		All Managers	0.00 MBPS (0.00 MiBPS	5) 0
	Total MBs per Second (Decimal)			>
	Average I/O Response Time (ms)	All Managers	0.0000	0 >
		All Managers	0.0000	0
	Maximum I/O Response Time (ms)			>
		All Managers	0.00 %	0 %

• CrystalDiskMark script setting:

CrystalDis	Settings			×
File Settings	Туре	Block Size	Queues	Threads
All	Profile: Default			
	SEQ. ~	2MiB ~	16 ~	2 ~
SEQ2M	SEQ ~	2MiB ~	16 ~	5 ~
Q16T2	RND ~	4KiB ~	32 ~	16 ~
SEQ2M	RND ~	4KiB ~	8 ~	8 ~
Q16T5	Profile: Peak Perfor	mance		
RND4K	SEQ 🗸	1MiB ~	8 ~	1 ~
Q32T16	RND ~	4KiB ~	32 ~	16 ~
DND4K	Profile:Demo			
O8T8	SEQ ~	1MiB ~	8 ~	1 ~
	Measure Time (sec)	)	Interval Time (sec)	
	5	~	1	~
	Default	NVMe SSD		ОК

- a. Open CrystalDiskMark with administrator rights.
- b. Click Settings.

CrystalD	Settings							×
All	Type Profile: Defai	ult	Block Size		Queues		Threads	
All	SEQ	~	2MiB	~	16	~	2	~
SEQ2M	SEQ	~	2MiB	~	16	~	5	~
Q16T2	RND	~	4KiB	~	32	~	16	~
SEQ2M	RND	~	4KiB	~	8	~	8	~

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

📇 CrystalDisk	Settings			×
File Settings	Туре	Block Size	Queues	Threads
	Profile: Default			
All	SEQ ~	2MiB ~	64	~ 2 ~
SE02M	SEQ ~	2MiB ~	64	~ 5 ~
Q64T2	RND ~	4KiB ~	32	~ 16 ~
SECON	RND ~	4KiB ~	8	~ 8 ~
O64T5	Profile: Peak Perfo	rmance		
	SEQ ~	1MiB ~	8	~ 1 ~
RND4K	RND ~	4KiB ~	32	~ 16 ~
Q32110	Profile:Demo			
RND4K	SEQ ~	1MiB ~	8	× 1 ×
Q8T8	Measure Time (sec	:)	Interval Time (se	ec)
	5	~	· 1	~
	Default	NVMe SSD		OK

**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.

File	File Settings Profile Theme Help Language									
		5	~	8GiB	~ D	: 0% (0	/1863GiB)	~	MB/s	$\sim$
	····	Read [MB/s] Write [MB/s]							/s]	
SE	Q2M				•	00			<u>_</u>	^
Q	16T1				υ.	00			0.0	υ

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

File	Settings	Profile Theme Help Languag	e
	All	5 ~ 8GiB ~ D: 0% (0)	/1863GiB) ~ MB/s ~
	All	Read [MB/s]	Write [MB/s]
S	EQ2M	0.00	0.00
Q	16T1	0.00	0.00

## 4.1.3 Gen3 HighPoint NVMe RAID AIC test results

Iometer					
(script setting)	Gen3 RAID AIC	Legacy	RAID0	RAID1	RAID10
2m-Seq-Read	SSD6202	3,512	7,084	7,047	/
(MiB/s)	SSD6202A	3,504	6,744	6,981	/
	SSD6204A	1,759	6,940	3,551	/
	SSD7101A-1	3,580	14,207	7,038	14,205
	SSD7104	3,478	14,201	6,946	14,163
	SSD7105	3,499	14,501	7,108	14,022
	SSD7202	3 <i>,</i> 550	7,082	6,991	/
	SSD7204	3,512	7,104	6,849	7,039
	SSD6202	3,541	6,048	3,435	/
	SSD6202A	3,487	6,082	3,068	/
	SSD6204A	1,798	6,105	1,766	/
2m-Seq-Write	SSD7101A-1	3,518	12,167	3,518	7,030
(MiB/s)	SSD7104	3,398	11,882	3,409	7,018
	SSD7105	3,450	12,003	3,487	6,827
	SSD7202	3,489	6,921	3,503	/
	SSD7204	3,523	6,941	3,392	3,488
	SSD6202	792,401	740,214	692,304	/
	SSD6202A	802,304	859,794	871,488	/
	SSD6204A	505,139	710,251	692,304	/
4k-Rand-Read	SSD7101A-1	830,996	112,222	110,075	114,074
(IOPS)	SSD7104	835,390	111,044	105,802	113,602
	SSD7105	550,134	685,187	663,248	680,916
	SSD7202	720,064	125,028	119,943	/
	SSD7204	854,424	120,418	118,013	110,104
	SSD6202	640,324	602,401	610,410	/
	SSD6202A	630,103	697,440	655,622	/
	SSD6204A	401,230	646,801	390,412	/
4k-Rand-Write	SSD7101A-1	640,705	100,269	67,775	70,149
(IOPS)	SSD7104	659,117	99,344	69,771	70,260
	SSD7105	512,401	581,660	391,969	449,213
	SSD7202	600,413	102,019	67,308	/
	SSD7204	691,716	110,411	70,214	84,410

• crystaid				
(script setting)	Gen3 RAID AIC	RAIDO	RAID1	RAID10
2m-Seq (MB/s)	SSD6202	Tots         Source         Other Source         Made           Based         0.05	All         Solution         D this impage           All         5 - Scal         D this (https://scales/s	/
	SSD6202A	R:         temp / tem         Mole / temp           All         5         60         0.0 % 0/72608         Mole -           Marci         7090.12         6068.45         write MB/o           Marci         7080.55         5963.35           Marci         7089.55         6185.47           No         5         60 % 0/72608         0.05 %           Marci         7089.55         6185.47         No           No         5         644 (0%)         Write (0%)         Write (0%)           Marci         17425.29         341111.82         0.05 %         753682.86         612148.44	The interm Multi Symposize         Multi Symposize         Multi Symposize           Mark (Mkr)         Write (MKr)         Write (MKr)           Mark (Mkr)         3365,71         2852,91           Mark (Mkr)         3072,444           Mark (Mkr)         3097,30           Tis string         File         00%/15028         00%/75038           Tis string         5-1         String 400%         Write (Nr)           Mark (Mkr)         00%/15028         00%/5         00%/5           Mark (Mkr)         5-1         String 400%         Write (Nr)           Mark (Mr)         759752,69         612403,32         32	/
	SSD6204A	No         Servery         Parts         Description         Mark (MMy)           So         Bid         D 0% 00/24208         Mark (MMy)           Back (MMy)         Write (MMy)         Write (MMy)           Back (MMy)         T167.46         6293.31           Back (MMy)         6120.37           Back (MMy)         6329.13           Ts         Emp.           Att         5           So         CON (M/SLOR)           Write (DFS)         Write (DFS)           Back (MS)         Write (DFS)           Back (MS)         T593551.07           Gald 2053         630235.35	Pic         Samp         Polic         None         Hole         Legacy           All         S - (Seal - C) Dis(1)(Secal)         Mills - (Mills - (Mil	/
	SSD7101A-1	Tai         Solidity         Tailer         Tailer <thtailer< th="">         Tailer         <thtailer< th=""> <thtailer< th="">         Tailer</thtailer<></thtailer<></thtailer<>	Pick         Setting         Pick         New Help         Lingapt           All         5 - () (6.0 - () () () () (0.01) () () (0.01) () () (0.01) () () (0.01) () () (0.01) () () (0.01) () (0	R:         Source And Control         Nume High Lengange           All         5 - Ged ID: 05 % 0272668         Number - Mark           Source         9537.62         6498.91           Source         142219.71         6821.12           Source         142628.82         7000329           R:         Source         05 % 0272668         Ords           Source         142628.82         7000329         Noise 1005           R:         Source         05 % 0272678         Ords         Ords           Source         12900.15         15700.444         Noise 118853.76         67914.31
	SSD7104	The family, Public News Wey, Linguight         Image News News News News News News News New	File         Setting         Long and Mathy         Setting and Mathy         Write (MMa)           Mathy         5         Setting and Mathy         Write (MMa)           Mathy         7120.12         3478.20           Mathy         7120.12         3478.20           Mathy         7120.12         3478.20           Mathy         7110.23         3513.26           File         Setting Anthy         Write (MMa)           Mathy         Setting Anthy         Write (MMa)           Mathy         7110.23         3513.26           File         Setting Anthy         Write (MMa)           Mathy         Setting Anthy         <	Initial         Initial <t< td=""></t<>
	SSD7105	Instructure         Total Mark         Constructure           All         5 - Scot         D 06 M(742cB)         Malke           Basel MMXy         White (MMX)         White (MMX)           Basel MMXy         10065.30         9034.93           Basel MMXy         14381.82         13669.17           Basel MMXy         14381.82         13972.07           Fix Entry Johns His Legage         005 °         005 M(74326)           Fix Entry Johns His Legage         005 °         Write (075)           Martin         19283.94         45782.96         05 °           Gastrin         683653.81         557442.63         557442.63	Instruction         Source Public New Hold Lengage         Mail New Hold Lengage         Mail New Hold Lengage           All         Source New Hold New Hold Lengage         Write (MMA)         Write (MMA)           Norme         6726.47         3459.82         Source New Hold N	It         Sense Aub. New Yee Jongs         Mail         Sense Aub. New Yee Jongs         Mail         Mail<
	SSD7202	In         Source         Do No NO72608         Male           All         5         6.66         DO No NO72608         Male           Mail         Faci (MAr)         Write (MIX)         Write (MIX)           Mail         7120.96         6895.42           Mail         7113.55         6838.88           Mail         7140.26         7027.57           Ts         Source         7140.26         7007.57           Ts         Source         0.50 NO72608         Corpos           Mail         Source         14260.74         23640.38           Mail         127708.25         103927.98	The Series And New High Support           MI         Source New High Support           MI         Source New High Support           MI         Control New High Support           MI         T114.38         34488.72           Note New High Support         T114.38         34488.72           Note New High Support         T114.38         34488.72           Start New High Support         T118.04         3514.55           Start Med Cores         One Note Support         One Note Support           Mile Support         Support         One Note Support           Mile Support         Support         Support         New High Support           Mile Support         Support         New High Support         New High Support           Mile Support         Support         New High Support         New High Support           Mile Support         Support         New High Support         New High Support           Support         Support         New High Support         New High Suppor	/
	SSD7204	Pice         Pice <th< td=""><td>The Series         Parties         Note: Help: Language           All         5 - Selies         &gt; Do Not Artistical Coll         Malkits - Reserved Artistical Coll           Note: T127.90         34546.66           Series         7138.44         3421.68           Series         7138.44         3421.68           Series         7148.05         3459.72           The Series         7148.05         - Series           All         5 - Series         - Dot Natherson         - Series           All         5 - Series         - Dot Natherson         - Series           All         5 - Series         - Dot Natherson         - Series           All         5 - Series         - Dot Natherson         - Series           Maid (DOT)         Write DOTS         Write DOTS           Mark (DES)         126938.48         67617.19</td><td>The Series Public News Hole Language         White With Language           All         5 - 0.064         -0.064.001450.080         White WMA/s           Marking         712.66.10         35011.666         35011.666           Marking         7052.72         342.66.26         35516.89           The Series Public New Hoj Language         -0.064.01450.08         0.075 - 74.42           Marking         2.5.668         -0.064.01450.08         0.075 - 74.42           Marking         2.5.608         -0.054.01450.08         0.075 - 74.42           Marking         2.5.608         -0.054.01450.08         0.075 - 74.42           Marking         2.5.003.76         155.519.7.78         0.005 - 74.42           Marking         1.242370.36         68022.71         -68.022.71</td></th<>	The Series         Parties         Note: Help: Language           All         5 - Selies         > Do Not Artistical Coll         Malkits - Reserved Artistical Coll           Note: T127.90         34546.66           Series         7138.44         3421.68           Series         7138.44         3421.68           Series         7148.05         3459.72           The Series         7148.05         - Series           All         5 - Series         - Dot Natherson         - Series           All         5 - Series         - Dot Natherson         - Series           All         5 - Series         - Dot Natherson         - Series           All         5 - Series         - Dot Natherson         - Series           Maid (DOT)         Write DOTS         Write DOTS           Mark (DES)         126938.48         67617.19	The Series Public News Hole Language         White With Language           All         5 - 0.064         -0.064.001450.080         White WMA/s           Marking         712.66.10         35011.666         35011.666           Marking         7052.72         342.66.26         35516.89           The Series Public New Hoj Language         -0.064.01450.08         0.075 - 74.42           Marking         2.5.668         -0.064.01450.08         0.075 - 74.42           Marking         2.5.608         -0.054.01450.08         0.075 - 74.42           Marking         2.5.608         -0.054.01450.08         0.075 - 74.42           Marking         2.5.003.76         155.519.7.78         0.005 - 74.42           Marking         1.242370.36         68022.71         -68.022.71

• CrystalDiskMark

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

## 4.1.4 Gen4 HighPoint NVMe RAID AIC test results

lometer lometer					
(script setting)	Gen4 RAID AIC	Legacy	RAID0	RAID1	RAID10
	SSD7502	6,941	13,840	12,104	/
2m-Seq-Read	SSD7505	6,724	14,313	11,431	14,314
	SSD7540	6,811	14,314	N/A	N/A
2m Sog Write	SSD7502	5,029	7,041	5,120	/
(MiB/c)	SSD7505	4,942	10,900	5,057	7,127
	SSD7540	5,041	11,065	N/A	N/A
Alc Dand Daad	SSD7502	641,404	658,771	675,705	/
	SSD7505	658,964	705,962	657,870	672,632
(10P3)	SSD7540	659,715	706,431	N/A	N/A
Alc Dand Mirita	SSD7502	509,823	570,443	420,014	/
	SSD7505	512,004	577,474	389,852	449,421
(1043)	SSD7540	517,931	573,880	N/A	N/A

#### • CrystalDiskMark

(script setting)	Gen4 RAID AIC	RAID0	RAID1	RAID10
2m-Seq (MB/s)	SSD7502	Its         Sense year         Sense year         Sense year         Sense year         Sense year           Add         S - 16 Ge         D Ofic (MD2/GGC)         Sense - D Ofic (MD2/GC)         Sense - Write (MD2/GC)           Sense - 10 Sense - 10 Sense - Sense - Sensense - Sense - Sensense - Sense - Sense - Sens	Image South         Test Source         Source         Source         Source         Source         Source         Within (MMA)         Within (MMA)           Mass         6610.59         5087.35         Source	/
	SSD7505	Test         Sense         Auto         Sense         Auto         Sense         Auto         Material	atting         rest         steps         steps <th< td=""><td>The         Inditisy         Auth         News         Negs Language           All         5 - (Bidl)         - (Dis (D) 252628)         Milling - (Dis (D) 252628)           All         5 - (Dis (D) 252628)         Write (DMA)           Write         10052.27         6725.99           Write         14280.32         6921.51           Write         143008.95         7093.30           Write         160 - (Dis (D) 252628)         (Dis (D) - (Dis (D) 2568))           Write         5 - (Dis (D) - (Dis (D) 2568))         Write (DPS)           Write         192.99.56         442424.92           Write         672367.43         456743.65</td></th<>	The         Inditisy         Auth         News         Negs Language           All         5 - (Bidl)         - (Dis (D) 252628)         Milling - (Dis (D) 252628)           All         5 - (Dis (D) 252628)         Write (DMA)           Write         10052.27         6725.99           Write         14280.32         6921.51           Write         143008.95         7093.30           Write         160 - (Dis (D) 252628)         (Dis (D) - (Dis (D) 2568))           Write         5 - (Dis (D) - (Dis (D) 2568))         Write (DPS)           Write         192.99.56         442424.92           Write         672367.43         456743.65
	SSD7540	In         Servery Auton         Name: Help Language           All         5 - (8 Gal)         > (0 Koh)         * (0 Koh)           Winter (MM A)         Winter (MM A)         * (0 Koh)         * (0 Koh)           Winter (MM A)         9235.67         * (0 Koh)         * (0 Koh)           Winter (MM A)         10045.11         9235.67         * (0 Koh)           Winter (MM A)         14279.22         13887.48         * (0 Koh)           Winter (MM A)         14230.78         * (0 Koh)         * (0 Koh)           Winter (W Koh)         14230.78         * (0 Koh)         * (0 Koh)           Winter (W Koh)         * (0 Koh)         * (0 Koh)         * (0 Koh)           Winter (W Koh)         * (0 Koh)         * (0 Koh)         * (0 Koh)           Winter (W Koh)         * (0 Koh)         * (0 Koh)         * (0 Koh)           Winter (W Koh)         * (0 Koh)         * (0 Koh)         * (0 Koh)           Winter (W Koh)         * (0 Koh)         * (0 Koh)         * (0 Koh)           Winter (W Koh)         * (0 Koh)         * (0 Koh)         * (0 Koh)           Winter (W Koh)         * (0 Koh)         * (0 Koh)         * (0 Koh)           Winter (W Koh)         * (0 Koh)         * (0 Koh)	N/A	N/A

#### Notes:

/ means that this AIC does not support the creation of RAID10. N/A means that this AIC did not test this item.

# 5. Uninstalling HighPoint NVMe RAID AICs from the Supermicro H11DSi

## 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 4U Chassis: SuperChassis

#### 213AC-R1K23LPB/ SuperChassis 216BE1C4-R1K23LPB/ SuperChassis

#### 846BE1C-R1K23B

The following installation procedure applies to these chassis:

Chassis	Model
2U	SuperChassis 213AC-R1K23LPB
	SuperChassis 216BE1C4-R1K23LPB
40	SuperChassis 846BE1C-R1K23B

- a. Use a wired ESD wrist strap that is properly grounded.
- b. Shut down the system.
- c. Press both release tabs simultaneously to release the cover from the locked position.
- d. Lift the cover up and off the chassis.



e. 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.



i. Install the screw securing the PCI shield.



j. Align the cover with the chassis.



## 5.1.3 Uninstalling the Hardware from 2U and 3U Chassis: SuperChassis

### 825TQC-R802LPB/ SuperChassis 826BE1C4-R1K23LPB/ SuperChassis

#### 829HE1C4-R1K62LPB/ SuperChassis 836BE1C-R1K23B

For PCIe slot recommendations, please refer to this <u>table</u>. The following installation procedure applies to these chassis:

Chassis	Model		
2U	SuperChassis 825TQC-R802LPB		
	SuperChassis 826BE1C4-R1K23LPB		
	SuperChassis 829HE1C4-R1K62LPB		
3U	SuperChassis 836BE1C-R1K23B		

- 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.



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

For PCIe slot recommendations, please refer to this <u>table</u>. 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 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.



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.

#### Notes:

Failing to remove the HighPoint NVMe RAID AIC from the system 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 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.

🐞 HighPoint NVMe RAID Co	ntroller Driver Uninstall	<u></u>		×
	Completing HighPo Controller Driver Un Your computer must be restarte uninstallation of HighPoint NVMe you want to reboot now?	int NVMe ninstall d in order to cc RAID Controlli	RAID	e Do
	< Back	Finish	Cano	el

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 the Driver

- a. Open the system terminal with root privileges.
- b. Enter the following commands to uninstall the driver: hptuninhptnvme.
- c. 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]#
```

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

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

#### After uninstalling:

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

f. If the system does not display information about "hptnvme", the driver has been successfully uninstalled.

#### 5.2.2.2 Uninstall the RAID Management Software

- a. Open the system terminal with root privileges.
- b. 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) ...
- c. 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
```