Lenovo

ThinkSystem SR650a V4
Internal Cable Routing Guide

Machine Type: 7DGC, 7DGD

Note

Before using this information and the product it supports, be sure to read and understand the safety information and the safety instructions, which are available at:
https://pubs.lenovo.com/safety_documentation/

In addition, be sure that you are familiar with the terms and conditions of the Lenovo warranty for your server, which can be found at:
http://datacentersupport.lenovo.com/warrantylookup

First Edition (April 2025)

Contents

Safety

Before installing this product, read the Safety Information.

قبل تركيب هذا المنتج، يجب قراءة الملاحظات الآمنية

Antes de instalar este produto, leia as Informações de Segurança.

在安装本产品之前，请仔细阅读 Safety Information （安全信息）。

安裝本產品之前，請先閱讀「安全資訊」。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας (safety information).

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

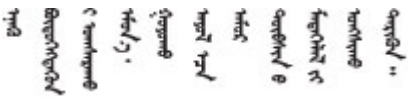
A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza.

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.



Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Antes de instalar este produto, leia as Informações sobre Segurança.

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto zariadenia si pečítaje Bezpečnostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto, lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

ཐོན་རྫས་འདི་བདེ་སྐྱོང་མ་བྱས་གོང་། ·སྐྲ་ཐྱི་ཡིད་གཟབ· བྱ་འདྲ་མིན་ཡོད་པའི་འོད་སྣེར་བལྟ་དགོས།

Bu ürünü kurmadan önce güvenlik bilgilerini okuyun.

ھەزكۇر مەھسۇلاتنى ئورنىتىشتىن بۇرۇن بىخەتەرلىك ئۇچۇرلىرىنى ئوقۇپ چىقىڭ.

Youq mwngz yungh canjbinj neix gaxgonq, itdingh aeu doeg aen canjbinj soengq cungj vahgangj ancien siusik.

Safety inspection checklist

Use the information in this section to identify potentially unsafe conditions with your server. As each machine was designed and built, required safety items were installed to protect users and service technicians from injury.

Note: The product is not suitable for use at visual display workplaces according to §2 of the Workplace Regulations.

Note: The set-up of the server is made in the server room only.

CAUTION:
This equipment must be installed or serviced by trained personnel, as defined by the IEC 62368-1, the standard for Safety of Electronic Equipment within the Field of Audio/Video, Information Technology and Communication Technology. Lenovo assumes you are qualified in the servicing of equipment and trained in recognizing hazards energy levels in products. Access to the equipment is by the use of a tool, lock and key, or other means of security, and is controlled by the authority responsible for the location.

Important: Electrical grounding of the server is required for operator safety and correct system function. Proper grounding of the electrical outlet can be verified by a certified electrician.

Use the following checklist to verify that there are no potentially unsafe conditions:

1. Make sure that the power is off and the power cord is disconnected.
2. Check the power cord.
   - Make sure that the third-wire ground connector is in good condition. Use a meter to measure third-wire ground continuity for 0.1 ohm or less between the external ground pin and the frame ground.
   - Make sure that the power cord is the correct type.

     To view the power cords that are available for the server:

     a. Go to:

http://dcsc.lenovo.com/#/

b. Click **Preconfigured Model** or **Configure to order**.

c. Enter the machine type and model for your server to display the configurator page.

d. Click **Power → Power Cables** to see all line cords.

- Make sure that the insulation is not frayed or worn.

3. Check for any obvious non-Lenovo alterations. Use good judgment as to the safety of any non-Lenovo alterations.
4. Check inside the server for any obvious unsafe conditions, such as metal filings, contamination, water or other liquid, or signs of fire or smoke damage.
5. Check for worn, frayed, or pinched cables.
6. Make sure that the power-supply cover fasteners (screws or rivets) have not been removed or tampered with.

Internal cable routing

See this section to do cable routing for specific components.

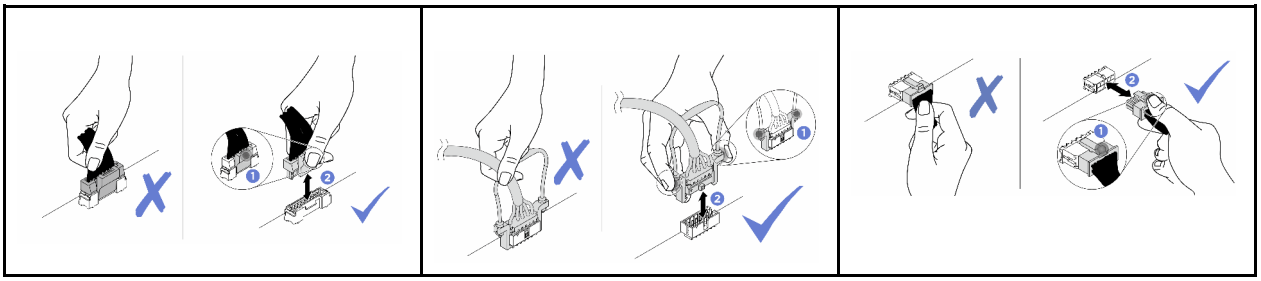
Notes: Follow below guidelines when connecting cables:

- Turn off the server before you connect or disconnect any internal cables.
- See the documentation that comes with any external devices for additional cabling instructions. It might be easier for you to route cables before you connect the devices to the server.
- Cable identifiers of some cables are printed on the cables that come with the server and optional devices. Use these identifiers to connect the cables to the correct connectors.
- Ensure that the cable is not pinched and does not cover any connectors or obstruct any components on the system board assembly.
- Ensure that the relevant cables pass through the cable clips.

Attention: Strictly observe the following instructions to avoid damaging cable sockets on the system board assembly. Any damage to the cable sockets might require replacing the system board assembly.

- Connect cable connectors vertically or horizontally in alignment with the orientations of the corresponding cable sockets, avoiding any tilt.
- To disconnect cables from the system board assembly, do as follows:
  1. Press and hold all latches, release tabs, or locks on cable connectors to release the cable connectors.
  2. Remove the cable connectors vertically or horizontally in alignment with the orientations of the corresponding cable sockets, avoiding any tilt.

     Note: The cable connectors might look different from those in the illustration, but the removal procedure is the same.



Identifying connectors

See this section to locate and identify the connectors on the electric boards.

Drive backplane connectors

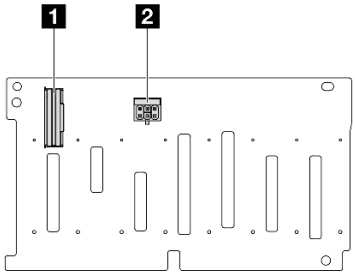
See this section to locate the connectors in the drive backplanes.

The server supports the following backplanes depending on server configurations:

- “8 x 2.5-inch SAS/SATA front backplane” on page 2
- “8 x 2.5-inch AnyBay front backplane” on page 2
- “E3.S drive backplane” on page 2
- “Front M.2 boot backplane and controller board” on page 3

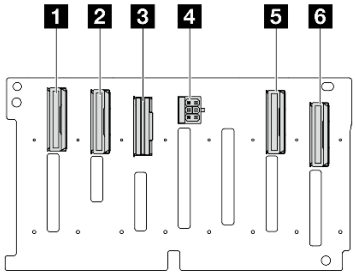
- “Rear M.2 backplane” on page 3

8 x 2.5-inch SAS/SATA front backplane



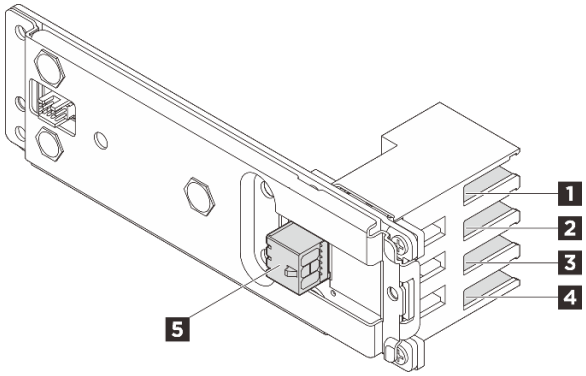
1 SAS connector	2 Power connector

8 x 2.5-inch AnyBay front backplane



1 NVMe 6-7 connector	2 NVMe 4-5 connector
3 SAS connector	4 Power connector
5 NVMe 2-3 connector	6 NVMe 0-1 connector

E3.S drive backplane



1 Bay 0	2 Bay 1
3 Bay 2	4 Bay 3
5 Power connector	

Front M.2 boot backplane and controller board

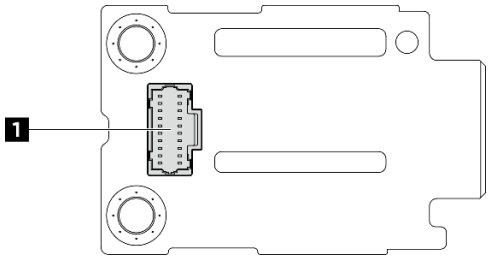


Figure 1. Front M.2 boot backplane

1 Power connector

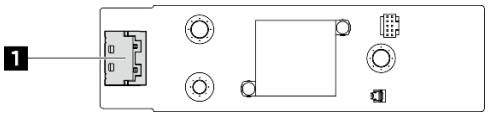
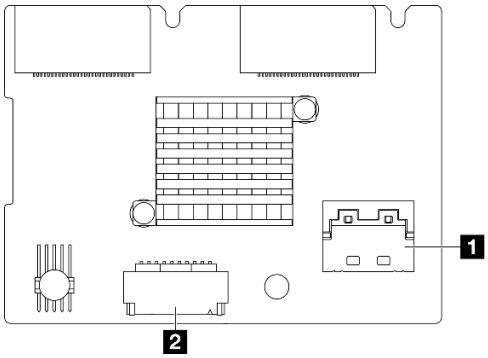


Figure 2. Front M.2 controller board

1 Signal connector

Rear M.2 backplane



1 Signal connector	2 Power connector

System-board-assembly connectors for cable routing

The following illustrations show the internal connectors on the system board assembly that are used for internal cable routing.

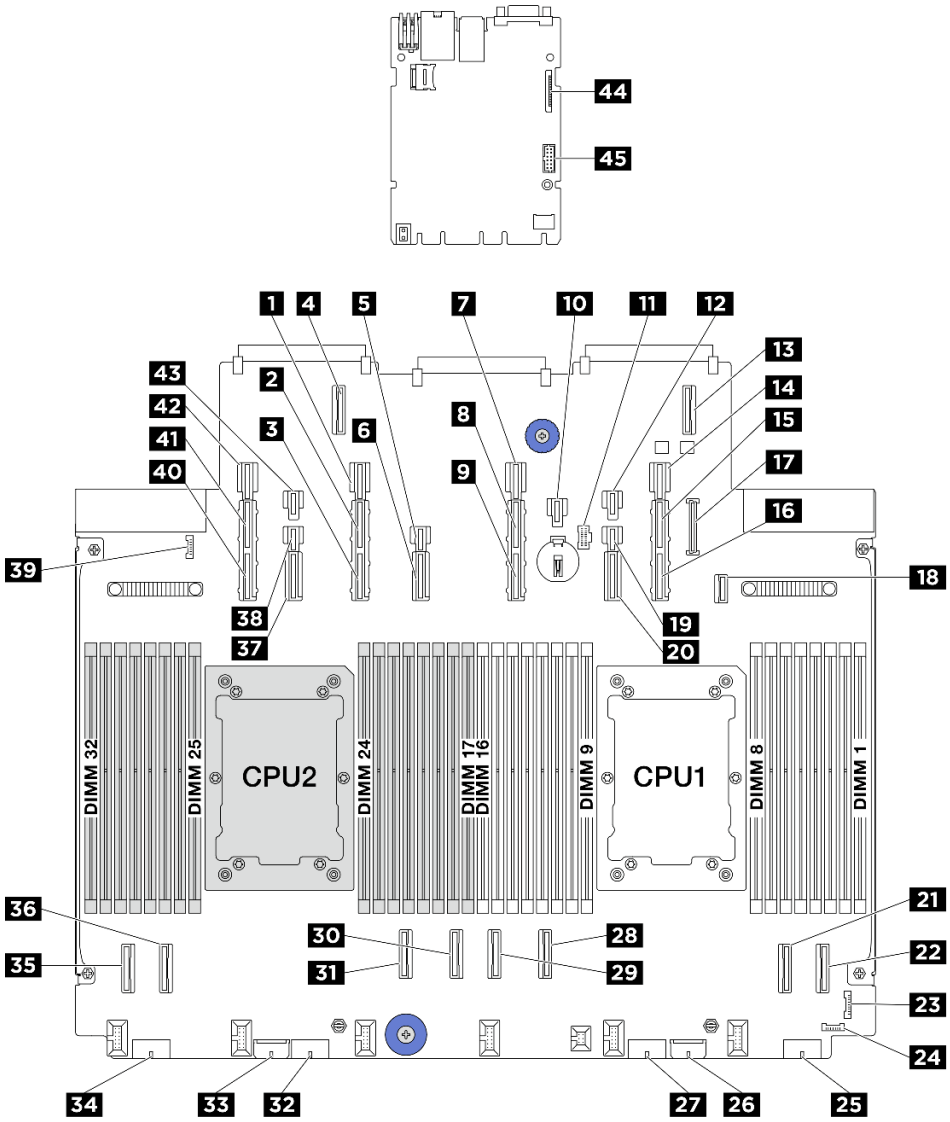


Figure 3. System-board-assembly connectors

1 Power connector 13	2 PCIe connector 13A
3 PCIe connector 13B	4 OCP expansion connector 2
5 Power connector 12	6 PCIe connector 12
7 Power connector 11	8 PCIe connector 11A
9 PCIe connector 11B	10 Power connector 21
11 M.2 power connector	12 Power connector 20
13 OCP 1 expansion connector	14 Power connector 9
15 PCIe connector 9A	16 PCIe connector 9B
17 Front panel USB connector	18 M.2 backplane signal connector
19 Power connector 10	20 PCIe connector 10
21 PCIe connector 2	22 PCIe connector 1

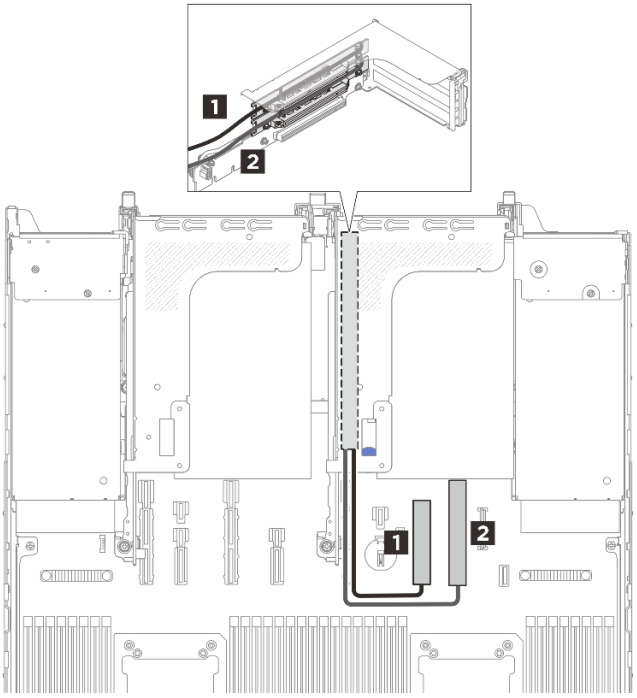
23 Front I/O connector	24 Leak detection connector 1
25 Power connector 4	26 Internal expander power connector
27 Power connector 3	28 PCIe connector 3
29 PCIe connector 4	30 PCIe connector 5
31 PCIe connector 6	32 Power connector 2
33 Internal RAID power connector	34 Power connector 1
35 PCIe connector 8	36 PCIe connector 7
37 PCIe connector 14	38 Power connector 14
39 Leak detection connector 2	40 PCIe connector 15B
41 PCIe connector 15A	42 Power connector 15
43 Power connector 23	44 Second management Ethernet connector
45 Serial port connector	

Riser card cable routing

Follow the instructions in this section to learn how to do cable routing for riser cards.

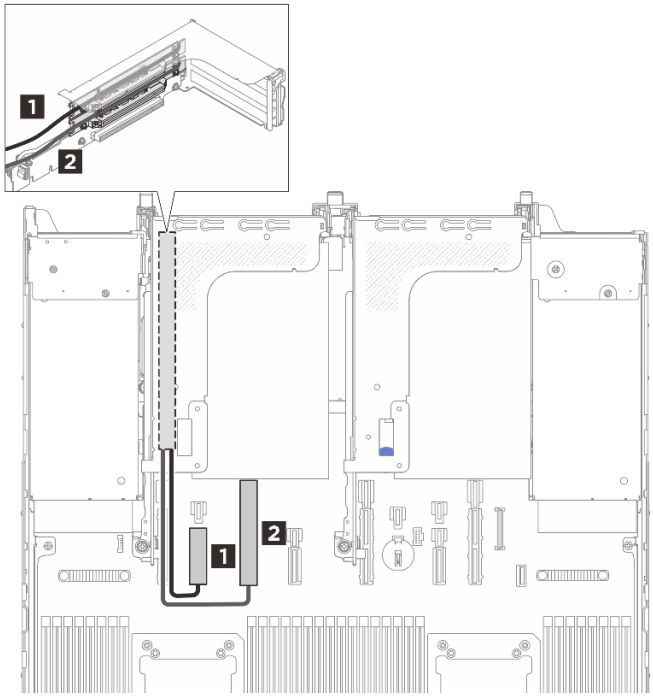
Rear riser assembly	With three riser cards	With two riser cards
Riser assembly 2 (Processor 1)	“Riser assembly 2: x8/x16/x16” on page 6	“Riser assembly 2: x16/x16” on page 8
Riser assembly 3 (Processor 2)	“Riser assembly 3: x8/x16/x16” on page 7	“Riser assembly 3: x16/x16” on page 9
Front riser assembly: Riser assembly 6 and Riser assembly 7 • “x8/x8/x8/x8” on page 10 • “x16/x16 (supporting DW GPU adapters)” on page 12		

Riser assembly 2: x8/x16/x16 configuration



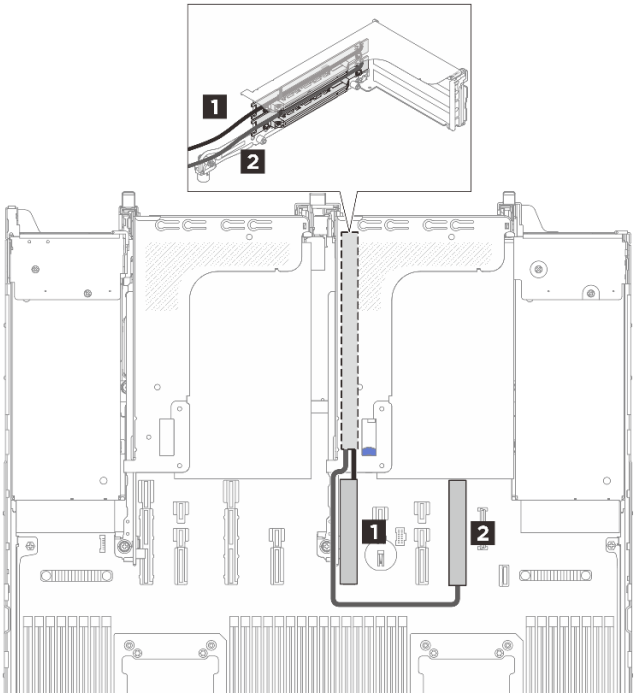
From	To (processor board)	Cable length
1 Riser card on Slot 3	1 PCIe connector 10 and Power connector 10	350 mm
2 Riser card on Slot 4	2 PCIe connector 9 and Power connector 9	300 mm
The riser card on the lowest slot connects to the processor board directly, requiring no cable.		

Riser assembly 3: x8/x16/x16 configuration



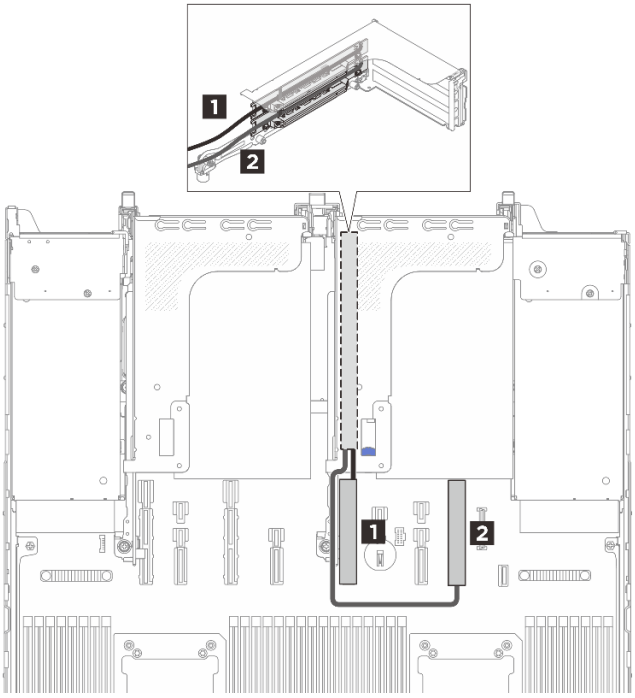
From	To (processor board)	Cable length
1 Riser card on Slot 6	1 PCIe connector 14 and Power connector 14	350 mm
2 Riser card on Slot 7	2 PCIe connector 13 and Power connector 13	300 mm

Riser assembly 2: x16/x16 configuration



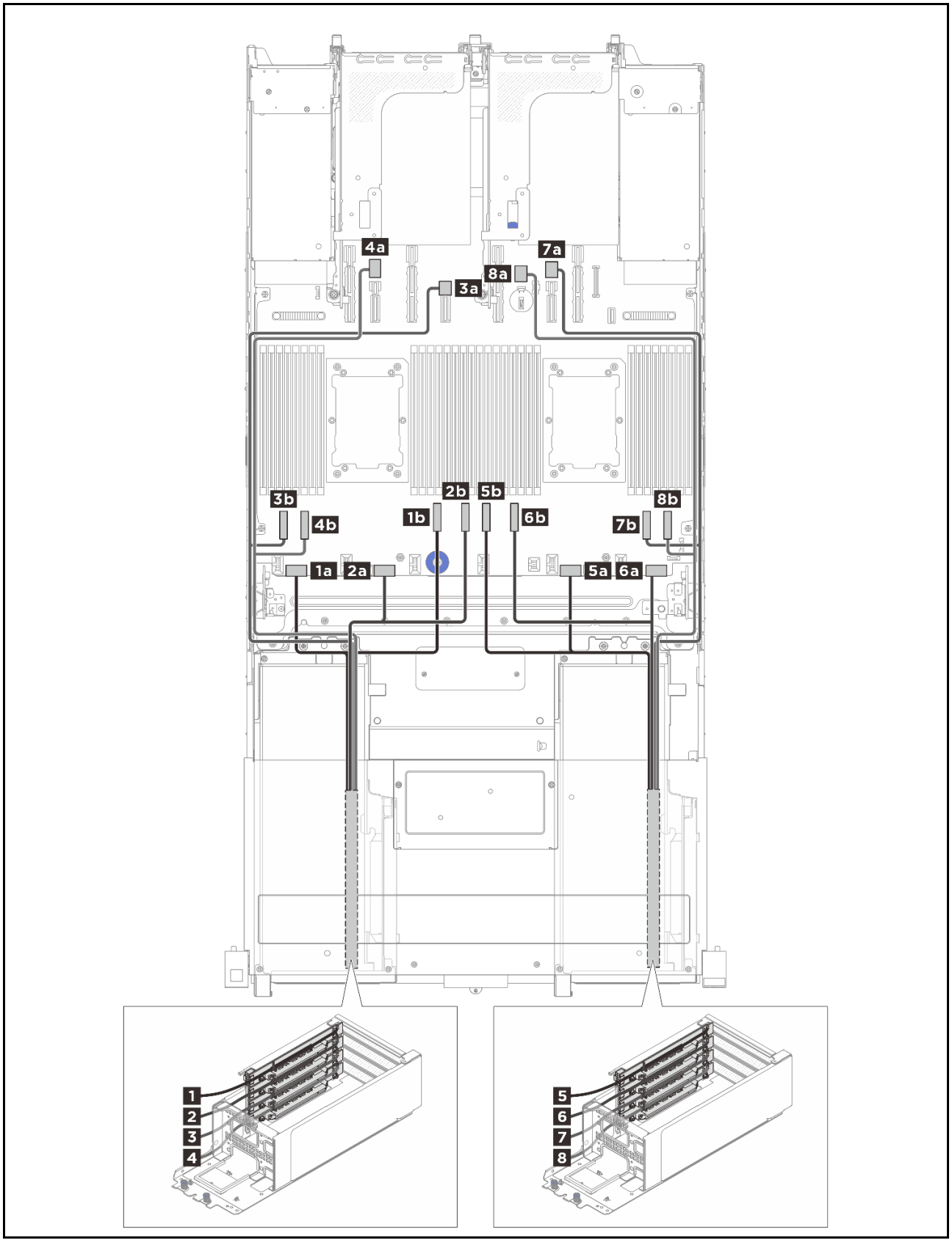
From	To (processor board)	Cable length
1 Riser card on Slot 3	1 PCIe connector 10 and Power connector 11	300 mm
2 Riser card on Slot 4	2 PCIe connector 9 and Power connector 9	300 mm
The riser card on the lowest slot connects to the processor board directly, requiring no cable.		

Riser assembly 3: x16/x16 configuration



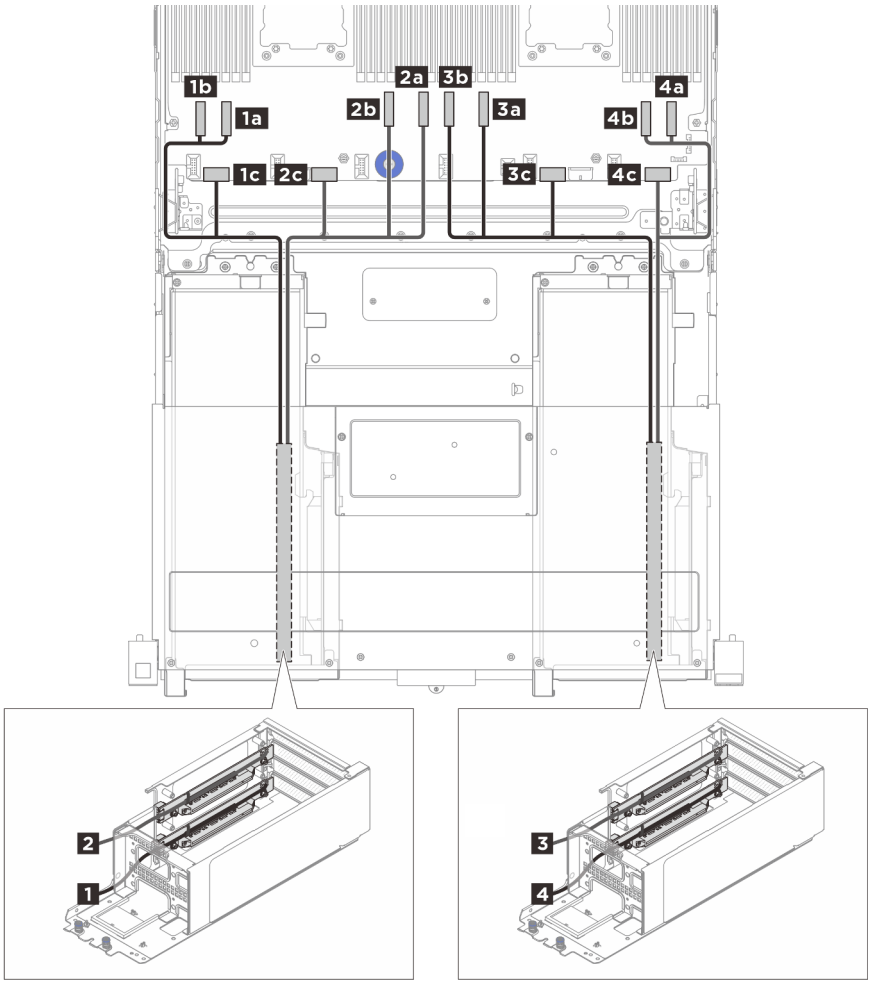
From	To (processor board)	Cable length
1 Riser card on Slot 6	1 PCIe connector 10 and Power connector 11	300 mm
2 Riser card on Slot 7	2 PCIe connector 9 and Power connector 9	300 mm

Front riser assembly: x8/x8/x8/x8 configuration



From	To (processor board)	Cable length
1 Riser card on Slot 16	1a Power connector 1	550/470 mm
	1b PCIe connector 6	
2 Riser card on Slot 17	2a Power connector 2	550/470 mm
	2b PCIe connector 5	
3 Riser card on Slot 18	3a Power connector 12	550/1000 mm
	3b PCIe connector 8	
4 Riser card on Slot 19	4a Power connector 23	550/1000 mm
	4b PCIe connector 7	
5 Riser card on Slot 20	5a Power connector 3	550/470 mm
	5b PCIe connector 4	
6 Riser card on Slot 21	6a Power connector 4	550/470 mm
	6b PCIe connector 3	
7 Riser card on Slot 22	7a Power connector 20	550/1000 mm
	7b PCIe connector 2	
8 Riser card on Slot 23	8a Power connector 21	550/1000 mm
	8b PCIe connector 1	

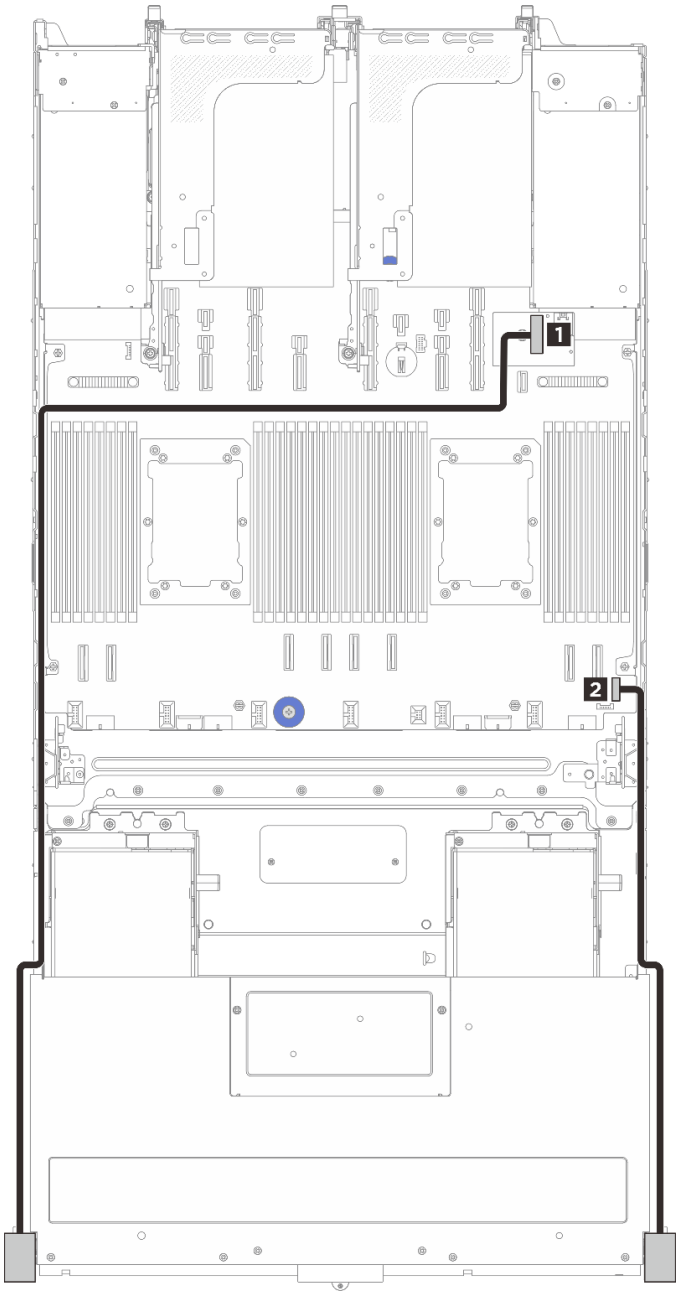
Front riser assembly: x16/x16 configuration



From	To (processor board)	Cable length
1 Riser card on Slot 19	1a PCIe connector 7	550/450 mm
	1b PCIe connector 8	
	1c Power connector 1	
2 Riser card on Slot 17	2a PCIe connector 5	550/450 mm
	2b PCIe connector 6	
	2c Power connector 2	
3 Riser card on Slot 21	3a PCIe connector 3	550/450 mm
	3b PCIe connector 4	
	3c Power connector 3	
4 Riser card on Slot 23	4a PCIe connector 1	550/450 mm
	4b PCIe connector 2	
	4c Power connector 4	

Rack latch cable routing

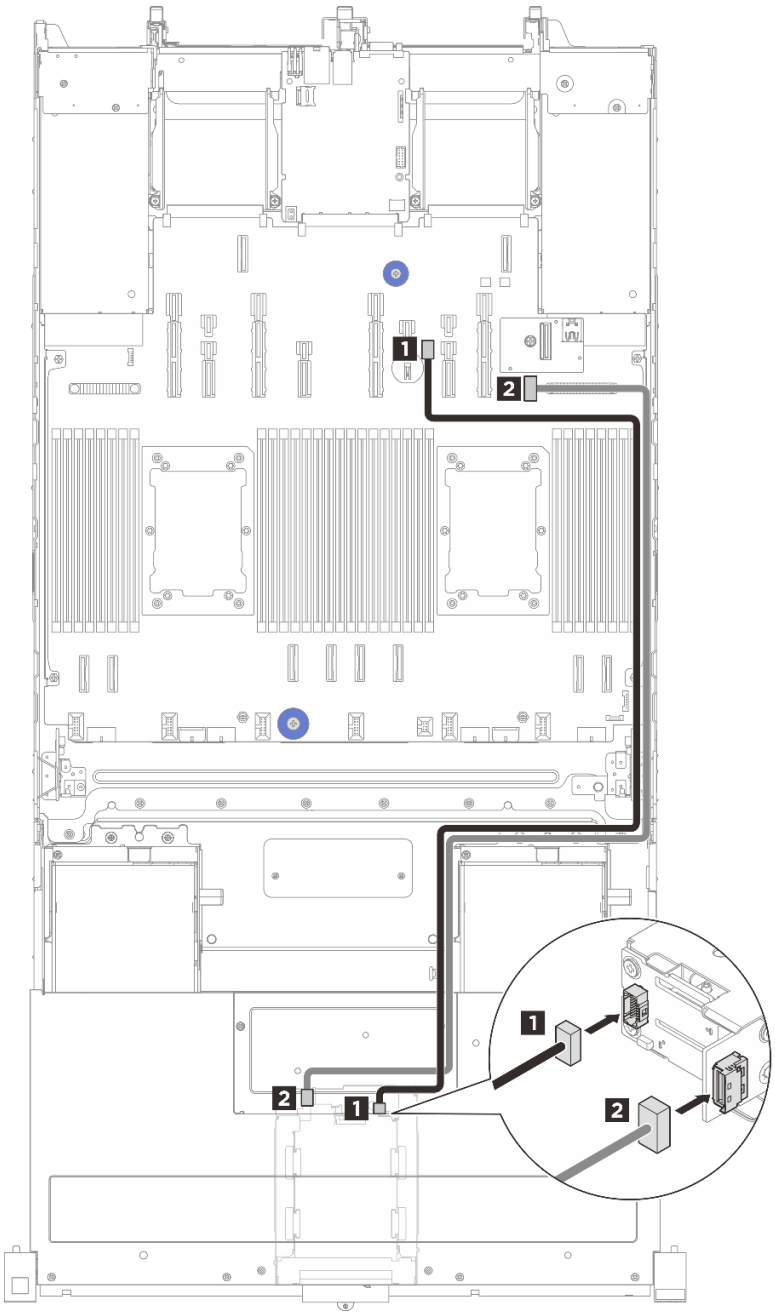
Follow the instructions in this section to learn how to do cable routing for rack latches.



From	To	Cable length
Left rack latch with USB/MiniDP	1 USB I/O board	1100 mm
Right rack latch	2 Front I/O connector on the processor board	550 mm

Front M.2 boot backplane and controller board cable routing

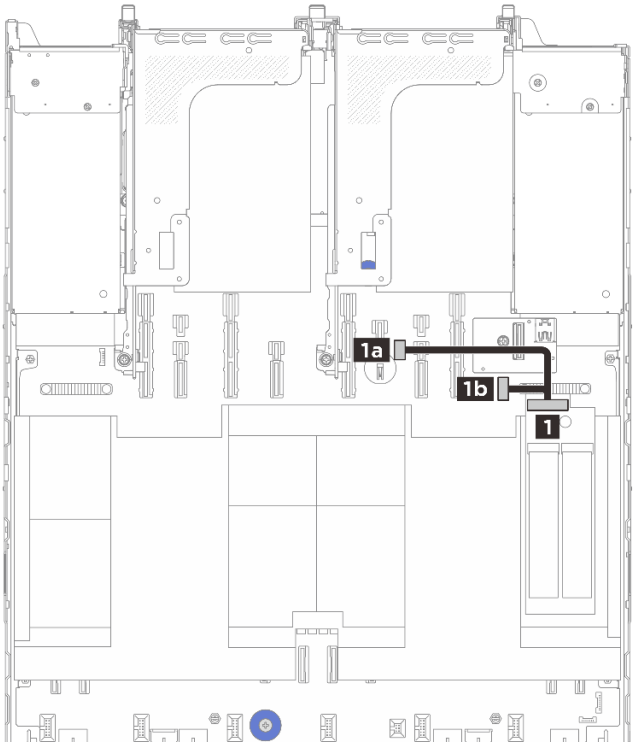
Follow the instructions in this section to learn how to do cable routing for front M.2 boot backplane and controller board.



From	Cable wall	To (processor board)	Cable length
1 M.2 boot backplane	Right cable wall	1 M.2 power connector	1000 mm
2 M.2 controller board	Right cable wall	2 M.2 backplane signal connector	900 mm

Internal M.2 backplane cable routing

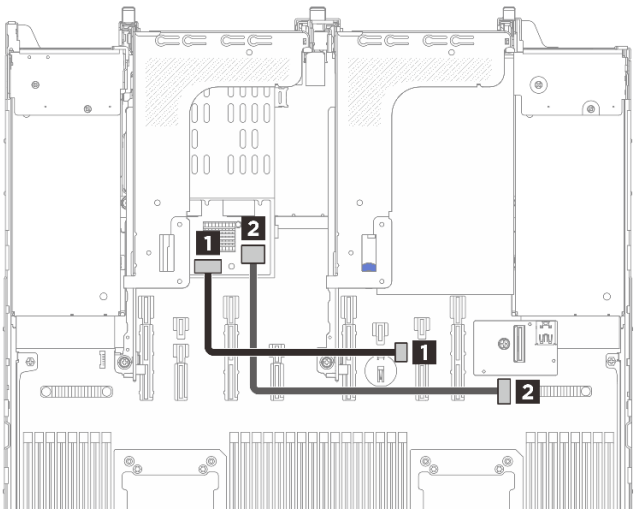
Follow the instructions in this section to learn how to do cable routing for internal M.2 backplane.



From (rear M.2 backplane)	To (processor board)	Cable length
1 Internal M.2 backplane connector	1a M.2 power connector	400/400 mm
	1b M.2 backplane signal connector	

Rear M.2 backplane cable routing

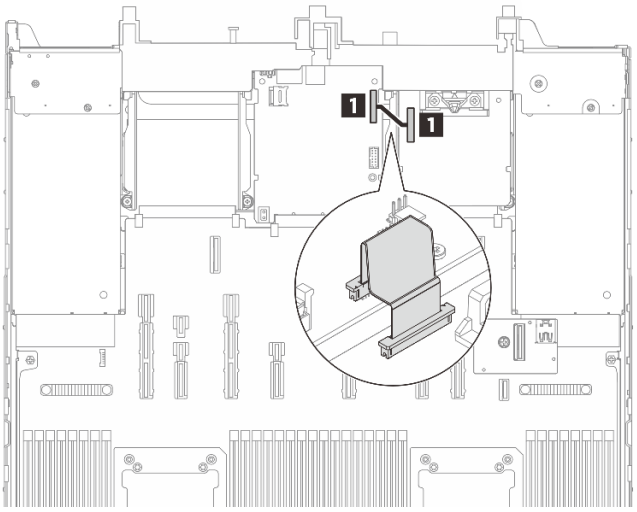
Follow the instructions in this section to learn how to do cable routing for rear M.2 backplane.



From (rear M.2 backplane)	To (processor board)	Cable length
1 Power connector	1 M.2 power connector	320 mm
2 Signal connector	2 M.2 backplane signal connector	310 mm

Management NIC adapter cable routing

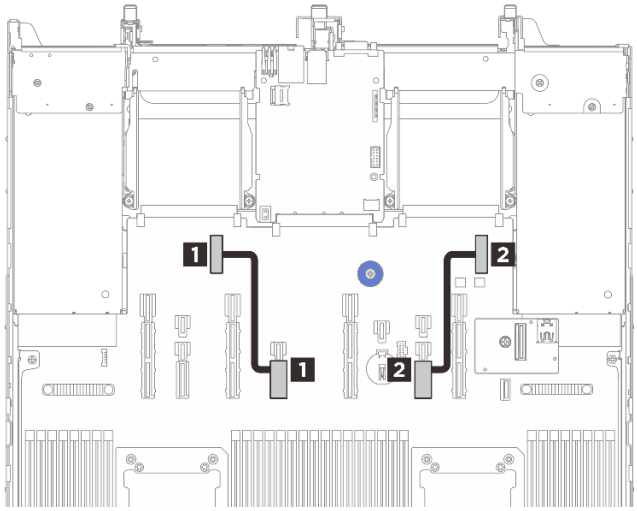
Follow the instructions in this section to learn how to do cable routing for management NIC adapter.



From	To (system I/O board)
1 Management NIC adapter	1 Second management Ethernet connector

OCP module cable routing

Follow the instructions in this section to learn how to do cable routing for OCP modules with PCIe x16 connection.

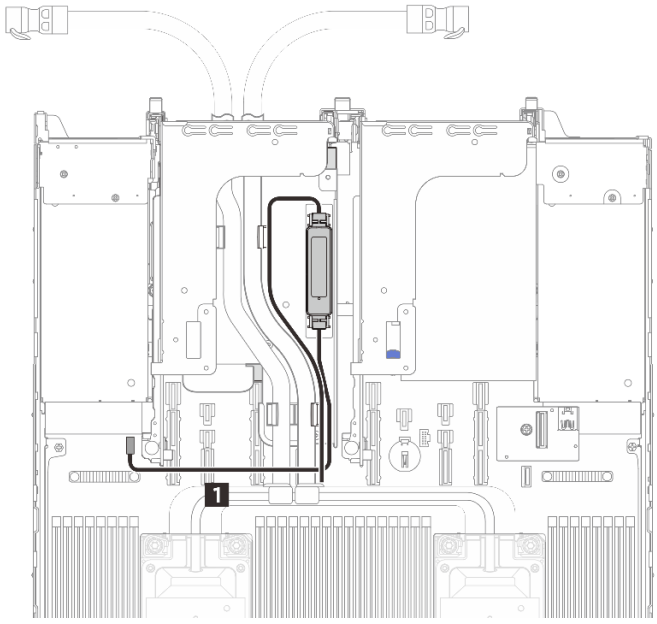


From (processor board)	To (processor board)	Cable length
1 OCP expansion connector 2	1 PCIe connector 12	160 mm
2 OCP expansion connector 1	2 PCIe connector 10	160 mm

Processor Neptune® Core Module cable routing

Follow the instructions in this section to learn how to do cable routing for Processor Neptune® Core Module.

Note: For better cable arrangement, it is required to install the hoses and liquid detection sensor module to a designated holder, and make sure that the module is secured in holder clips. See “Install the Processor Neptune® Core Module” in *User Guide* or *Hardware Maintenance Guide* for details.



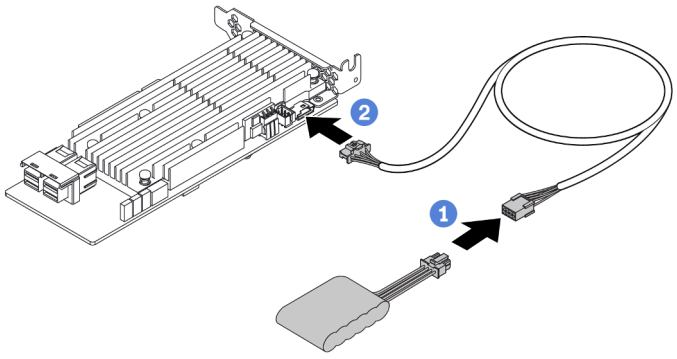
From	To (processor board)
Leak detection cable	1 Leak detection connector 2

RAID flash power module cable routing

Follow the instructions in this section to learn how to do cable routing for RAID flash power module (supercap).

For locations of RAID flash power modules, see “RAID flash power module replacement” in *User Guide* or *Hardware Maintenance Guide*.

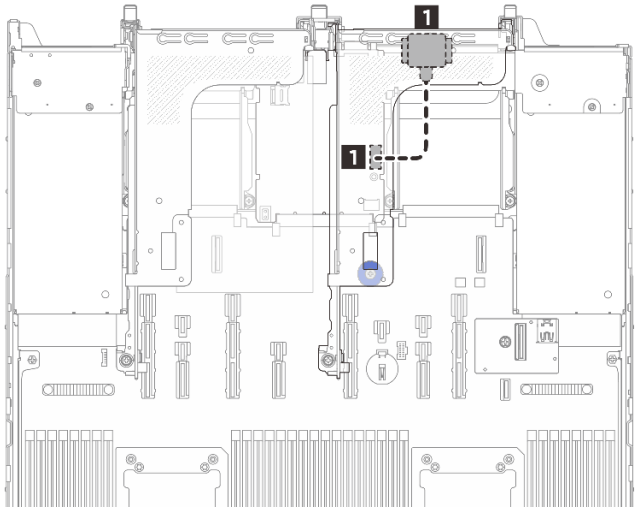
An extension cable is provided for each RAID flash power module for cable connection. Connect the cable from the RAID flash power module to the corresponding RAID adapter as shown.



From	To
RAID flash power module	Supercap connector on the RAID adapter

Serial port module cable routing

Follow the instructions in this section to learn how to do cable routing for serial port module.



From	To (system I/O board)	Cable length
1 Serial port module	1 Serial port connector	220 mm

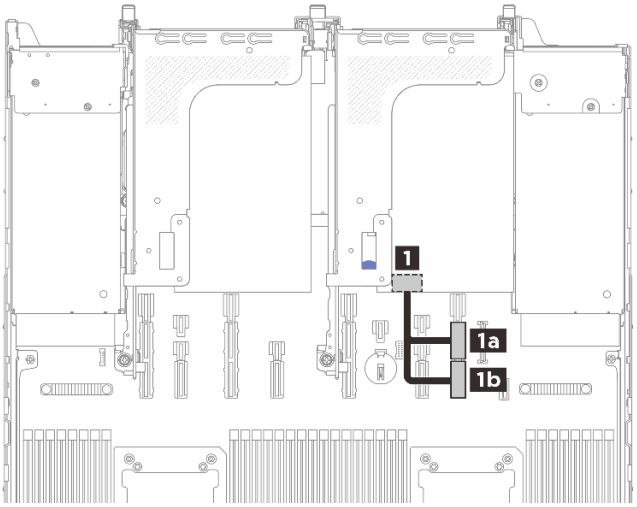
ConnectX-8 InfiniBand adapter cable routing

Follow the instructions in this section to learn how to do cable routing for the aux cables of ConnectX-8 InfiniBand adapters.

According to the configuration, see the corresponding section for the ConnectX-8 adapter aux cable routing:

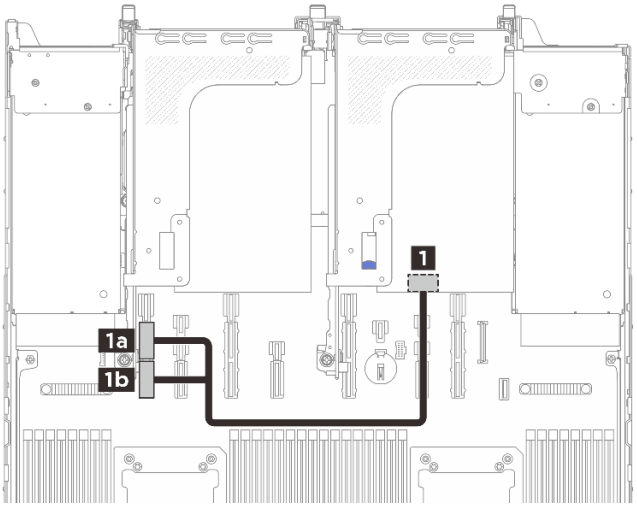
- “One ConnectX-8 adapter with one processor installed” on page 20
- “One ConnectX-8 adapter with two processors installed” on page 20
- “Two ConnectX-8 adapters with two processors installed” on page 21

One ConnectX-8 adapter with one processor installed



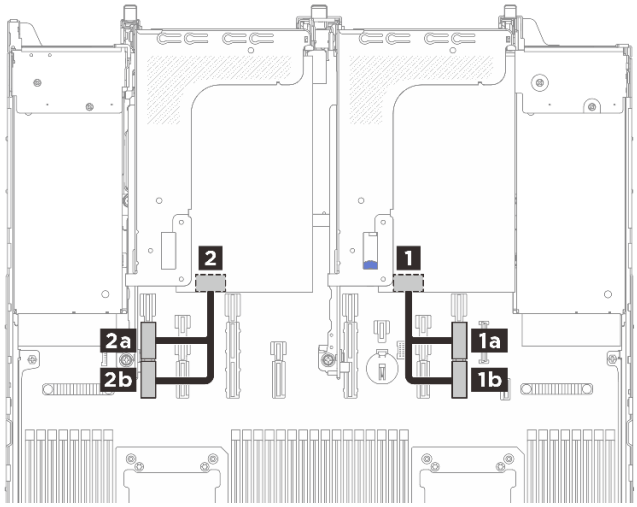
From	To (processor board)	Cable length
1 ConnectX adapter on Riser assembly 2	1a PCIe connector 9A	300 mm
	1b PCIe connector 9B	

One ConnectX-8 adapter with two processors installed



From	To (processor board)	Cable length
1 ConnectX adapter on Riser assembly 2	1a PCIe connector 15A	300 mm
	1b PCIe connector 15B	

Two ConnectX-8 adapters with two processors installed



From	To (processor board)	Cable length
1 ConnectX adapter on Riser assembly 2	1a PCIe connector 9A	300 mm
	1b PCIe connector 9B	
2 ConnectX adapter on Riser assembly 3	2a PCIe connector 15A	300 mm
	2b PCIe connector 15B	

2.5-inch drive backplane cable routing

Follow the instructions in this section to learn how to do cable routing for the 2.5-inch drive backplane.

2.5-inch drive backplane cable routing

Connect power cable and signal cables to the 2.5-inch drive backplane according to the corresponding sections:

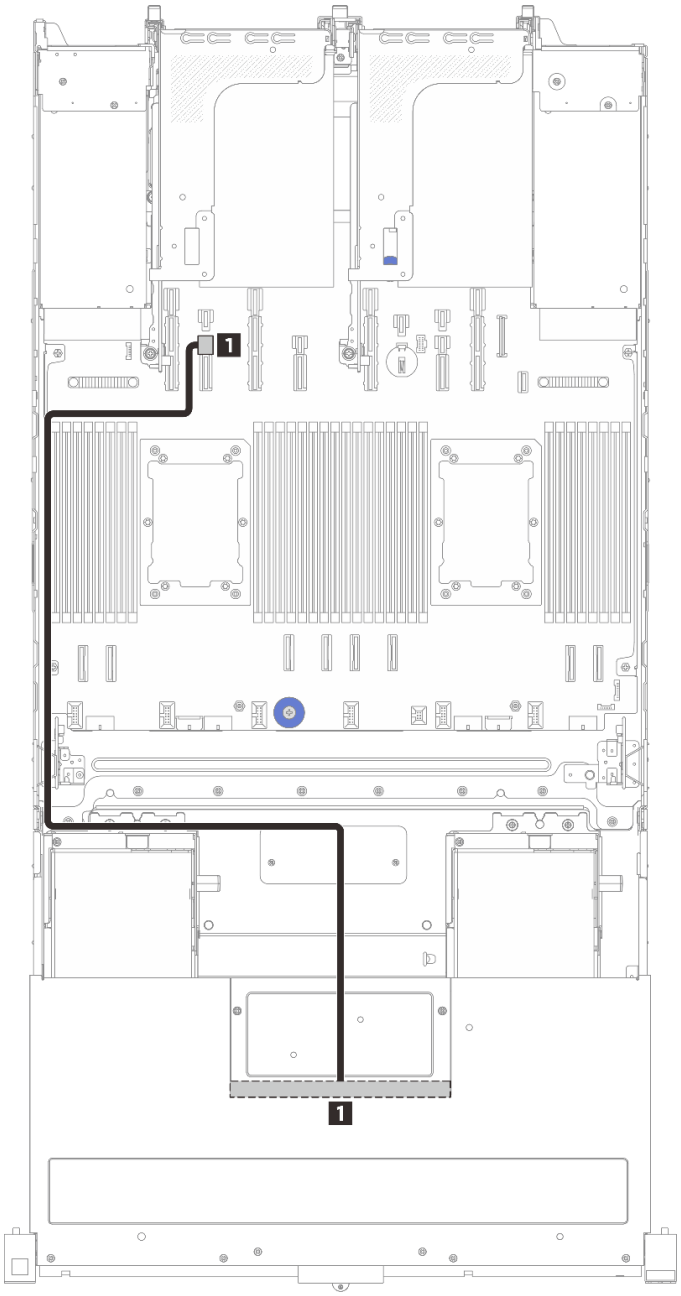
- “2.5-inch drive backplane power cable routing” on page 21
- “2.5-inch drive backplane signal cable routing” on page 23

2.5-inch drive backplane power cable routing

According to the configuration of front riser assemblies, see the corresponding section for the 2.5-inch drive power cable routing:

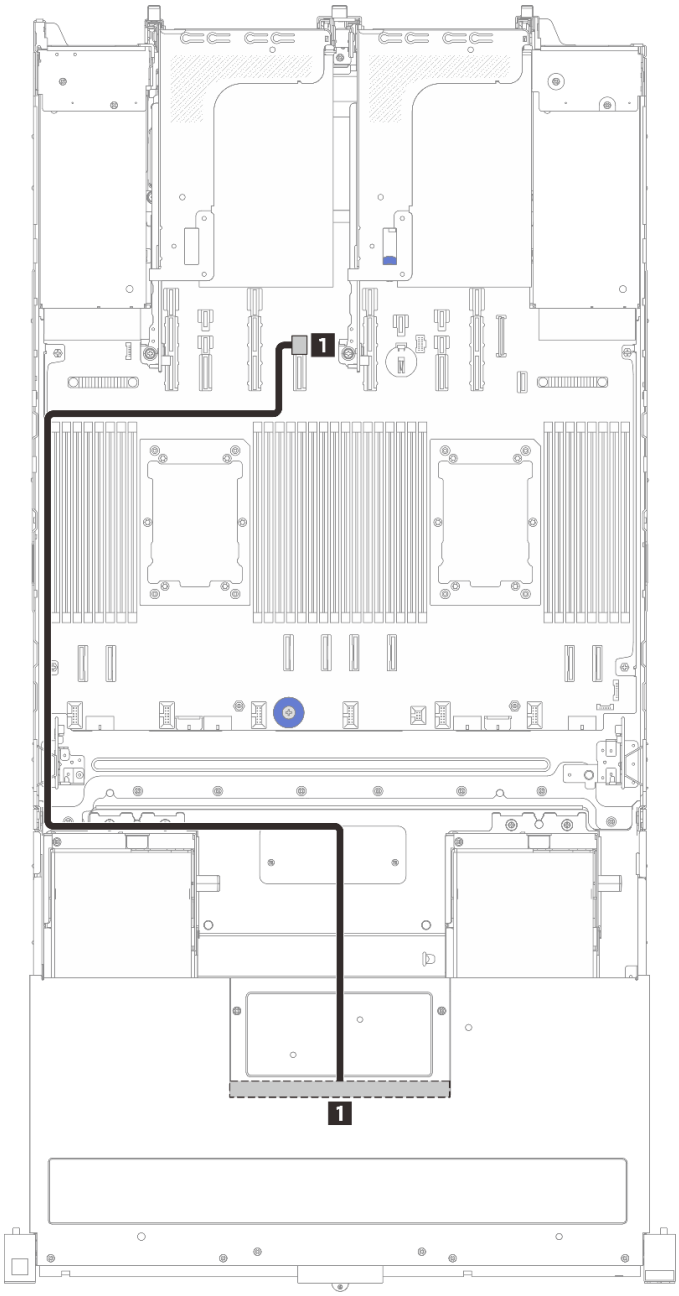
- “Front riser assemblies x8/x8/x8/x8 configuration” on page 22
- “Front riser assemblies x16/x16 configuration (supporting DW GPU adapters)” on page 23

x8/x8/x8/x8 configuration



From	Cable wall	To	Cable length
1 Power connector on 2.5-inch drive backplane	Left cable wall	1 Power connector 14 on processor board	900 mm

x16/x16 configuration



From	Cable wall	To	Cable length
1 Power connector on 2.5-inch drive backplane	Left cable wall	1 Power connector 12 on processor board	900 mm

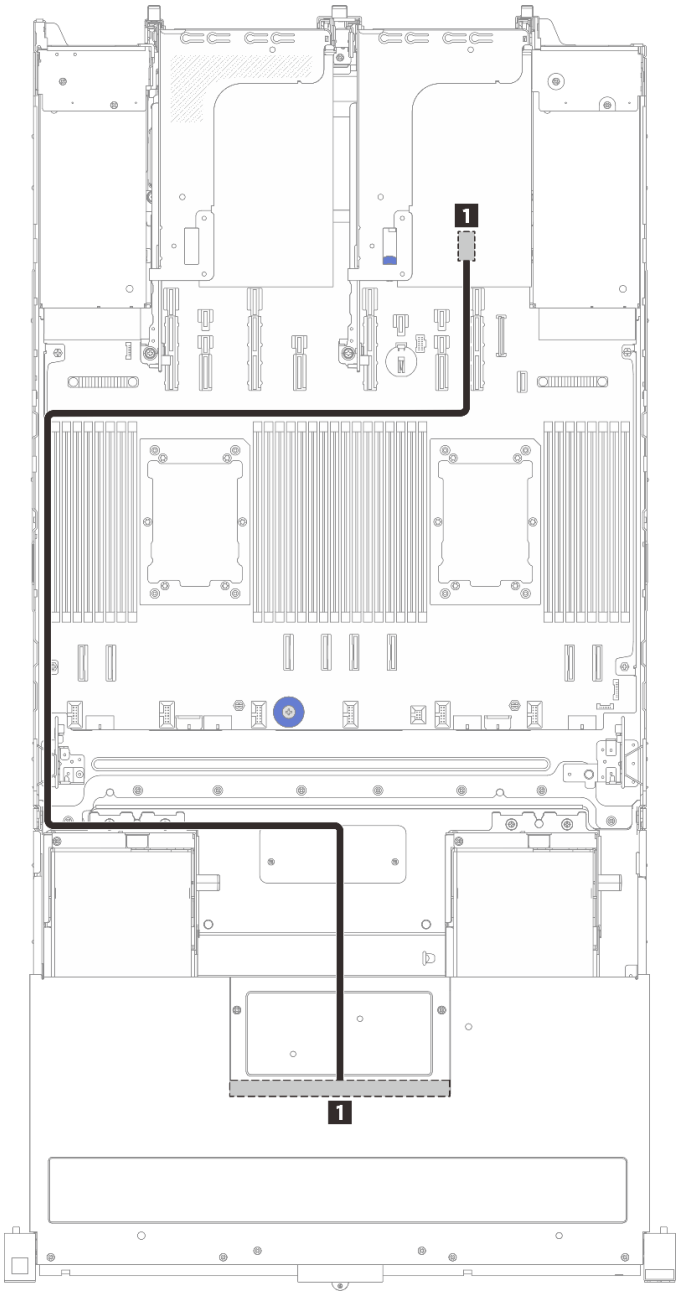
2.5-inch drive backplane signal cable routing

According to the configuration, see the corresponding section for the 2.5-inch drive signal cable routing:

- SAS/SATA or AnyBay (Tri-Mode) backplane to SFF RAID adapter
- SAS/SATA or AnyBay (Tri-Mode) backplane to internal CFF RAID adapter (with one processor installed)

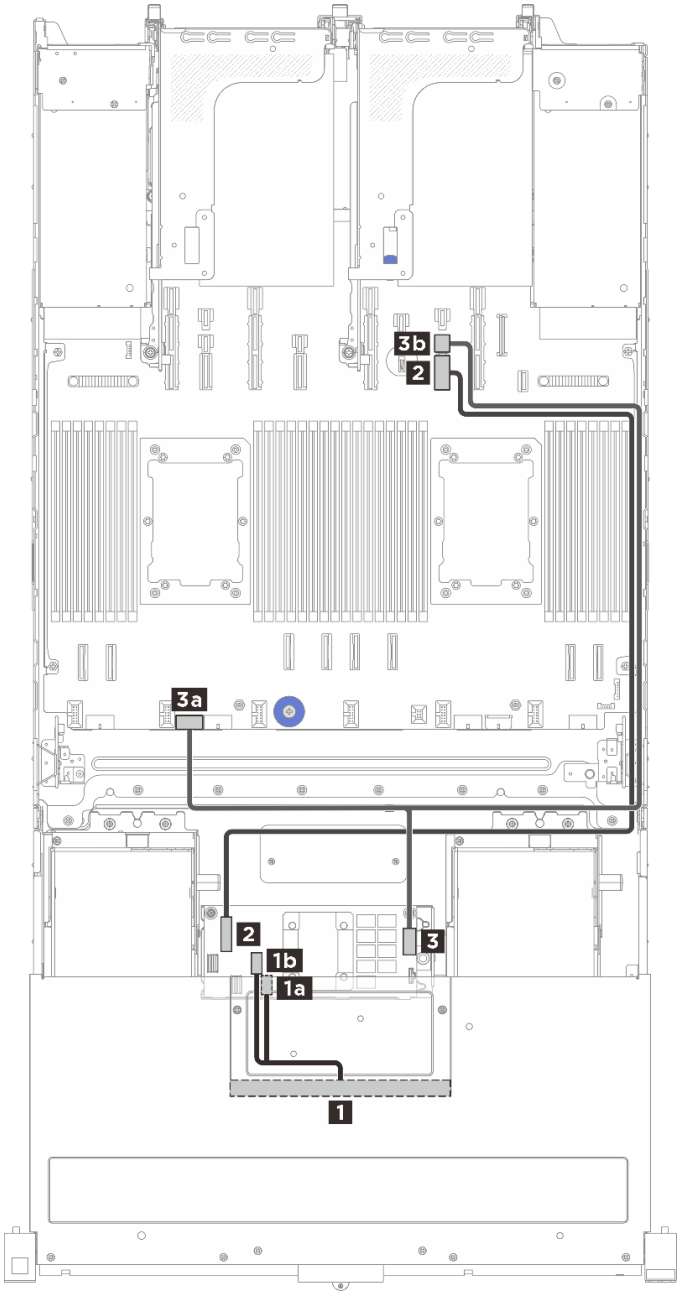
- SAS/SATA or AnyBay (Tri-Mode) backplane to internal CFF RAID adapter (with two processors installed)
- NVMe backplane
- AnyBay backplane to SFF RAID adapter
- AnyBay backplane to internal CFF RAID adapter

SAS/SATA or AnyBay backplane to SFF RAID adapter



From	Cable wall	To	Cable length
1 SAS connector on 2.5-inch drive backplane	Left cable wall	1 • Gen3 RAID adapter: C0C1 connector • Gen4 RAID adapter: C0 connector	1020 mm

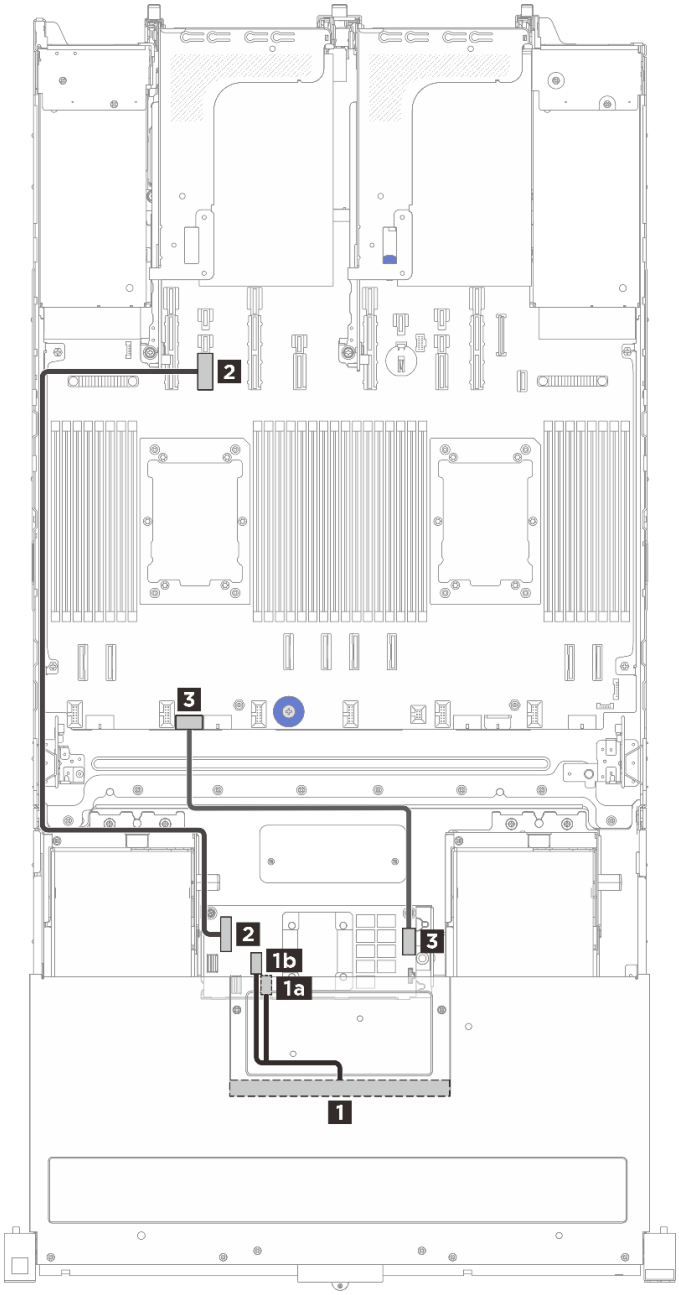
SAS/SATA or AnyBay (Tri-mode) backplane to internal CFF RAID adapter (with one processor installed)



From	Cable wall	To (internal CFF RAID adapter)	Cable length
1 SAS connector on 2.5-inch drive backplane	N/A	1a C0 connector	140/140 mm
		1b C1 connector	
2 PCIe connector 10 on processor board	Right cable wall	2 CFF input connector	900 mm
3a Internal RAID power connector on processor board	N/A	3 Power connector	300/800 mm

3b Power connector 10 on processor board	Right cable wall		

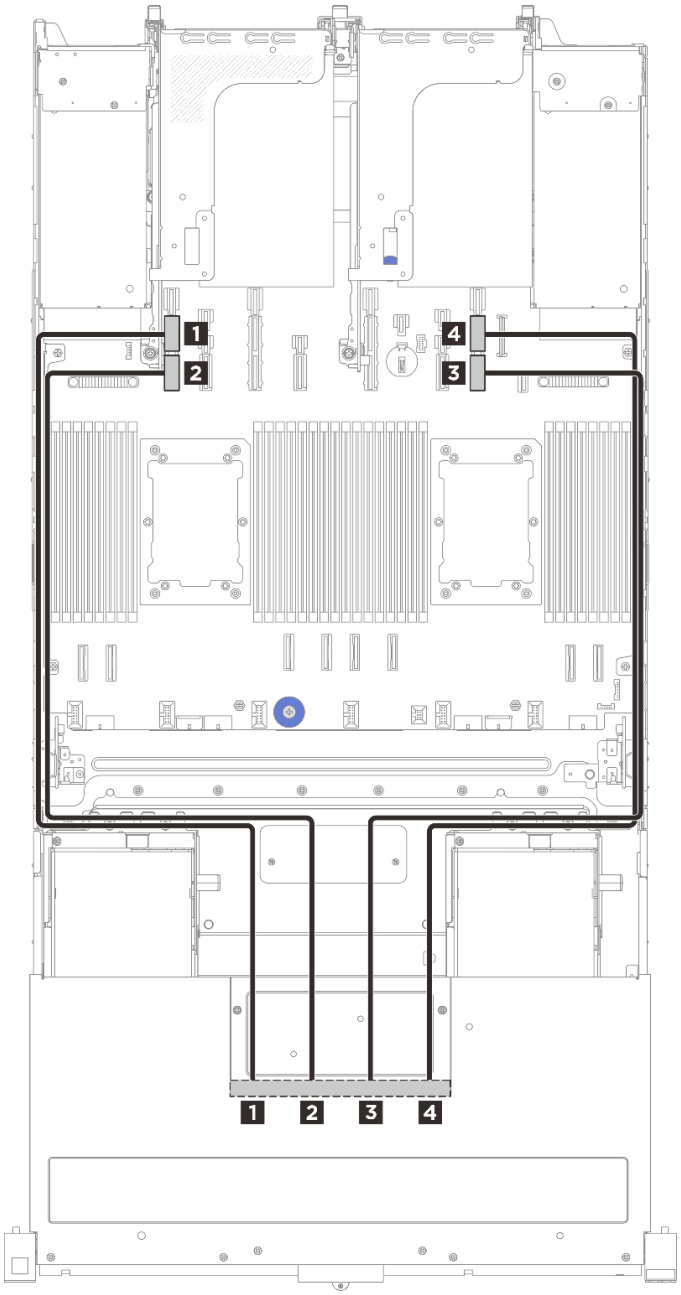
SAS/SATA or AnyBay backplane to internal CFF RAID adapter (with two processors installed)



From	Cable wall	To (internal CFF RAID adapter)	Cable length

1 SAS connector on 2.5-inch drive backplane	N/A	1a C0 connector 1b C1 connector	140/140 mm
2 PCIe connector 14 on processor board	Left cable wall	2 CFF input connector	900 mm
3 Internal RAID power connector on processor board	N/A	3 Power connector	300 mm

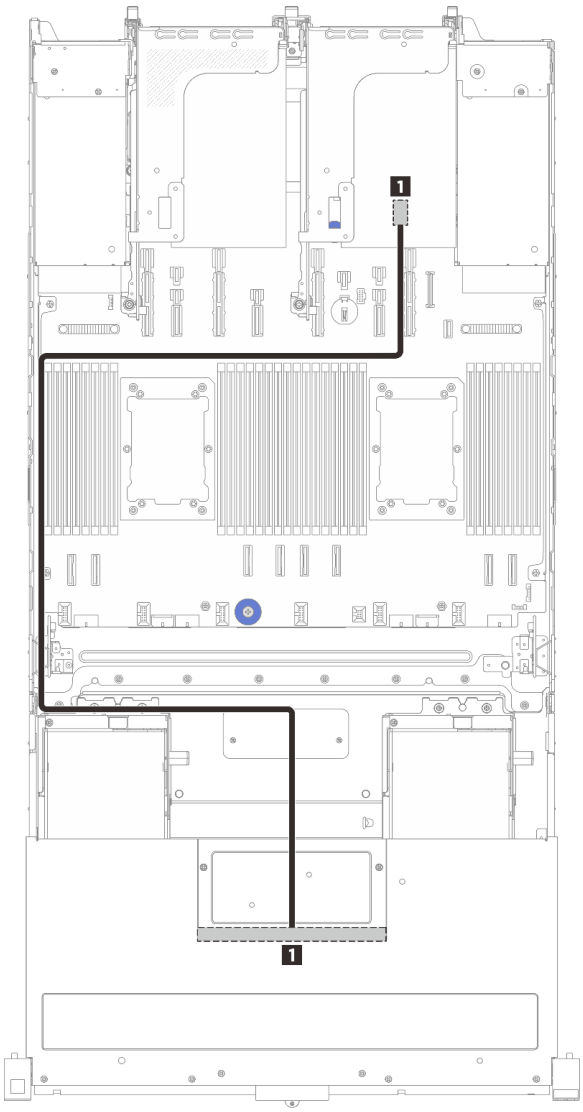
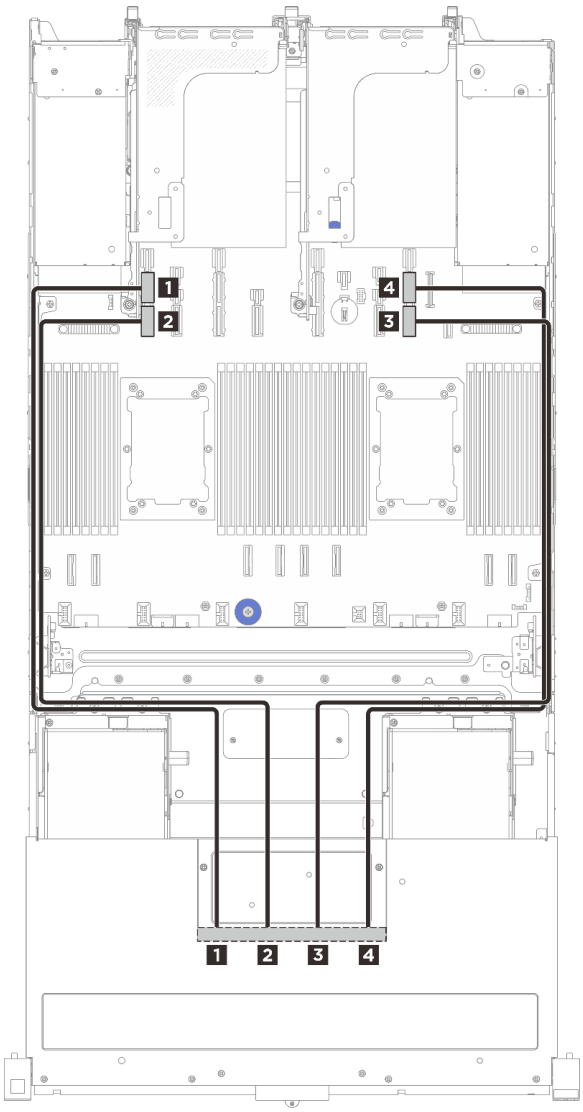
NVMe backplane



From (drive backplane)	Cable wall	To (processor board)	Cable length

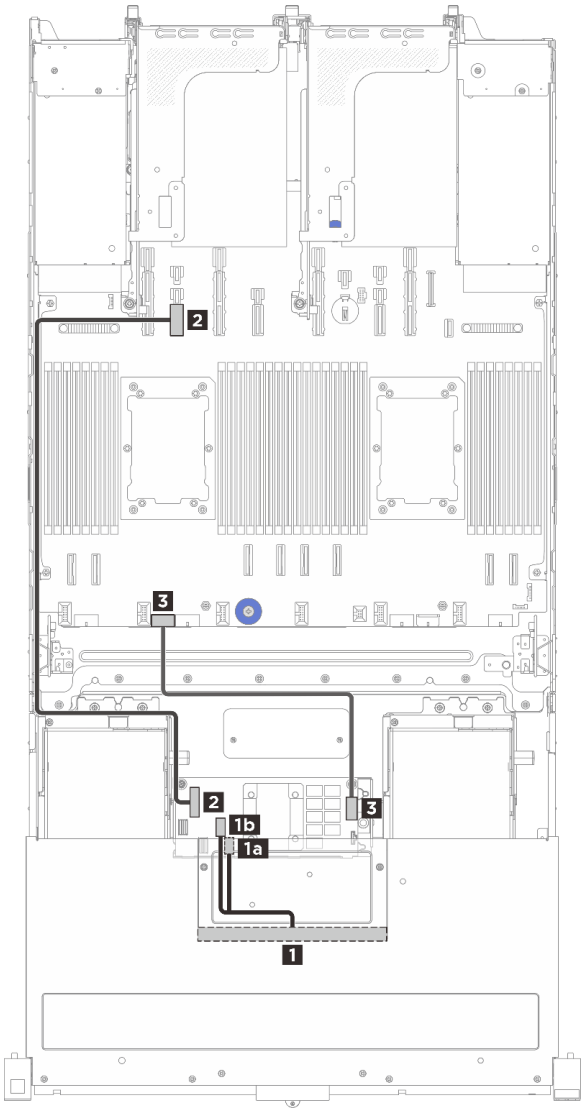
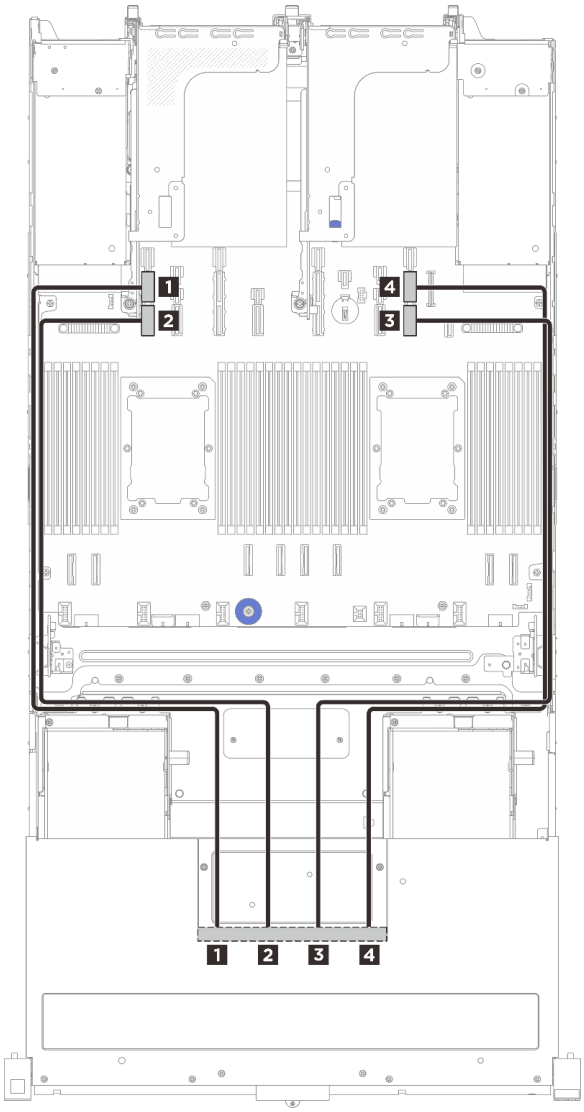
1 NVMe 0-1 connector	Left cable wall	1 PCIe connector 15A	800 mm
2 NVMe 2-3 connector	Left cable wall	2 PCIe connector 15B	800 mm
3 NVMe 4-5 connector	Right cable wall	3 PCIe connector 9B	800 mm
4 NVMe 6-7 connector	Right cable wall	4 PCIe connector 9A	800 mm

AnyBay backplane to SFF RAID adapter

SAS/SATA cable				NVMe cable			
							
From	**Cable wall**	**To**	**Cable length**	**From (drive backplane)**	**Cable wall**	**To (processor board)**	**Cable length**

1 SAS connector on 2.5-inch drive backplane	Left cable wall	1 • Gen3 RAID adapter: C0C1 connec-tor • Gen4 RAID adapter: C0 connec-tor	1020 mm	1 NVMe 0-1 connector	Left cable wall	1 PCIe connector 15A	800 mm
				2 NVMe 2-3 connector	Left cable wall	2 PCIe connector 15B	800 mm
				3 NVMe 4-5 connector	Right cable wall	3 PCIe connector 9B	800 mm
				4 NVMe 6-7 connector	Right cable wall	4 PCIe connector 9A	800 mm

AnyBay backplane to internal CFF RAID adapter

SAS/SATA cable	NVMe cable
	

From	Cable wall	To (internal CFF RAID adapter)	Cable length	From (drive backplane)	Cable wall	To (processor board)	Cable length
1 SAS connector on 2.5-inch drive backplane	N/A	1a C0 connector	140/140 mm	1 NVMe 0-1 connector	Left cable wall	1 PCIe connector 15A	800 mm
		1b C1 connector		2 NVMe 2-3 connector	Left cable wall	2 PCIe connector 15B	800 mm
2 PCIe connector 14 on processor board	Left cable wall	2 CFF input connector	900 mm	3 NVMe 4-5 connector	Right cable wall	3 PCIe connector 9B	800 mm
3 Internal RAID power connector on processor board	N/A	3 Power connector	300 mm	4 NVMe 6-7 connector	Right cable wall	4 PCIe connector 9A	800 mm

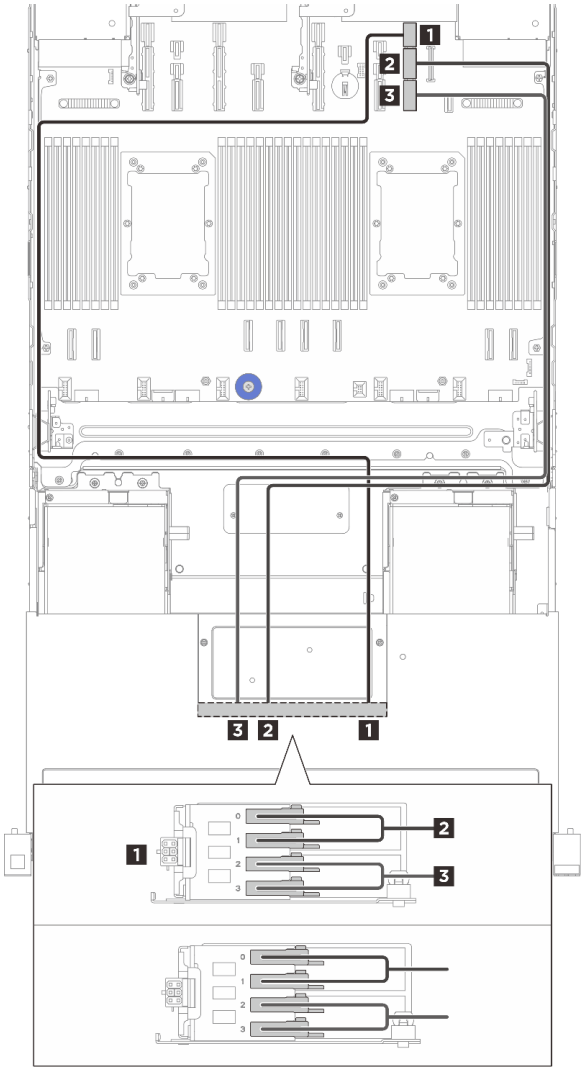
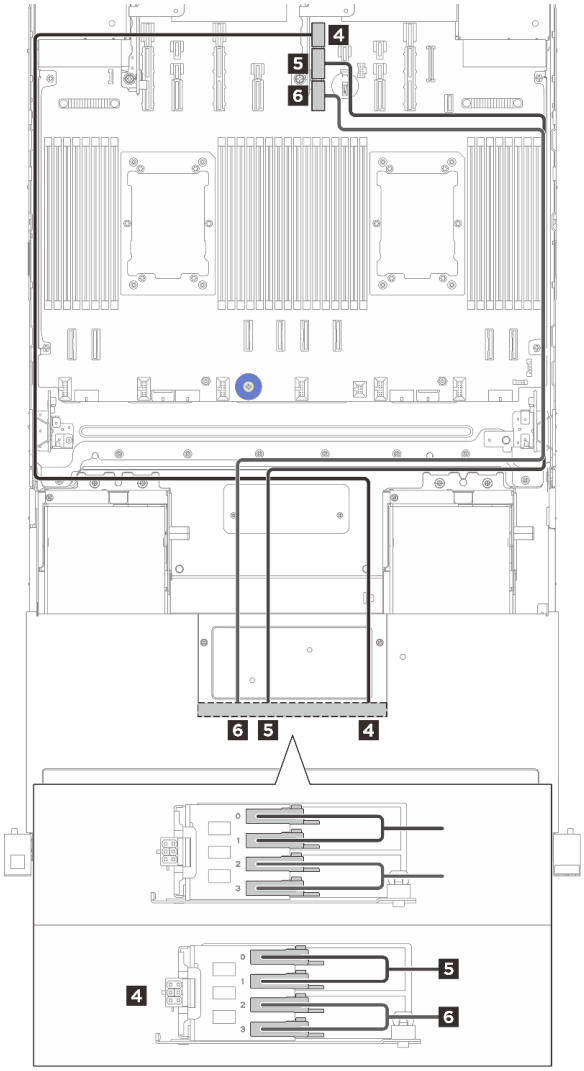
E3.S drive backplane cable routing

Follow the instructions in this section to learn how to do cable routing for E3.S drive backplanes.

According to the configuration, see the corresponding section for the E3.S drive backplane cable routing:

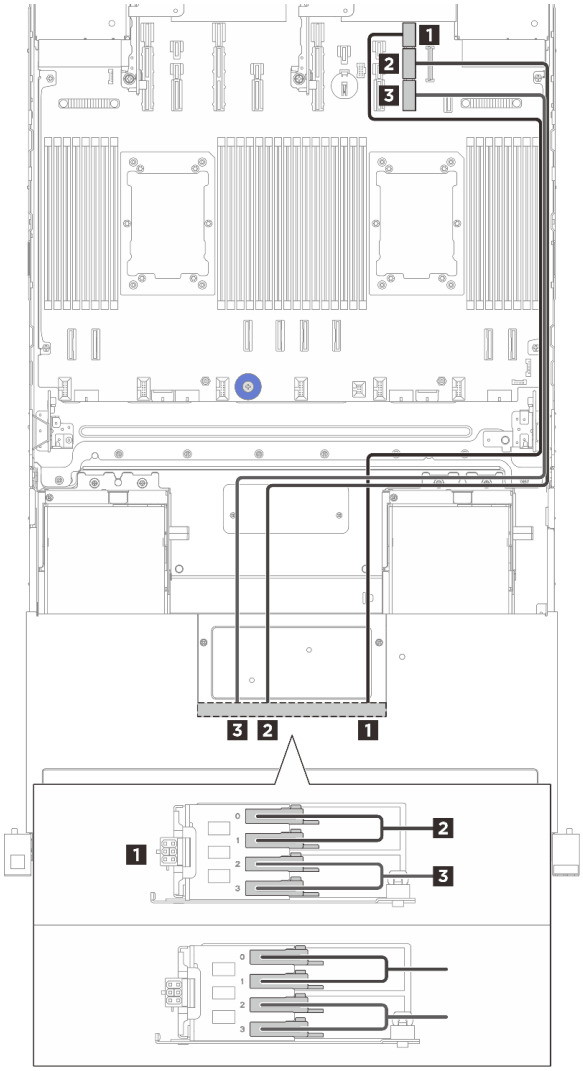
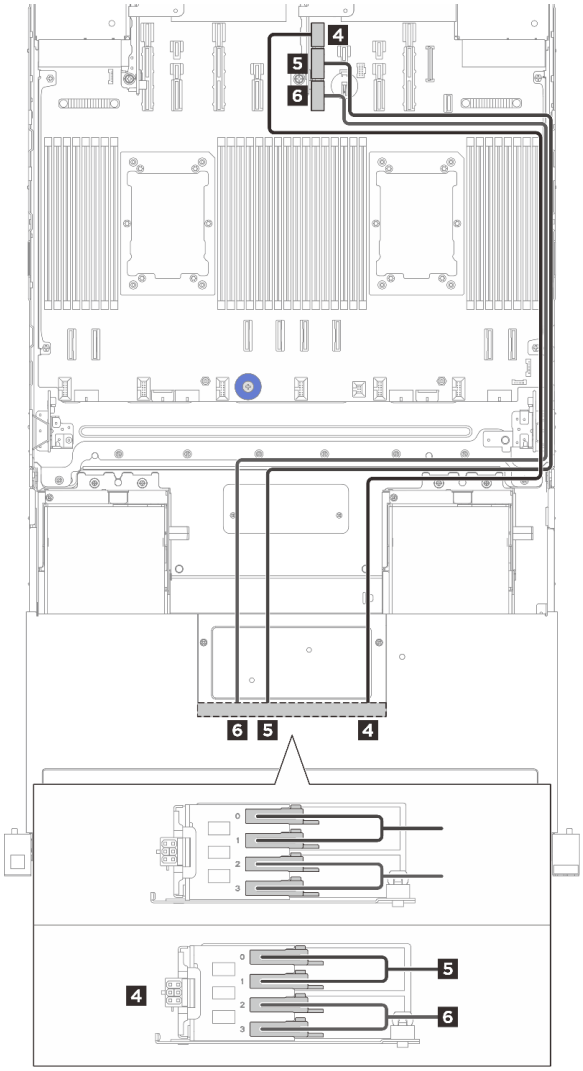
- “1 CPU + Front riser assemblies x8/x8/x8/x8 configuration” on page 32
- “1 CPU + Front riser assemblies x16/x16 configuration” on page 33
- “2 CPU configuration” on page 34
- “Configuration with front M.2 backplanes” on page 35

1 CPU + Front riser assemblies x8/x8/x8/x8 configuration

Backplane 1	Backplane 2
	

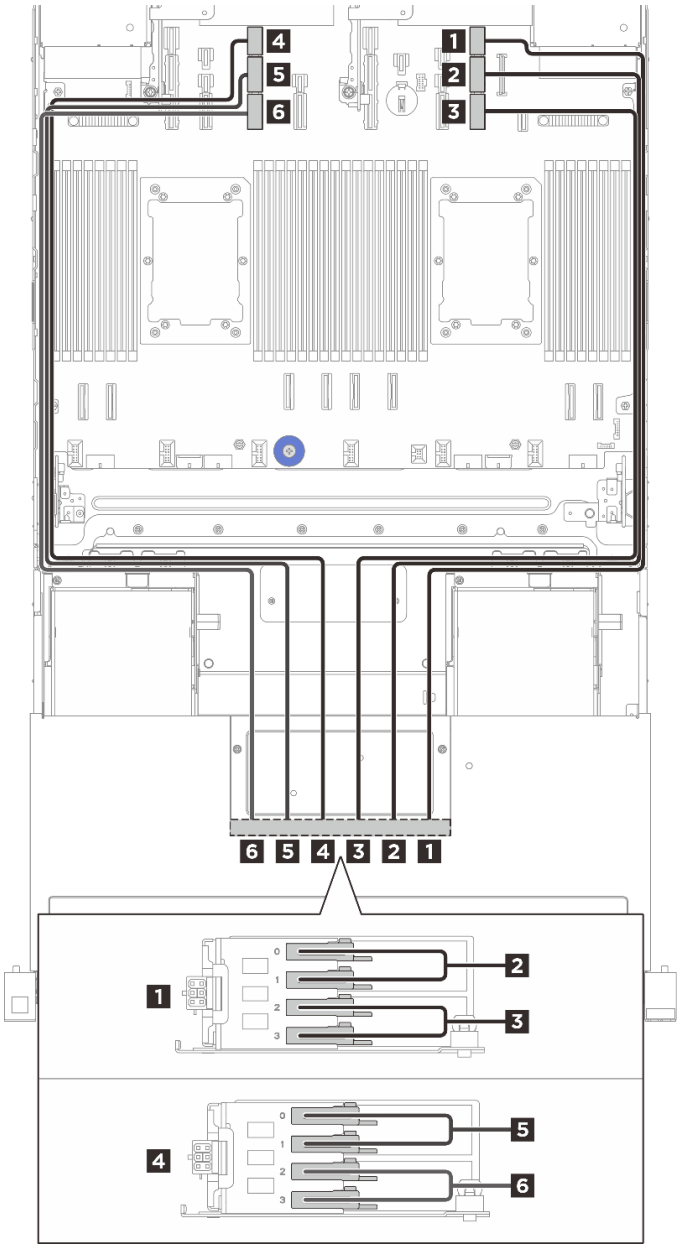
From (E3.S backplanes)	Cable wall	To (processor board)	Cable length
1 (BP1) power connector	Left cable wall	1 Power connector 9	1200 mm
2 (BP1) Bay 0, 1	Right cable wall	2 PCIe connector 9A	850 mm
3 (BP1) Bay 2, 3	Right cable wall	3 PCIe connector 9B	850 mm
4 (BP2) power connector	Left cable wall	4 Power connector 11	1200 mm
5 (BP2) Bay 0, 1	Right cable wall	5 PCIe connector 11A	850 mm
6 (BP2) Bay 2, 3	Right cable wall	6 PCIe connector 11B	850 mm

1 CPU + Front riser assemblies x16/x16 configuration

Backplane 1	Backplane 2
	

From (E3.S backplanes)	Cable wall	To (processor board)	Cable length
1 (BP1) power connector	Right cable wall	1 Power connector 9	900 mm
2 (BP1) Bay 0, 1	Right cable wall	2 PCIe connector 9A	850 mm
3 (BP1) Bay 2, 3	Right cable wall	3 PCIe connector 9B	850 mm
4 (BP2) power connector	Right cable wall	4 Power connector 11	900 mm
5 (BP2) Bay 0, 1	Right cable wall	5 PCIe connector 11A	850 mm
6 (BP2) Bay 2, 3	Right cable wall	6 PCIe connector 11B	850 mm

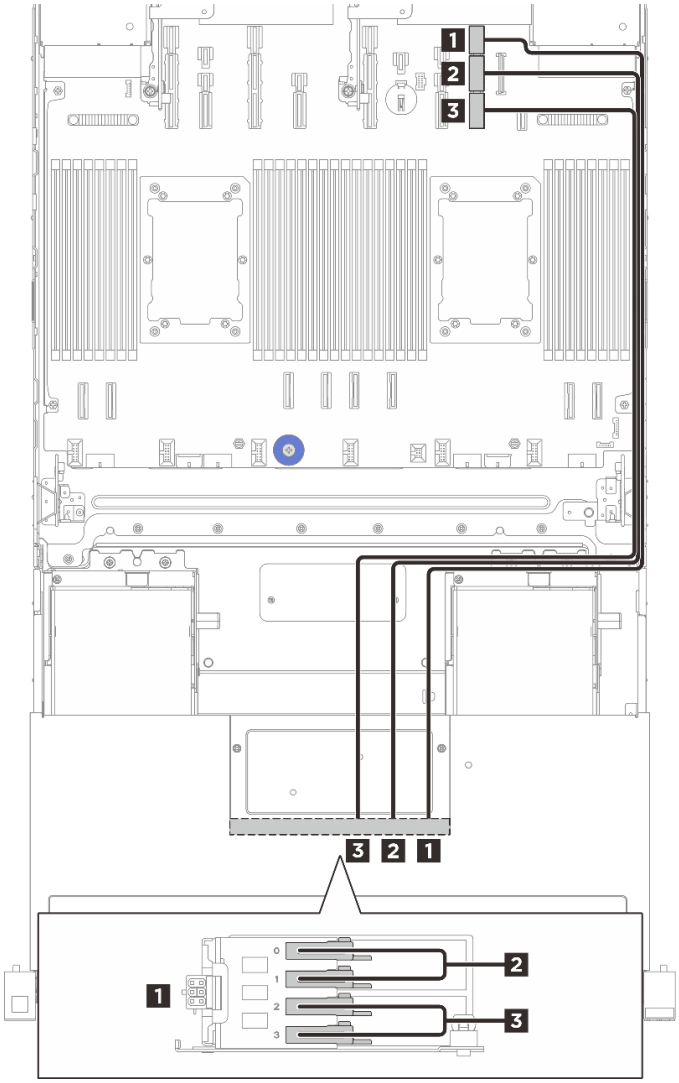
2 CPU configuration



From (E3.S backplanes)	Cable wall	To (processor board)	Cable length
1 (BP1) power connector	Right cable wall	1 Power connector 9	900 mm
2 (BP1) Bay 0, 1	Right cable wall	2 PCIe connector 9A	850 mm
3 (BP1) Bay 2, 3	Right cable wall	3 PCIe connector 9B	850 mm
4 (BP2) power connector	Left cable wall	4 Power connector 13	900 mm
5 (BP2) Bay 0, 1	Left cable wall	5 PCIe connector 13A	850 mm
6 (BP2) Bay 2, 3	Left cable wall	6 PCIe connector 13B	850 mm

Configuration with front M.2 backplanes

For the front M.2 backplane cable routing, see “Front M.2 boot backplane and controller board cable routing” on page 14.



From (E3.S backplane)	Cable wall	To (processor board)	Cable length
1 (BP1) power connector	Right cable wall	1 Power connector 9	900 mm
2 (BP1) Bay 0, 1	Right cable wall	2 PCIe connector 9A	850 mm
3 (BP1) Bay 2, 3	Right cable wall	3 PCIe connector 9B	850 mm

Appendix A. Documents and supports

This section provides handy documents, driver and firmware downloads, and support resources.

Documents download

This section provides introduction and download link for handy documents.

Documents

Download the following product documentations at:

https://pubs.lenovo.com/sr650a-v4/pdf_files

- ***Rail Installation Guides***
  - Rail installation in a rack
- ***CMA Installation Guides***
  - CMA installation in a rack
- ***User Guide***
  - Complete overview, system configuration, hardware components replacing, and troubleshooting.

    Selected chapters from *User Guide*:
    - ***System Configuration Guide* :** Server overview, components identification, system LEDs and diagnostics display, product unboxing, setting up and configuring the server.
    - ***Hardware Maintenance Guide* :** Installing hardware components, cable routing, and troubleshooting.
- ***PCIe Slot Installation Guide***
  - PCIe slot installation rules.
- ***Cable Routing Guide***
  - Cable routing information.
- ***Messages and Codes Reference***
  - XClarity Controller, LXPM, and uEFI events
- ***UEFI Manual***
  - UEFI setting introduction

Support websites

This section provides driver and firmware downloads and support resources.

Support and downloads

- Drivers and Software download website for ThinkSystem SR650a V4
  - https://datacentersupport.lenovo.com/products/servers/thinksystem/sr650av4/7dgc/downloads/driver-list/
- Lenovo Data Center Forum
  - https://forums.lenovo.com/t5/Datacenter-Systems/ct-p/sv_eg
- Lenovo Data Center Support for ThinkSystem SR650a V4

  - https://datacentersupport.lenovo.com/products/servers/thinksystem/sr650av4/7dgc
- Lenovo License Information Documents
  - https://datacentersupport.lenovo.com/documents/lnvo-eula
- Lenovo Press website (Product Guides/Datasheets/White papers)
  - https://lenovopress.lenovo.com/
- Lenovo Privacy Statement
  - https://www.lenovo.com/privacy
- Lenovo Product Security Advisories
  - https://datacentersupport.lenovo.com/product_security/home
- Lenovo Product Warranty Plans
  - http://datacentersupport.lenovo.com/warrantylookup
- Lenovo Server Operating Systems Support Center website
  - https://datacentersupport.lenovo.com/solutions/server-os
- Lenovo ServerProven website (Options compatibility lookup)
  - https://serverproven.lenovo.com
- Operating System Installation Instructions
  - https://pubs.lenovo.com/thinksystem#os-installation
- Submit an eTicket (service request)
  - https://support.lenovo.com/servicerequest
- Subscribe to Lenovo Data Center Group product notifications (Stay up to date on firmware updates)
  - https://datacentersupport.lenovo.com/solutions/ht509500

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Important notes

Processor speed indicates the internal clock speed of the processor; other factors also affect application performance.

CD or DVD drive speed is the variable read rate. Actual speeds vary and are often less than the possible maximum.

When referring to processor storage, real and virtual storage, or channel volume, KB stands for 1 024 bytes, MB stands for 1 048 576 bytes, and GB stands for 1 073 741 824 bytes.

When referring to hard disk drive capacity or communications volume, MB stands for 1 000 000 bytes, and GB stands for 1 000 000 000 bytes. Total user-accessible capacity can vary depending on operating environments.

Maximum internal hard disk drive capacities assume the replacement of any standard hard disk drives and population of all hard-disk-drive bays with the largest currently supported drives that are available from Lenovo.

Maximum memory might require replacement of the standard memory with an optional memory module.

Each solid-state memory cell has an intrinsic, finite number of write cycles that the cell can incur. Therefore, a solid-state device has a maximum number of write cycles that it can be subjected to, expressed as `total bytes written` (TBW). A device that has exceeded this limit might fail to respond to system-generated commands or might be incapable of being written to. Lenovo is not responsible for replacement of a device that has exceeded its maximum guaranteed number of program/erase cycles, as documented in the Official Published Specifications for the device.

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Some software might differ from its retail version (if available) and might not include user manuals or all program functionality.

Electronic emission notices

When you attach a monitor to the equipment, you must use the designated monitor cable and any interference suppression devices that are supplied with the monitor.

Additional electronic emissions notices are available at:

https://pubs.lenovo.com/important_notices/

Taiwan Region BSMI RoHS declaration

單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
機架	○	○	○	○	○	○
外部蓋板	○	○	○	○	○	○
機械組合件	–	○	○	○	○	○
空氣傳動設備	–	○	○	○	○	○
冷卻組合件	–	○	○	○	○	○
內存模組	–	○	○	○	○	○
處理器模組	–	○	○	○	○	○
電纜組合件	–	○	○	○	○	○
電源供應器	–	○	○	○	○	○
儲備設備	–	○	○	○	○	○
印刷電路板	–	○	○	○	○	○

備考1. 〝超出0.1 wt %〞及〝超出0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。

Note1 : “exceeding 0.1wt%” and “exceeding 0.01 wt%” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.

備考2. 〝○〞係指該項限用物質之百分比含量未超出百分比含量基準值。

Note2 : “○”indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考3. 〝-〞係指該項限用物質為排除項目。

Note3 : The “-“ indicates that the restricted substance corresponds to the exemption.

Taiwan Region import and export contact information

Contacts are available for Taiwan Region import and export information.

委製商/進口商名稱: 台灣聯想環球科技股份有限公司
進口商地址: 台北市南港區三重路 66 號 8 樓
進口商電話: 0800-000-702

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