Lenovo

ThinkSystem SR650 V4
Internal Cable Routing Guide



Machine Type: 7DGC, 7DGD, 7DGE, 7DGF, 7DLN, 7DK2

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

Second Edition (June 2025)

© Copyright Lenovo 2025.

LIMITED AND RESTRICTED RIGHTS NOTICE: If data or software is delivered pursuant to a General Services Administration (GSA) contract, use, reproduction, or disclosure is subject to restrictions set forth in Contract No. GS-35F-05925.

Contents

Contents i

Safety iii

Safety inspection checklist iv

Internal cable routing 1

Identifying connectors 1

Drive backplane connectors 1

System-board-assembly connectors for cable routing 5

ConnectX-8 adapter cable routing 9

Front M.2 boot backplane and controller board cable routing 11

Internal M.2 backplane cable routing 12

GPU adapter cable routing 13

Left and right rack latch cable routing 14

Compute Complex Neptune Core Module cable routing 15

Processor Neptune Core Module cable routing . . 16

Management NIC adapter cable routing 17

OCP module cable routing 18

RAID flash power module cable routing 19

Rear M.2 backplane cable routing. 20

Riser card cable routing 21

Serial port module cable routing 24

Drive backplane cable routing: 2.5-inch chassis without Compute Complex Neptune Core Module 25

Front backplanes only 27

Front + Rear backplanes 54

Front + Middle backplanes. 78

Front + Middle + Rear backplanes 91

Drive backplane cable routing: 2.5-inch chassis with Compute Complex Neptune Core Module . . 104

Drive backplane cable routing: 3.5-inch chassis 111

12 x 3.5-inch SAS/SATA backplane 112

12 x 3.5-inch AnyBay backplane 122

E3.S chassis without Compute Complex Neptune Core Module 128

E3.S chassis with Compute Complex Neptune Core Module 134

Appendix A. Documents and supports 137

Documents download 137

Support websites 137

Appendix B. Notices 139

Trademarks 140

Important notes 140

Electronic emission notices 140

Taiwan Region BSMI RoHS declaration 141

Taiwan Region import and export contact information 141

TCO Certified. 141

© Copyright Lenovo 2025

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.

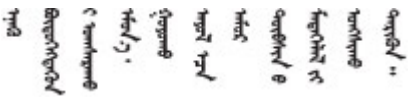
A termék telepítése előtt olvassa el a Biztonsági előírásokat!

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.

© Copyright Lenovo 2025

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་སྤྱོད་མ་བྱས་གོང་། ་སྐོར་གྱི་ཡིད་གཟབ་བྱ་འདྲ་མིན་ཡོད་པའི་འོད་སྡེར་བལྟ་དགོས།

Bu ürünü kurmadan önce güvenlik bilgilerini okuyun.

مەزكۇر 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.

© Copyright Lenovo 2025

Internal cable routing

See this section to do cable routing for specific components.

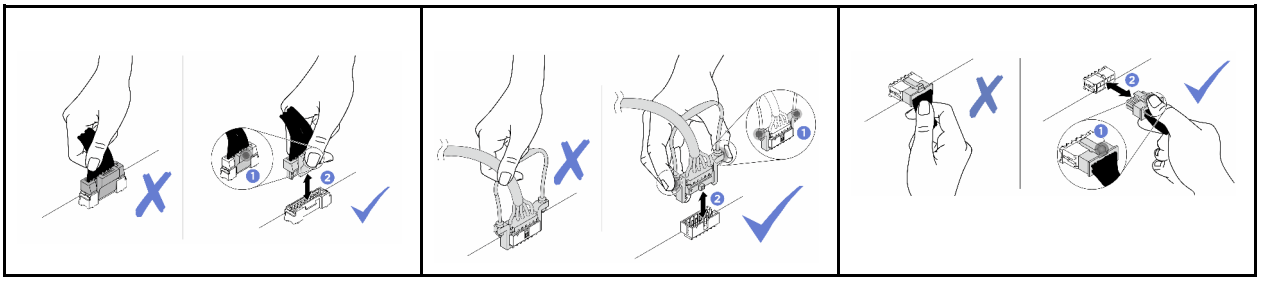
Notes: Follow below guidelines when connecting cables:

- 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” on page 1
- “System-board-assembly connectors for cable routing” on page 5

Drive backplane connectors

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

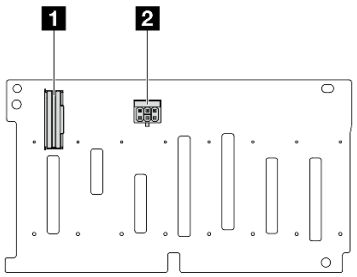
The server supports the following backplanes depending on server configurations:

- “8 x 2.5-inch SAS/SATA front backplane” on page 2

© Copyright Lenovo 2025

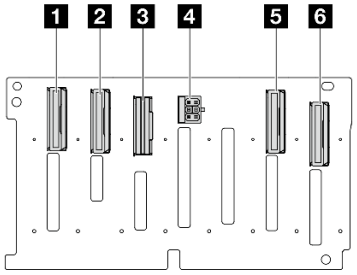
- “8 x 2.5-inch AnyBay front backplane” on page 2
- “12 x 3.5-inch SAS/SATA front backplane” on page 2
- “12 x 3.5-inch AnyBay front backplane” on page 3
- “4 x 2.5-inch SAS/SATA middle/rear backplane” on page 3
- “4 x 2.5-inch AnyBay middle/rear backplane” on page 3
- “4 x 3.5-inch SAS/SATA rear backplane” on page 3
- “8 x 2.5-inch SAS/SATA rear backplane” on page 3
- “E3.S drive backplane” on page 4
- “Front M.2 boot backplane and controller board” on page 4
- “Rear M.2 backplane” on page 4

8 x 2.5-inch SAS/SATA front backplane



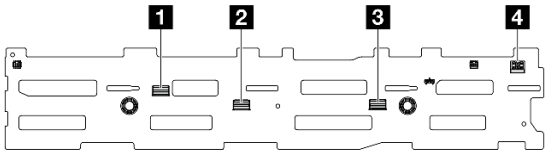
1 SAS connector	2 Power connector

8 x 2.5-inch AnyBay front backplane



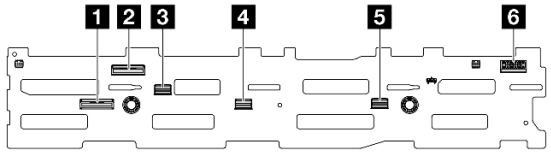
1 NVMe 6-7 connector	2 NVMe 4-5 connector
3 SAS connector	4 Power connector
5 NVMe 2-3 connector	6 NVMe 0-1 connector

12 x 3.5-inch SAS/SATA front backplane



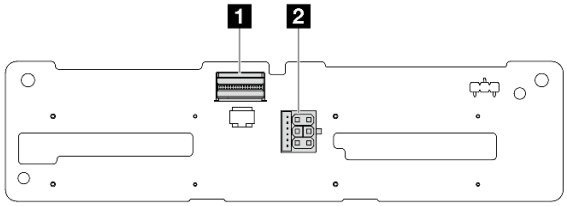
1 SAS 2 connector	2 SAS 1 connector
3 SAS 0 connector	4 Power connector

12 x 3.5-inch AnyBay front backplane



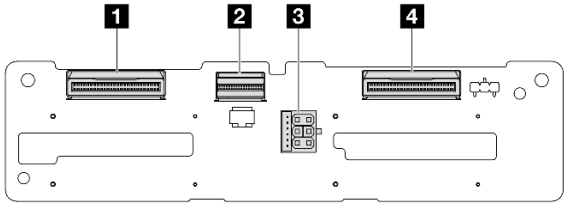
1 NVMe 10-11 connector	2 NVMe 8-9 connector
3 SAS 2 connector	4 SAS 1 connector
5 SAS 0 connector	6 Power connector

4 x 2.5-inch SAS/SATA middle/rear backplane



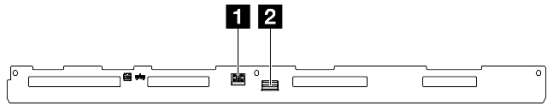
1 SAS connector	2 Power connector

4 x 2.5-inch AnyBay middle/rear backplane



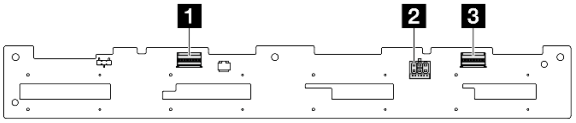
1 NVMe 2-3 connector	2 SAS connector
3 Power connector	4 NVMe 0-1 connector

4 x 3.5-inch SAS/SATA rear backplane



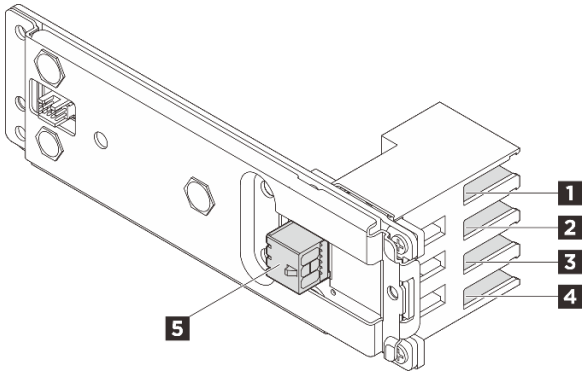
1 Power connector	2 SAS connector

8 x 2.5-inch SAS/SATA rear backplane



1 SAS 1 connector	2 Power connector
3 SAS 0 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

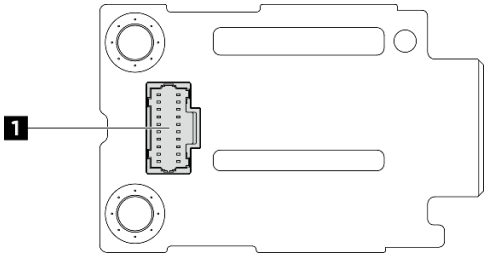


Figure 1. Front M.2 boot backplane

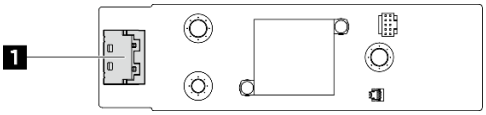
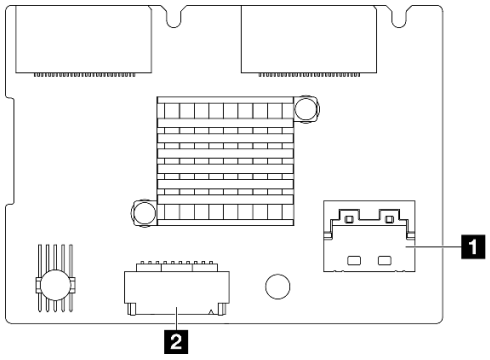


Figure 2. Front M.2 controller board

1 Power connector	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.

- "Servers *without* Compute Complex Neptune Core Module" on page 5
- "Servers *with* Compute Complex Neptune Core Module" on page 7

Servers *without* Compute Complex Neptune Core Module

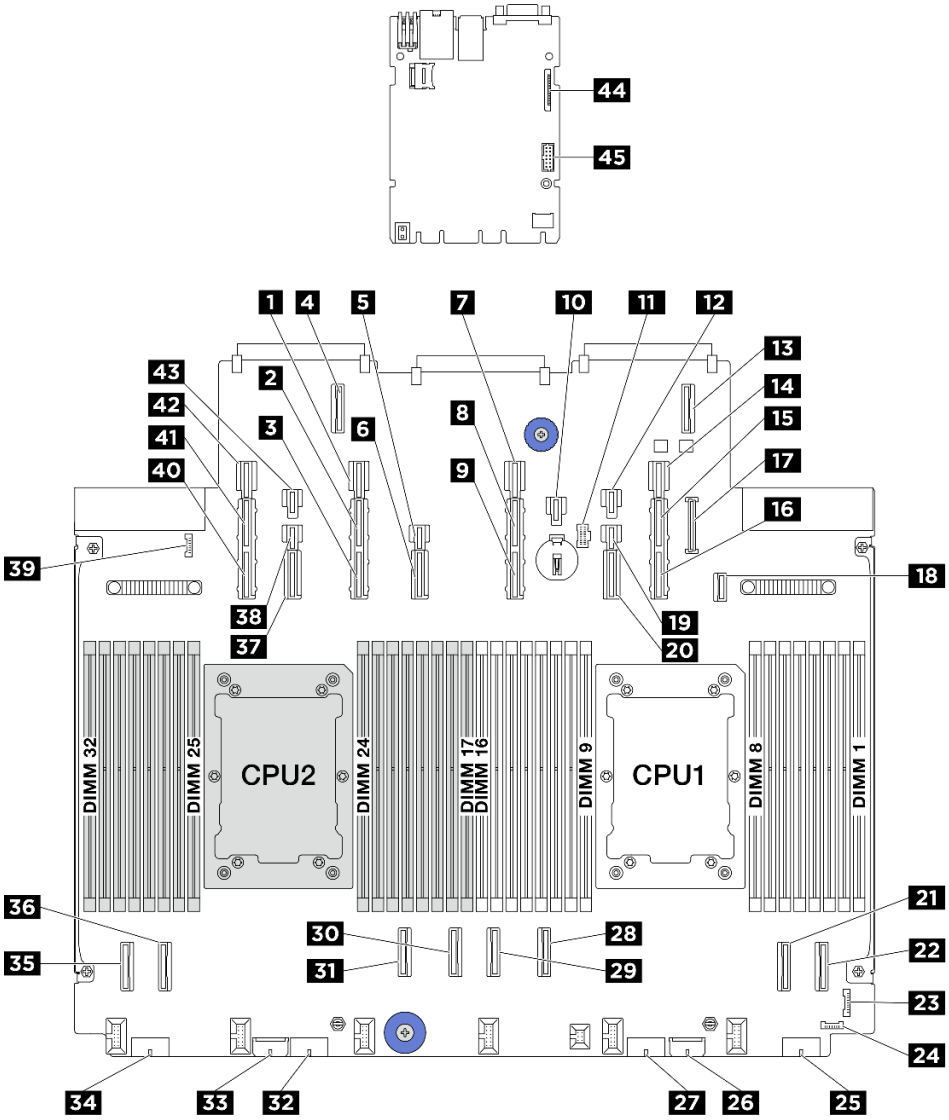


Figure 3. Servers *without* Compute Complex Neptune Core Module

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	

Servers *with* Compute Complex Neptune Core Module

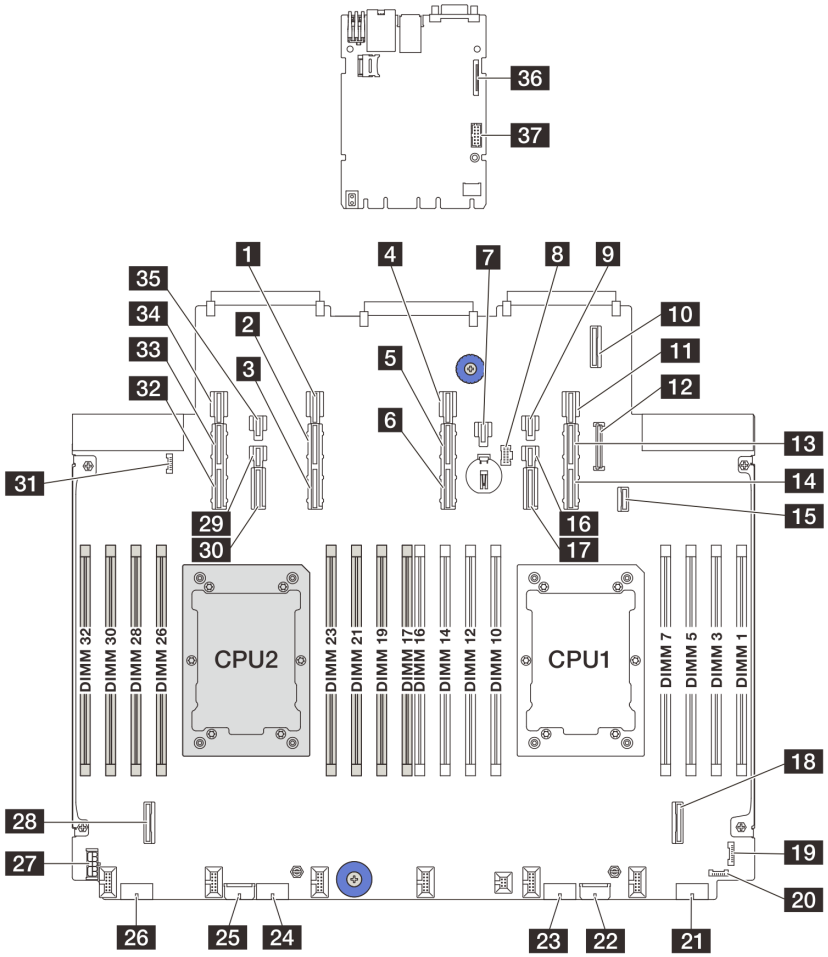


Figure 4. Servers with Compute Complex Neptune Core Module

1 Power connector 13	2 PCIe connector 13A
3 PCIe connector 13B	4 Power connector 11
5 PCIe connector 11A	6 PCIe connector 11B
7 Power connector 21	8 M.2 power connector
9 Power connector 20	10 OCP expansion connector 1
11 Power connector 9	12 Front panel USB connector
13 PCIe connector 9A	14 PCIe connector 9B
15 M.2 backplane signal connector	16 Power connector 10
17 PCIe connector 10	18 PCIe connector 2
19 Front I/O connector	20 Leak detection connector 1
21 Power connector 4	22 Expander power connector
23 Power connector 3	24 Power connector 2
25 RAID power connector (SR650 V4)	26 Power connector 1

27 RAID power connector (SR630 V4)	28 PCIe connector 7
29 Power connector 14	30 PCIe connector 14
31 Leak detection connector 2	32 PCIe connector 15B
33 PCIe connector 15A	34 Power connector 15
35 Power connector 23	36 Second management Ethernet connector
37 Serial port connector	

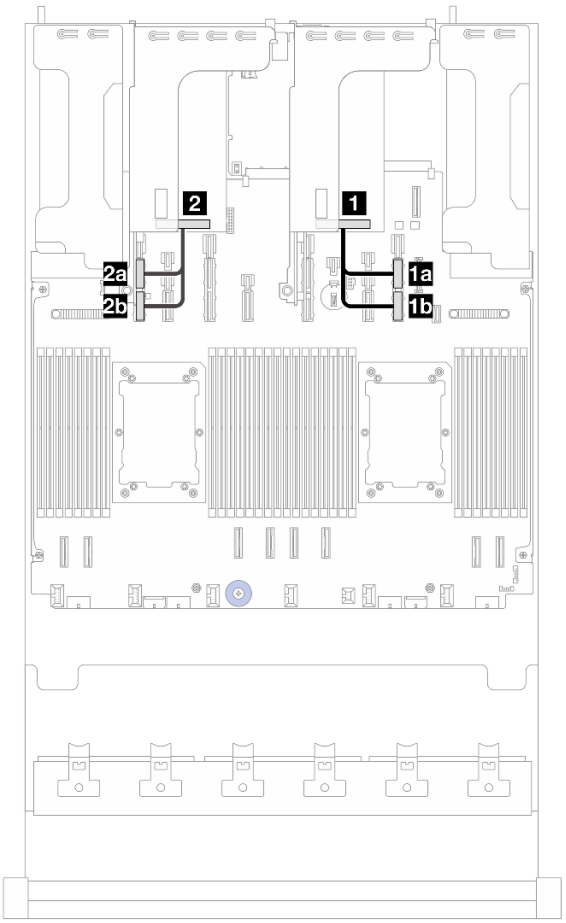
ConnectX-8 adapter cable routing

This section provides cable routing information for the ConnectX-8 InfiniBand adapter.

- “ConnectX-8 adapter cable routing in scenario 1” on page 9
- “ConnectX-8 adapter cable routing in scenario 2” on page 9

ConnectX-8 adapter cable routing in scenario 1

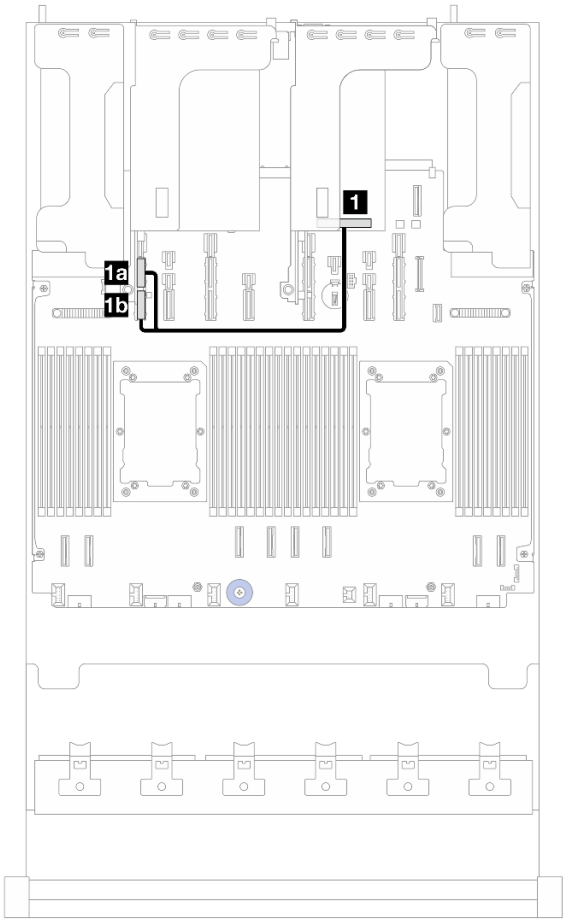
Scenario 1: The server is equipped with two processors and two ConnectX-8 adapters (cable 1 and cable 2) or one processor and one ConnectX-8 adapter (cable 1).



From	To (processor board)	Cable length
1 ConnectX-8 adapter on slot 5	1a PCIe 9A	300 mm
	1b PCIe 9B	
2 ConnectX-8 adapter on slot 7	2a PCIe 15A	300 mm
	2b PCIe 15B	

ConnectX-8 adapter cable routing in scenario 2

Scenario 2: The server is equipped with two processors and one ConnectX-8 adapter.



From	To (processor board)	Cable length
1 ConnectX-8 adapter on slot 5	1a PCIe 15A	300 mm
	1b PCIe 15B	

Front M.2 boot backplane and controller board cable routing

This section provides cable routing information for the front M.2 boot backplane and controller board.

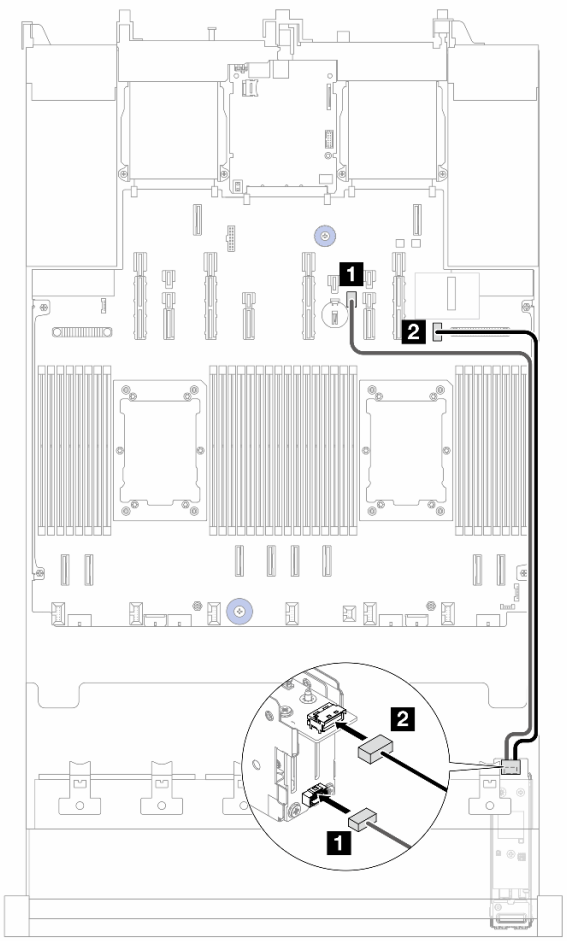


Figure 5. Cable routing for front M.2 boot backplane and controller board

From	To (processor board)	Length
1 M.2 boot backplane	1 M.2 power connector	700 mm
2 M.2 controller board	2 M.2 backplane signal connector	650 mm

Internal M.2 backplane cable routing

This section provides cable routing information for the internal M.2 backplane.

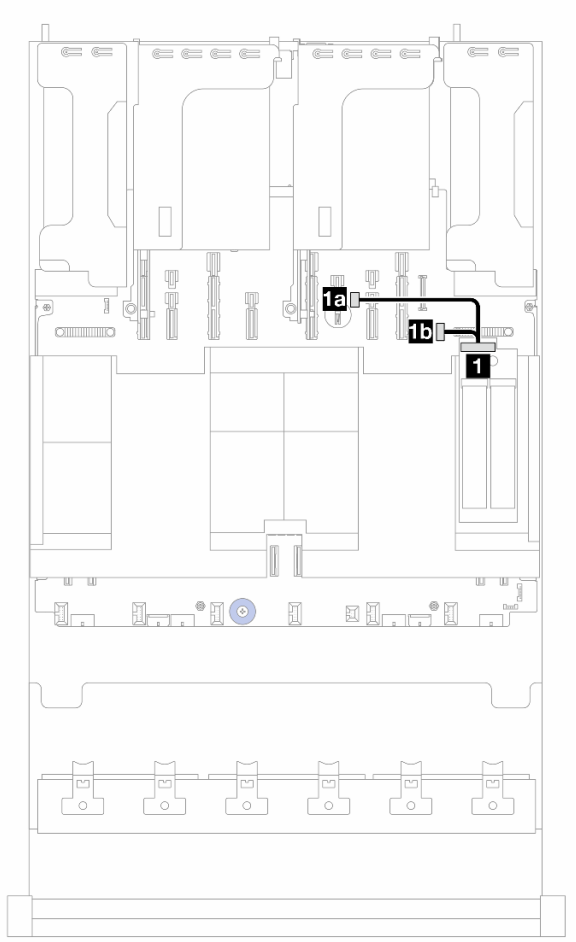


Figure 6. Cable routing for internal M.2 backplane

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

GPU adapter cable routing

This section provides cable routing information for the GPU adapters.

Notes:

- The GPU power cable is needed only when GPU power is greater than or equal to 75 W.
- The location of the GPU adapter may differ from that shown in the illustration, but the cable routing is similar.
- For riser card cable routing, see “Riser card cable routing” on page 21.

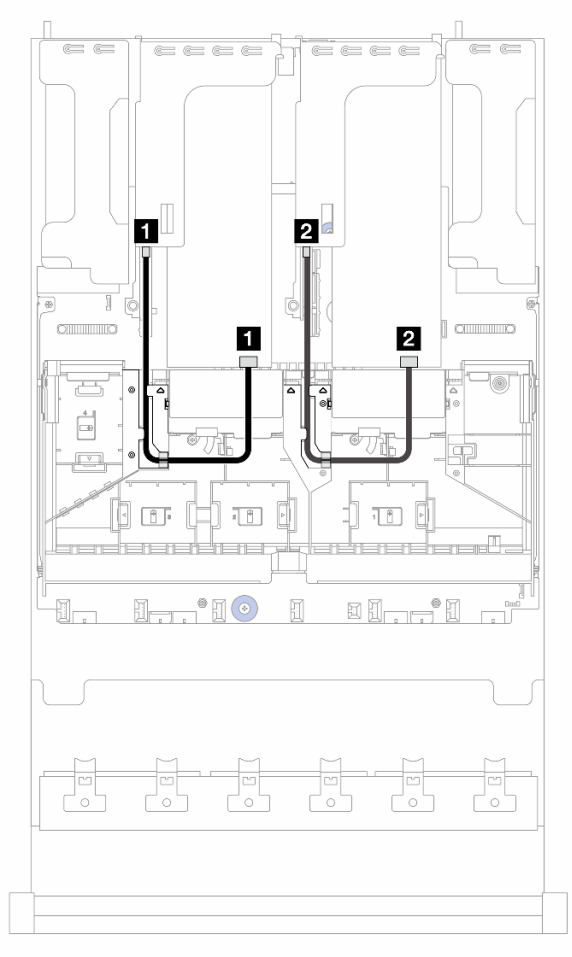


Figure 7. Cable routing for GPU adapters

From (GPU adapter)	To (riser card)	Length
1 Power connector	1 Power connector	320 mm
2 Power connector	2 Power connector	320 mm

Left and right rack latch cable routing

This section provides cable routing information for the left rack latch with USB/MiniDP and the right rack latch (with front operator panel).

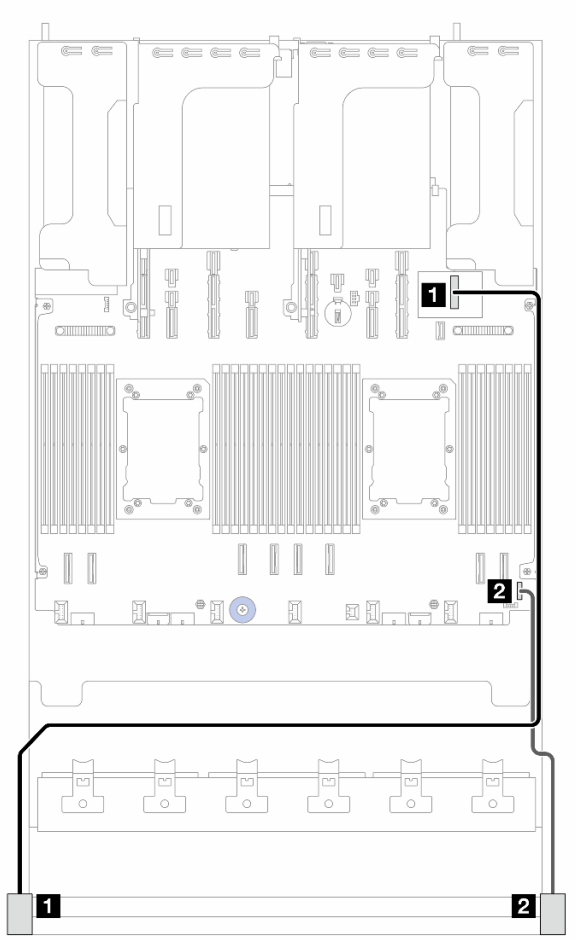


Figure 8. Cable routing for left and right rack latches

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

Compute Complex Neptune Core Module cable routing

This section provides cable routing information for the Compute Complex Neptune Core Module.

Note: For better cable arrangement, it is required to install the hoses and leakage detection sensor module to a designated holder, and make sure that the module is secured in holder clips. Use the illustration below or “Install the Lenovo Compute Complex Neptune Core Module” in *User Guide* or *Hardware Maintenance Guide* for details.

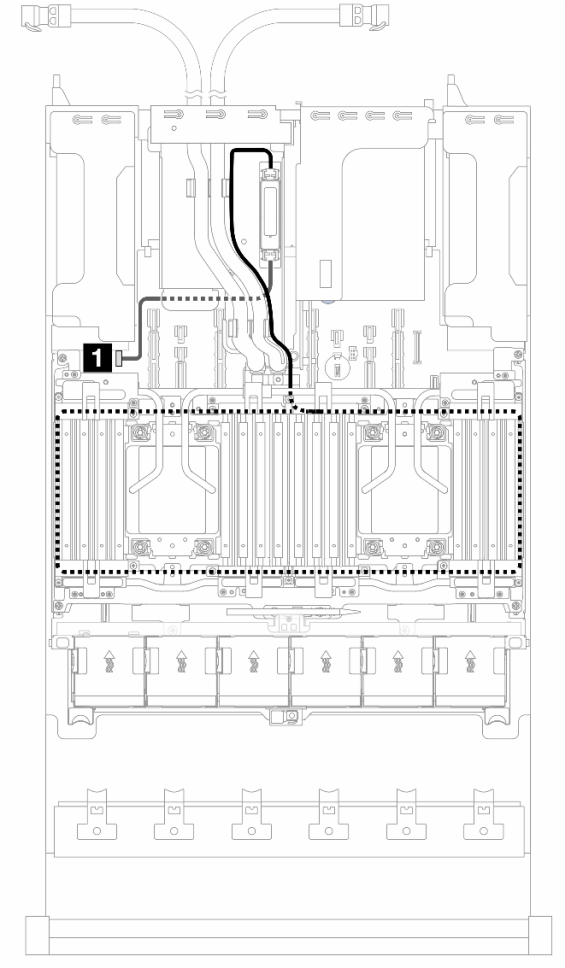


Figure 9. Cable routing for Compute Complex Neptune Core Module

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

Processor Neptune Core Module cable routing

This section provides cable routing information for the Processor Neptune Core Module.

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

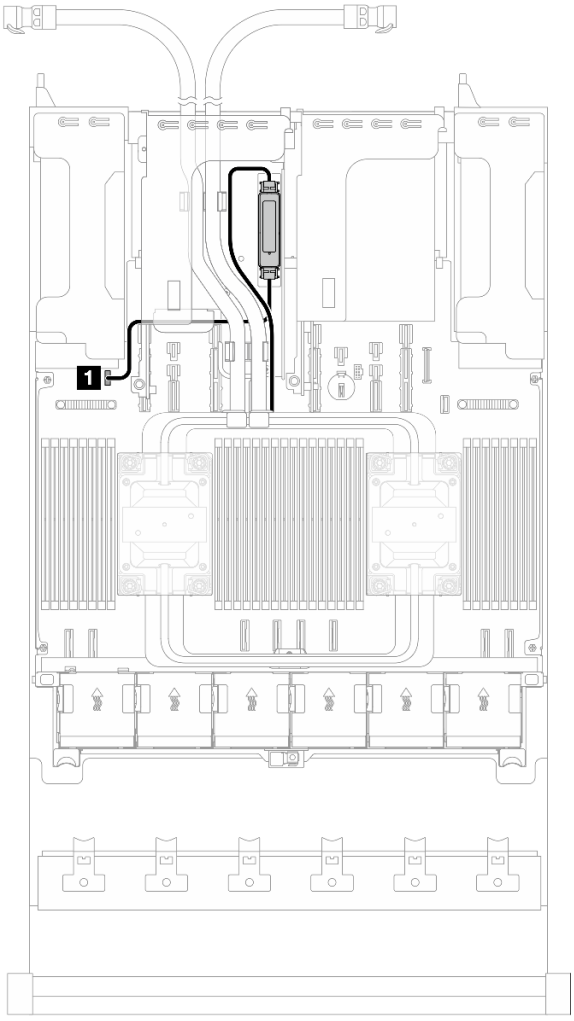


Figure 10. Cable routing for Processor Neptune Core Module

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

Management NIC adapter cable routing

This section provides cable routing information for the management NIC adapter.

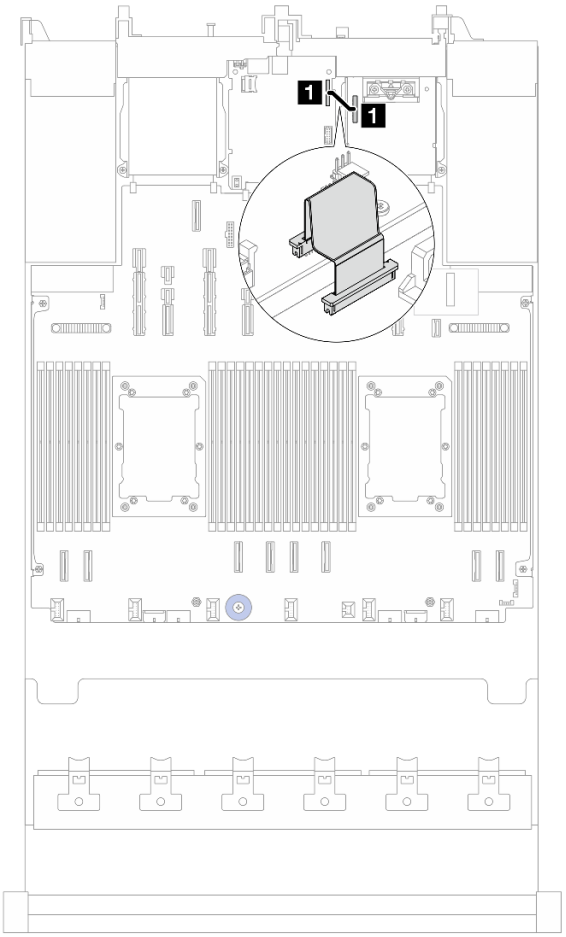


Figure 11. Cable routing for management NIC adapter

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

OCP module cable routing

This section provides cable routing information for OCP modules with PCIe x16 connection.

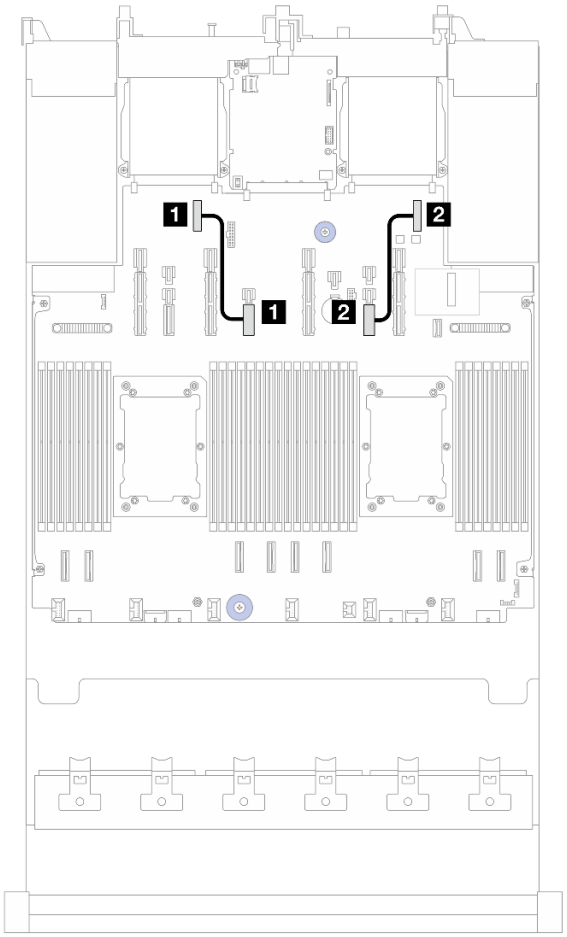


Figure 12. Cable routing for OCP modules with PCIe x16 connection

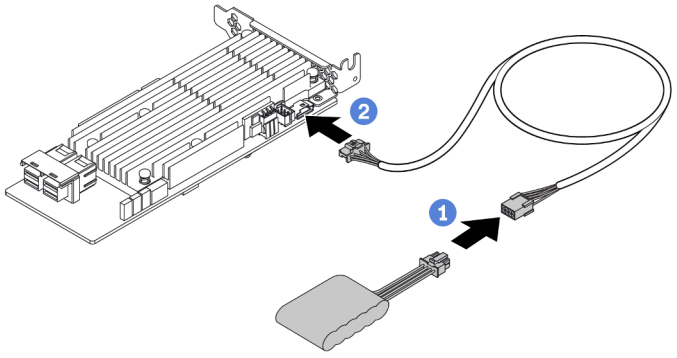
From (processor board)	To (processor board)	Length
1 OCP expansion connector 2	1 PCIe connector 12	160 mm
2 OCP expansion connector 1	2 PCIe connector 10	160 mm

RAID flash power module cable routing

This section provides cable routing information for RAID flash power modules (also known as 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

Rear M.2 backplane cable routing

This section provides cable routing information for the rear M.2 backplane.

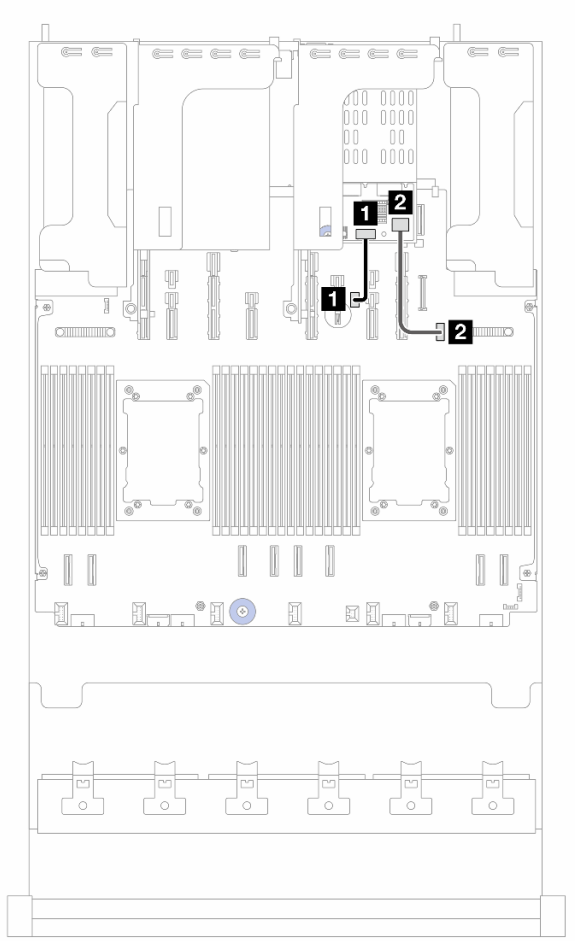


Figure 13. Cable routing for rear M.2 backplane

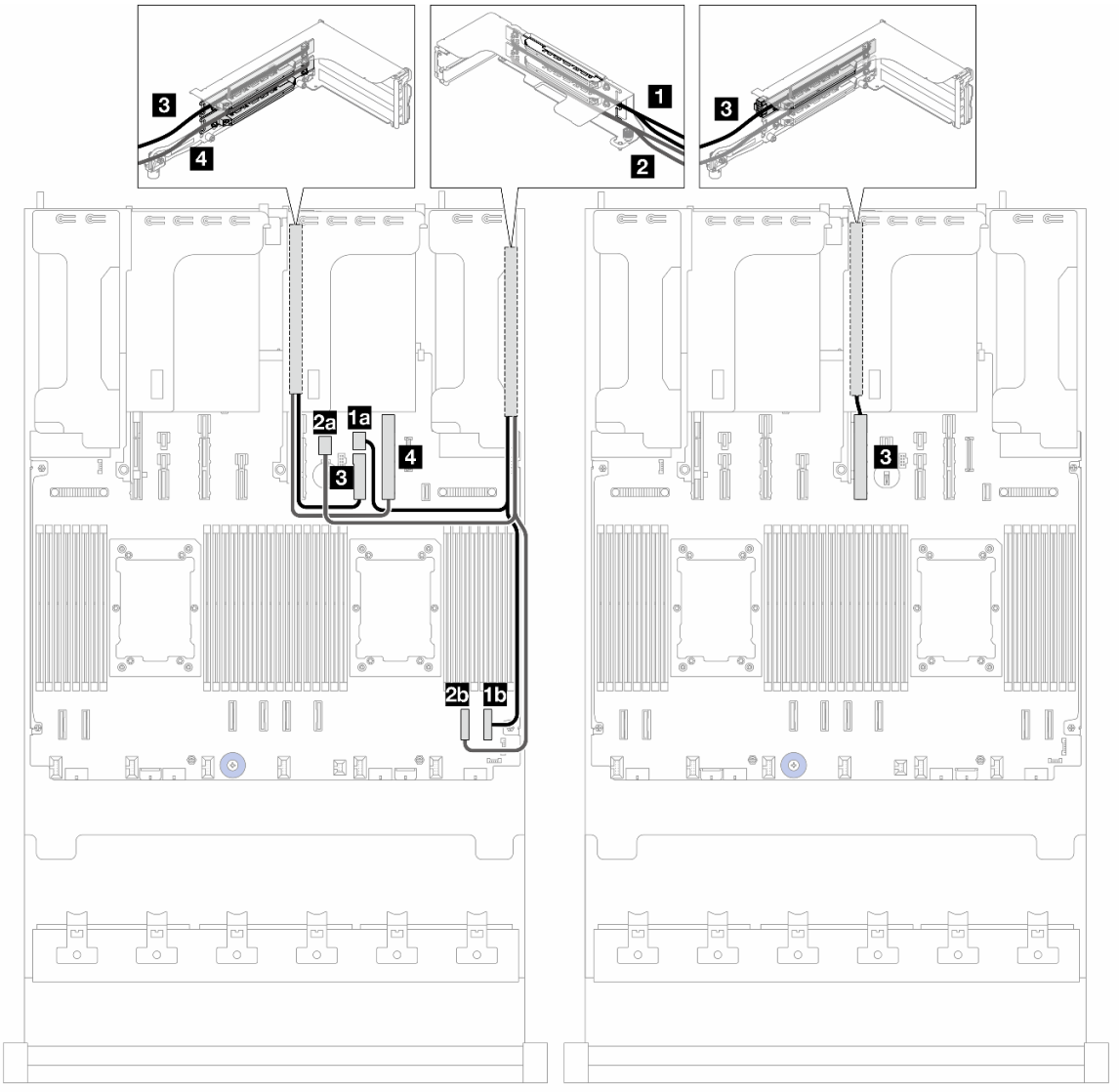
From (rear M.2 backplane)	To (processor board)	Length
1 Power connector	1 M.2 power connector	320 mm
2 Signal connector	2 M.2 backplane signal connector	310 mm

Riser card cable routing

This section provides cable routing information for the riser cards.

- “Cable routing for riser cards corresponding to processor 1” on page 21
- “Cable routing for riser cards corresponding to processor 2” on page 22
- “Cable routing for riser cards in configurations with 8 x 2.5-inch rear drive bays” on page 23

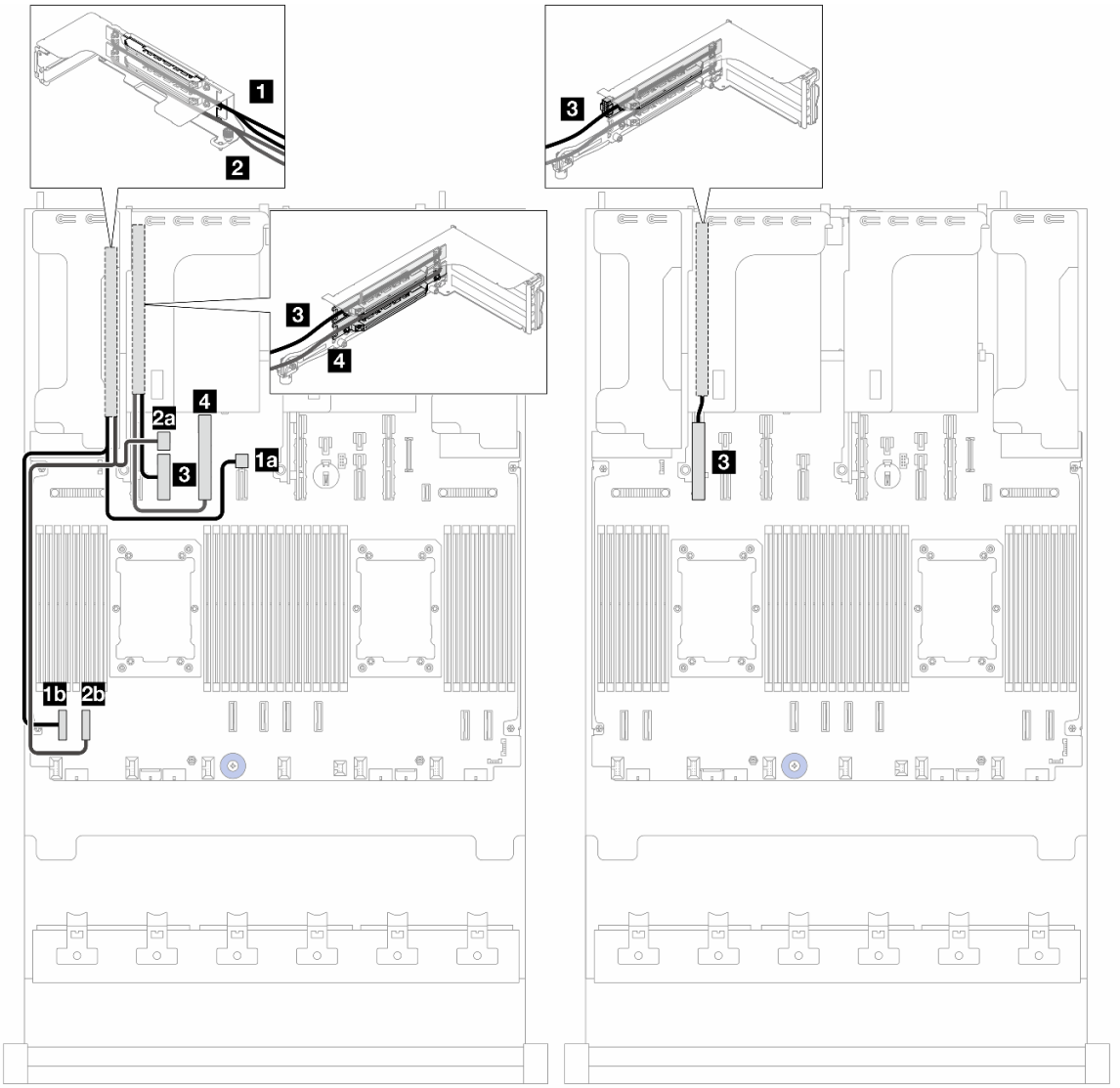
Cable routing for riser cards corresponding to processor 1



From	To (processor board)	Cable length
1 Riser card on slot 1	1a PWR 20	500/400 mm
	1b PCIe 1	
2 Riser card on slot 2	2a PWR 21	500/400 mm
	2b PCIe 2	
3 Riser card on slot 3	3 PCIe & PWR 10 (when slot 5 is occupied)	350 mm

From	To (processor board)	Cable length
	3 PCIe & PWR 11 (when slot 5 is empty)	300 mm
4 Riser card on slot 4	4 PCIe & PWR 9	300 mm

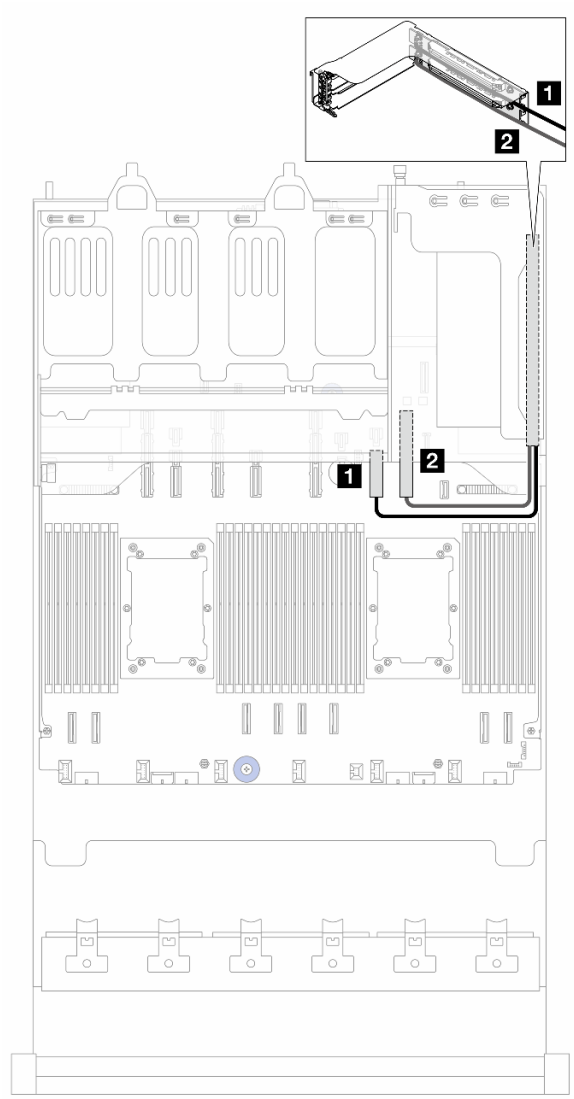
Cable routing for riser cards corresponding to processor 2



From	To (processor board)	Cable length
1 Riser card on slot 9	1a PWR 12	500/400 mm
	1b PCIe 8	
2 Riser card on slot 10	2a PWR 23	500/400 mm
	2b PCIe 7	
3 Riser card on slot 6	3 PCIe & PWR 14 (when slot 8 is occupied)	350 mm

From	To (processor board)	Cable length
	3 PCIe & PWR 15 (when slot 8 is empty)	300 mm
4 Riser card on slot 7	4 PCIe & PWR 13	300 mm

Cable routing for riser cards in configurations with 8 x 2.5-inch rear drive bays



From	To (processor board)	Cable length
1 Riser card on slot 1	1 PCIe & PWR 10	350 mm
2 Riser card on slot 2	2 PCIe & PWR 9	300 mm

Serial port module cable routing

This section provides cable routing information for the serial port module.

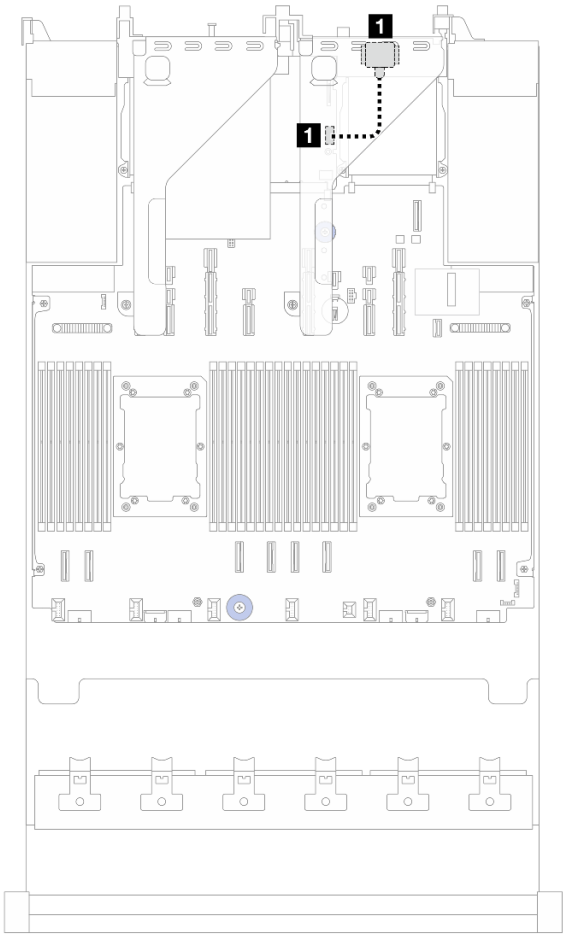


Figure 14. Cable routing for serial port module

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

Drive backplane cable routing: 2.5-inch chassis without Compute Complex Neptune Core Module

This section provides backplane cable connection information for server models with 2.5-inch front drive bays and without Compute Complex Neptune Core Module.

Power cable connections

Notes:

- For connectors on each drive backplane, see “Drive backplane connectors” on page 1.
  - Front backplanes (BP1/2/3):
    - 8 x 2.5-inch SAS/SATA front backplane
    - 8 x 2.5-inch AnyBay front backplane (also used as an 8 x 2.5-inch NVMe front backplane when only NVMe connectors on the backplane are cabled)
  - Middle backplanes (BP10/11):
    - 4 x 2.5-inch SAS/SATA middle/rear backplane
    - 4 x 2.5-inch AnyBay middle/rear backplane (also used as a 4 x 2.5-inch NVMe middle/rear backplane when only NVMe connectors on the backplane are cabled)
  - Rear backplane (BP9):
    - 4 x 2.5-inch SAS/SATA middle/rear backplane
    - 4 x 2.5-inch AnyBay middle/rear backplane (also used as a 4 x 2.5-inch NVMe middle/rear backplane when only NVMe connectors on the backplane are cabled)
    - 8 x 2.5-inch SAS/SATA rear backplane
- The following uses the 4 x 2.5-inch middle/rear backplane as an example of BP9 for illustration. The cable routing for 8 x 2.5-inch rear backplane is similar.

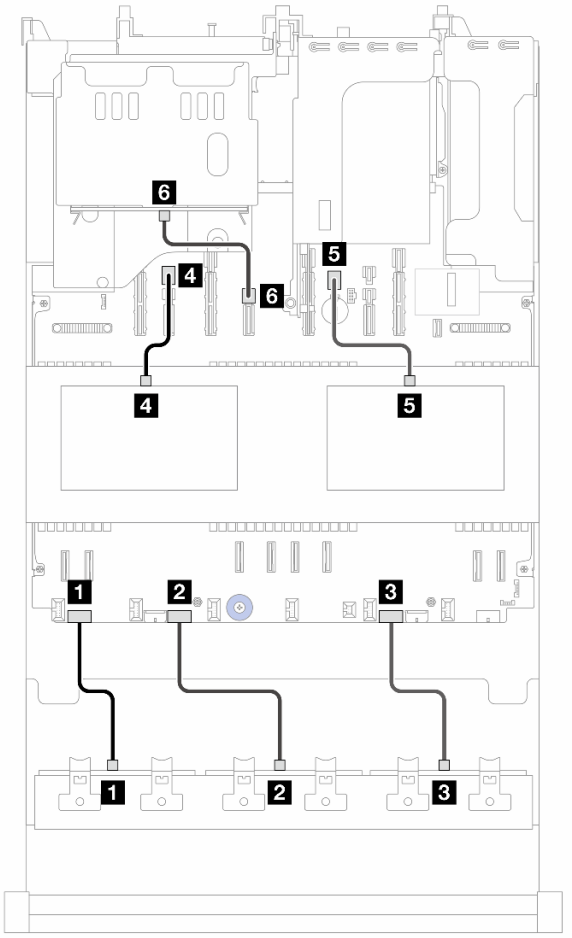


Figure 15. Power cable connections

From	To (processor board)	Length
1 BP1: PWR	1 PWR 1	250 mm
2 BP2: PWR	2 PWR 2	250 mm
3 BP3: PWR	3 PWR 3	250 mm
4 BP10: PWR	4 PWR 23	250 mm
5 BP11: PWR	5 PWR 21	250 mm
6 BP9: PWR	6 PWR 12	250 mm

Signal cable connections

Refer to the specific topic for signal cable connections depending on the backplanes you have installed.

- “Front backplanes only” on page 27
- “Front + Rear backplanes” on page 54
- “Front + Middle backplanes” on page 78
- “Front + Middle + Rear backplanes” on page 91

Front backplanes only

This section provides cable routing information for the server models with front drive bays only.

- “8/16/24 x 2.5" SAS/SATA” on page 27
- “8/16/24 x 2.5" AnyBay (tri-mode)” on page 30
- “8/16/24 x 2.5" AnyBay/NVMe” on page 33
- “8 x 2.5" SAS/SATA + 8 x 2.5" AnyBay/NVMe” on page 40
- “8 x 2.5" AnyBay + 8 x 2.5" NVMe” on page 43
- “8 x 2.5" SAS/SATA + 16 x 2.5" NVMe” on page 46
- “16 x 2.5" SAS/SATA + 8 x 2.5" AnyBay/NVMe” on page 50

8/16/24 x 2.5" SAS/SATA

This topic provides cable routing information for the 8 x 2.5"/16 x 2.5"/24 x 2.5" SAS/SATA configuration.

- “Cable routing to SFF 8i/16i adapter (config. 1/3/4/6/7)” on page 27
- “Cable routing to CFF 16i adapter (config. 2/5/8)” on page 29
- “Cable routing to SFF 8i adapter (config. 8)” on page 29

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
8 x 2.5" SAS/SATA (BP1)	1 x SFF 8i/16i	1
	1 x CFF 16i	2
16 x 2.5" SAS/SATA (BP1 + BP2)	2 x SFF 8i	3
	1 x SFF 16i	4
	1 x CFF 16i	5
24 x 2.5" SAS/SATA (BP1 + BP2 + BP3)	3 x SFF 8i	6
	SFF 16i + 8i	7
	SFF 8i + CFF 16i	8

Cable routing to SFF 8i/16i adapter (config. 1/3/4/6/7)

Notes:

- The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.
- Cable 3 is needed only in the 3 x SFF 8i or SFF 16i + 8i configuration.

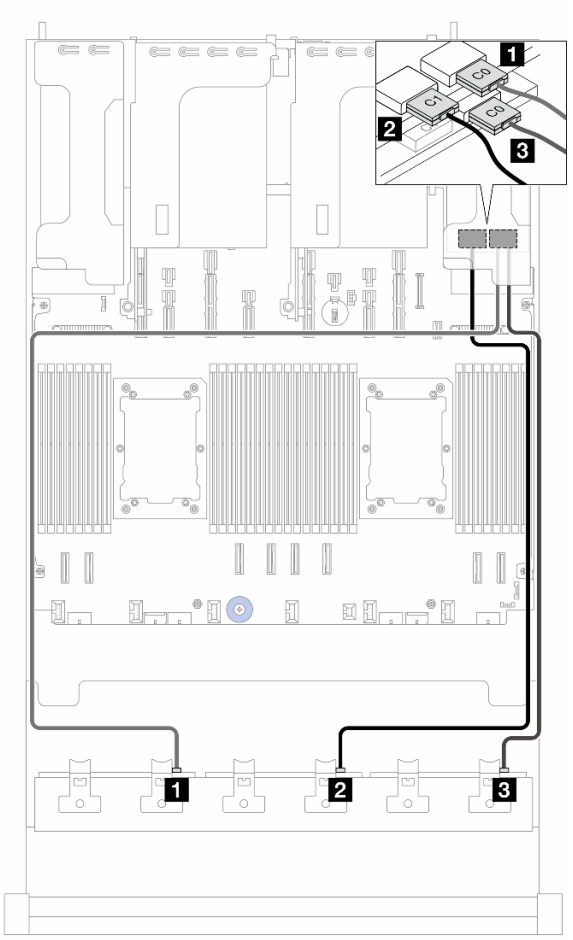


Figure 16. Cable routing to SFF 8i/16i adapter

From	To		Cable length
1 BP1: SAS	1 8i adapter: • Gen 4: C0 • Gen 3: C0C1	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
2 BP2: SAS	2 8i adapter: • Gen 4: C0 • Gen 3: C0C1	2 • Gen 4: C1 • Gen 3: C2C3	900 mm
3 BP3: SAS	3 8i adapter: • Gen 4: C0 • Gen 3: C0C1	3 8i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm

Cable routing to CFF 16i adapter (config. 2/5/8)

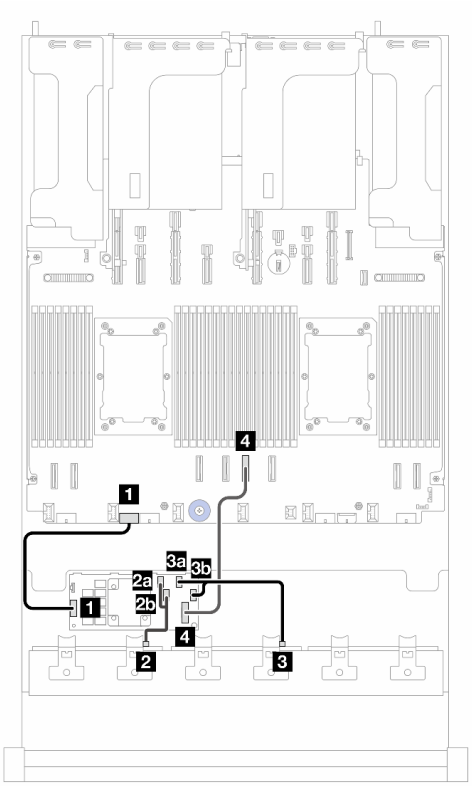


Figure 17. Cable routing when two processors are installed

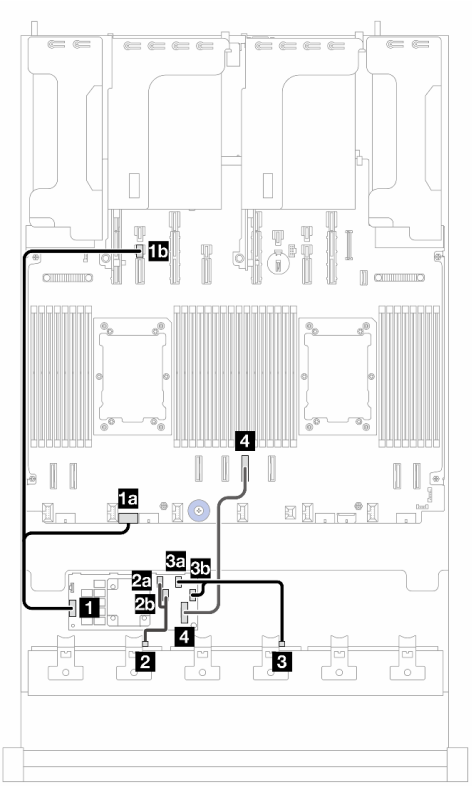


Figure 18. Cable routing when one processor is installed

2P: two processors; 1P: one processor; PB: processor board

From (CFF 16i adapter)	To		Cable length
	2P	1P	
1 POWER	1 PB: RAID PWR	1a PB: RAID PWR 1b PB: PWR 14	• 2P: 210 mm • 1P: 300/800 mm
2a C0 2b C1	2 BP1: SAS	2 BP1: SAS	140/140 mm
3a C2 3b C3	3 BP2: SAS	3 BP2: SAS	140/140 mm
4 MB (CFF INPUT)	4 PB: PCIe 4	4 PB: PCIe 4	450 mm

Cable routing to SFF 8i adapter (config. 8)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

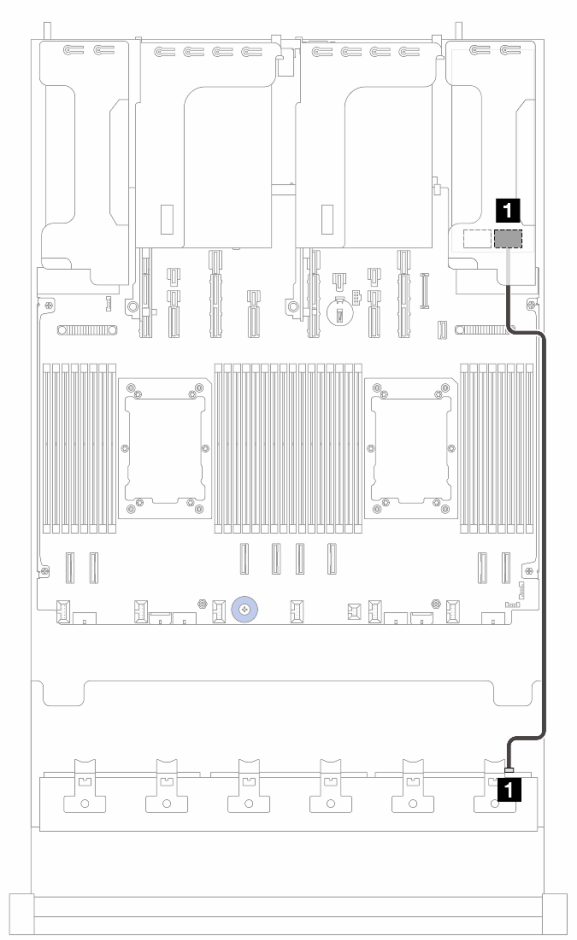


Figure 19. Cable routing to SFF 8i adapter

From	To	Cable length
1 BP3: SAS	1 8i adapter: C0	900 mm

8/16/24 x 2.5" AnyBay (tri-mode)

This topic provides cable routing information for the 8 x 2.5"/16 x 2.5"/24 x 2.5" AnyBay (tri-mode) configuration.

- "Cable routing to SFF 8i/16i adapter (config. 1/3/4/6/7)" on page 31
- "Cable routing to CFF 16i adapter (config. 2/5/8)" on page 32
- "Cable routing to SFF 8i adapter (config. 8)" on page 33

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
8 x 2.5" AnyBay (BP1)	1 x SFF 8i/16i (tri-mode)	1
	1 x CFF 16i (tri-mode)	2
16 x 2.5" AnyBay (BP1 + BP2)	2 x SFF 8i (tri-mode)	3

BP config.	Storage controller	Config. No.
	1 x SFF 16i (tri-mode)	4
	1 x CFF 16i (tri-mode)	5
24 x 2.5" AnyBay (BP1 + BP2 + BP3)	3 x SFF 8i (tri-mode)	6
	SFF 16i + 8i (tri-mode)	7
	SFF 8i + CFF 16i (tri-mode)	8

Cable routing to SFF 8i/16i adapter (config. 1/3/4/6/7)

Notes:

- The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.
- Cable 3 is needed only in the 3 x SFF 8i or SFF 16i + 8i configuration.

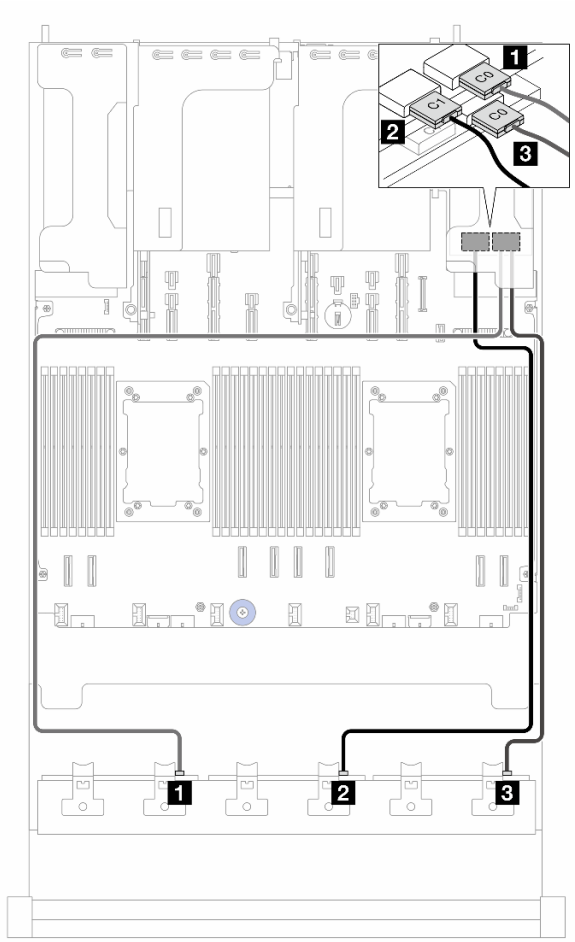


Figure 20. Cable routing to SFF 8i/16i adapter

From	To		Cable length
1 BP1: SAS	1 8i adapter: • Gen 4: C0 • Gen 3: C0C1	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
2 BP2: SAS	2 8i adapter: • Gen 4: C0 • Gen 3: C0C1	2 • Gen 4: C1 • Gen 3: C2C3	900 mm
3 BP3: SAS	3 8i adapter: • Gen 4: C0 • Gen 3: C0C1	3 8i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm

Cable routing to CFF 16i adapter (config. 2/5/8)

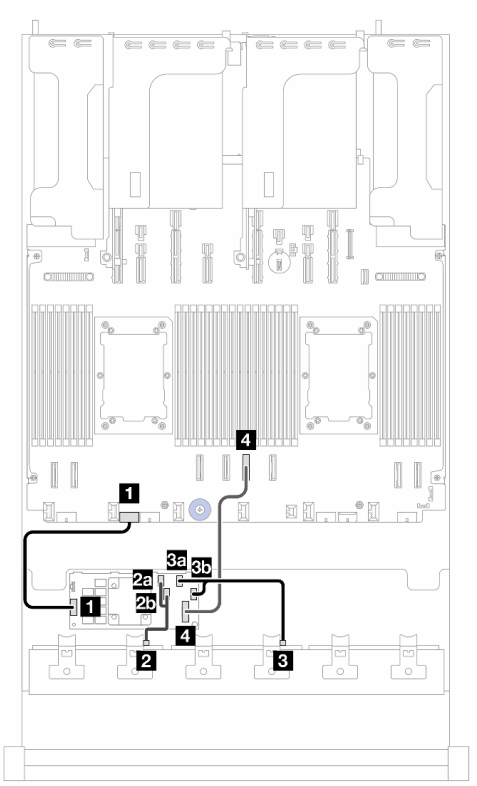


Figure 21. Cable routing when two processors are installed

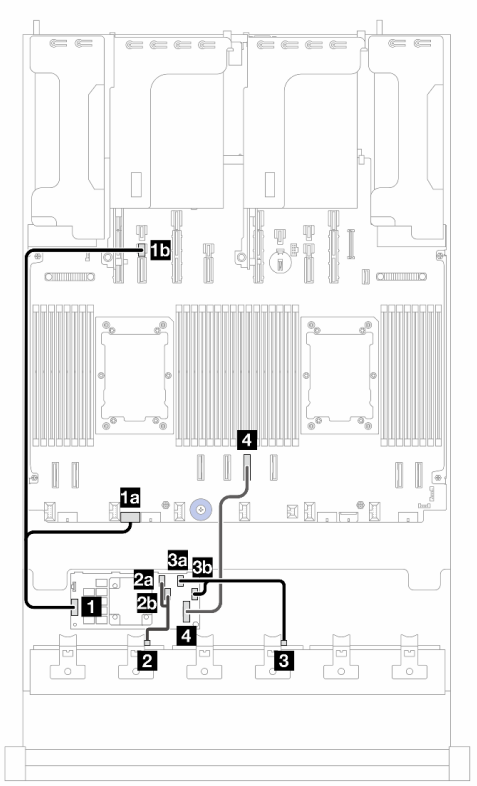


Figure 22. Cable routing when one processor is installed

2P: two processors; 1P: one processor; PB: processor board

From (CFF 16i adapter)	To		Cable length
	2P	1P	
1 POWER	1 PB: RAID PWR	1a PB: RAID PWR	• 2P: 210 mm • 1P: 300/800 mm
		1b PB: PWR 14	
2a C0	2 BP1: SAS	2 BP1: SAS	140/140 mm
2b C1			

From (CFF 16i adapter)	To		Cable length
	2P	1P	
3a C2 3b C3	3 BP2: SAS	3 BP2: SAS	140/140 mm
4 MB (CFF INPUT)	4 PB: PCIe 4	4 PB: PCIe 4	450 mm

Cable routing to SFF 8i adapter (config. 8)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

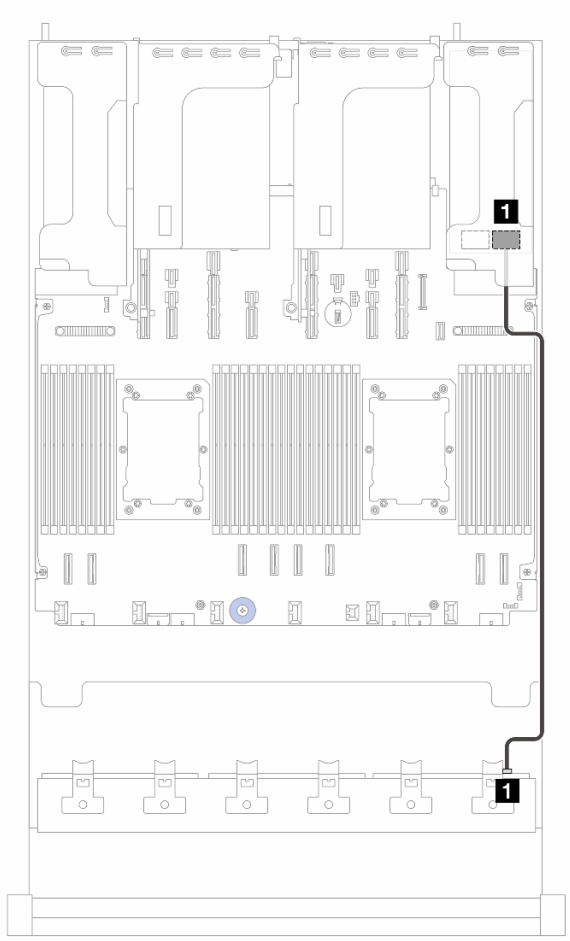


Figure 23. Cable routing to SFF 8i adapter

From	To	Cable length
1 BP3: SAS	1 8i adapter: C0	900 mm

8/16/24 x 2.5" AnyBay/NVMe

This topic provides cable routing information for the 8 x 2.5"/16 x 2.5"/24 x 2.5" AnyBay/NVMe configuration.

- "NVMe cable routing (config. 1/2/3)" on page 34

- “Cable routing to SFF 8i/16i adapter (config. 2)” on page 35
- “Cable routing to CFF 16i adapter (config. 3)” on page 36
- “NVMe cable routing (config. 4)” on page 37
- “NVMe cable routing (config. 5)” on page 38

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
8 x 2.5" NVMe (BP1)	N/A	1
8 x 2.5" AnyBay (BP1)	1 x SFF 8i/16i	2
	1 x CFF 16i	3
16 x 2.5" NVMe (BP1 + BP2)	N/A	4
24 x 2.5" NVMe (BP1 + BP2 + BP3)	N/A	5

NVMe cable routing (config. 1/2/3)

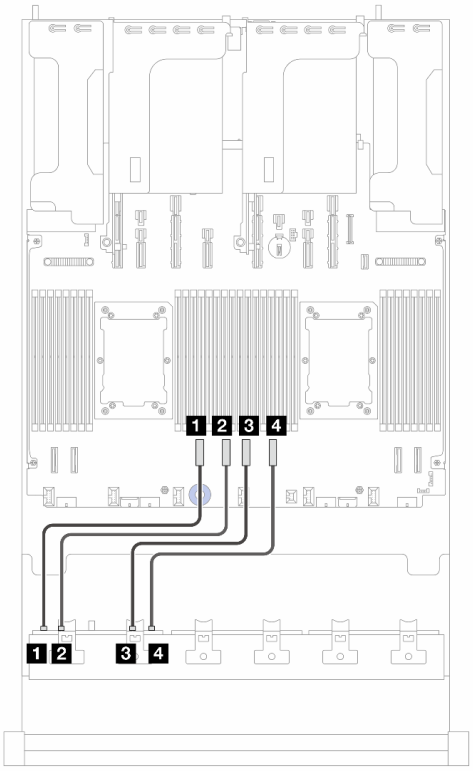


Figure 24. Cable routing when two processors are installed

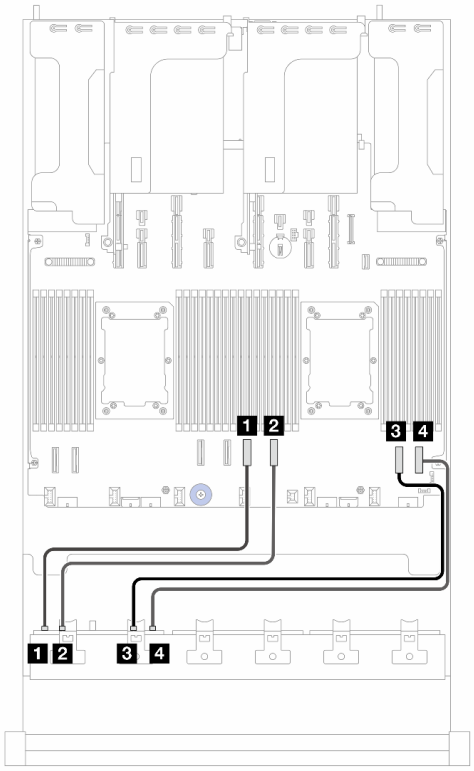


Figure 25. Cable routing when one processor is installed

2P: two processors; 1P: one processor

From (BP1)	To (processor board)		Cable length
	2P	1P	
1 NVMe 0-1	1 PCIe 6	1 PCIe 4	• 350 mm
2 NVMe 2-3	2 PCIe 5	2 PCIe 3	• 350 mm
3 NVMe 4-5	3 PCIe 4	3 PCIe 2	• 350 mm (PCIe 4) • 550 mm (PCIe 2)
4 NVMe 6-7	4 PCIe 3	4 PCIe 1	• 350 mm (PCIe 3) • 550 mm (PCIe 1)

Cable routing to SFF 8i/16i adapter (config. 2)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

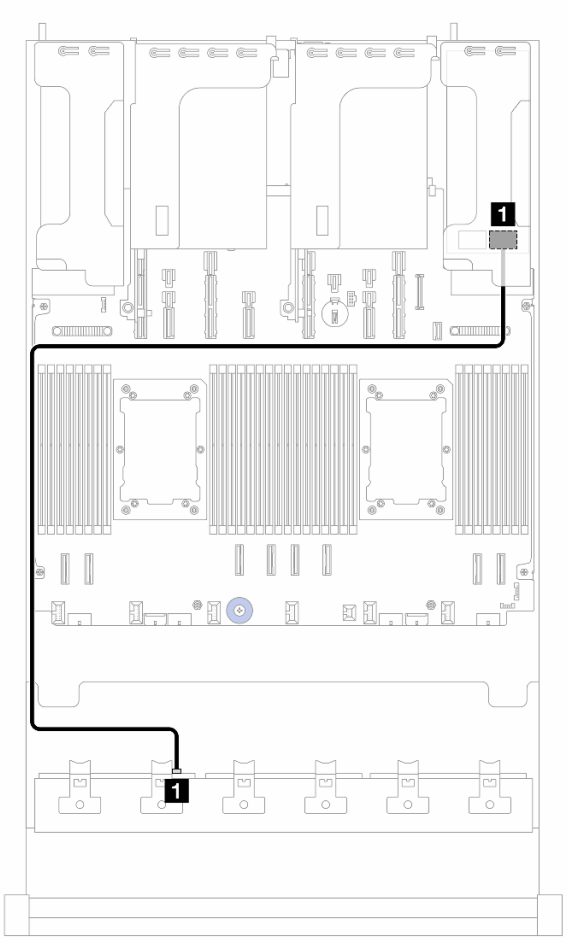


Figure 26. Cable routing to SFF 8i/16i adapter

From	To	Cable length
1 BP1: SAS	1 8i/16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm

Cable routing to CFF 16i adapter (config. 3)

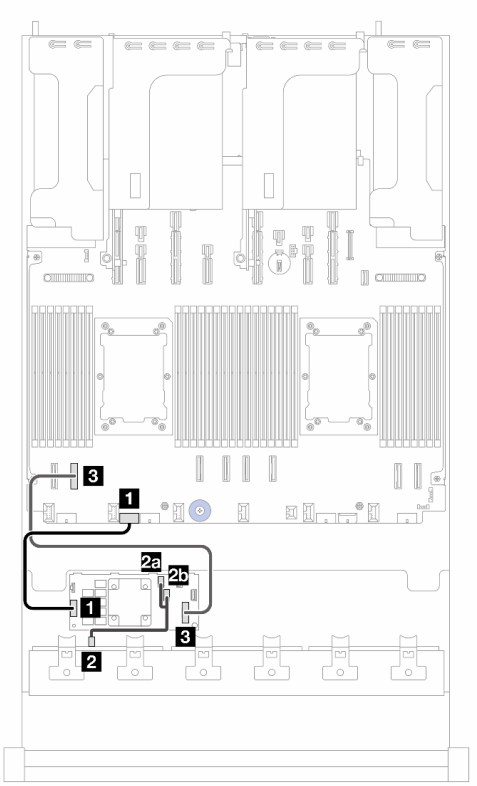


Figure 27. Cable routing when two processors are installed

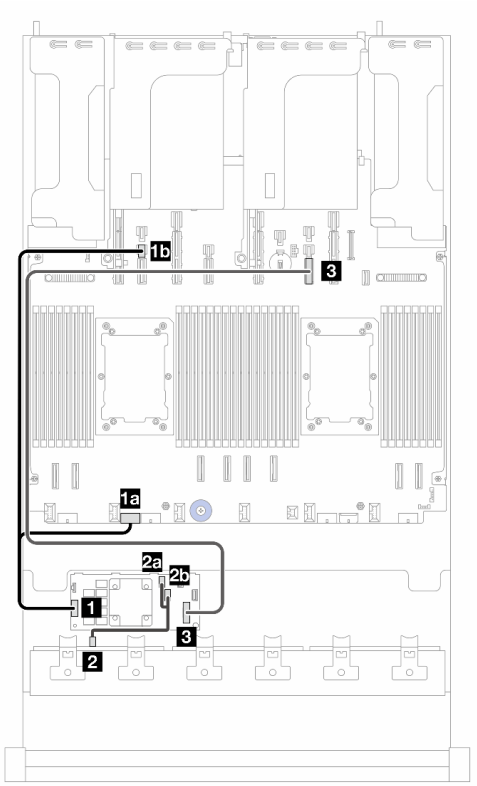


Figure 28. Cable routing when one processor is installed

PB: processor board; 2P: two processors; 1P: one processor

From (CFF 16i adapter)	To		Cable length
	2P	1P	
1 POWER	1 PB: RAID PWR	1a PB: RAID PWR 1b PB: PWR 14	• 2P: 210 mm • 1P: 300/800 mm
2a C0 2b C1	2 BP1: SAS	2 BP1: SAS	• 140/140 mm
3 MB (CFF INPUT)	3 PB: PCIe 7	3 PB: PCIe 10	• 2P: 450 mm • 1P: 900 mm

NVMe cable routing (config. 4)

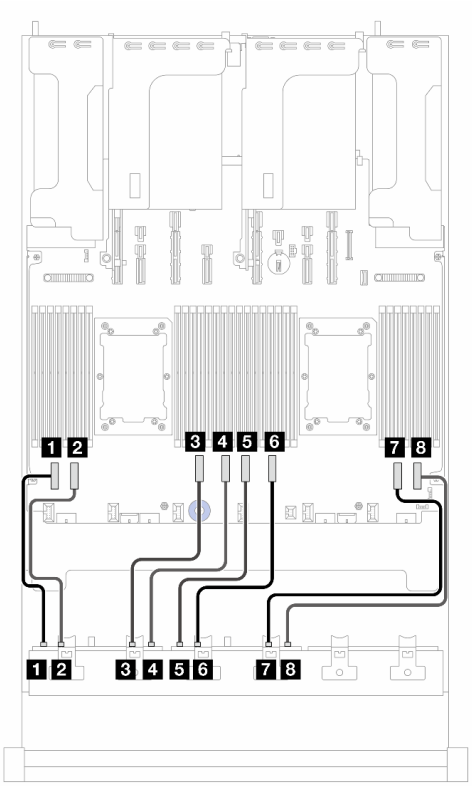


Figure 29. Cable routing when two processors are installed

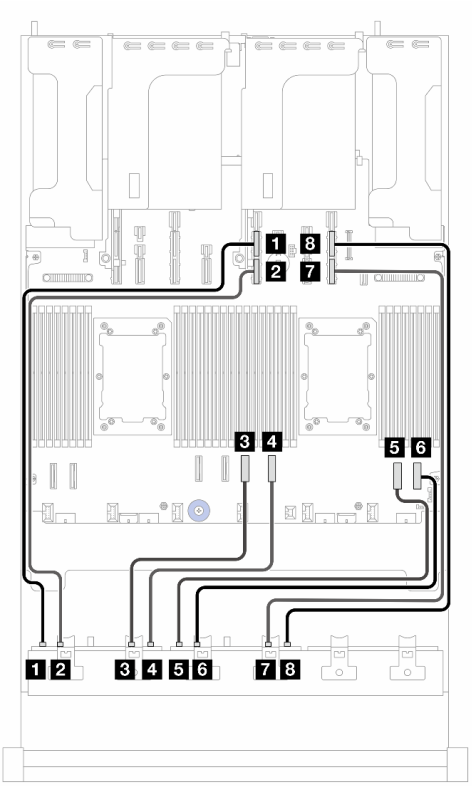


Figure 30. Cable routing when one processor is installed

2P: two processors; 1P: one processor

From	To (processor board)		Cable length
	2P	1P	
1 BP1: NVMe 0-1	1 PCIe 8	1 PCIe 11A	• 350 mm (PCIe 8) • 700 mm (PCIe 11A)
2 BP1: NVMe 2-3	2 PCIe 7	2 PCIe 11B	• 350 mm (PCIe 7) • 700 mm (PCIe 11B)
3 BP1: NVMe 4-5	3 PCIe 6	3 PCIe 4	• 350 mm
4 BP1: NVMe 6-7	4 PCIe 5	4 PCIe 3	• 350 mm
5 BP2: NVMe 0-1	5 PCIe 4	5 PCIe 2	• 250 mm (PCIe 4) • 550 mm (PCIe 2)
6 BP2: NVMe 2-3	6 PCIe 3	6 PCIe 1	• 250 mm (PCIe 3) • 550 mm (PCIe 1)
7 BP2: NVMe 4-5	7 PCIe 2	7 PCIe 9B	• 350 mm (PCIe 2) • 700 mm (PCIe 9B)
8 BP2: NVMe 6-7	8 PCIe 1	8 PCIe 9A	• 350 mm (PCIe 1) • 700 mm (PCIe 9A)

NVMe cable routing (config. 5)

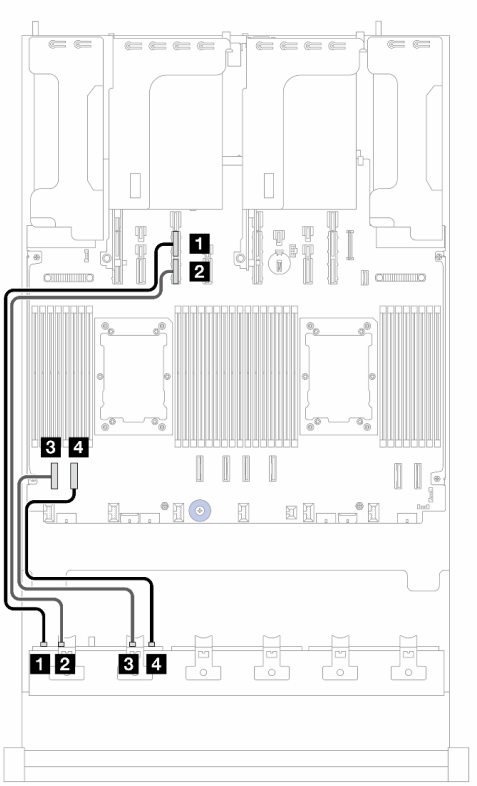


Figure 31. Cable routing to BP1 when slots 5 and 8 are occupied

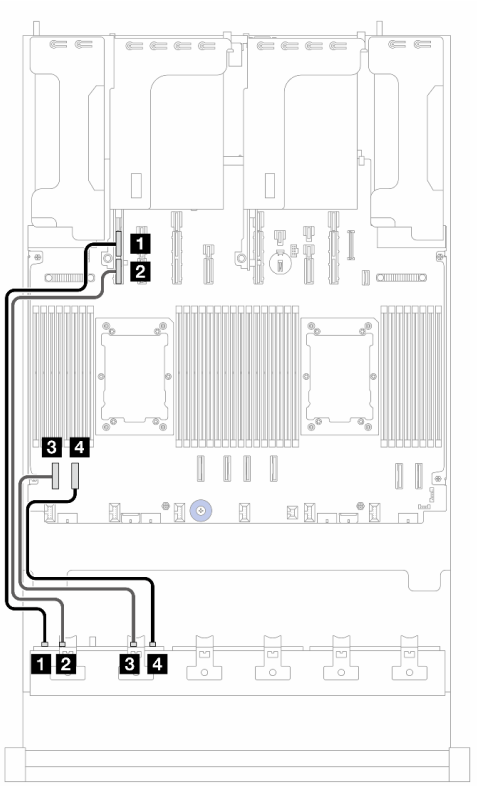


Figure 32. Cable routing to BP1 when slots 5 and 8 are empty

From (BP1)	To (processor board)		Cable length
	slot 5/8 occupied	slot 5/8 empty	
1 NVMe 0-1	1 PCIe 13A	1 PCIe 15A	600 mm
2 NVMe 2-3	2 PCIe 13B	2 PCIe 15B	600 mm
3 NVMe 4-5	3 PCIe 8	3 PCIe 8	350 mm
4 NVMe 6-7	4 PCIe 7	4 PCIe 7	350 mm

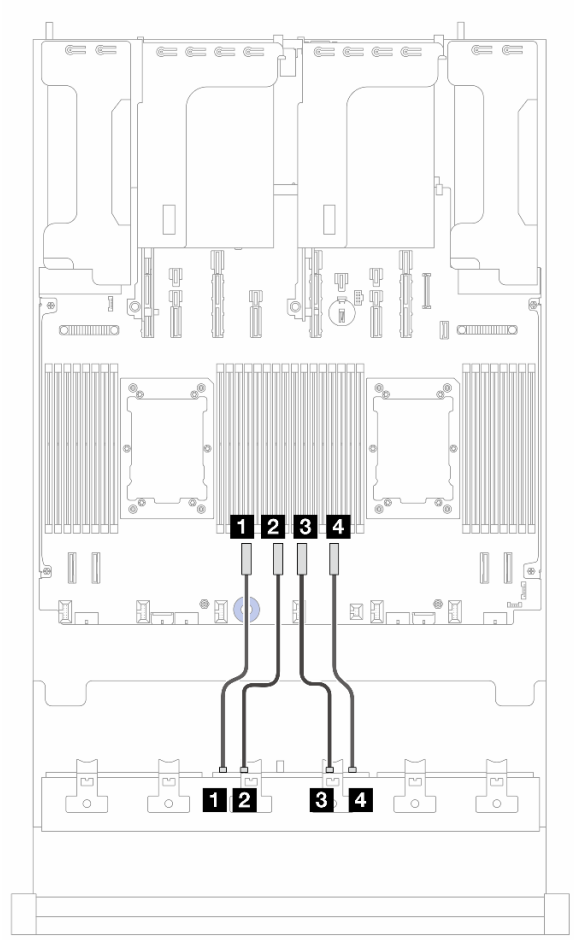


Figure 33. Cable routing to BP2

From (BP2)	To (processor board)	Cable length
1 NVMe 0-1	1 PCIe 6	250 mm
2 NVMe 2-3	2 PCIe 5	250 mm
3 NVMe 4-5	3 PCIe 4	250 mm
4 NVMe 6-7	4 PCIe 3	250 mm

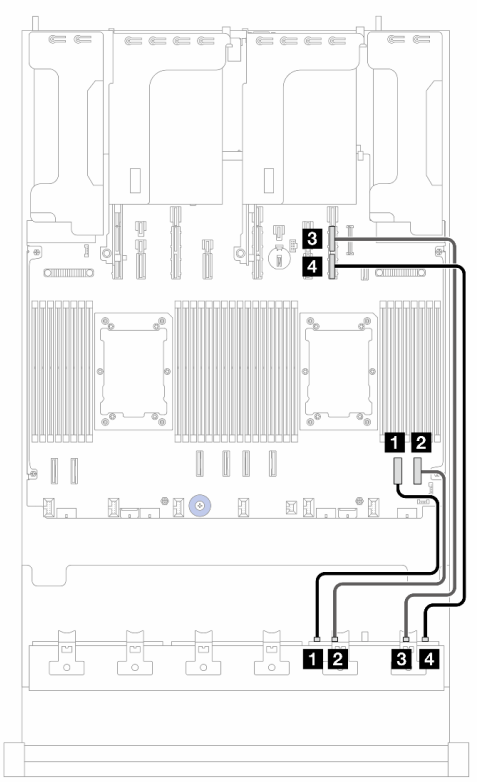


Figure 34. Cable routing to BP3 when slots 5 and 8 are occupied

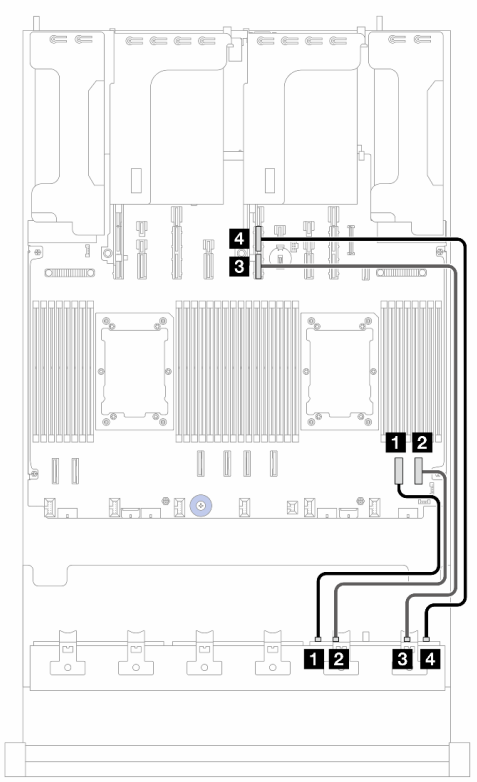


Figure 35. Cable routing to BP3 when slots 5 and 8 are empty

From (BP3)	To (processor board)		Cable length
	slot 5/8 occupied	slot 5/8 empty	
1 NVMe 0-1	1 PCIe 2	1 PCIe 2	350 mm
2 NVMe 2-3	2 PCIe 1	2 PCIe 1	350 mm
3 NVMe 4-5	3 PCIe 9A	3 PCIe 11B	600 mm
4 NVMe 6-7	4 PCIe 9B	4 PCIe 11A	600 mm

8 x 2.5" SAS/SATA + 8 x 2.5" AnyBay/NVMe

This topic provides cable routing information for the 8 x 2.5" SAS/SATA + 8 x 2.5" AnyBay/NVMe configuration.

- "NVMe cable routing (config. 1/2/3/4/5)" on page 41
- "Cable routing to SFF 8i/16i adapter (config. 1/2/4)" on page 42
- "Cable routing to CFF 16i adapter (config. 3/5)" on page 42

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
8 x 2.5" SAS/SATA + 8 x 2.5" AnyBay (BP1 + BP2)	2 x SFF 8i	1

BP config.	Storage controller	Config. No.
	1 x SFF 16i	2
	1 x CFF 16i	3
8 x 2.5" SAS/SATA + 8 x 2.5" NVMe (BP1 + BP2)	1 x SFF 8i/16i	4
	1 x CFF 16i	5

NVMe cable routing (config. 1/2/3/4/5)

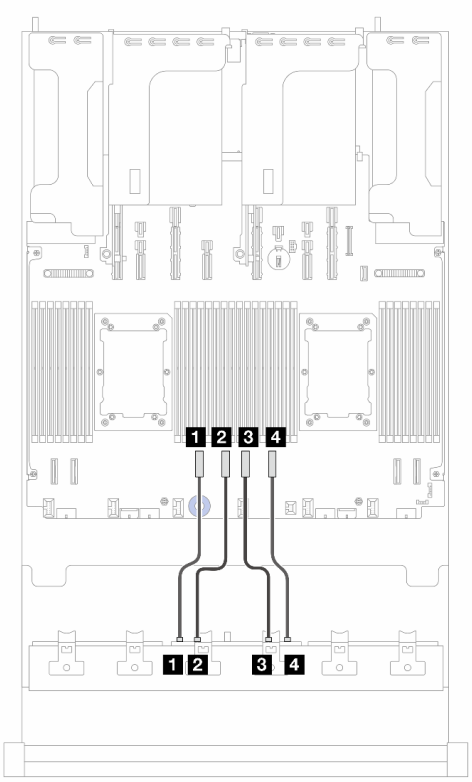


Figure 36. NVMe cable routing to BP2 when two processors are installed

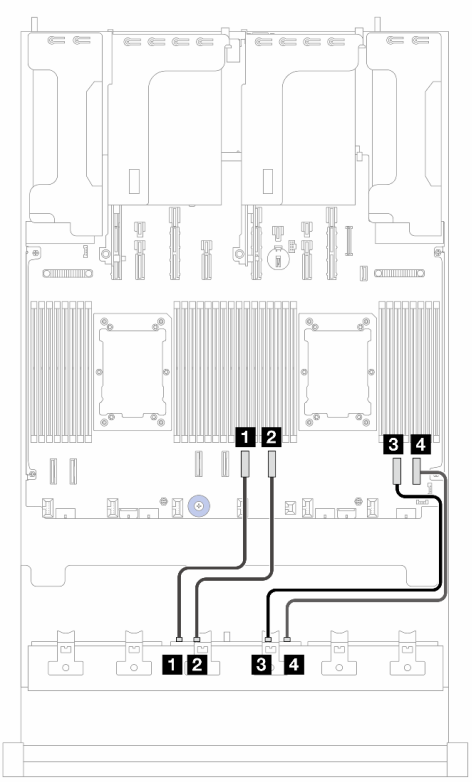


Figure 37. NVMe cable routing to BP2 when one processor is installed

2P: two processors; 1P: one processor

From (BP2)	To (processor board)		Cable length
	2P	1P	
1 NVMe 0-1	1 PCIe 6	1 PCIe 4	• 250 mm
2 NVMe 2-3	2 PCIe 5	2 PCIe 3	• 250 mm
3 NVMe 4-5	3 PCIe 4	3 PCIe 2	• 250 mm (PCIe 4) • 350 mm (PCIe 2)
4 NVMe 6-7	4 PCIe 3	4 PCIe 1	• 250 mm (PCIe 3) • 350 mm (PCIe 1)

Cable routing to SFF 8i/16i adapter (config. 1/2/4)

Notes:
- The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.
- Cable 2 is not needed in config. 4.

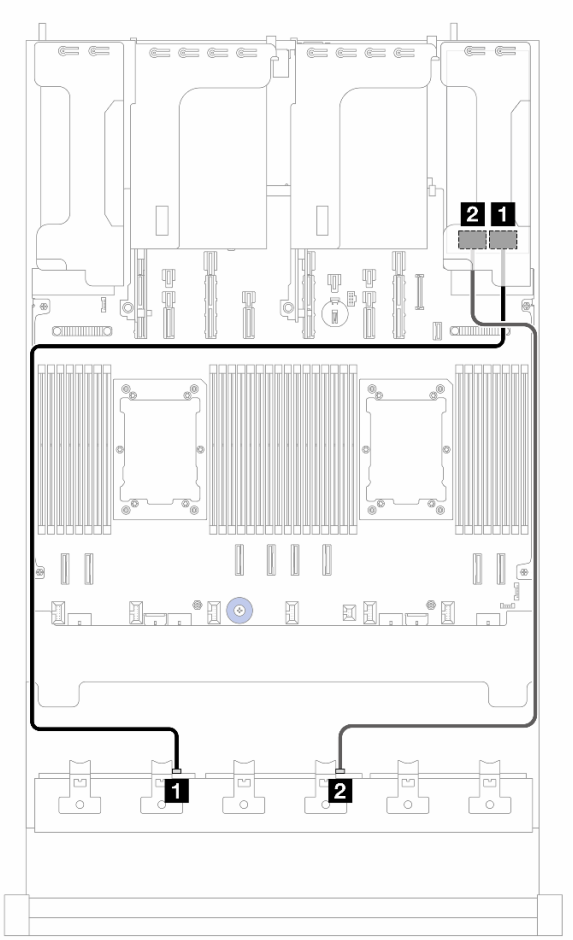


Figure 38. Cable routing to SFF 8i/16i adapter

From	To		Cable length
1 BP1: SAS	1 8i adapter: • Gen 4: C0 • Gen 3: C0C1	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
2 BP2: SAS	2 8i adapter: • Gen 4: C0 • Gen 3: C0C1	2 • Gen 4: C1 • Gen 3: C2C3	900 mm

Cable routing to CFF 16i adapter (config. 3/5)

Note: Cable 3 is not needed in config. 5.

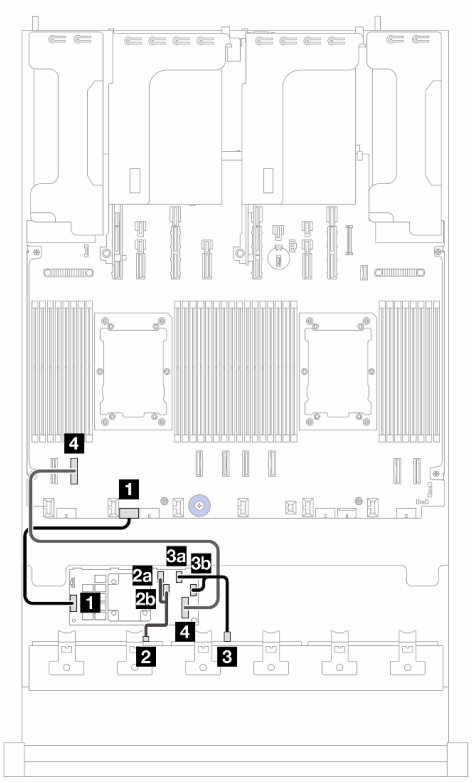


Figure 39. Cable routing when two processors are installed

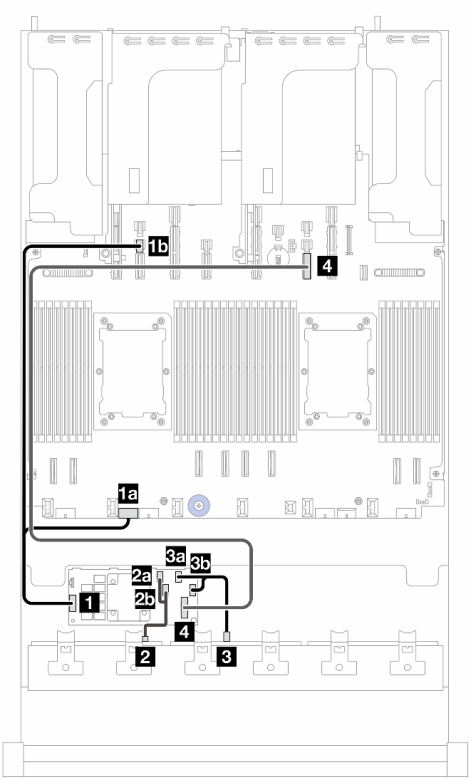


Figure 40. Cable routing when one processor is installed

2P: two processors; 1P: one processor; PB: processor board

From (CFF 16i adapter)	To		Cable length
	2P	1P	
1 POWER	1 PB: RAID PWR	1a PB: RAID PWR 1b PB: PWR 14	• 2P: 210 mm • 1P: 300/800 mm
2a C0 2b C1	2 BP1: SAS	2 BP1: SAS	• 140/140 mm
3a C2 3b C3	3 BP2: SAS	3 BP2: SAS	• 140/140 mm
4 MB (CFF INPUT)	4 PB: PCIe 7	4 PB: PCIe 10	• 2P: 450 mm • 1P: 900 mm

8 x 2.5" AnyBay + 8 x 2.5" NVMe

This topic provides cable routing information for the 8 x 2.5" AnyBay + 8 x 2.5" NVMe configuration.

- "NVMe cable routing (config. 1/2)" on page 44
- "Cable routing to SFF 8i/16i adapter (config. 1)" on page 45
- "Cable routing to CFF 16i adapter (config. 2)" on page 46

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
8 x 2.5" AnyBay + 8 x 2.5" NVMe (BP1 + BP2)	1 x SFF 8i/16i	1
	1 x CFF 16i	2

NVMe cable routing (config. 1/2)

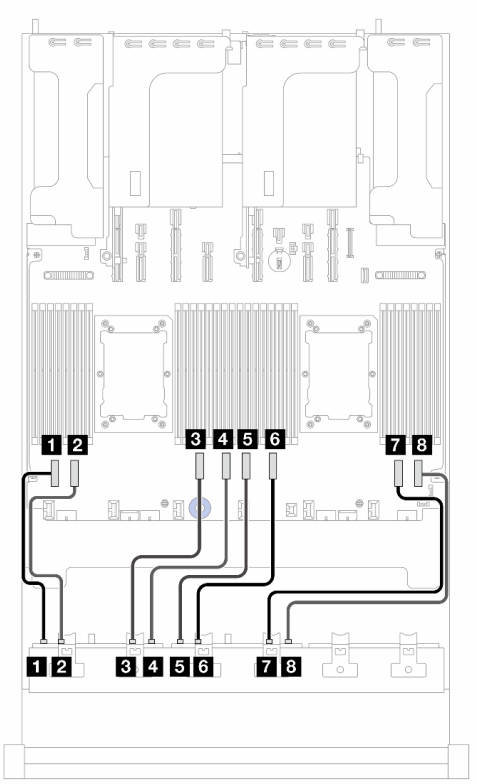


Figure 41. Cable routing when two processors are installed

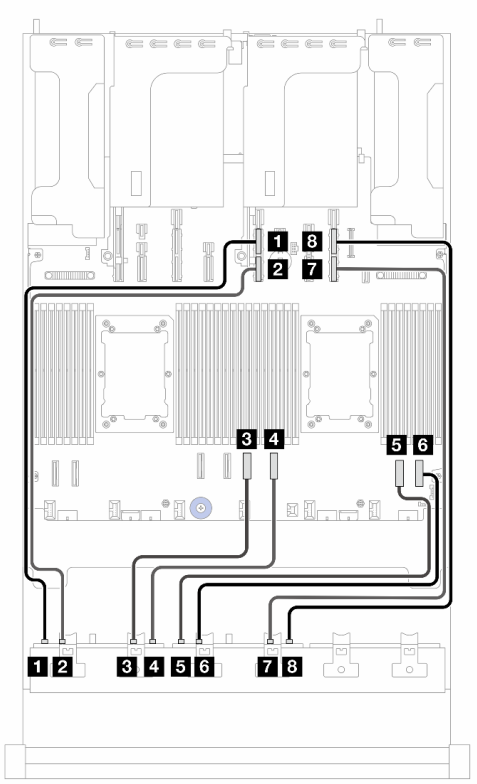


Figure 42. Cable routing when one processor is installed

2P: two processors; 1P: one processor

From	To (processor board)		Cable length
	2P	1P	
1 BP1: NVMe 0-1	1 PCIe 8	1 PCIe 11A	• 350 mm (PCIe 8) • 700 mm (PCIe 11A)
2 BP1: NVMe 2-3	2 PCIe 7	2 PCIe 11B	• 350 mm (PCIe 7) • 700 mm (PCIe 11B)
3 BP1: NVMe 4-5	3 PCIe 6	3 PCIe 4	• 350 mm
4 BP1: NVMe 6-7	4 PCIe 5	4 PCIe 3	• 350 mm
5 BP2: NVMe 0-1	5 PCIe 4	5 PCIe 2	• 250 mm (PCIe 4) • 550 mm (PCIe 2)

From	To (processor board)		Cable length
	2P	1P	
6 BP2: NVMe 2-3	6 PCIe 3	6 PCIe 1	• 250 mm (PCIe 3) • 550 mm (PCIe 1)
7 BP2: NVMe 4-5	7 PCIe 2	7 PCIe 9B	• 350 mm (PCIe 2) • 700 mm (PCIe 9B)
8 BP2: NVMe 6-7	8 PCIe 1	8 PCIe 9A	• 350 mm (PCIe 1) • 700 mm (PCIe 9A)

Cable routing to SFF 8i/16i adapter (config. 1)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

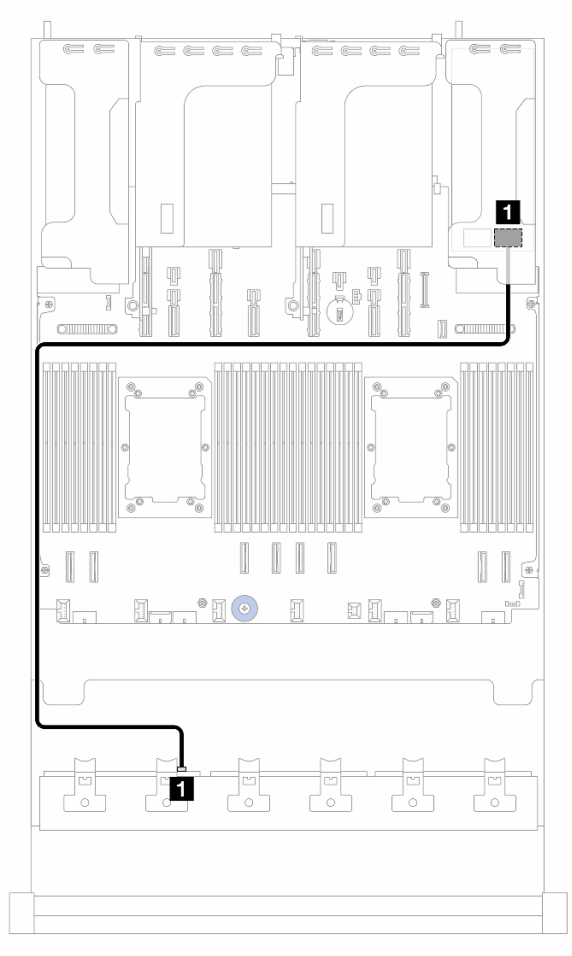


Figure 43. Cable routing to SFF 8i/16i adapter

From	To	Cable length
1 BP1: SAS	1 8i/16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm

Cable routing to CFF 16i adapter (config. 2)

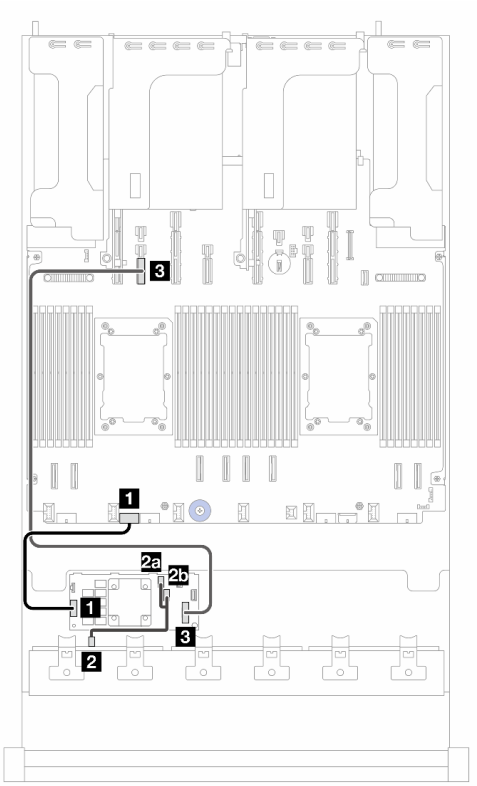


Figure 44. Cable routing when two processors are installed

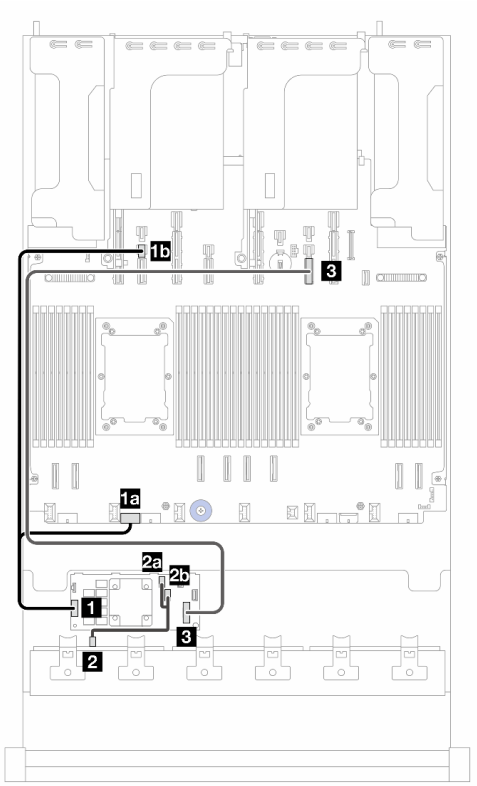


Figure 45. Cable routing when one processor is installed

PB: processor board; 2P: two processors; 1P: one processor

From (CFF 16i adapter)	To		Cable length
	2P	1P	
1 POWER	1 PB: RAID PWR	1a PB: RAID PWR	• 2P: 210 mm • 1P: 300/800 mm
		1b PB: PWR 14	
2a C0	2 BP1: SAS	2 BP1: SAS	• 140/140 mm
2b C1			
3 MB (CFF INPUT)	3 PB: PCIe 14	3 PB: PCIe 10	• 900 mm

8 x 2.5" SAS/SATA + 16 x 2.5" NVMe

This topic provides cable routing information for the 8 x 2.5" SAS/SATA + 16 x 2.5" NVMe configuration.

- “NVMe cable routing (config. 1/2)” on page 47
- “Cable routing to SFF 8i/16i adapter (config. 1)” on page 48
- “Cable routing to CFF 16i adapter (config. 2)” on page 50

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
8 x 2.5" SAS/SATA + 16 x 2.5" NVMe (BP1 + BP2 + BP3)	1 x SFF 8i/16i	1
	1 x CFF 16i	2

NVMe cable routing (config. 1/2)

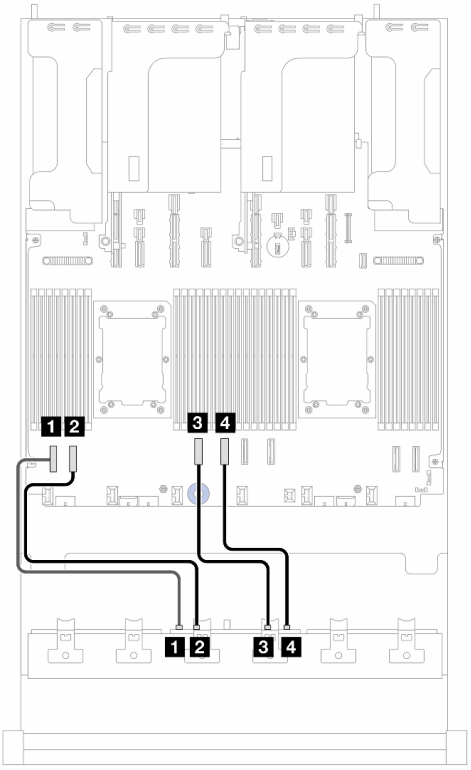


Figure 46. Cable routing to BP2 when two processors are installed

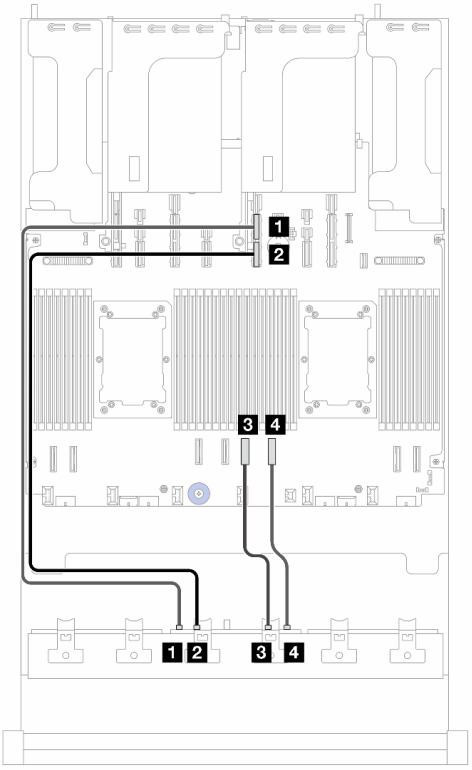


Figure 47. Cable routing to BP2 when one processor is installed

2P: two processors; 1P: one processor

From (BP2)	To (processor board)		Cable length
	2P	1P	
1 NVMe 0-1	1 PCIe 8	1 PCIe 11A	• 350 mm (PCIe 8) • 820 mm (PCIe 11A)
2 NVMe 2-3	2 PCIe 7	2 PCIe 11B	• 350 mm (PCIe 7) • 820 mm (PCIe 11B)
3 NVMe 4-5	3 PCIe 6	3 PCIe 4	• 250 mm
4 NVMe 6-7	4 PCIe 5	4 PCIe 3	• 250 mm

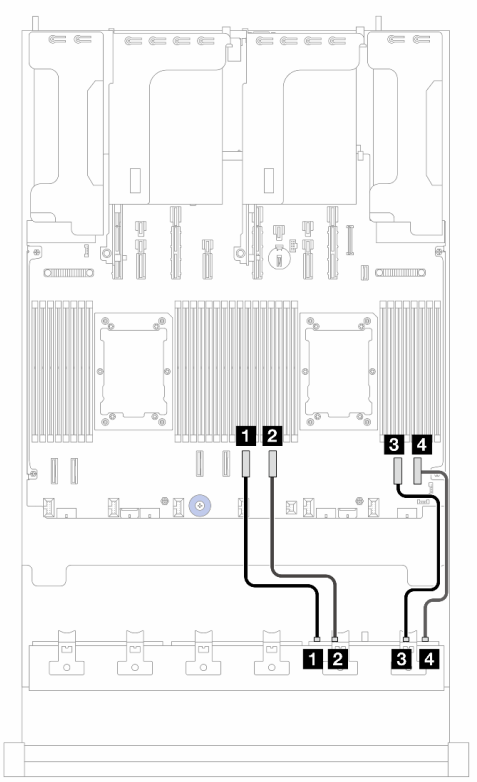


Figure 48. Cable routing to BP3 when two processors are installed

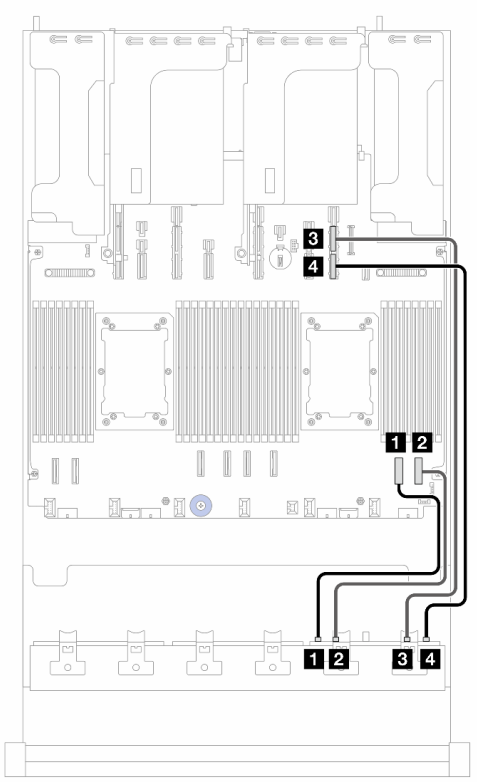


Figure 49. Cable routing to BP3 when one processor is installed

2P: two processors; 1P: one processor

From (BP3)	To (processor board)		Cable length
	2P	1P	
1 NVMe 0-1	1 PCIe 4	1 PCIe 2	• 350 mm
2 NVMe 2-3	2 PCIe 3	2 PCIe 1	• 350 mm
3 NVMe 4-5	3 PCIe 2	3 PCIe 9A	• 350 mm (PCIe 2) • 600 mm (PCIe 9A)
4 NVMe 6-7	4 PCIe 1	4 PCIe 9B	• 350 mm (PCIe 1) • 600 mm (PCIe 9B)

Cable routing to SFF 8i/16i adapter (config. 1)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

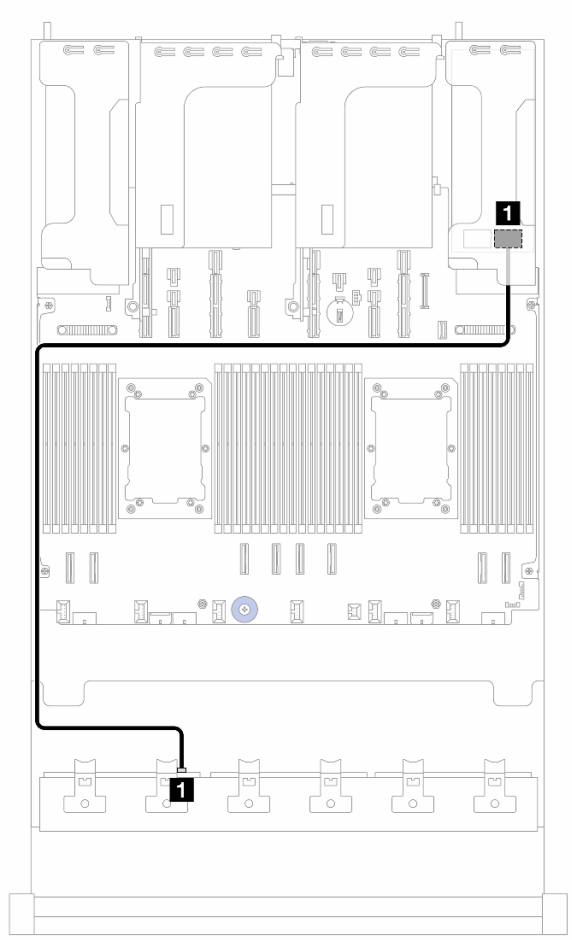


Figure 50. Cable routing to SFF 8i/16i adapter

From	To	Cable length
1 BP1: SAS	1 8i/16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm

Cable routing to CFF 16i adapter (config. 2)

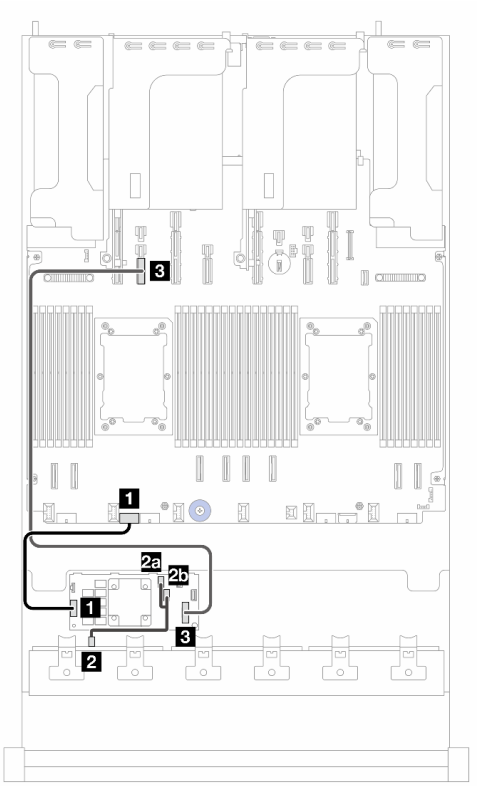


Figure 51. Cable routing when two processors are installed

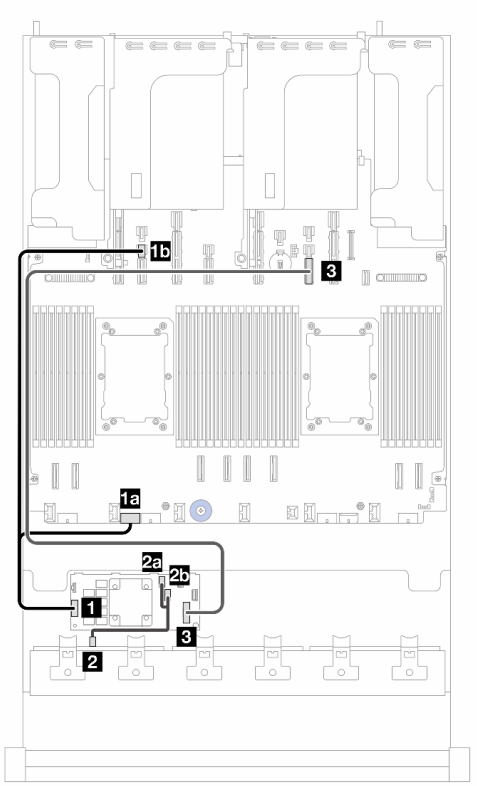


Figure 52. Cable routing when one processor is installed

PB: processor board; 2P: two processors; 1P: one processor

From (CFF 16i adapter)	To		Cable length
	2P	1P	
1 POWER	1 PB: RAID PWR	1a PB: RAID PWR	• 2P: 210 mm • 1P: 300/800 mm
		1b PB: PWR 14	
2a C0	2 BP1: SAS	2 BP1: SAS	• 140/140 mm
2b C1			
3 MB (CFF INPUT)	3 PB: PCIe 14	3 PB: PCIe 10	• 900 mm

16 x 2.5" SAS/SATA + 8 x 2.5" AnyBay/NVMe

This topic provides cable routing information for the 16 x 2.5" SAS/SATA + 8 x 2.5" AnyBay/NVMe configuration.

- "NVMe cable routing to BP3 (config. 1/2/3/4/5/6)" on page 51
- "Cable routing to SFF 8i/16i adapter (config. 1/2/4/5)" on page 52
- "Cable routing to CFF 16i adapter (config. 3/6)" on page 53
- "Cable routing to SFF 8i adapter (config. 3)" on page 54

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
16 x 2.5" SAS/SATA + 8 x 2.5" AnyBay (BP1 + BP2 + BP3)	3 x SFF 8i	1
	SFF 16i + 8i	2
	SFF 8i + CFF 16i	3
16 x 2.5" SAS/SATA + 8 x 2.5" NVMe (BP1 + BP2 + BP3)	2 x SFF 8i	4
	1 x SFF 16i	5
	1 x CFF 16i	6

NVMe cable routing to BP3 (config. 1/2/3/4/5/6)

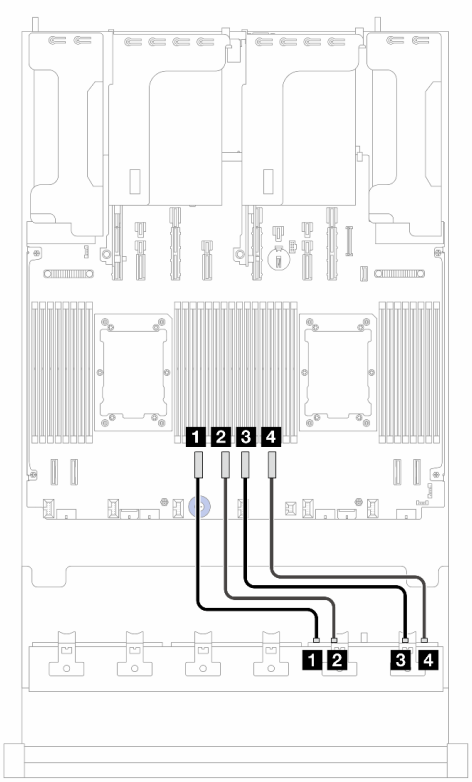


Figure 53. Cable routing when two processors are installed

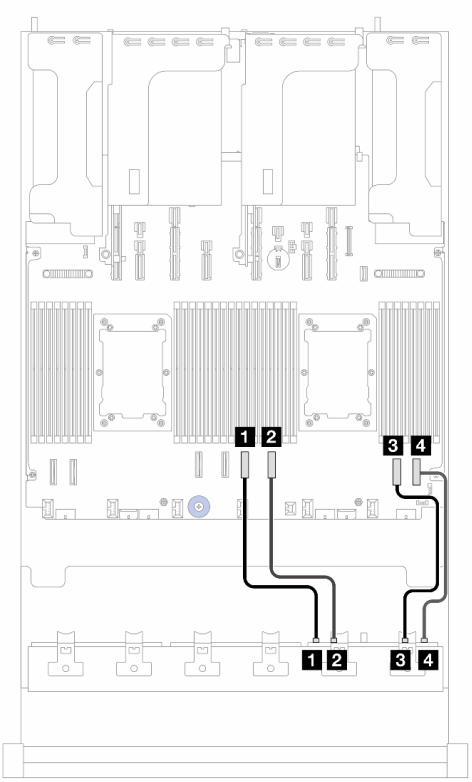


Figure 54. Cable routing when one processor is installed

2P: two processors; 1P: one processor

From (BP3)	To (processor board)		Cable length
	2P	1P	
1 NVMe 0-1	1 PCIe 6	1 PCIe 4	350 mm
2 NVMe 2-3	2 PCIe 5	2 PCIe 3	350 mm

From (BP3)	To (processor board)		Cable length
	2P	1P	
3 NVMe 4-5	3 PCIe 4	3 PCIe 2	350 mm
4 NVMe 6-7	4 PCIe 3	4 PCIe 1	350 mm

Cable routing to SFF 8i/16i adapter (config. 1/2/4/5)

Notes:
- The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.
- Cable 3 is needed only in the 3 x SFF 8i or SFF 16i + 8i configuration.

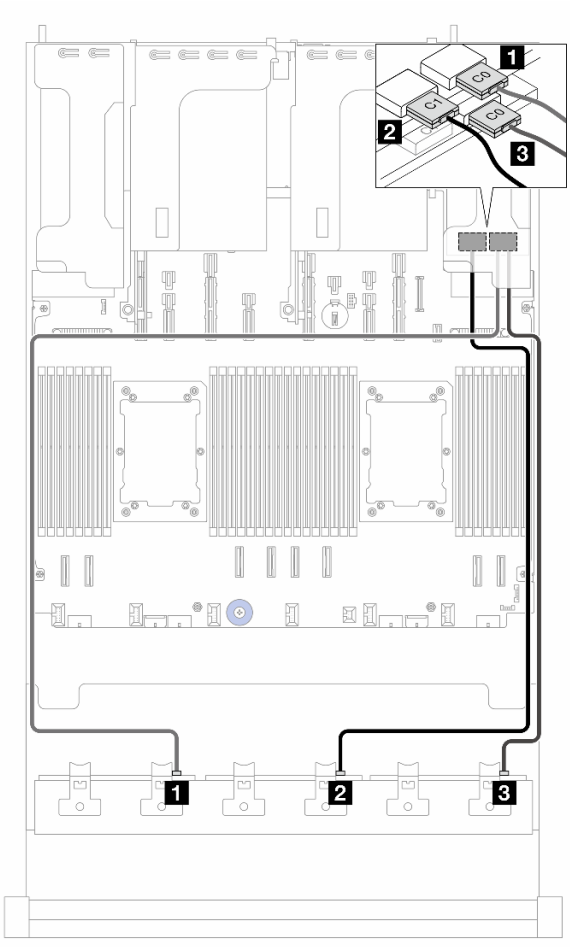


Figure 55. Cable routing to SFF 8i/16i adapter

From	To		Cable length
1 BP1: SAS	1 8i adapter: • Gen 4: C0 • Gen 3: C0C1	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
2 BP2: SAS	2 8i adapter: • Gen 4: C0 • Gen 3: C0C1	2 • Gen 4: C1 • Gen 3: C2C3	900 mm
3 BP3: SAS	3 8i adapter: • Gen 4: C0 • Gen 3: C0C1	3 8i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm

Cable routing to CFF 16i adapter (config. 3/6)

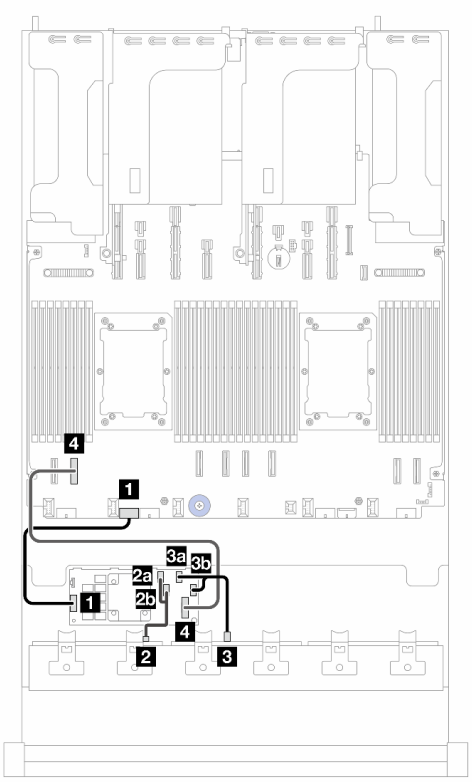


Figure 56. Cable routing when two processors are installed

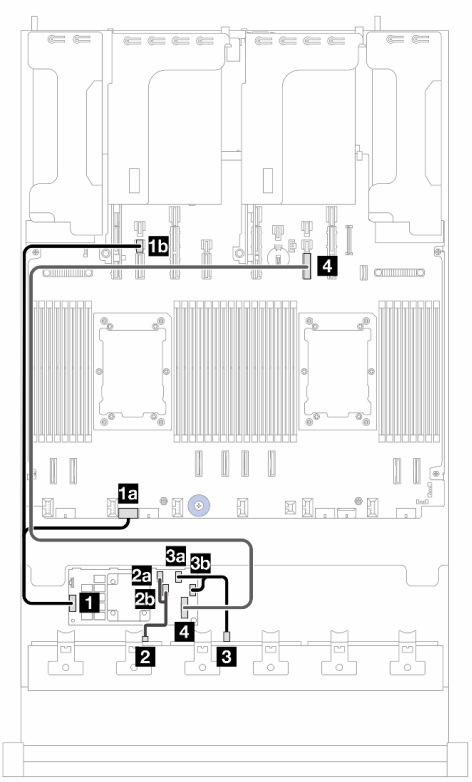


Figure 57. Cable routing when one processor is installed

2P: two processors; 1P: one processor; PB: processor board

From (CFF 16i adapter)	To		Cable length
	2P	1P	
1 POWER	1 PB: RAID PWR	1a PB: RAID PWR 1b PB: PWR 14	• 2P: 210 mm • 1P: 300/800 mm
2a C0 2b C1	2 BP1: SAS	2 BP1: SAS	• 140/140 mm

From (CFF 16i adapter)	To		Cable length
	2P	1P	
3a C2 3b C3	3 BP2: SAS	3 BP2: SAS	• 140/140 mm
4 MB (CFF INPUT)	4 PB: PCIe 7	4 PB: PCIe 10	• 2P: 450 mm • 1P: 900 mm

Cable routing to SFF 8i adapter (config. 3)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

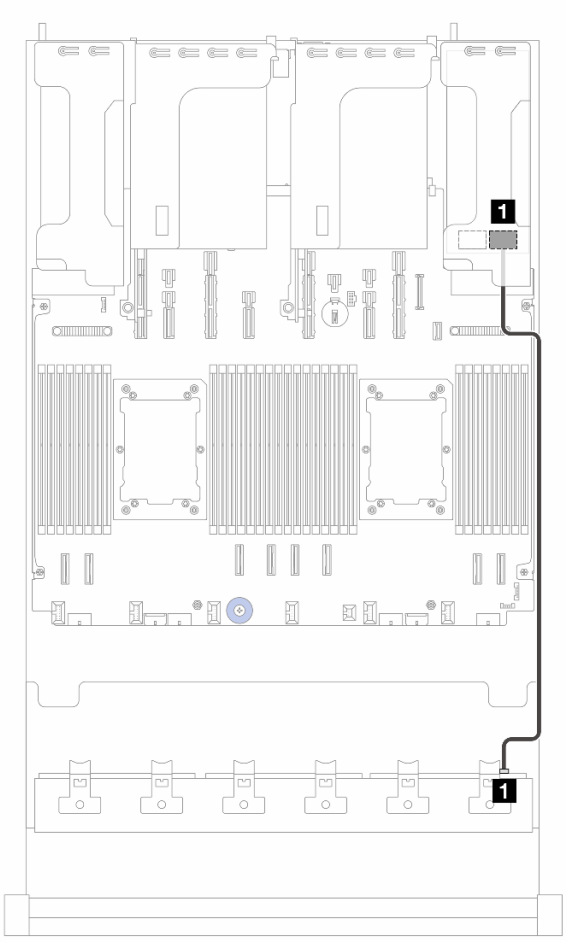


Figure 58. Cable routing to SFF 8i adapter

From	To	Cable length
1 BP3: SAS	1 8i adapter: C0	900 mm

Front + Rear backplanes

This section provides cable routing information for the server models with front and rear drive bays.

- “Front 24 x 2.5" SAS/SATA + Rear 4 x 2.5" SAS/SATA” on page 55

- “Front 24 x 2.5" SAS/SATA + Rear 4 x 2.5" AnyBay” on page 61
- “Front 24 x 2.5" SAS/SATA + Rear 8 x 2.5" SAS/SATA” on page 65
- “Front 24 x 2.5" NVMe + Rear 4 x 2.5" NVMe” on page 69
- “Front (16 x 2.5" SAS/SATA + 8 x 2.5" AnyBay) + Rear 4/8 x 2.5" SAS/SATA” on page 73

Front 24 x 2.5" SAS/SATA + Rear 4 x 2.5" SAS/SATA

This topic provides cable routing information for the front 24 x 2.5" SAS/SATA + rear 4 x 2.5" SAS/SATA configuration.

- “Cable routing to SFF 8i/16i adapter (config. 1/2)” on page 55
- “Cable routing to SFF 8i/16i adapter (config. 3/4)” on page 56
- “Cable routing to CFF 16i adapter (config. 3/4)” on page 58
- “Cable routing to CFF expander (config. 5/6)” on page 59
- “Cable routing to SFF 8i/16i adapter (config. 5)” on page 59
- “Cable routing to CFF 16i adapter (config. 6)” on page 61

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
Front 24 x 2.5" SAS/SATA + Rear 4 x 2.5" SAS/SATA (BP1 + BP2 + BP3 + BP9)	SFF 16i + 2 x SFF 8i	1
	2 x SFF 16i	2
	CFF 16i + 2 x SFF 8i	3
	CFF 16i + SFF 16i	4
	CFF EXP + SFF 8i/16i	5
	CFF EXP + CFF 16i	6

Cable routing to SFF 8i/16i adapter (config. 1/2)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

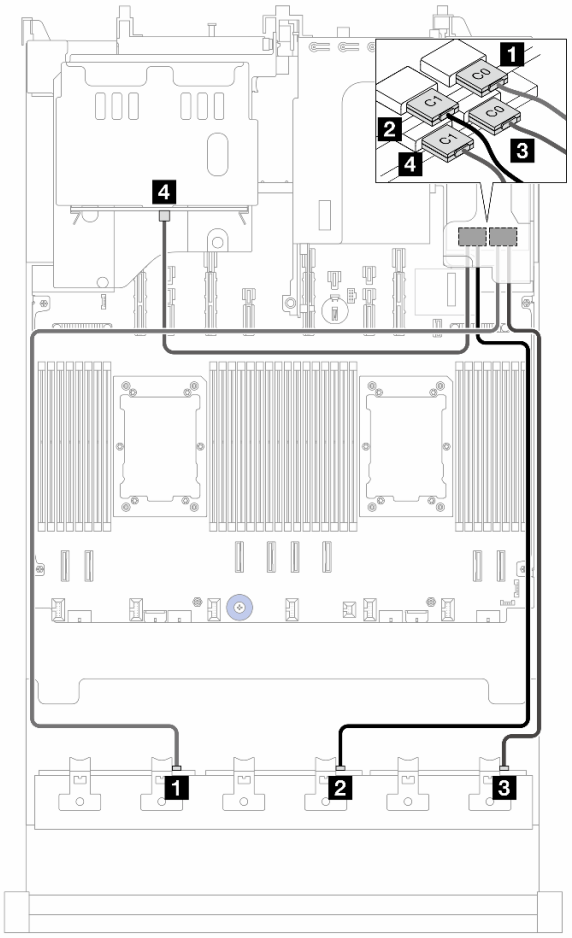


Figure 59. Cable routing to SFF 8i/16i adapter (config. 1/2)

From	To		Cable length
	Config. 1	Config. 2	
1 BP1: SAS	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
2 BP2: SAS	2 • Gen 4: C1 • Gen 3: C2C3	2 • Gen 4: C1 • Gen 3: C2C3	900 mm
3 BP3: SAS	3 8i adapter: • Gen 4: C0 • Gen 3: C0C1	3 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
4 BP9: SAS	4 8i adapter: C0	4 • Gen 4: C1 • Gen 3: C2	450 mm

Cable routing to SFF 8i/16i adapter (config. 3/4)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

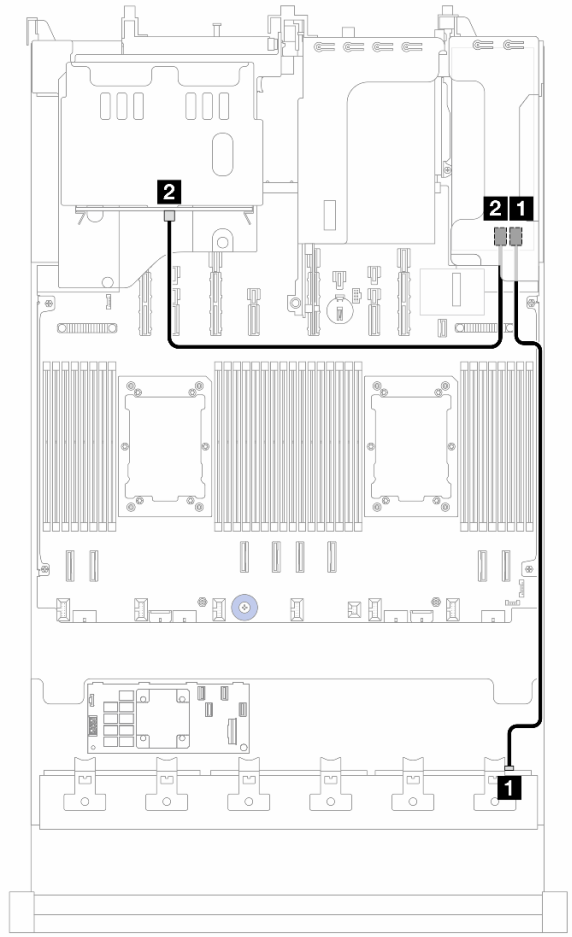


Figure 60. Cable routing to SFF 8i/16i adapter (config. 3/4)

From	To		Cable length
	Config. 3	Config. 4	
1 BP3: SAS	1 8i adapter: • C0	1 16i adapter: • C0	900 mm
2 BP9: SAS	2 8i adapter: • C0	2 • C1	450 mm

Cable routing to CFF 16i adapter (config. 3/4)

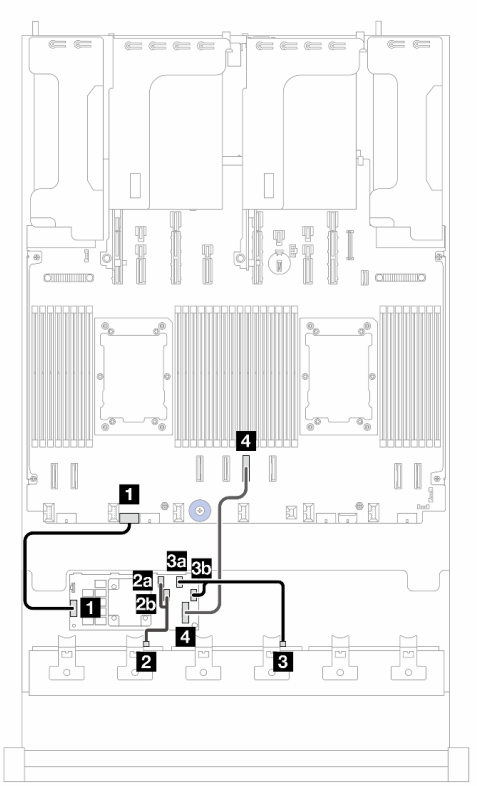


Figure 61. Cable routing when two processors are installed

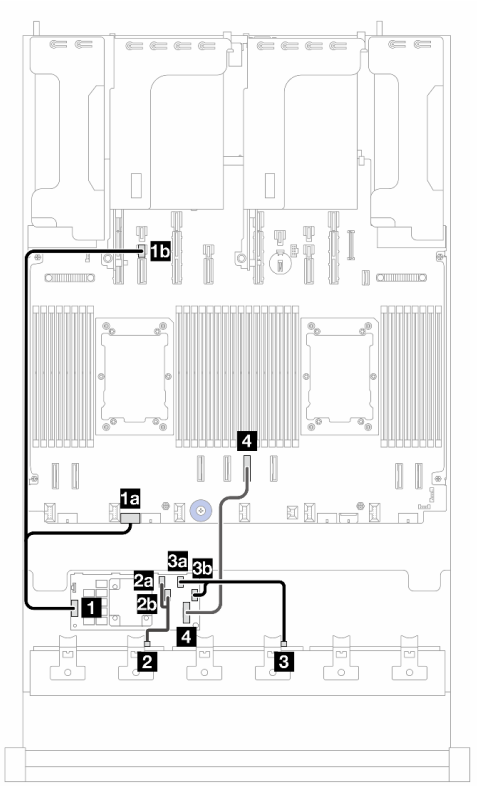


Figure 62. Cable routing when one processor is installed

2P: two processors; 1P: one processor; PB: processor board

From (CFF 16i adapter)	To		Cable length
	2P	1P	
1 POWER	1 PB: RAID PWR	1a PB: RAID PWR 1b PB: PWR 14	• 2P: 210 mm • 1P: 300/800 mm
2a C0 2b C1	2 BP1: SAS	2 BP1: SAS	140/140 mm
3a C2 3b C3	3 BP2: SAS	3 BP2: SAS	140/140 mm
4 MB (CFF INPUT)	4 PB: PCIe 4	4 PB: PCIe 4	450 mm

Cable routing to CFF expander (config. 5/6)

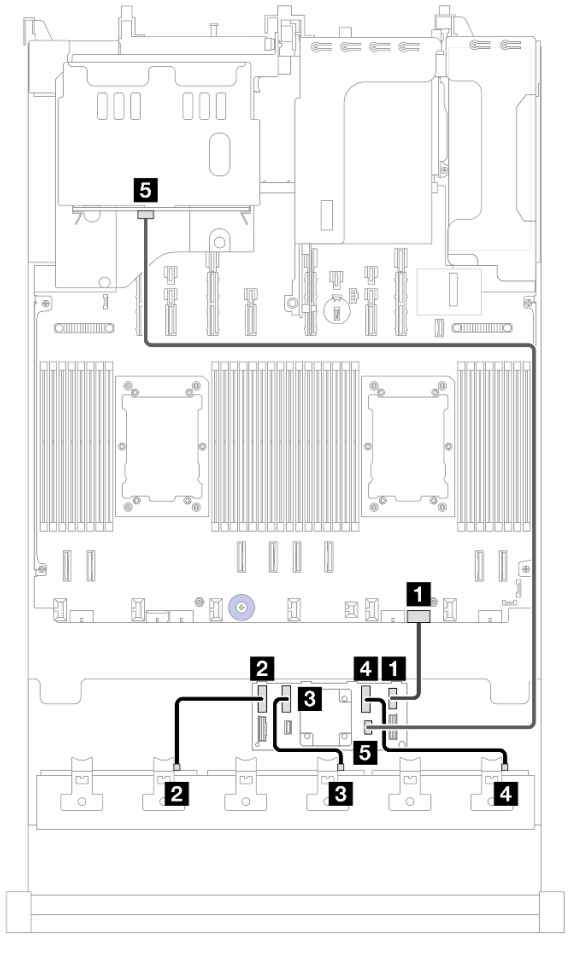


Figure 63. Cable routing to CFF expander

From (CFF expander)	To	Cable length
1 POWER	1 PB: EXP PWR	210 mm
2 C0	2 BP1: SAS	200 mm
3 C1	3 BP2: SAS	110 mm
4 C2	4 BP3: SAS	110 mm
5 C4	5 BP9: SAS	800 mm

Cable routing to SFF 8i/16i adapter (config. 5)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

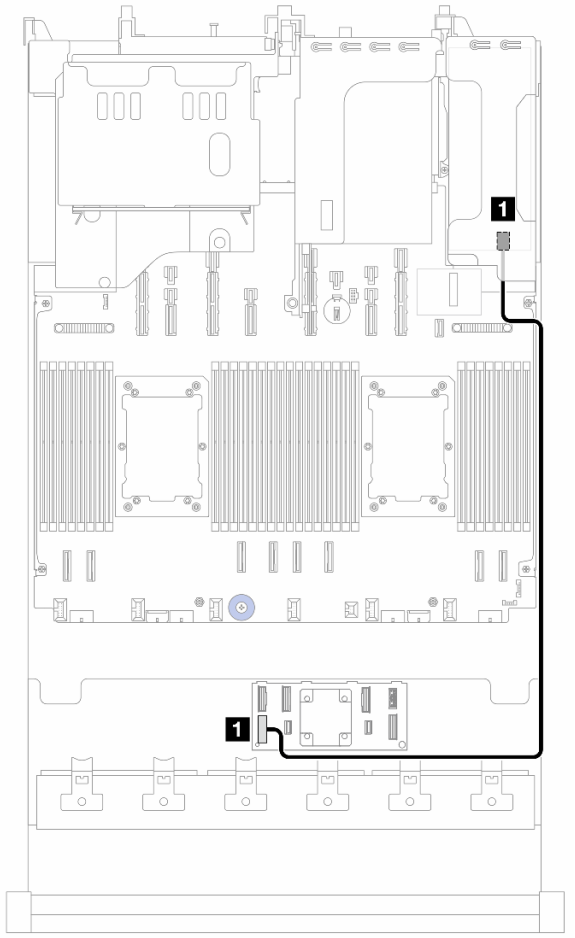


Figure 64. Cable routing to SFF 8i/16i adapter (config. 5)

From	To	Cable length
1 CFF expander: RAID/HBA	1 8i/16i adapter: • Gen 4: C0 • Gen 3: C0C1	780 mm

Cable routing to CFF 16i adapter (config. 6)

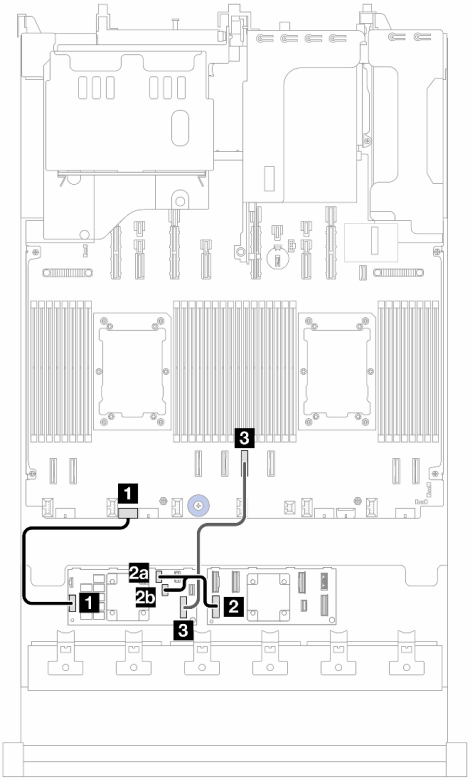


Figure 65. Cable routing when two processors are installed

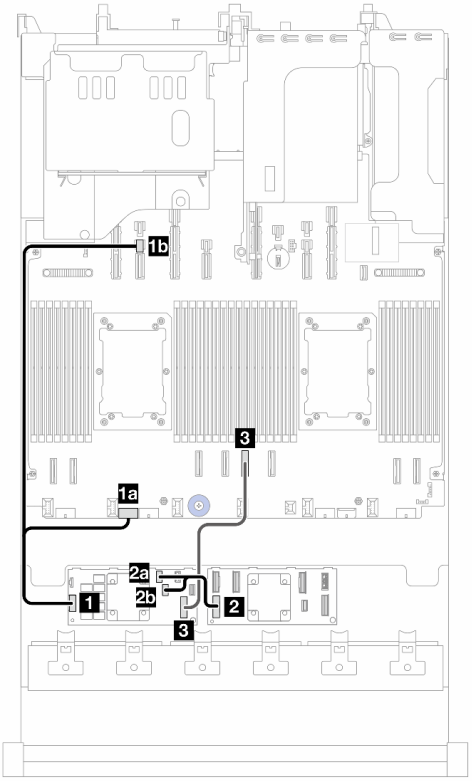


Figure 66. Cable routing when one processor is installed

2P: two processors; 1P: one processor; PB: processor board

From (CFF 16i adapter)	To		Cable length
	2P	1P	
1 POWER	1 PB: RAID PWR	1a PB: RAID PWR 1b PB: PWR 14	• 2P: 210 mm • 1P: 300/800 mm
2a C0 2b C1	2 CFF expander: RAID/HBA	2 CFF expander: RAID/HBA	150/150 mm
3 MB (CFF INPUT)	3 PB: PCIe 4	3 PB: PCIe 4	450 mm

Front 24 x 2.5" SAS/SATA + Rear 4 x 2.5" AnyBay

This topic provides cable routing information for the front 24 x 2.5" SAS/SATA + rear 4 x 2.5" AnyBay configuration.

- "NVMe cable routing to BP9 (config. 1/2/3/4)" on page 62
- "Cable routing to SFF 8i/16i adapter (config. 1/2)" on page 62
- "Cable routing to SFF 8i/16i adapter (config. 3/4)" on page 63
- "Cable routing to CFF 16i adapter (config. 3/4)" on page 65

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
Front 24 x 2.5" SAS/SATA + Rear 4 x 2.5" AnyBay (BP1 + BP2 + BP3 + BP9) **Note:** These configurations are supported only when two processors are installed.	SFF 16i + 2 x SFF 8i	1
	2 x SFF 16i	2
	CFF 16i + 2 x SFF 8i	3
	CFF 16i + SFF 16i	4

NVMe cable routing to BP9 (config. 1/2/3/4)

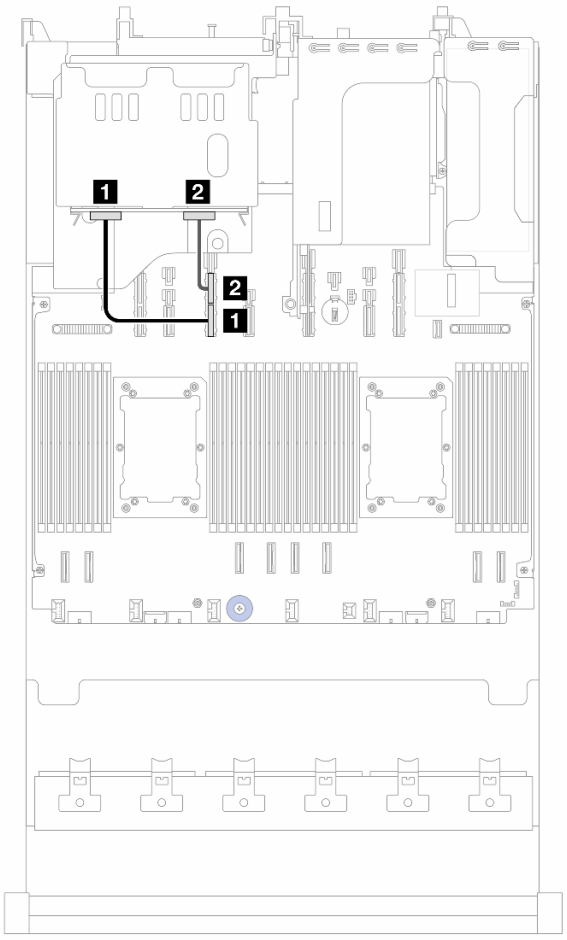


Figure 67. NVMe cable routing to BP9

From (BP9)	To (processor board)	Cable length
1 NVMe 2-3	1 PCIe 13B	280 mm
2 NVMe 0-1	2 PCIe 13A	280 mm

Cable routing to SFF 8i/16i adapter (config. 1/2)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

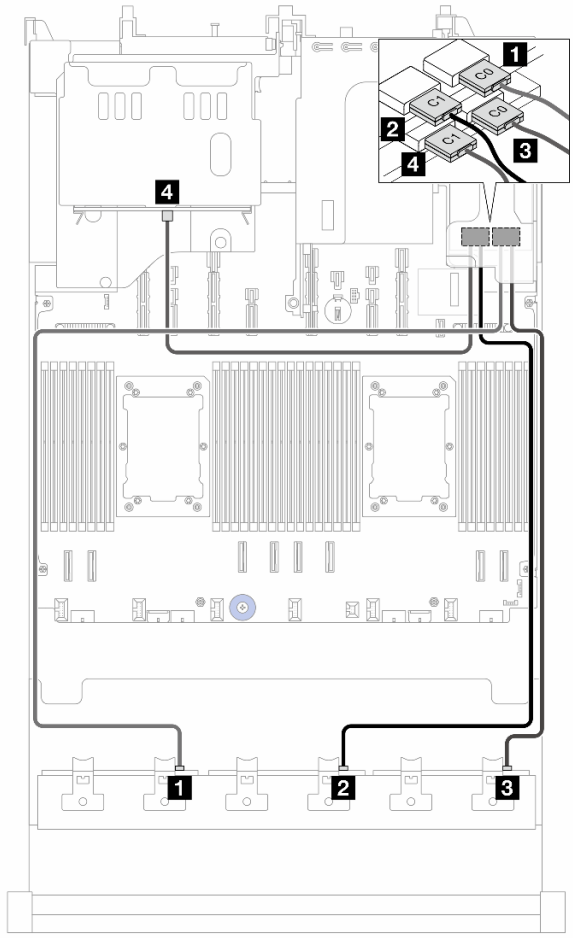


Figure 68. Cable routing to SFF 8i/16i adapter (config. 1/2)

From	To		Cable length
	Config. 1	Config. 2	
1 BP1: SAS	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
2 BP2: SAS	2 • Gen 4: C1 • Gen 3: C2C3	2 • Gen 4: C1 • Gen 3: C2C3	900 mm
3 BP3: SAS	3 8i adapter: • Gen 4: C0 • Gen 3: C0C1	3 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
4 BP9: SAS	4 8i adapter: C0	4 • Gen 4: C1 • Gen 3: C2	450 mm

Cable routing to SFF 8i/16i adapter (config. 3/4)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

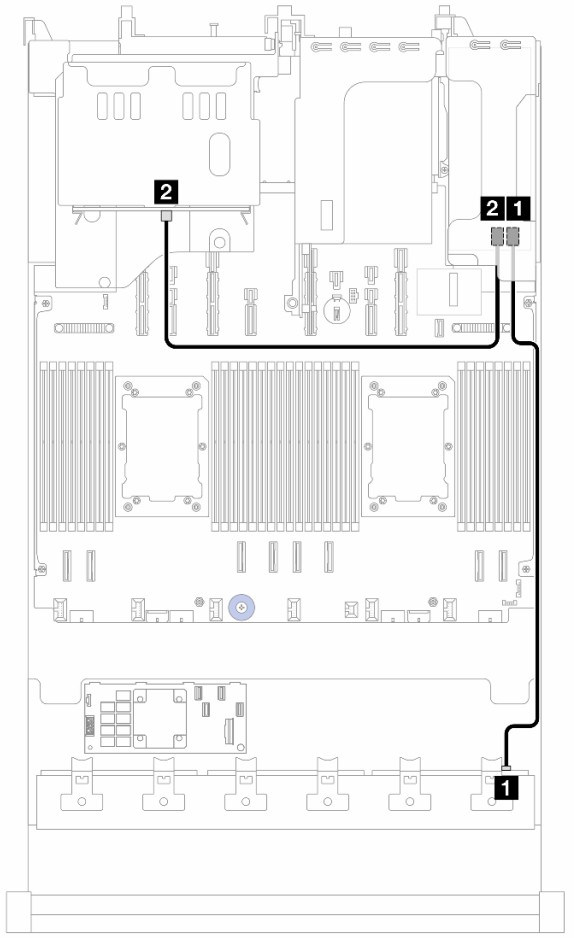


Figure 69. Cable routing to SFF 8i/16i adapter (config. 3/4)

From	To		Cable length
	Config. 3	Config. 4	
1 BP3: SAS	1 8i adapter: • C0	1 16i adapter: • C0	900 mm
2 BP9: SAS	2 8i adapter: • C0	2 • C1	450 mm

Cable routing to CFF 16i adapter (config. 3/4)

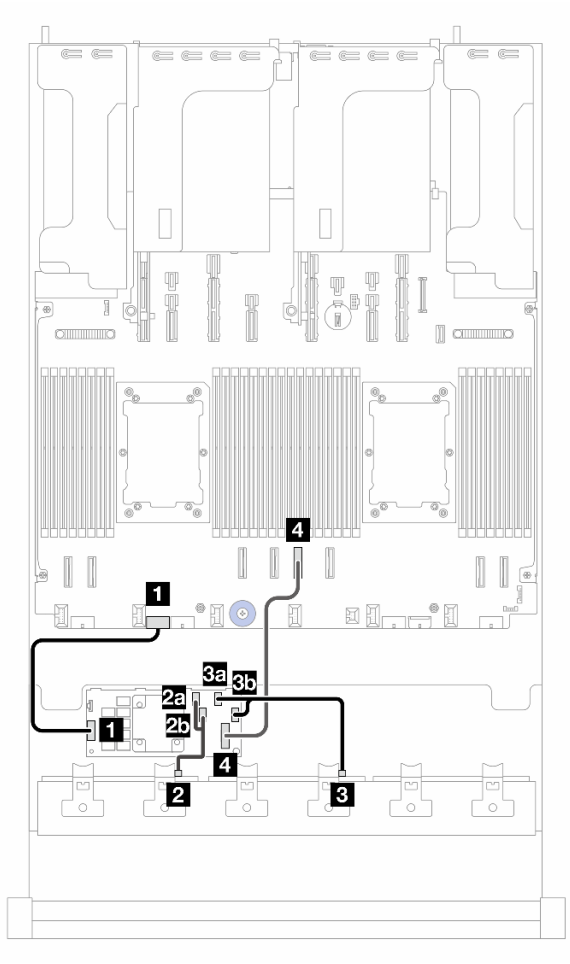


Figure 70. Cable routing to CFF 16i adapter

PB: processor board

From (CFF 16i adapter)	To	Cable length
1 POWER	1 PB: RAID PWR	210 mm
2a C0	2 BP1: SAS	140/140 mm
2b C1		
3a C2	3 BP2: SAS	140/140 mm
3b C3		
4 MB (CFF INPUT)	4 PB: PCIe 4	450 mm

Front 24 x 2.5" SAS/SATA + Rear 8 x 2.5" SAS/SATA

This topic provides cable routing information for the front 24 x 2.5" SAS/SATA + rear 8 x 2.5" SAS/SATA configuration.

- “Cable routing to SFF 16i adapters (config. 1)” on page 66
- “Cable routing to CFF expander (config. 2/3)” on page 67

- “Cable routing to SFF 8i/16i adapter (config. 2)” on page 68
- “Cable routing to CFF 16i adapter (config. 3)” on page 69

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
Front 24 x 2.5" SAS/SATA + Rear 8 x 2.5" SAS/SATA (BP1 + BP2 + BP3 + BP9)	2 x SFF 16i	1
	SFF 8i/16i + CFF EXP	2
	CFF 16i + CFF EXP	3

Cable routing to SFF 16i adapters (config. 1)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

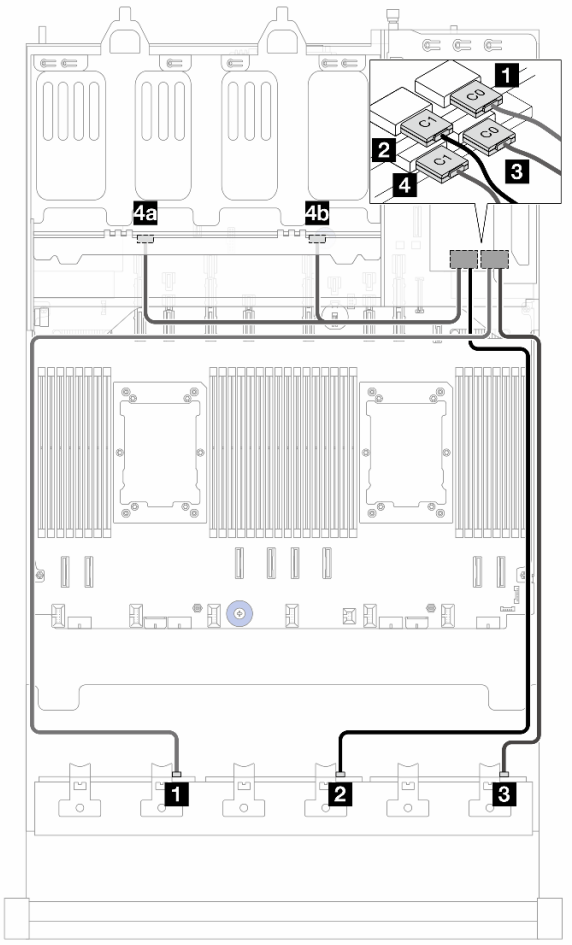


Figure 71. Cable routing to SFF 16i adapters

From	To	Cable length
1 BP1: SAS	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
2 BP2: SAS	2 • Gen 4: C1 • Gen 3: C2C3	900 mm
3 BP3: SAS	3 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
4a BP9: SAS 1	4 • Gen 4: C1 • Gen 3: C2C3	260/400 mm
4b BP9: SAS 0		

Cable routing to CFF expander (config. 2/3)

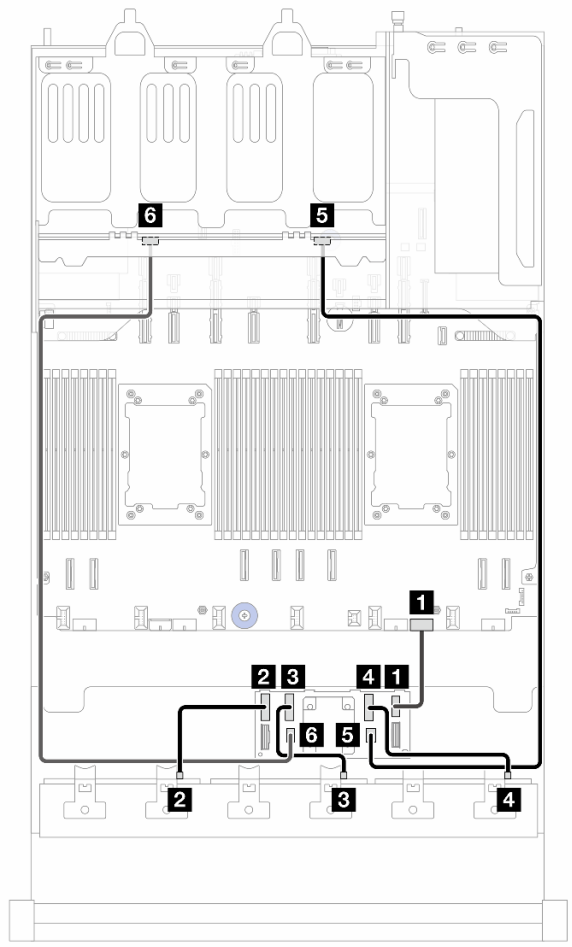


Figure 72. Cable routing to CFF expander

From (CFF expander)	To	Cable length
1 POWER	1 PB: EXP PWR	210 mm
2 C0	2 BP1: SAS	200 mm

From (CFF expander)	To	Cable length
3 C1	3 BP2: SAS	110 mm
4 C2	4 BP3: SAS	110 mm
5 C4	5 BP9: SAS 0	800 mm
6 C5	6 BP9: SAS 1	800 mm

Cable routing to SFF 8i/16i adapter (config. 2)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

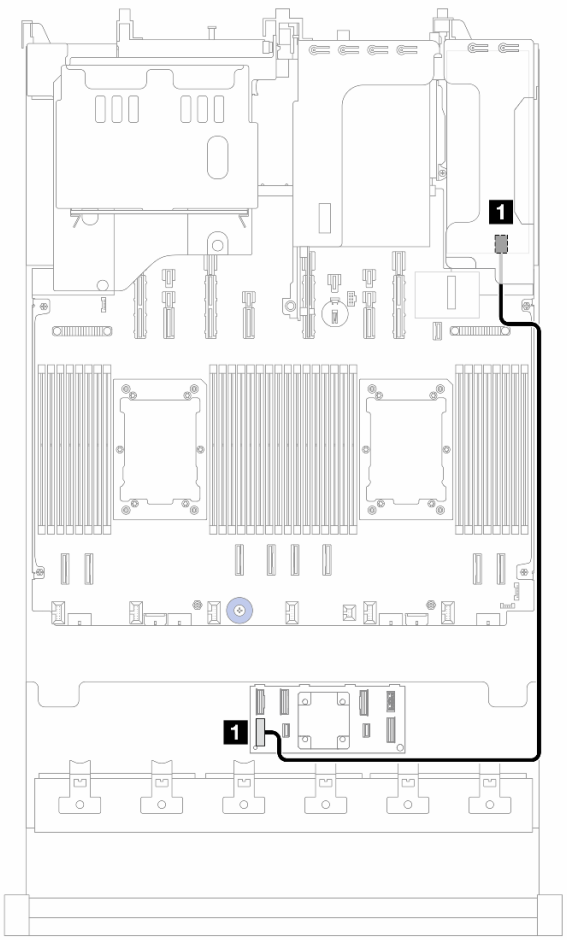


Figure 73. Cable routing to SFF 8i/16i adapter

From	To	Cable length
1 CFF expander: RAID/HBA	1 8i/16i adapter: • Gen 4: C0 • Gen 3: C0C1	780 mm

Cable routing to CFF 16i adapter (config. 3)

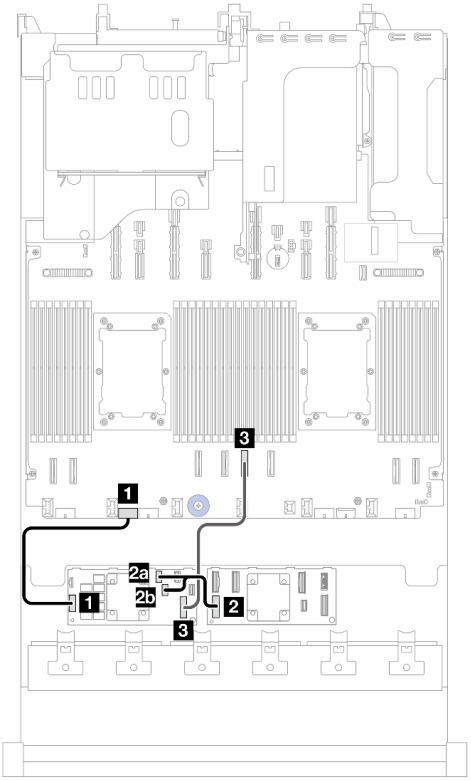


Figure 74. Cable routing when two processors are installed

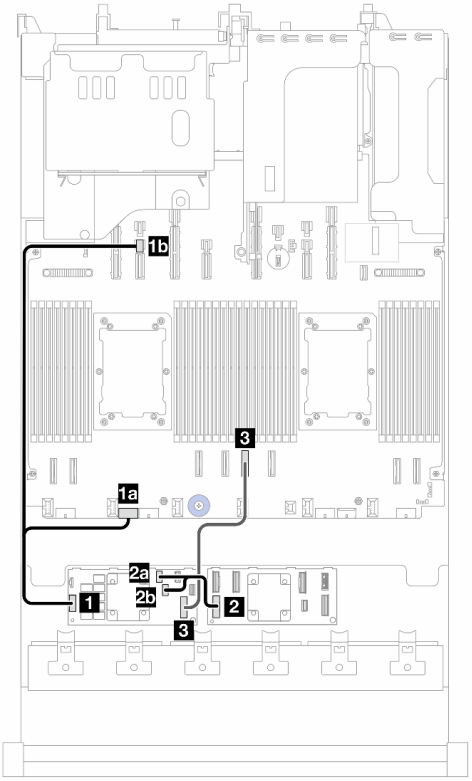


Figure 75. Cable routing when one processor is installed

2P: two processors; 1P: one processor; PB: processor board

From (CFF 16i adapter)	To		Cable length
	2P	1P	
1 POWER	1 PB: RAID PWR	1a PB: RAID PWR 1b PB: PWR 14	• 2P: 210 mm • 1P: 300/800 mm
2a C0 2b C1	2 CFF expander: RAID/HBA	2 CFF expander: RAID/HBA	150/150 mm
3 MB (CFF INPUT)	3 PB: PCIe 4	3 PB: PCIe 4	450 mm

Front 24 x 2.5" NVMe + Rear 4 x 2.5" NVMe

This topic provides cable routing information for the front 24 x 2.5" NVMe + rear 4 x 2.5" NVMe configuration.

Note: This configuration is supported only when two processors are installed.

- "NVMe cable routing to BP1" on page 70
- "NVMe cable routing to BP2" on page 71
- "NVMe cable routing to BP3" on page 72
- "NVMe cable routing to BP9" on page 73

NVMe cable routing to BP1

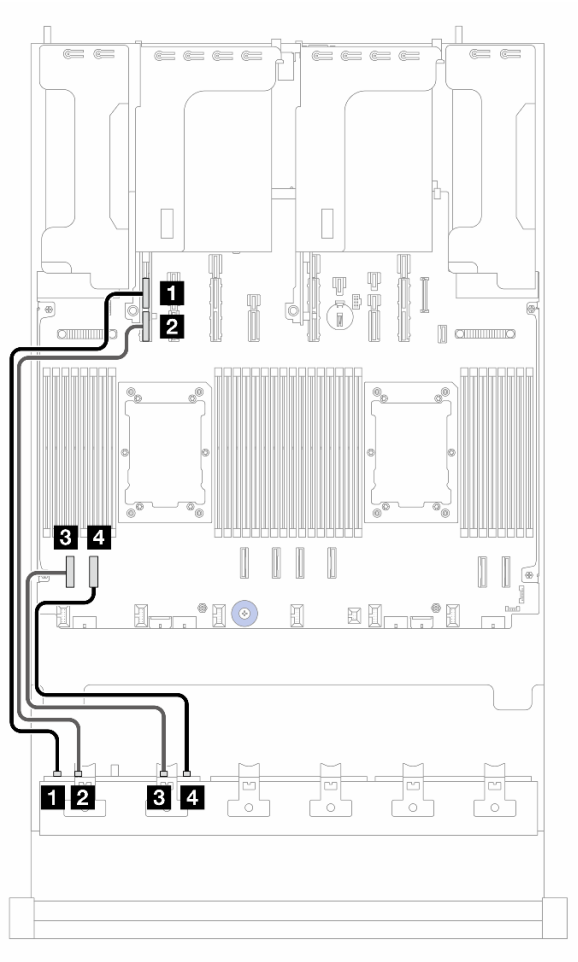


Figure 76. NVMe cable routing to BP1

From (BP1)	To (processor board)	Cable length
1 NVMe 0-1	1 PCIe 15A	600 mm
2 NVMe 2-3	2 PCIe 15B	600 mm
3 NVMe 4-5	3 PCIe 8	350 mm
4 NVMe 6-7	4 PCIe 7	350 mm

NVMe cable routing to BP2

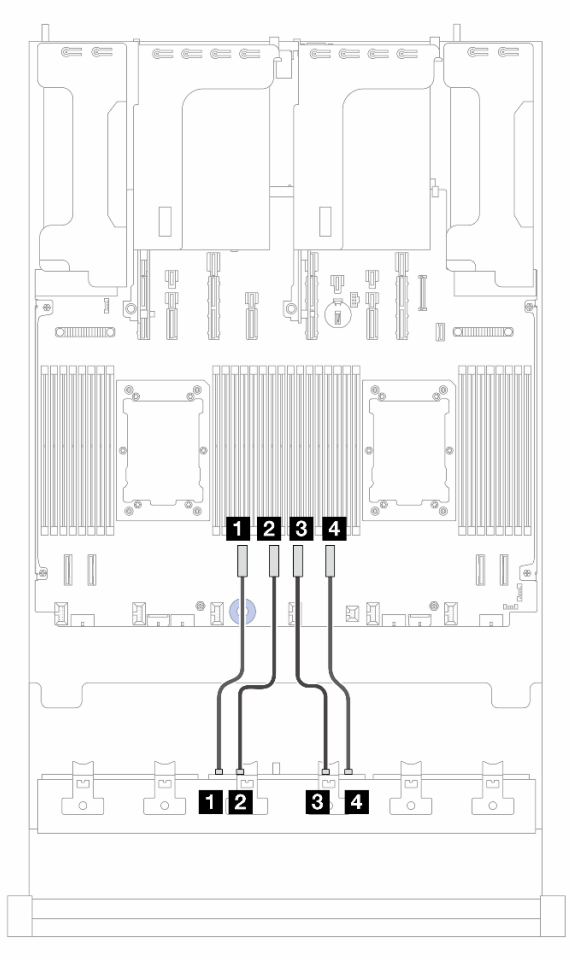


Figure 77. Cable routing to BP2

From (BP2)	To (processor board)	Cable length
1 NVMe 0-1	1 PCIe 6	250 mm
2 NVMe 2-3	2 PCIe 5	250 mm
3 NVMe 4-5	3 PCIe 4	250 mm
4 NVMe 6-7	4 PCIe 3	250 mm

NVMe cable routing to BP3

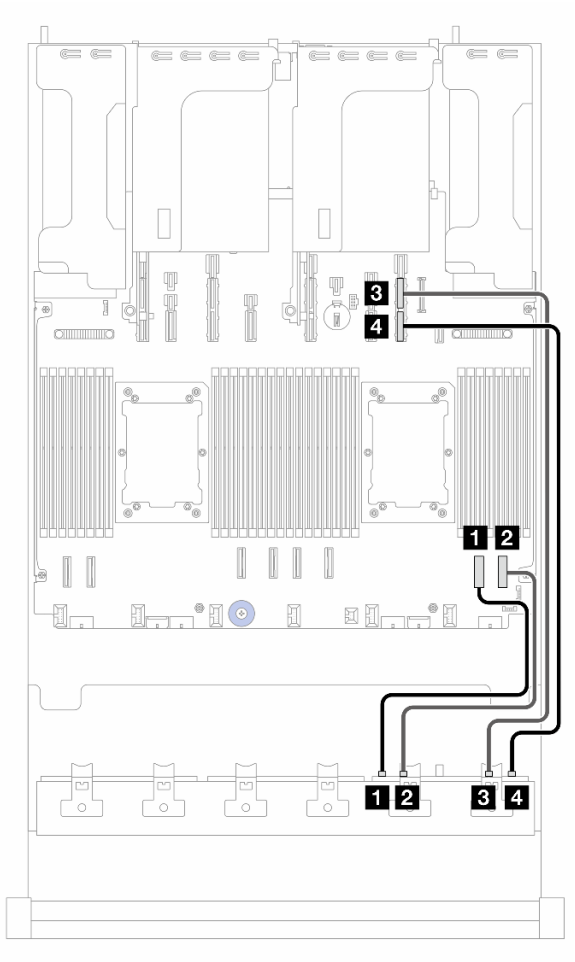


Figure 78. NVMe cable routing to BP3

From (BP3)	To (processor board)	Cable length
1 NVMe 0-1	1 PCIe 2	350 mm
2 NVMe 2-3	2 PCIe 1	350 mm
3 NVMe 4-5	3 PCIe 9A	600 mm
4 NVMe 6-7	4 PCIe 9B	600 mm

NVMe cable routing to BP9

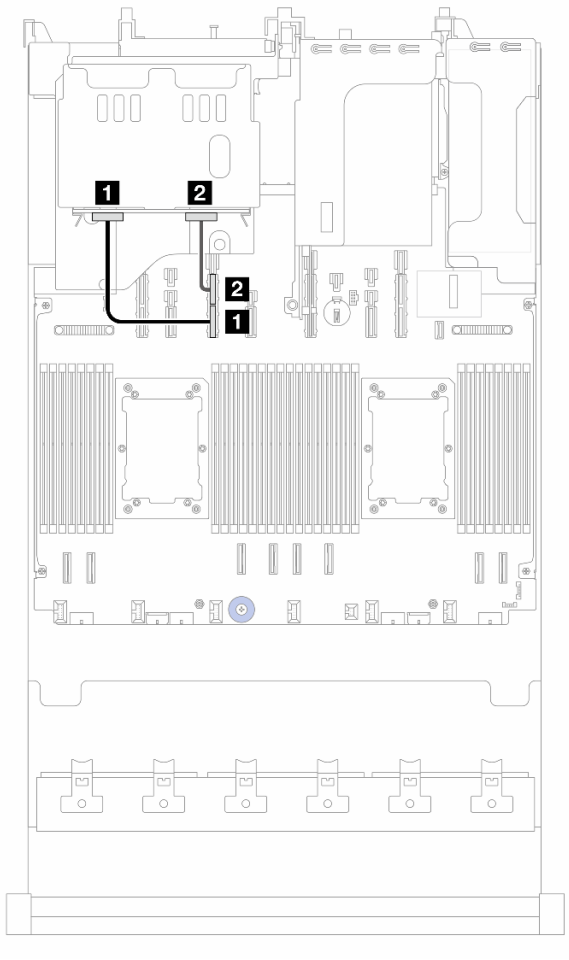


Figure 79. NVMe cable routing to BP9

From (BP9)	To (processor board)	Cable length
1 NVMe 2-3	1 PCIe 13B	280 mm
2 NVMe 0-1	2 PCIe 13A	280 mm

Front (16 x 2.5" SAS/SATA + 8 x 2.5" AnyBay) + Rear 4/8 x 2.5" SAS/SATA

This topic provides cable routing information for the front (16 x 2.5" SAS/SATA + 8 x 2.5" AnyBay) + rear 4 x 2.5"/8 x 2.5" SAS/SATA configuration.

- "NVMe cable routing to BP3 (config. 1/2/3/4/5)" on page 74
- "Cable routing to SFF 8i/16i adapter (config. 1/2)" on page 75
- "Cable routing to SFF 8i/16i adapter (config. 3/4)" on page 76
- "Cable routing to CFF 16i adapter (config. 3/4)" on page 77
- "Cable routing to SFF 16i adapters (config. 5)" on page 77

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
Front (16 x 2.5" SAS/SATA + 8 x 2.5" AnyBay) + rear 4 x 2.5" SAS/SATA (BP1 + BP2 + BP3 + BP9)	SFF 16i + 2 x SFF 8i	1
	2 x SFF 16i	2
	CFF 16i + 2 x SFF 8i	3
	CFF 16i + SFF 16i	4
Front (16 x 2.5" SAS/SATA + 8 x 2.5" AnyBay) + rear 8 x 2.5" SAS/SATA (BP1 + BP2 + BP3 + BP9)	2 x SFF 16i	5

NVMe cable routing to BP3 (config. 1/2/3/4/5)

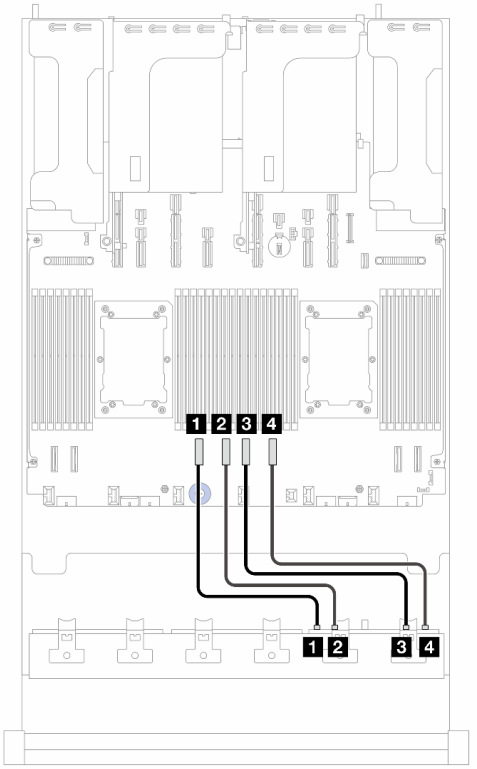


Figure 80. Cable routing when two processors are installed

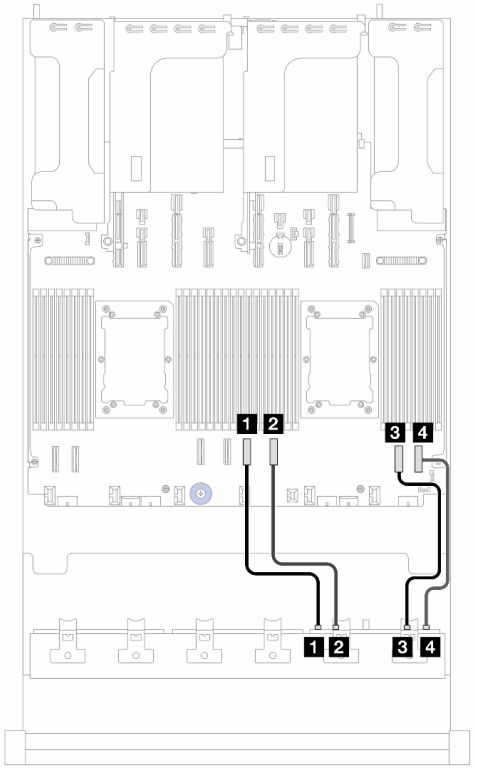


Figure 81. Cable routing when one processor is installed

2P: two processors; 1P: one processor

From (BP3)	To (processor board)		Cable length
	2P	1P	
1 NVMe 0-1	1 PCIe 6	1 PCIe 4	350 mm
2 NVMe 2-3	2 PCIe 5	2 PCIe 3	350 mm
3 NVMe 4-5	3 PCIe 4	3 PCIe 2	350 mm
4 NVMe 6-7	4 PCIe 3	4 PCIe 1	350 mm

Cable routing to SFF 8i/16i adapter (config. 1/2)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

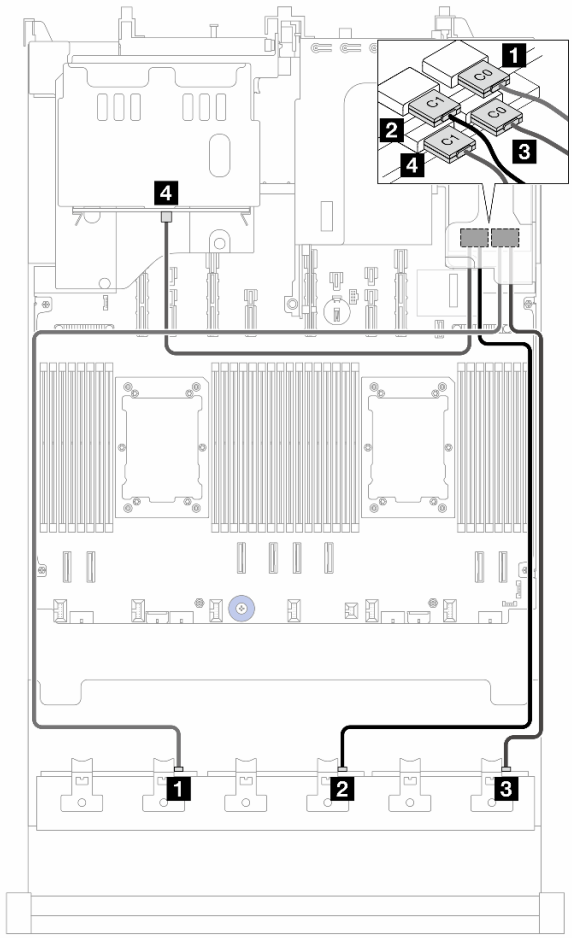


Figure 82. Cable routing to SFF 8i/16i adapter (config. 1/2)

From	To		Cable length
	Config. 1	Config. 2	
1 BP1: SAS	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
2 BP2: SAS	2 • Gen 4: C1 • Gen 3: C2C3	2 • Gen 4: C1 • Gen 3: C2C3	900 mm
3 BP3: SAS	3 8i adapter: • Gen 4: C0 • Gen 3: C0C1	3 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
4 BP9: SAS	4 8i adapter: C0	4 • Gen 4: C1 • Gen 3: C2	450 mm

Cable routing to SFF 8i/16i adapter (config. 3/4)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

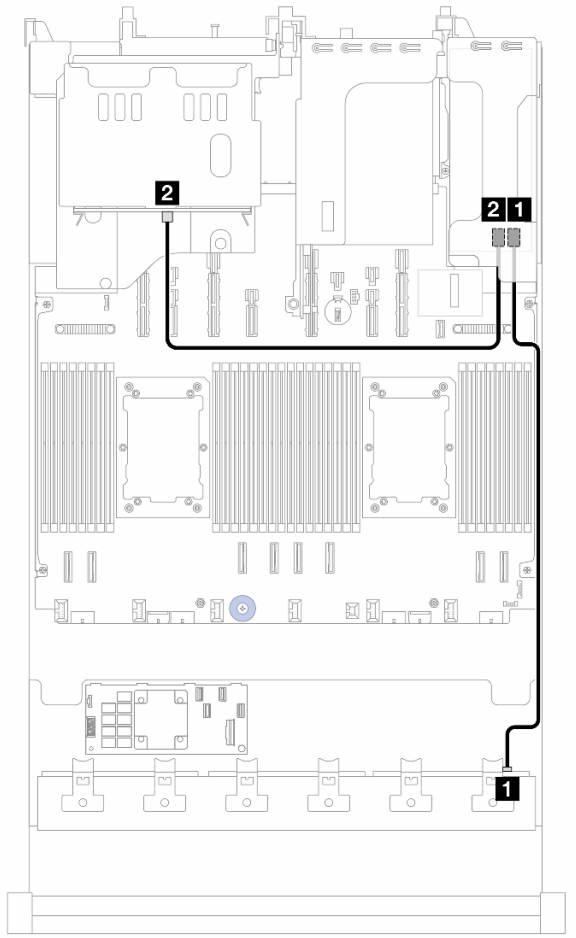


Figure 83. Cable routing to SFF 8i/16i adapter (config. 3/4)

From	To		Cable length
	Config. 3	Config. 4	
1 BP3: SAS	1 8i adapter: • C0	1 16i adapter: • C0	900 mm
2 BP9: SAS	2 8i adapter: • C0	2 • C1	450 mm

Cable routing to CFF 16i adapter (config. 3/4)

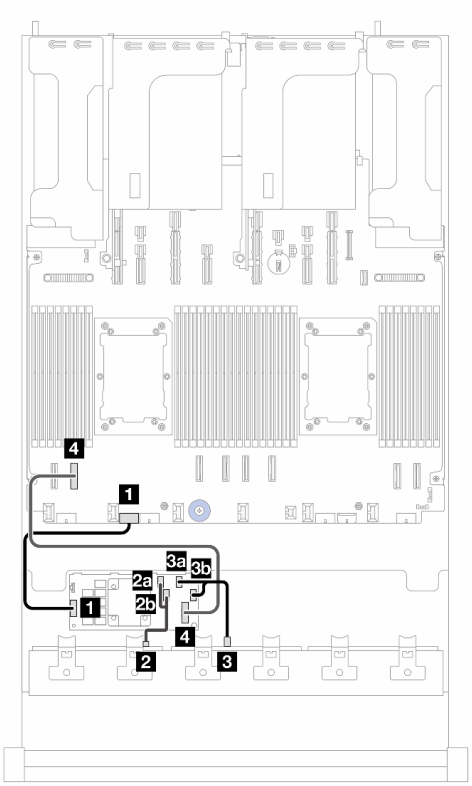


Figure 84. Cable routing when two processors are installed

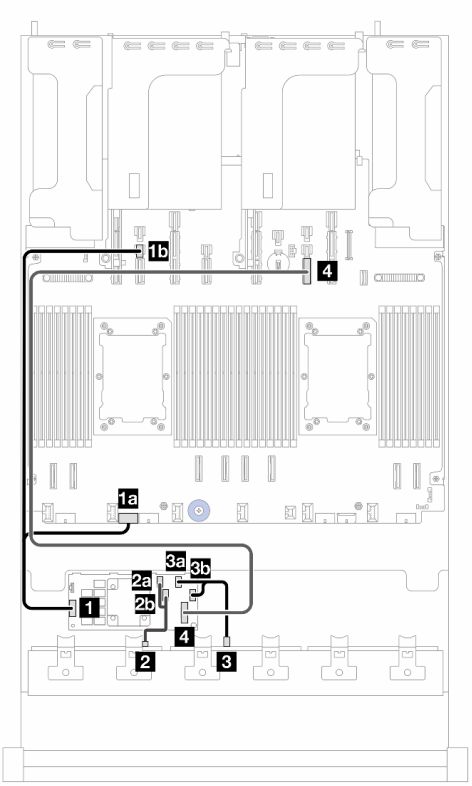


Figure 85. Cable routing when one processor is installed

2P: two processors; 1P: one processor; PB: processor board

From (CFF 16i adapter)	To		Cable length
	2P	1P	
1 POWER	1 PB: RAID PWR	1a PB: RAID PWR 1b PB: PWR 14	• 2P: 210 mm • 1P: 300/800 mm
2a C0 2b C1	2 BP1: SAS	2 BP1: SAS	• 140/140 mm
3a C2 3b C3	3 BP2: SAS	3 BP2: SAS	• 140/140 mm
4 MB (CFF INPUT)	4 PB: PCIe 7	4 PB: PCIe 10	• 2P: 450 mm • 1P: 900 mm

Cable routing to SFF 16i adapters (config. 5)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

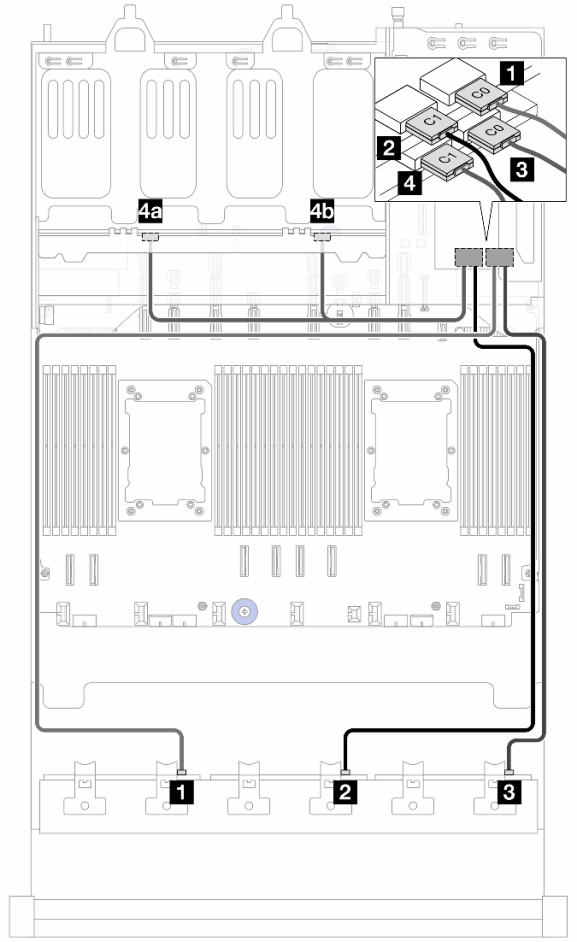


Figure 86. Cable routing to SFF 16i adapters

From	To	Cable length
1 BP1: SAS	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
2 BP2: SAS	2 • Gen 4: C1 • Gen 3: C2C3	900 mm
3 BP3: SAS	3 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
4a BP9: SAS 1	4 • Gen 4: C1 • Gen 3: C2C3	260/400 mm
4b BP9: SAS 0		

Front + Middle backplanes

This section provides cable routing information for the server models with front and middle drive bays.

- “Front 24 x 2.5" SAS/SATA + Middle 8 x 2.5" SAS/SATA” on page 79
- “Front (16 x 2.5" SAS/SATA + 8 x 2.5" AnyBay) + Middle 8 x 2.5" SAS/SATA” on page 84

- “Front 24 x 2.5" NVMe + Middle 8 x 2.5" NVMe” on page 87

Front 24 x 2.5" SAS/SATA + Middle 8 x 2.5" SAS/SATA

This topic provides cable routing information for the front 24 x 2.5" SAS/SATA + middle 8 x 2.5" SAS/SATA configuration.

- “Cable routing to SFF 16i adapters (config. 1)” on page 79
- “Cable routing to CFF expander (config. 2/3)” on page 81
- “Cable routing to SFF 8i adapter (config. 2)” on page 82
- “Cable routing to CFF 16i adapter (config. 3)” on page 84

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
Front 24 x 2.5" SAS/SATA + Middle 8 x 2.5" SAS/SATA (BP1 + BP2 + BP3 + BP10 + BP11)	2 x SFF 16i	1
	CFF EXP + SFF 8i	2
	CFF EXP + CFF 16i	3

Cable routing to SFF 16i adapters (config. 1)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

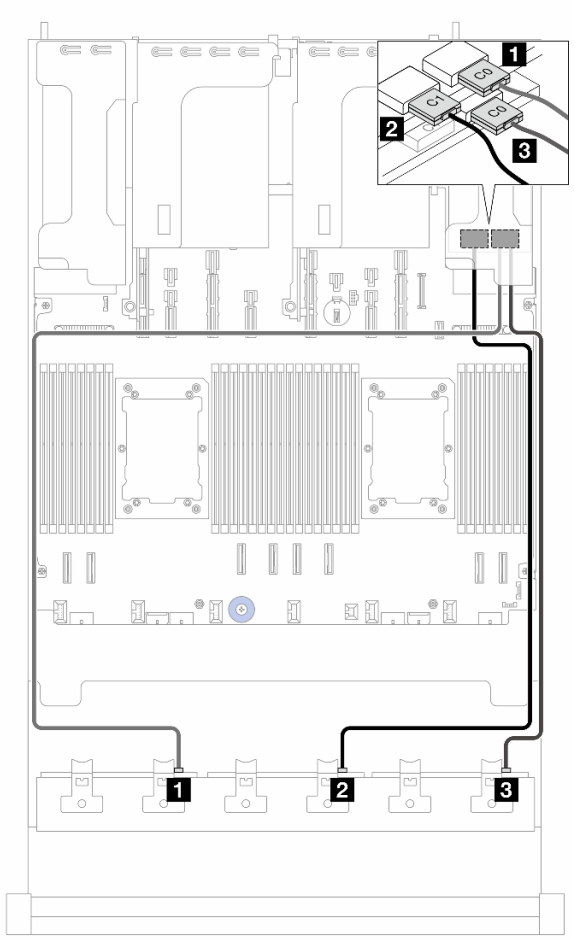


Figure 87. Cable routing from front backplanes to SFF 16i adapters

From	To	Cable length
1 BP1: SAS	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
2 BP2: SAS	2 • Gen 4: C1 • Gen 3: C2C3	900 mm
3 BP3: SAS	3 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm

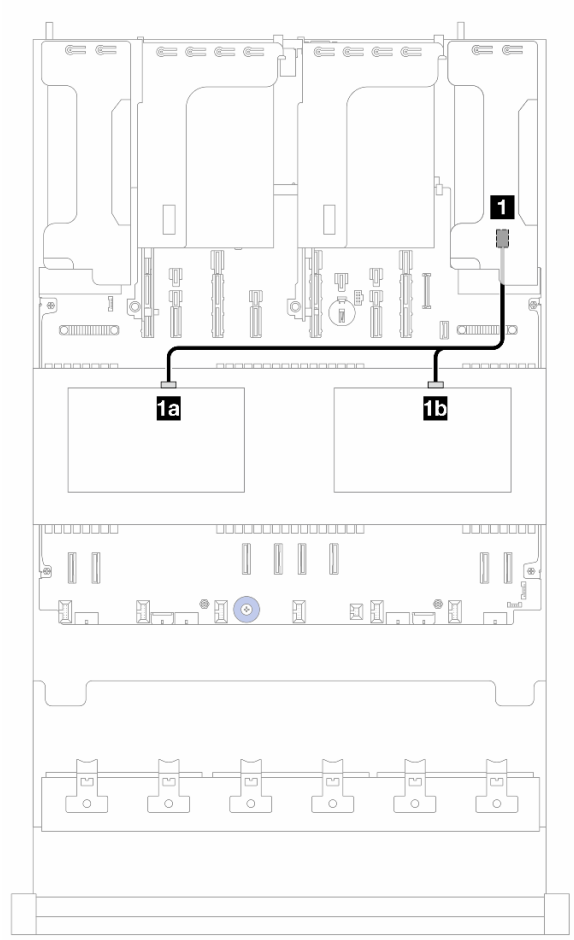


Figure 88. Cable routing from middle backplanes to SFF 16i adapter

From	To	Cable length
1a BP10: SAS	1 16i adapter: • Gen 4: C1 • Gen 3: C2C3	400/260 mm
1b BP11: SAS		

Cable routing to CFF expander (config. 2/3)

Note: Cable 5 is not needed in config. 3 (CFF EXP + CFF 16i).

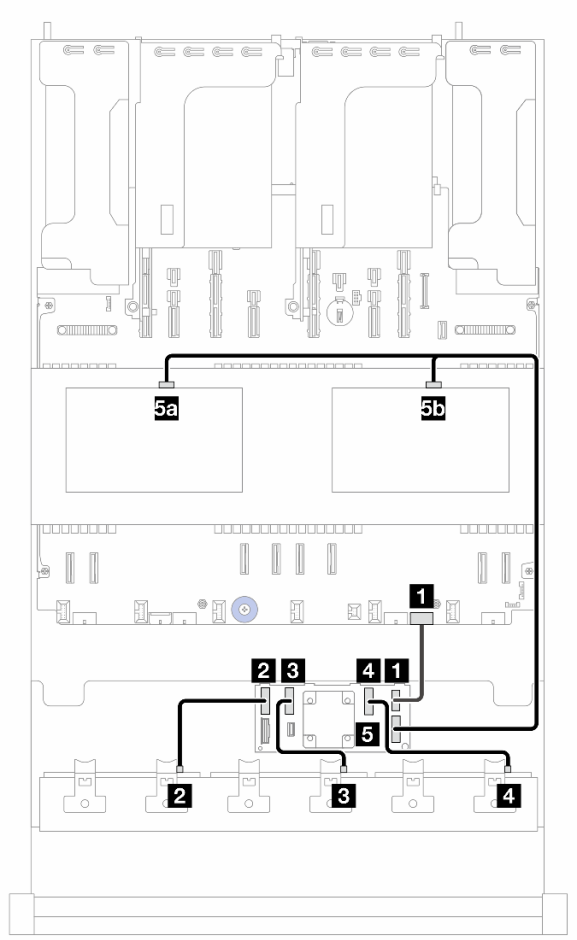


Figure 89. Cable routing to CFF expander

PB: processor board

From (CFF expander)	To	Cable length
1 POWER	1 PB: EXP PWR	210 mm
2 C0	2 BP1: SAS	200 mm
3 C1	3 BP2: SAS	110 mm
4 C2	4 BP3: SAS	110 mm
5 C3	5a BP10: SAS	700/500 mm
	5b BP11: SAS	

Cable routing to SFF 8i adapter (config. 2)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

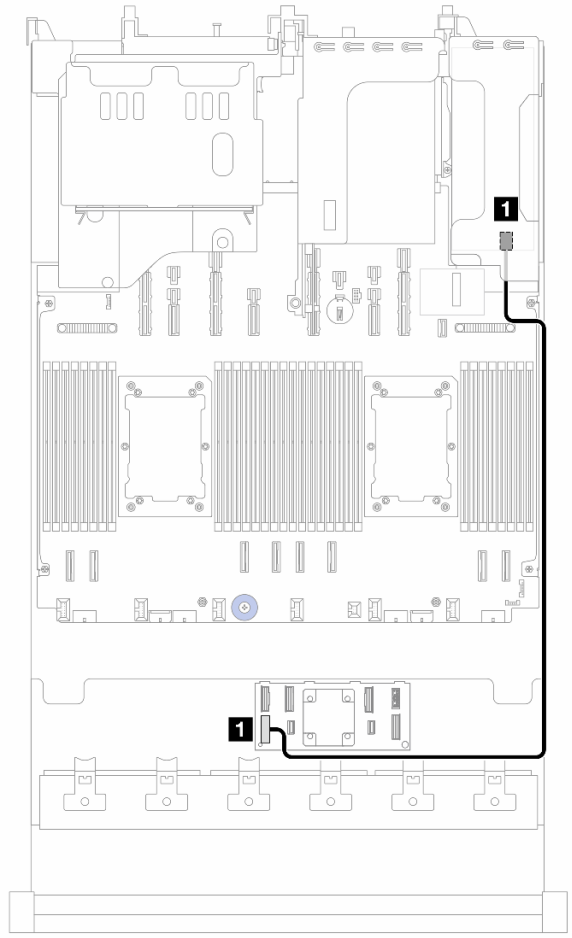


Figure 90. Cable routing to SFF 8i adapter

From	To	Cable length
1 CFF expander: RAID/HBA	1 8i adapter: • Gen 4: C0 • Gen 3: C0C1	780 mm

Cable routing to CFF 16i adapter (config. 3)

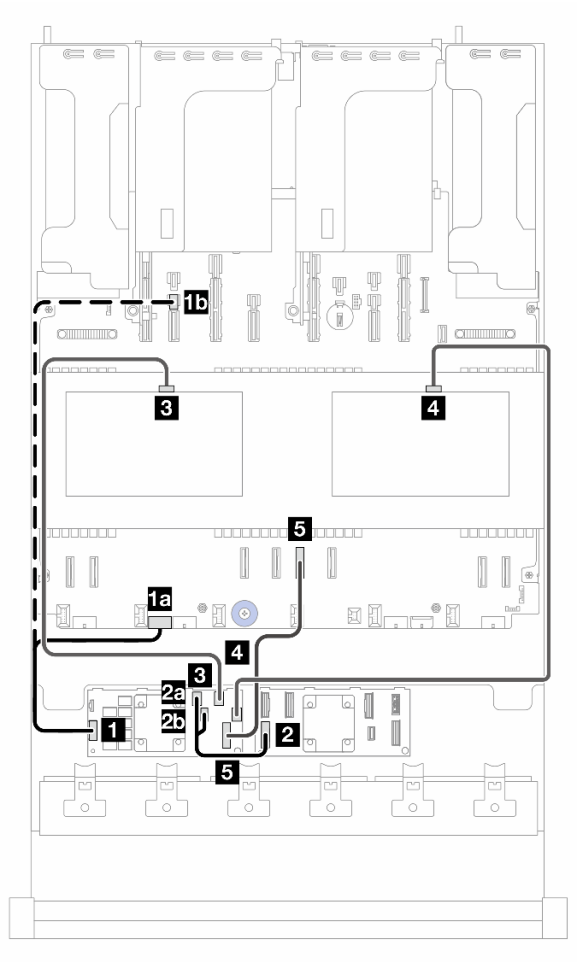


Figure 91. Cable routing to CFF 16i adapter

2P: two processors; 1P: one processor; PB: processor board

From (CFF 16i adapter)	To		Cable length
	2P	1P	
1 POWER	1a PB: RAID PWR	1a PB: RAID PWR 1b PB: PWR 14	• 2P: 210 mm • 1P: 300/800 mm
2a C0 2b C1	2 CFF expander: RAID/ HBA	2 CFF expander: RAID/ HBA	• 150/150 mm
3 C2	3 BP 10: SAS	3 BP 10: SAS	• 700 mm
4 C3	4 BP 11: SAS	4 BP 11: SAS	• 700 mm
5 MB (CFF INPUT)	5 PB: PCIe 4	5 PB: PCIe 4	• 450 mm

Front (16 x 2.5" SAS/SATA + 8 x 2.5" AnyBay) + Middle 8 x 2.5" SAS/SATA

This topic provides cable routing information for the front (16 x 2.5" SAS/SATA + 8 x 2.5" AnyBay) + middle 8 x 2.5" SAS/SATA configuration.

- “Cable routing to SFF 16i adapters” on page 85

- “NVMe cable routing to BP3” on page 87

Cable routing to SFF 16i adapters

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

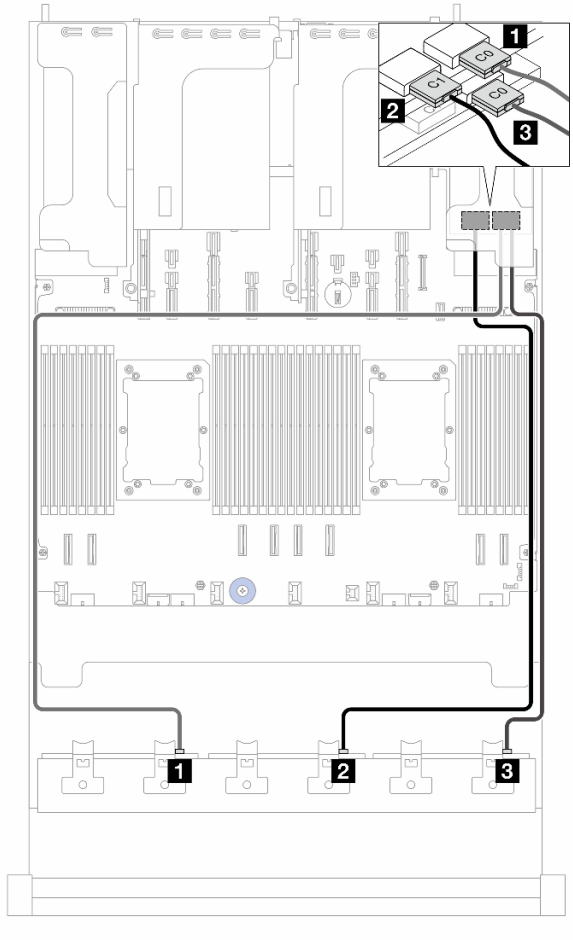


Figure 92. Cable routing from front backplanes to SFF 16i adapters

From	To	Cable length
1 BP1: SAS	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
2 BP2: SAS	2 • Gen 4: C1 • Gen 3: C2C3	900 mm
3 BP3: SAS	3 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm

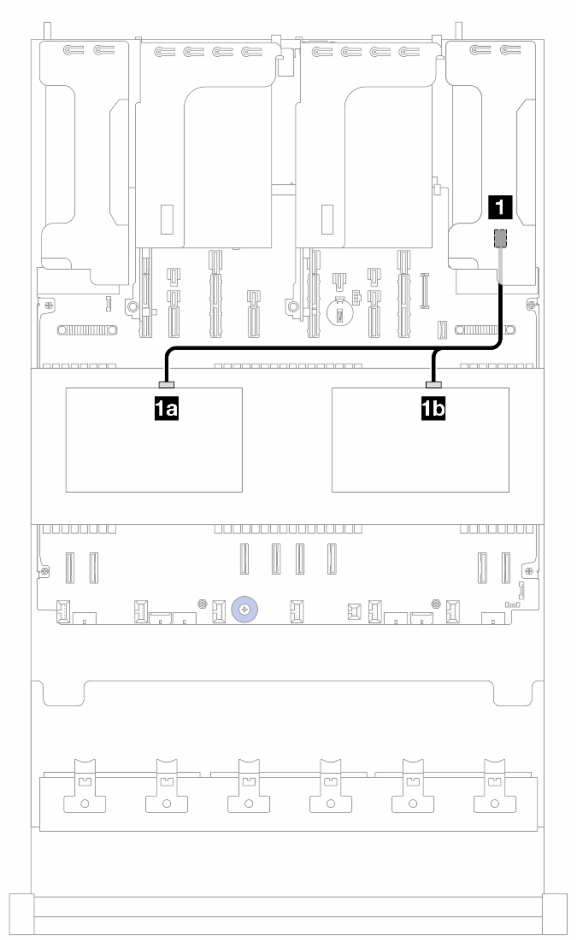


Figure 93. Cable routing from middle backplanes to SFF 16i adapter

From	To	Cable length
1a BP10: SAS	1 16i adapter: • Gen 4: C1 • Gen 3: C2C3	400/260 mm
1b BP11: SAS		

NVMe cable routing to BP3

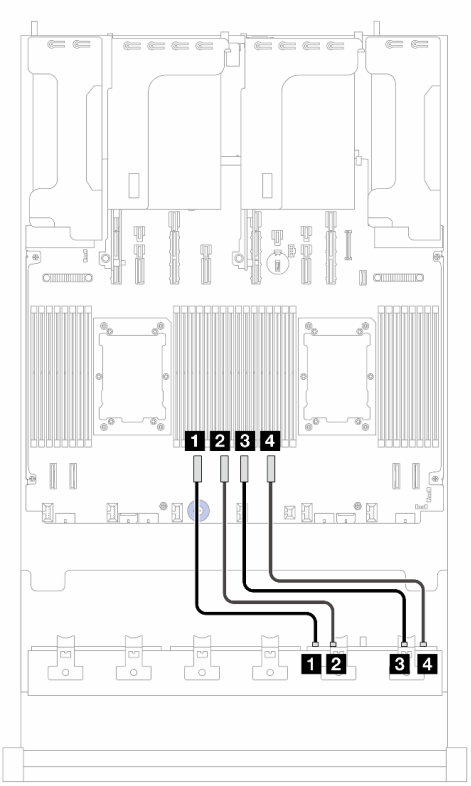


Figure 94. Cable routing when two processors are installed

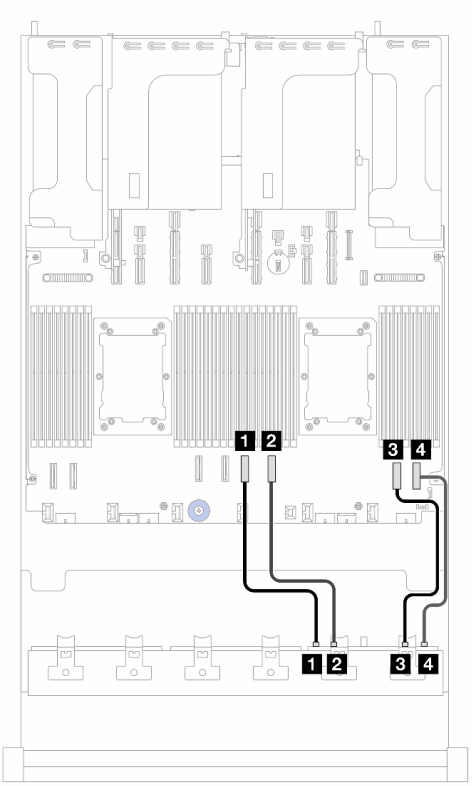


Figure 95. Cable routing when one processor is installed

2P: two processors; 1P: one processor

From (BP3)	To (processor board)		Cable length
	2P	1P	
1 NVMe 0-1	1 PCIe 6	1 PCIe 4	350 mm
2 NVMe 2-3	2 PCIe 5	2 PCIe 3	350 mm
3 NVMe 4-5	3 PCIe 4	3 PCIe 2	350 mm
4 NVMe 6-7	4 PCIe 3	4 PCIe 1	350 mm

Front 24 x 2.5" NVMe + Middle 8 x 2.5" NVMe

This topic provides cable routing information for the front 24 x 2.5" NVMe + middle 8 x 2.5" NVMe configuration.

Note: This configuration is supported only when two processors are installed.

- “NVMe cable routing to BP1” on page 88
- “NVMe cable routing to BP2” on page 89
- “NVMe cable routing to BP3” on page 90
- “NVMe cable routing to BP10 and BP11” on page 91

NVMe cable routing to BP1

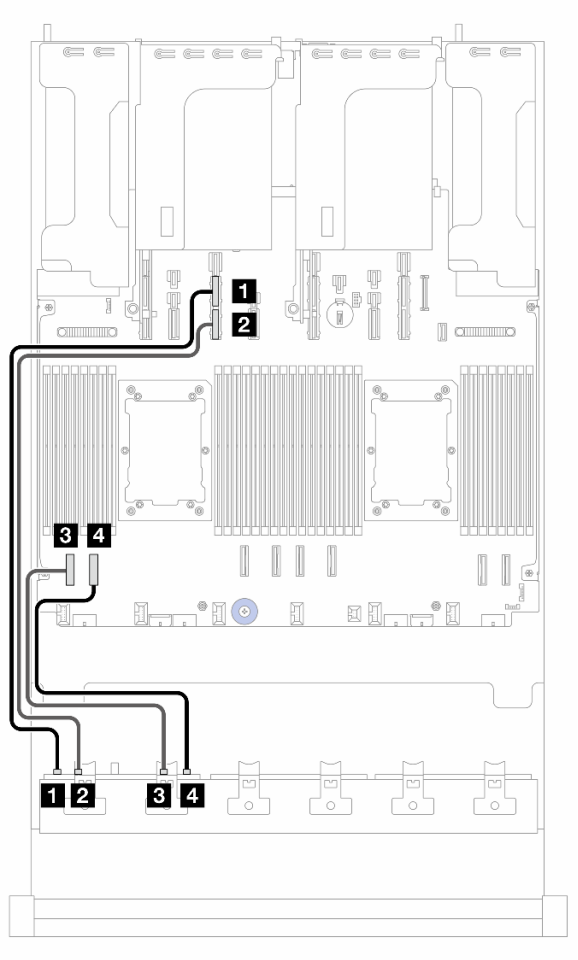


Figure 96. NVMe cable routing to BP1

From (BP1)	To (processor board)	Cable length
1 NVMe 0-1	1 PCIe 13A	600 mm
2 NVMe 2-3	2 PCIe 13B	600 mm
3 NVMe 4-5	3 PCIe 8	350 mm
4 NVMe 6-7	4 PCIe 7	350 mm

NVMe cable routing to BP2

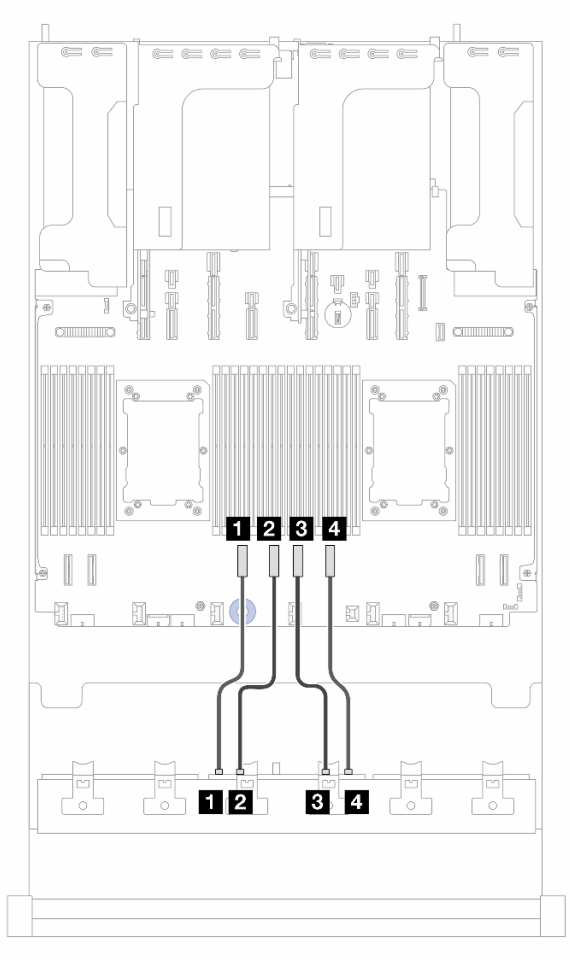


Figure 97. Cable routing to BP2

From (BP2)	To (processor board)	Cable length
1 NVMe 0-1	1 PCIe 6	250 mm
2 NVMe 2-3	2 PCIe 5	250 mm
3 NVMe 4-5	3 PCIe 4	250 mm
4 NVMe 6-7	4 PCIe 3	250 mm

NVMe cable routing to BP3

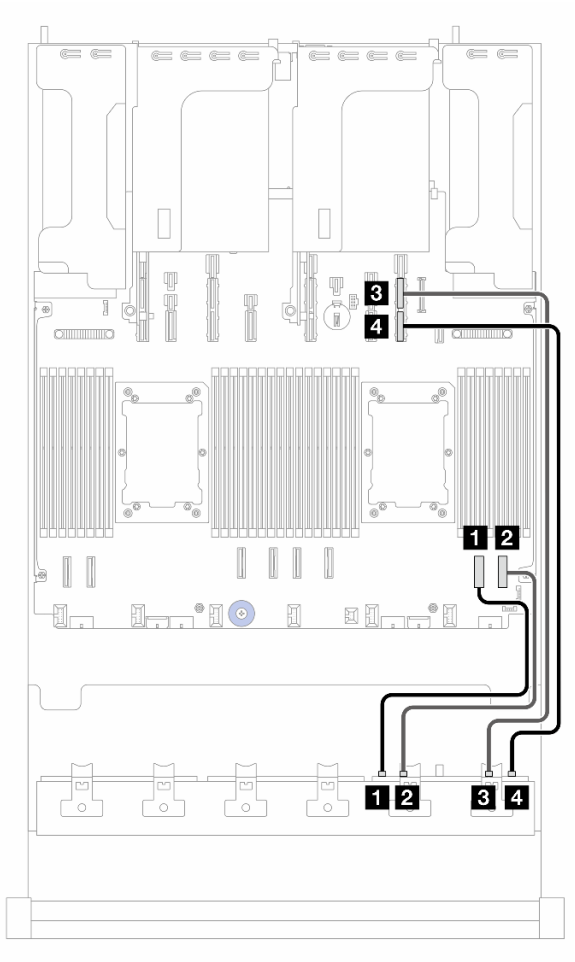


Figure 98. NVMe cable routing to BP3

From (BP3)	To (processor board)	Cable length
1 NVMe 0-1	1 PCIe 2	350 mm
2 NVMe 2-3	2 PCIe 1	350 mm
3 NVMe 4-5	3 PCIe 9A	600 mm
4 NVMe 6-7	4 PCIe 9B	600 mm

NVMe cable routing to BP10 and BP11

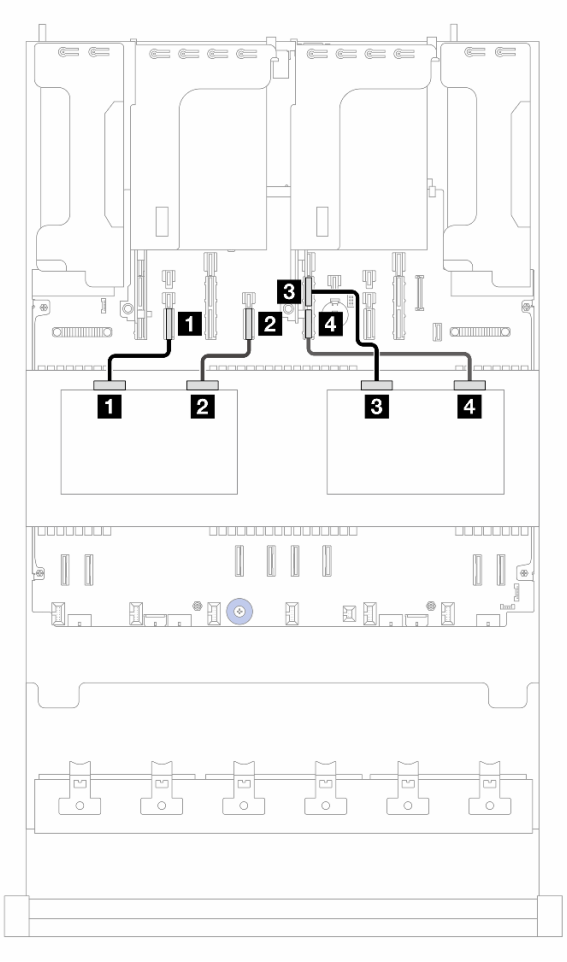


Figure 99. NVMe cable routing to BP10 and BP11

From	To (processor board)	Cable length
1 BP10: NVMe 0-1	1 PCIe 14	280 mm
2 BP10: NVMe 2-3	2 PCIe 12	280 mm
3 BP11: NVMe 0-1	3 PCIe 11A	280 mm
4 BP11: NVMe 2-3	4 PCIe 11B	280 mm

Front + Middle + Rear backplanes

This section provides cable routing information for the server models with front, middle, and rear drive bays.

- “Front 24 x 2.5" SAS/SATA + Middle 8 x 2.5" SAS/SATA + Rear 4 x 2.5" SAS/SATA” on page 91
- “Front 24 x 2.5" SAS/SATA + Middle 8 x 2.5" SAS/SATA + Rear 8 x 2.5" SAS/SATA” on page 95
- “Front 24 x 2.5" NVMe + Middle 8 x 2.5" NVMe + Rear 4 x 2.5" NVMe” on page 98

Front 24 x 2.5" SAS/SATA + Middle 8 x 2.5" SAS/SATA + Rear 4 x 2.5" SAS/SATA

This topic provides cable routing information for the front 24 x 2.5" SAS/SATA + middle 8 x 2.5" SAS/SATA + rear 4 x 2.5" SAS/SATA configuration.

- “Cable routing to SFF 8i adapter (config. 1)” on page 92
- “Cable routing to CFF expander (config. 1)” on page 93
- “Cable routing to CFF expander (config. 2)” on page 94
- “Cable routing to CFF 16i adapter (config. 2)” on page 95

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
BP1 + BP2 + BP3 + BP9 + BP10 + BP11	CFF EXP + SFF 8i	1
	CFF EXP + CFF 16i	2

Cable routing to SFF 8i adapter (config. 1)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

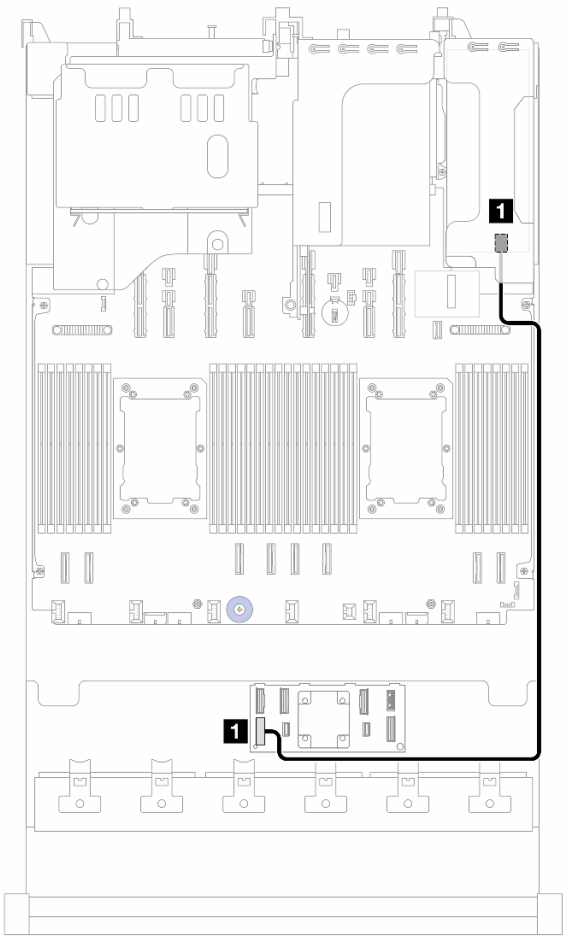


Figure 100. Cable routing to SFF 8i adapter

From	To	Cable length
1 CFF expander: RAID/HBA	1 8i adapter: • Gen 4: C0 • Gen 3: C0C1	780 mm

Cable routing to CFF expander (config. 1)

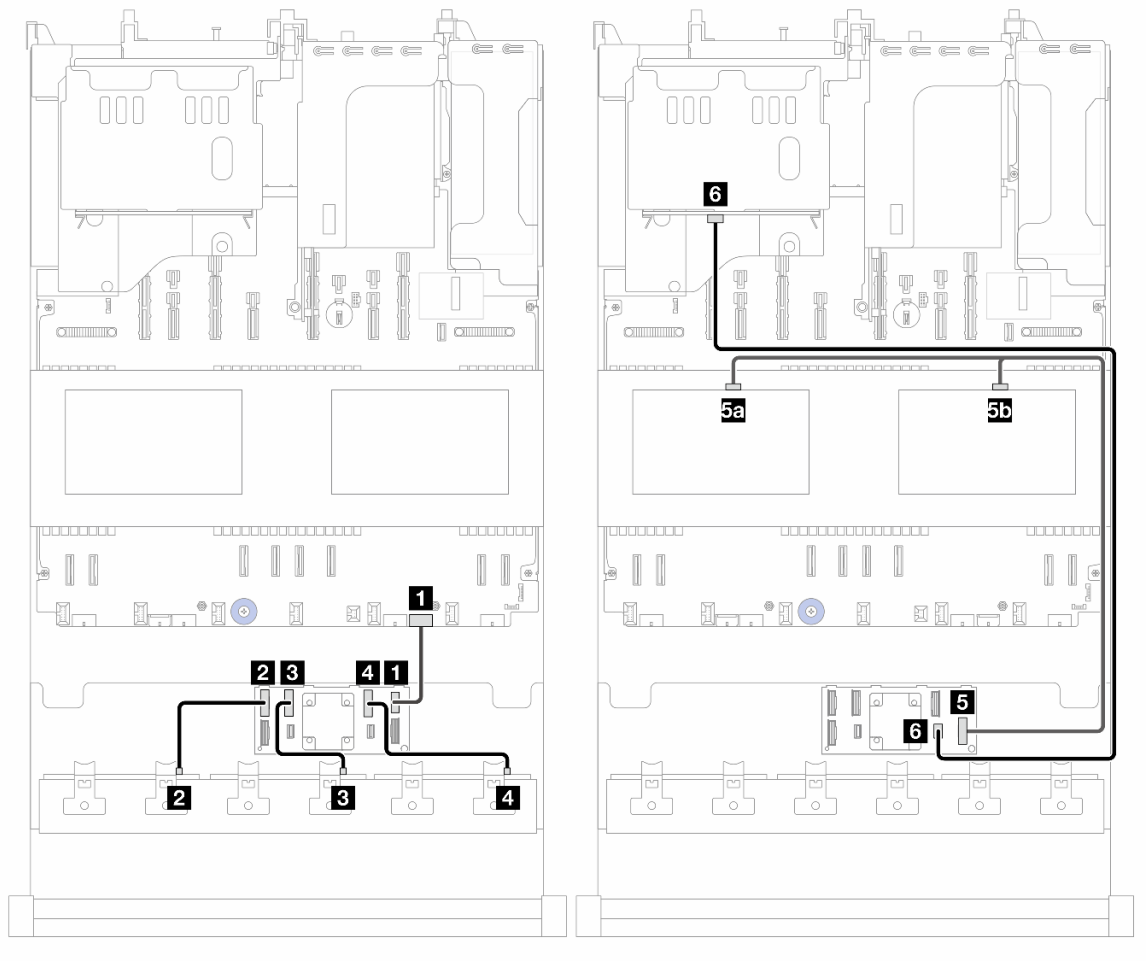


Figure 101. Cable routing to CFF expander (config. 1)

PB: processor board

From (CFF expander)	To	Cable length
1 POWER	1 PB: EXP PWR	210 mm
2 C0	2 BP1: SAS	200 mm
3 C1	3 BP2: SAS	110 mm
4 C2	4 BP3: SAS	110 mm
5 C3	5a BP10: SAS	700/500 mm
	5b BP11: SAS	
6 C4	6 BP9: SAS	800 mm

Cable routing to CFF expander (config. 2)

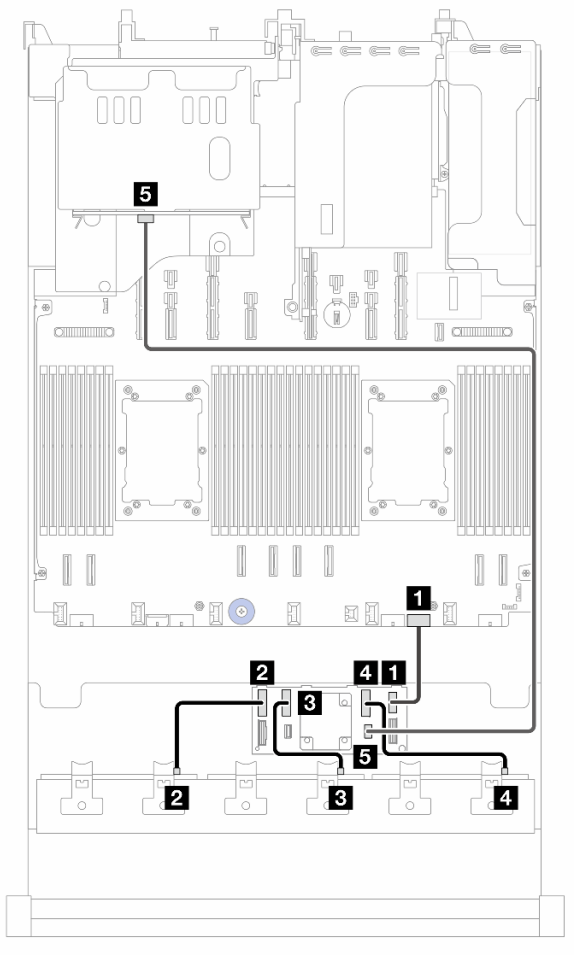


Figure 102. Cable routing to CFF expander

From (CFF expander)	To	Cable length
1 POWER	1 PB: EXP PWR	210 mm
2 C0	2 BP1: SAS	200 mm
3 C1	3 BP2: SAS	110 mm
4 C2	4 BP3: SAS	110 mm
5 C4	5 BP9: SAS	800 mm

Cable routing to CFF 16i adapter (config. 2)

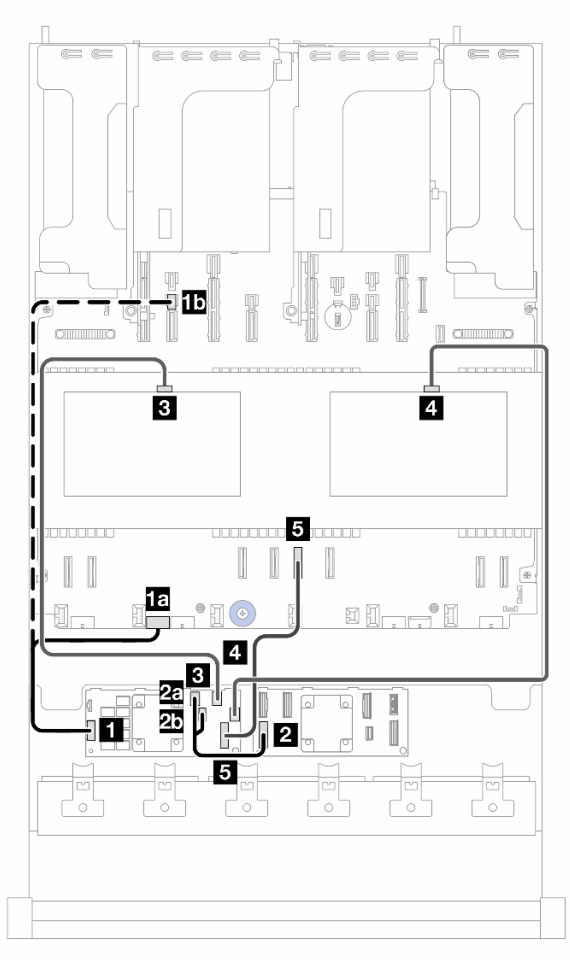


Figure 103. Cable routing to CFF 16i adapter

2P: two processors; 1P: one processor; PB: processor board

From (CFF 16i adapter)	To		Cable length
	2P	1P	
1 POWER	1a PB: RAID PWR	1a PB: RAID PWR	• 2P: 210 mm • 1P: 300/800 mm
		1b PB: PWR 14	
2a C0	2 CFF expander: RAID/ HBA	2 CFF expander: RAID/ HBA	• 150/150 mm
2b C1			
3 C2	3 BP 10: SAS	3 BP 10: SAS	• 700 mm
4 C3	4 BP 11: SAS	4 BP 11: SAS	• 700 mm
5 MB (CFF INPUT)	5 PB: PCIe 4	5 PB: PCIe 4	• 450 mm

Front 24 x 2.5" SAS/SATA + Middle 8 x 2.5" SAS/SATA + Rear 8 x 2.5" SAS/SATA

This topic provides cable routing information for the front 24 x 2.5" SAS/SATA + middle 8 x 2.5" SAS/SATA + rear 8 x 2.5" SAS/SATA configuration.

- “Cable routing to SFF 8i adapter (config. 1)” on page 96
- “Cable routing to CFF expander (config. 1/2)” on page 97
- “Cable routing to CFF 16i adapter (config. 2)” on page 98

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
BP1 + BP2 + BP3 + BP9 + BP10 + BP11	CFF EXP + SFF 8i	1
	CFF EXP + CFF 16i	2

Cable routing to SFF 8i adapter (config. 1)

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

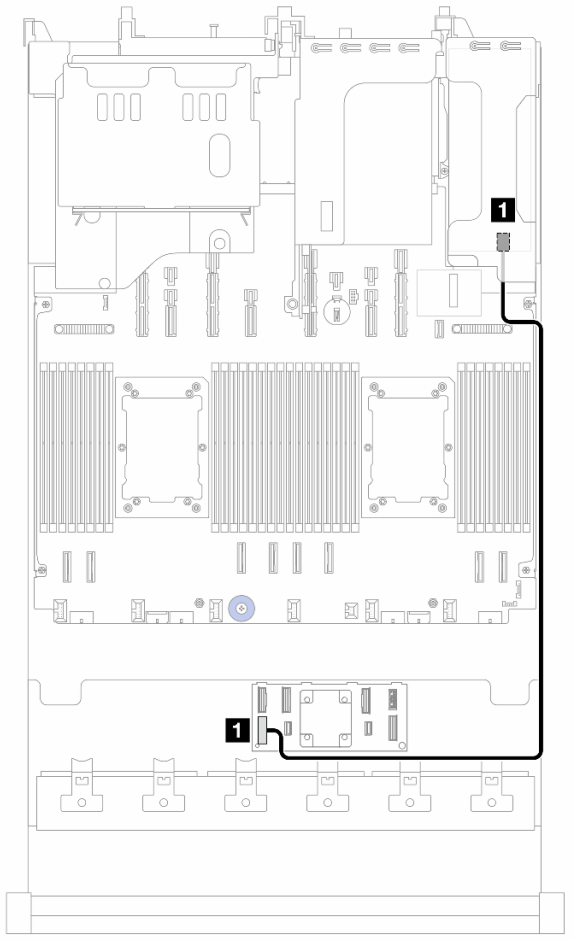


Figure 104. Cable routing to SFF 8i adapter

From	To	Cable length
1 CFF expander: RAID/HBA	1 8i adapter: • Gen 4: C0 • Gen 3: C0C1	780 mm

Cable routing to CFF expander (config. 1/2)

Note: Cable 5 is not needed in config. 2 (CFF EXP + CFF 16i).

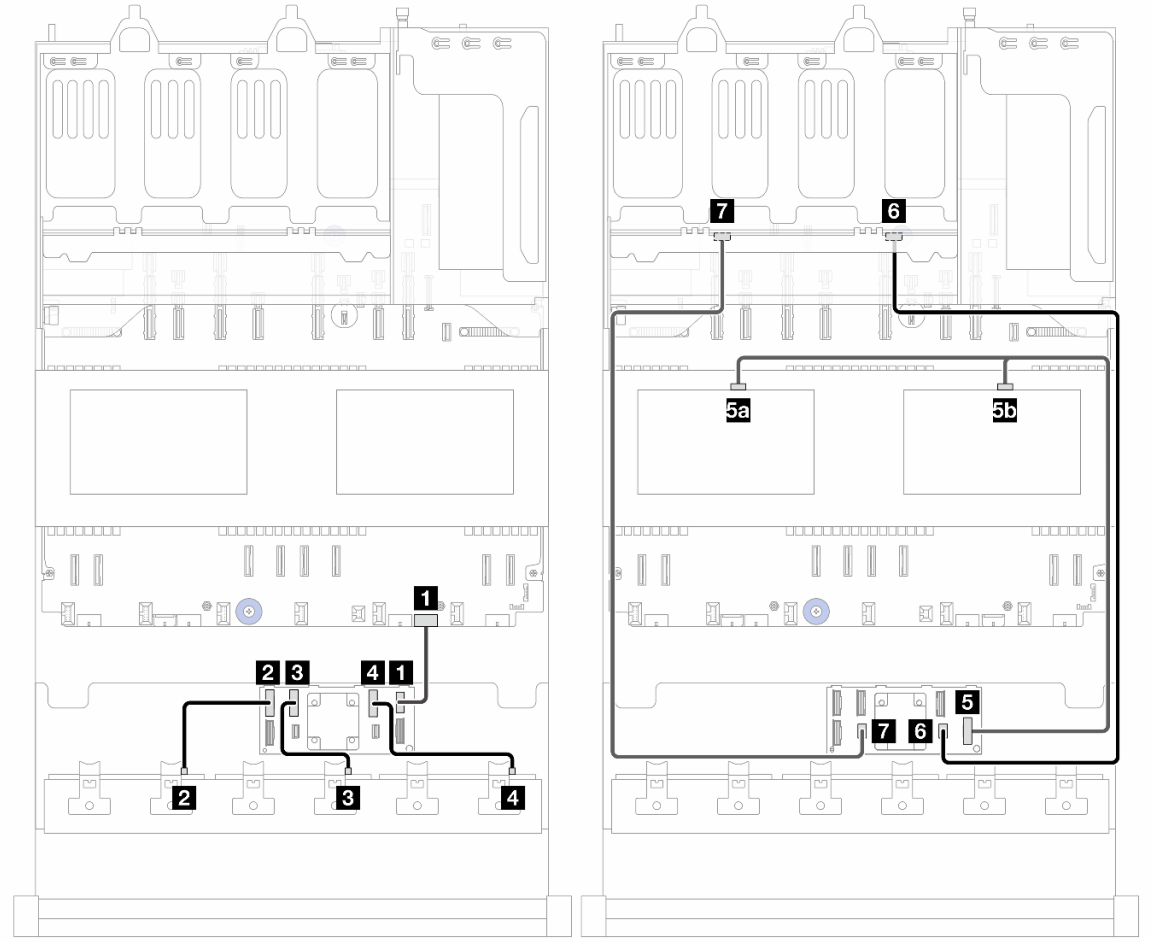


Figure 105. Cable routing to CFF expander

PB: processor board

From (CFF expander)	To	Cable length
1 POWER	1 PB: EXP PWR	210 mm
2 C0	2 BP1: SAS	200 mm
3 C1	3 BP2: SAS	110 mm
4 C2	4 BP3: SAS	110 mm
5 C3	5a BP10: SAS	700/500 mm
	5b BP11: SAS	
6 C4	6 BP9: SAS 0	800 mm
7 C5	7 BP9: SAS 1	800 mm

Cable routing to CFF 16i adapter (config. 2)

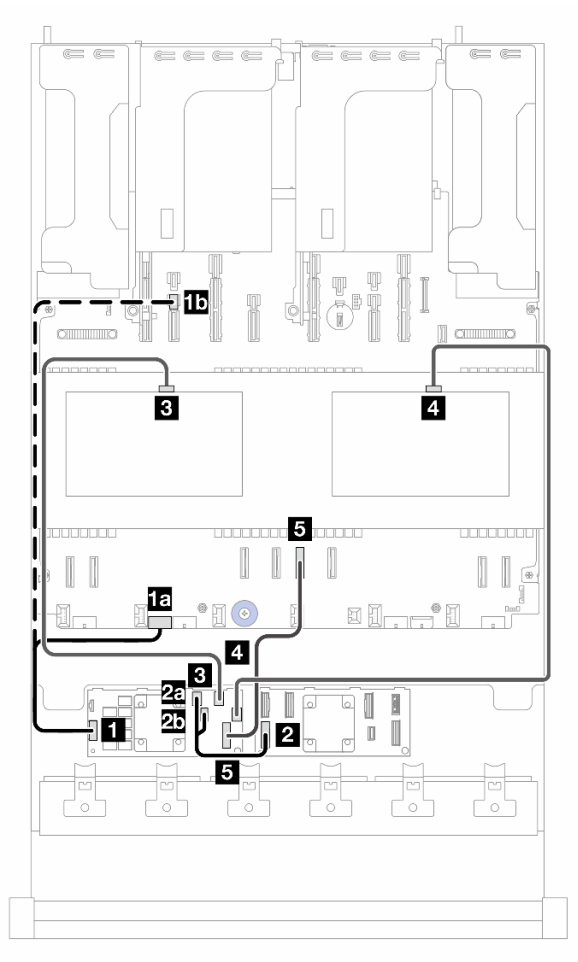


Figure 106. Cable routing to CFF 16i adapter

2P: two processors; 1P: one processor; PB: processor board

From (CFF 16i adapter)	To		Cable length
	2P	1P	
1 POWER	1a PB: RAID PWR	1a PB: RAID PWR	• 2P: 210 mm • 1P: 300/800 mm
		1b PB: PWR 14	
2a C0	2 CFF expander: RAID/ HBA	2 CFF expander: RAID/ HBA	• 150/150 mm
2b C1			
3 C2	3 BP 10: SAS	3 BP 10: SAS	• 700 mm
4 C3	4 BP 11: SAS	4 BP 11: SAS	• 700 mm
5 MB (CFF INPUT)	5 PB: PCIe 4	5 PB: PCIe 4	• 450 mm

Front 24 x 2.5" NVMe + Middle 8 x 2.5" NVMe + Rear 4 x 2.5" NVMe

This topic provides cable routing information for the front 24 x 2.5" NVMe + middle 8 x 2.5" NVMe + rear 4 x 2.5" NVMe configuration.

Note: This configuration is supported only when two processors are installed.

- “NVMe cable routing to BP1” on page 99
- “NVMe cable routing to BP2” on page 100
- “NVMe cable routing to BP3” on page 101
- “NVMe cable routing to BP9” on page 102
- “NVMe cable routing to BP10 and BP11” on page 103

NVMe cable routing to BP1

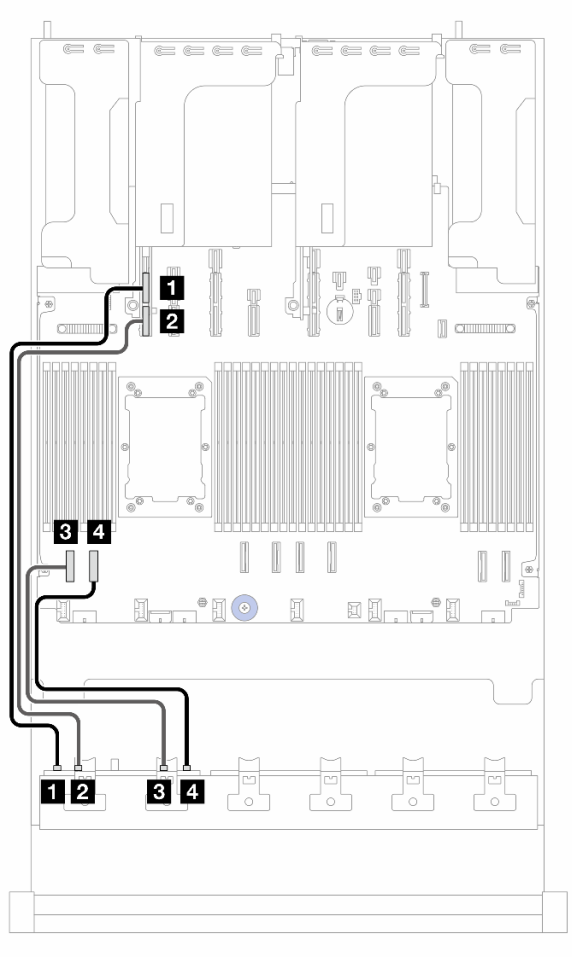


Figure 107. NVMe cable routing to BP1

From (BP1)	To (processor board)	Cable length
1 NVMe 0-1	1 PCIe 15A	600 mm
2 NVMe 2-3	2 PCIe 15B	600 mm
3 NVMe 4-5	3 PCIe 8	350 mm
4 NVMe 6-7	4 PCIe 7	350 mm

NVMe cable routing to BP2

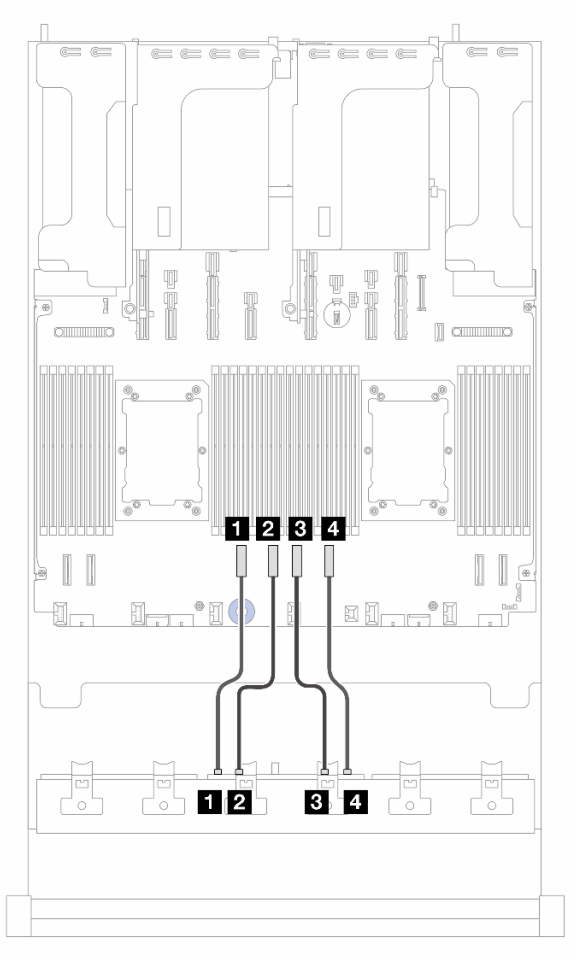


Figure 108. Cable routing to BP2

From (BP2)	To (processor board)	Cable length
1 NVMe 0-1	1 PCIe 6	250 mm
2 NVMe 2-3	2 PCIe 5	250 mm
3 NVMe 4-5	3 PCIe 4	250 mm
4 NVMe 6-7	4 PCIe 3	250 mm

NVMe cable routing to BP3

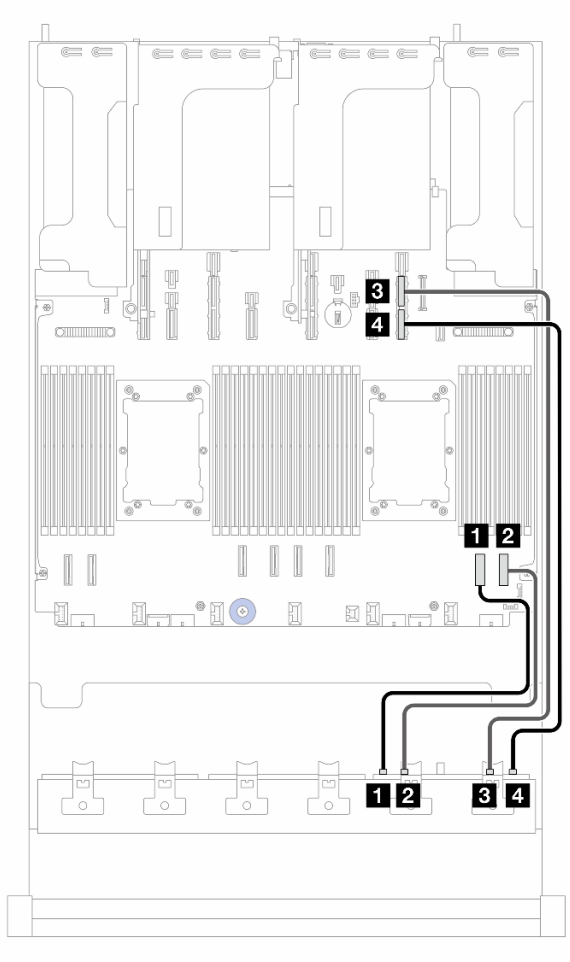


Figure 109. NVMe cable routing to BP3

From (BP3)	To (processor board)	Cable length
1 NVMe 0-1	1 PCIe 2	350 mm
2 NVMe 2-3	2 PCIe 1	350 mm
3 NVMe 4-5	3 PCIe 9A	600 mm
4 NVMe 6-7	4 PCIe 9B	600 mm

NVMe cable routing to BP9

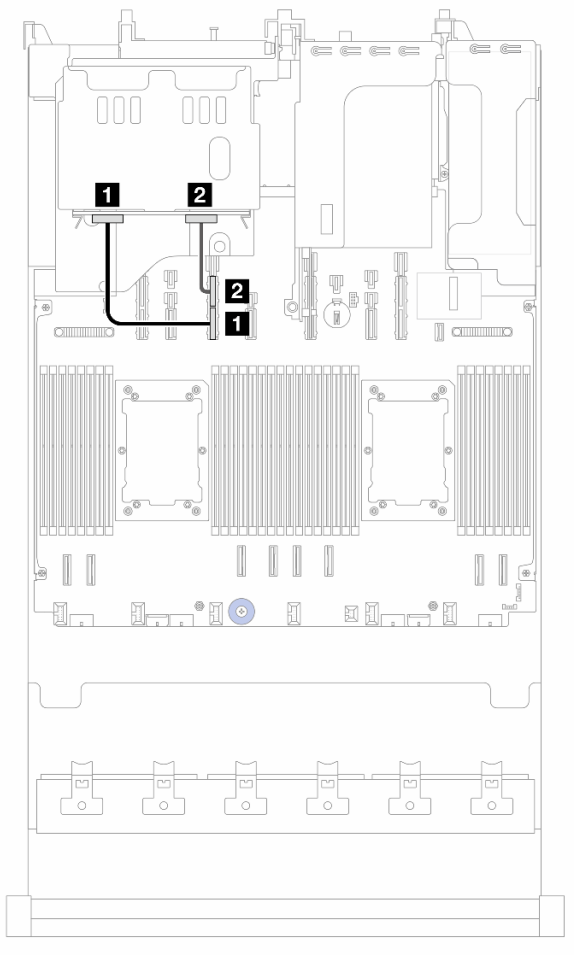


Figure 110. NVMe cable routing to BP9

From (BP9)	To (processor board)	Cable length
1 NVMe 2-3	1 PCIe 13B	280 mm
2 NVMe 0-1	2 PCIe 13A	280 mm

NVMe cable routing to BP10 and BP11

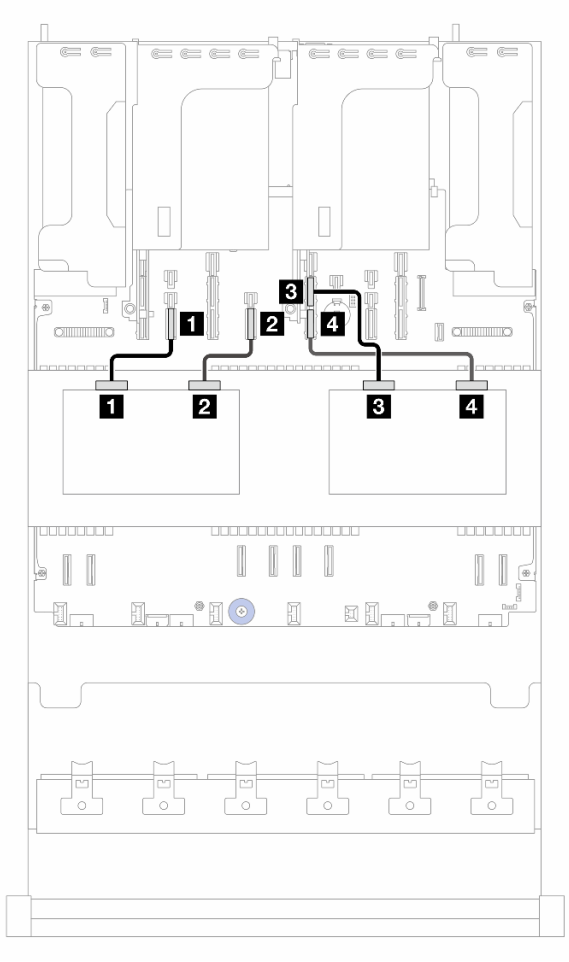


Figure 111. NVMe cable routing to BP10 and BP11

From	To (processor board)	Cable length
1 BP10: NVMe 0-1	1 PCIe 14	280 mm
2 BP10: NVMe 2-3	2 PCIe 12	280 mm
3 BP11: NVMe 0-1	3 PCIe 11A	280 mm
4 BP11: NVMe 2-3	4 PCIe 11B	280 mm

Drive backplane cable routing: 2.5-inch chassis with Compute Complex Neptune Core Module

This section provides backplane cable connection information for server models with 2.5" front drive bays and Compute Complex Neptune Core Module.

Power cable connections

For power cable connections, see “Drive backplane cable routing: 2.5-inch chassis without Compute Complex Neptune Core Module” on page 25.

Signal cable connections

- “Cable routing to SFF 8i/16i adapter (config. 1/4/6/9/11/13)” on page 104
- “NVMe cable routing (config. 8/9/10/11/12/13/14)” on page 105
- “Cable routing to CFF 16i adapter (config. 5/10/12/14)” on page 107
- “NVMe cable routing (config. 3/4/5)” on page 109
- “Cable routing to CFF 16i adapter (config. 2/7)” on page 109

The configuration numbers in the table below are for descriptive purposes only.

BP config.	Storage controller	Config. No.
8 x 2.5" SAS/SATA (BP1) 8 x 2.5" AnyBay (tri-mode)	1 x SFF 8i/16i	1
	1 x CFF 16i	2
8 x 2.5" NVMe (BP1)	N/A	3
8 x 2.5" AnyBay (BP1)	1 x SFF 8i/16i	4
	1 x CFF 16i	5
16 x 2.5" SAS/SATA (BP1 + BP2) 16 x 2.5" AnyBay (tri-mode)	2 x SFF 8i or 1 x SFF 16i	6
	1 x CFF 16i	7
16 x 2.5" NVMe (BP1 + BP2)	N/A	8
8 x 2.5" AnyBay + 8 x 2.5" NVMe (BP1 + BP2)	1 x SFF 8i/16i	9
	1 x CFF 16i	10
8 x 2.5" SAS/SATA + 8 x 2.5" AnyBay (BP1 + BP2)	2 x SFF 8i or 1 x SFF 16i	11
	1 x CFF 16i	12
8 x 2.5" SAS/SATA + 8 x 2.5" NVMe (BP1 + BP2)	1 x SFF 8i/16i	13
	1 x CFF 16i	14

Cable routing to SFF 8i/16i adapter (config. 1/4/6/9/11/13)

Notes:

- The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.
- Cable 2 is needed only in configurations with 8 x 2.5" SAS/SATA or AnyBay BP2.

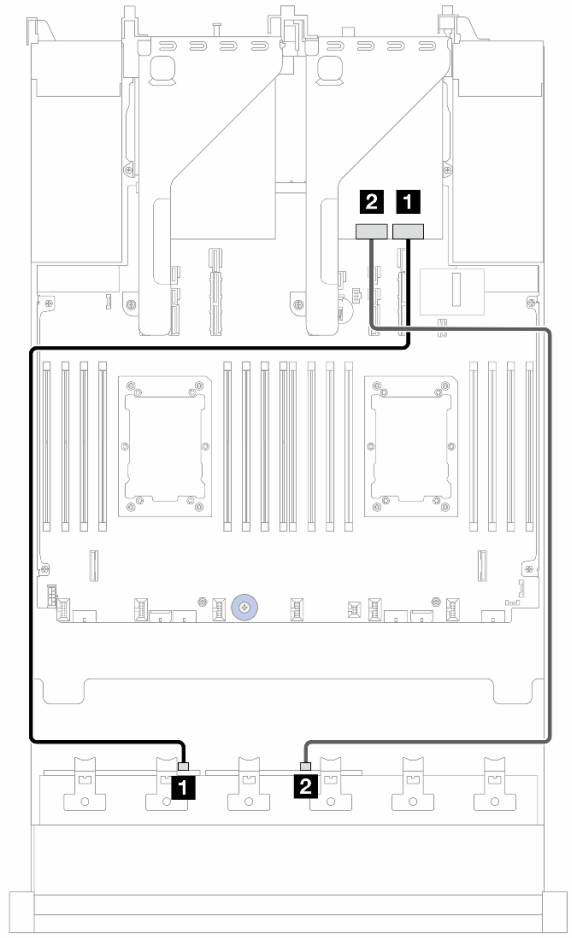


Figure 112. Cable routing to SFF 8i/16i adapter

From	To		Cable length
1 BP1: SAS	1 8i adapter: • Gen 4: C0 • Gen 3: C0C1	1 16i adapter: • Gen 4: C0 • Gen 3: C0C1	900 mm
2 BP2: SAS	2 8i adapter: • Gen 4: C0 • Gen 3: C0C1	2 • Gen 4: C1 • Gen 3: C2C3	900 mm

NVMe cable routing (config. 8/9/10/11/12/13/14)

Note: NVMe cable routing to BP1 is applicable only to configurations with 8 x 2.5" AnyBay or NVMe BP1 (config. 8/9/10).

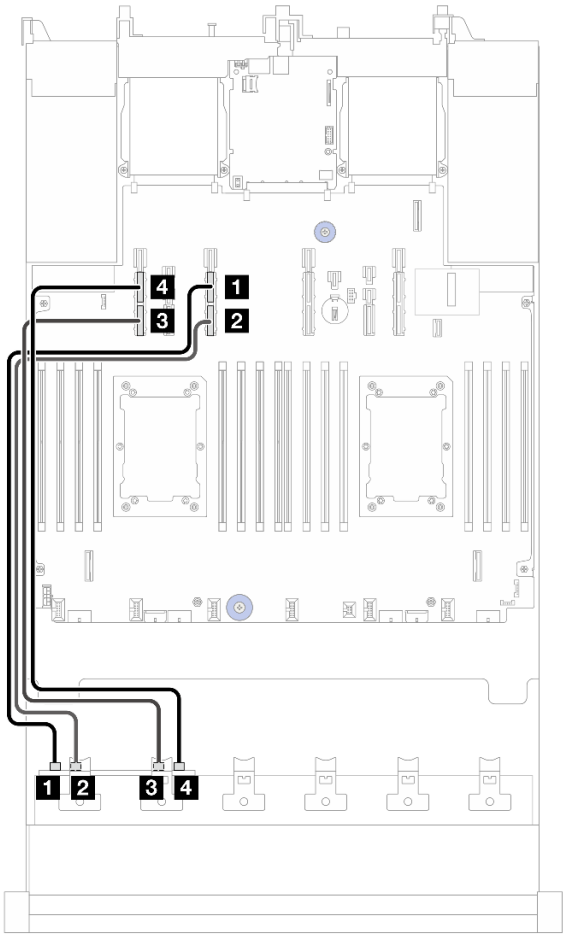


Figure 113. NVMe cable routing to BP1

From (BP1)	To (processor board)	Cable length
1 NVMe 0-1	1 PCIe 13A	600 mm
2 NVMe 2-3	2 PCIe 13B	600 mm
3 NVMe 4-5	3 PCIe 15B	600 mm
4 NVMe 6-7	4 PCIe 15A	600 mm

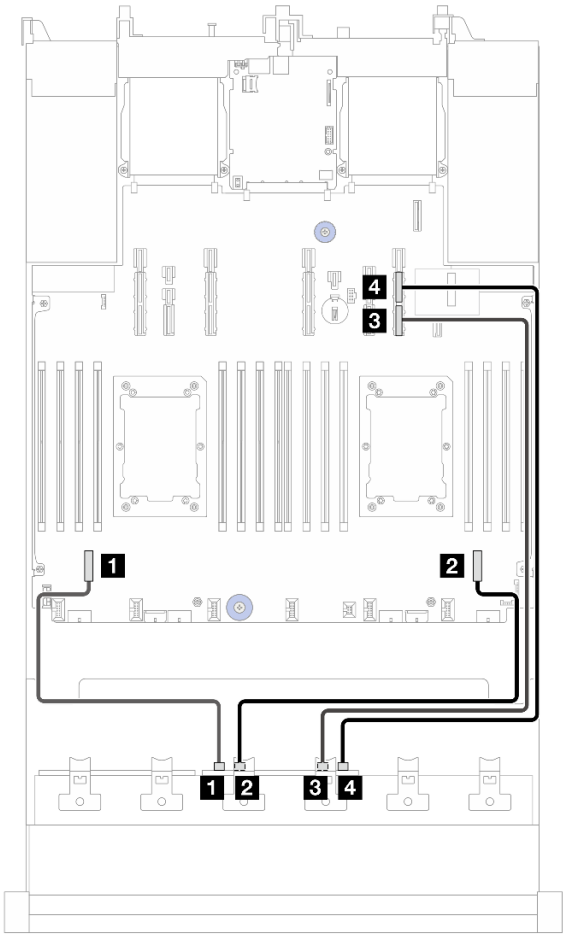


Figure 114. NVMe cable routing to BP2

From (BP2)	To (processor board)	Cable length
1 NVMe 0-1	1 PCIe 7	350 mm
2 NVMe 2-3	2 PCIe 2	450 mm
3 NVMe 4-5	3 PCIe 9B	700 mm
4 NVMe 6-7	4 PCIe 9A	700 mm

Cable routing to CFF 16i adapter (config. 5/10/12/14)

Note: Cable 3 is needed only in config. 12.

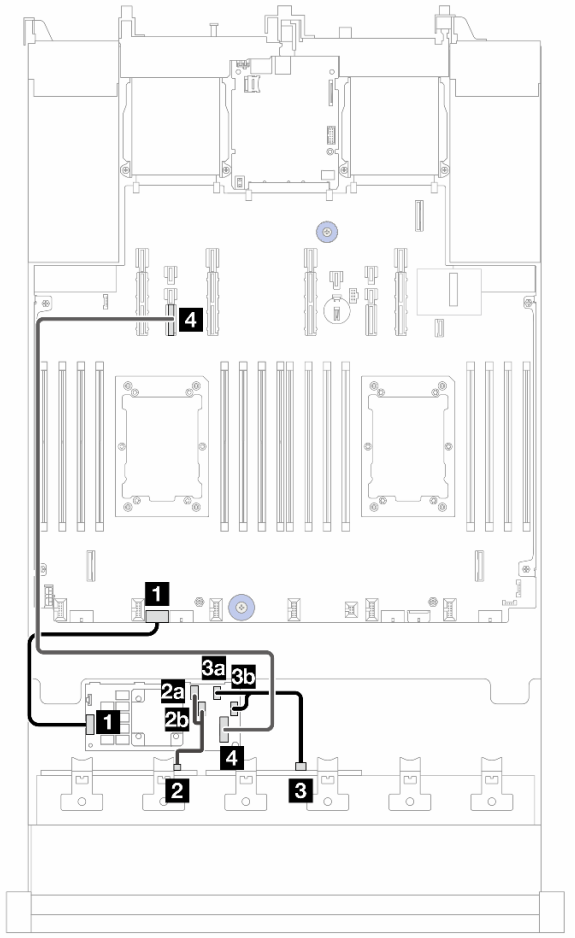


Figure 115. Cable routing to CFF 16i adapter (config. 5/10/12/14)

2P: two processors; 1P: one processor; PB: processor board

From (CFF 16i adapter)	To	Cable length
1 POWER	1 PB: RAID PWR	210 mm
2a C0	2 BP1: SAS	140/140 mm
2b C1		
3a C2	3 BP2: SAS	140/140 mm
3b C3		
4 MB (CFF INPUT)	4 PB: PCIe 14	900 mm

NVMe cable routing (config. 3/4/5)

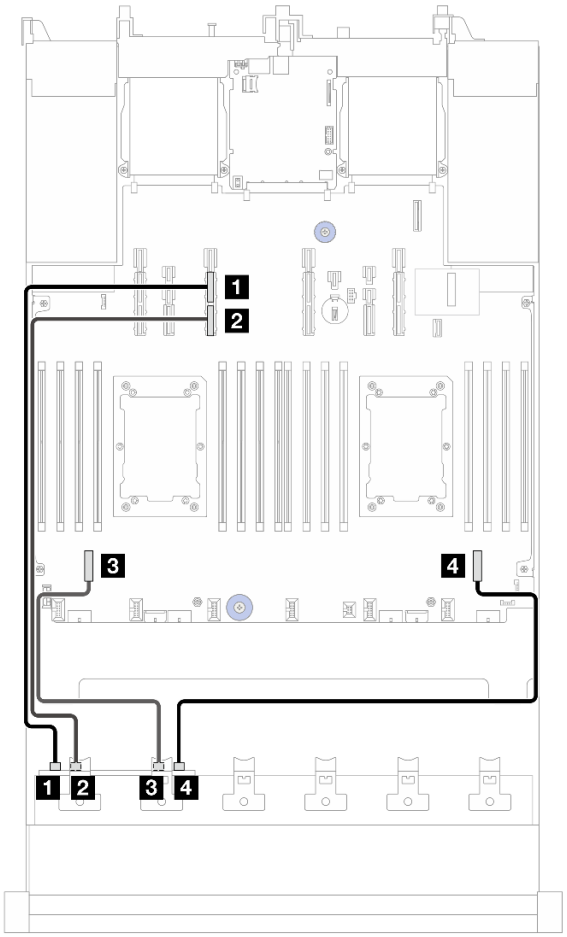


Figure 116. NVMe cable routing to BP1

From (BP1)	To (processor board)	Cable length
1 NVMe 0-1	1 PCIe 13A	600 mm
2 NVMe 2-3	2 PCIe 13B	600 mm
3 NVMe 4-5	3 PCIe 7	350 mm
4 NVMe 6-7	4 PCIe 2	450 mm

Cable routing to CFF 16i adapter (config. 2/7)

Note: Cable 3 is needed only in config. 7.

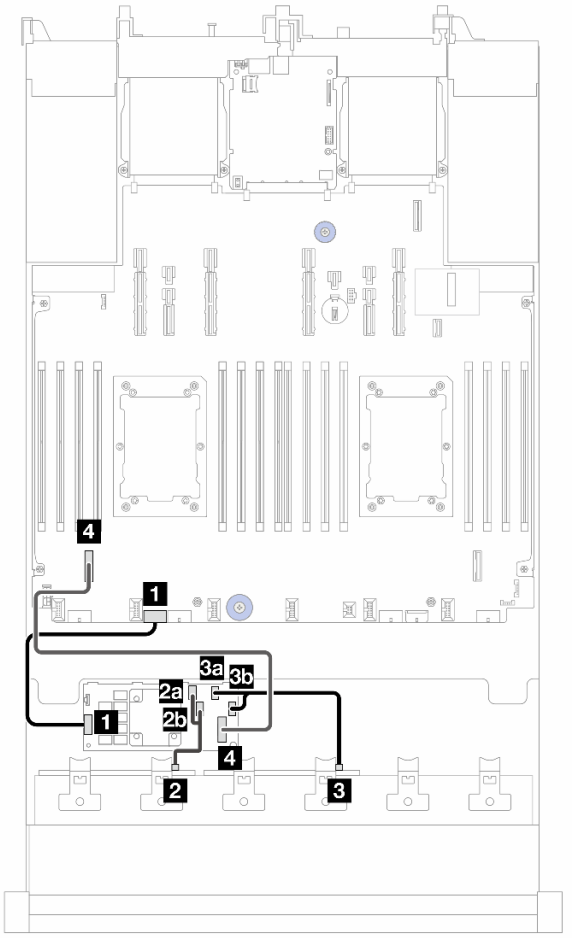


Figure 117. Cable routing to CFF 16i adapter (config. 2/7)

2P: two processors; 1P: one processor; PB: processor board

From (CFF 16i adapter)	To	Cable length
1 POWER	1 PB: RAID PWR	210 mm
2a C0	2 BP1: SAS	140/140 mm
2b C1		
3a C2	3 BP2: SAS	140/140 mm
3b C3		
4 MB (CFF INPUT)	4 PB: PCIe 7	450 mm

Drive backplane cable routing: 3.5-inch chassis

This section provides backplane cable connection information for server models with 3.5-inch front drive bays.

Power cable connections

Notes:

- For connectors on each drive backplane, see “Drive backplane connectors” on page 1.
  - Front backplane (BP1):
    - 12 x 3.5-inch SAS/SATA front backplane (also used as an 8 x 3.5-inch SAS/SATA front backplane when the upper four drive bays are left empty)
    - 12 x 3.5-inch AnyBay front backplane (also used as a 12 x 3.5-inch NVMe front backplane when only NVMe connectors on the backplane are cabled)
  - Middle backplanes (BP10/11):
    - 4 x 2.5-inch AnyBay middle/rear backplane (also used as a 4 x 2.5-inch NVMe middle/rear backplane when only NVMe connectors on the backplane are cabled)
  - Rear backplane (BP9):
    - 4 x 2.5-inch AnyBay middle/rear backplane (also used as a 4 x 2.5-inch NVMe middle/rear backplane when only NVMe connectors on the backplane are cabled)
    - 4 x 3.5-inch SAS/SATA rear backplane
- The following uses the 4 x 3.5-inch rear backplane as an example of BP9 for illustration. The cable routing for 4 x 2.5-inch rear backplane is similar.

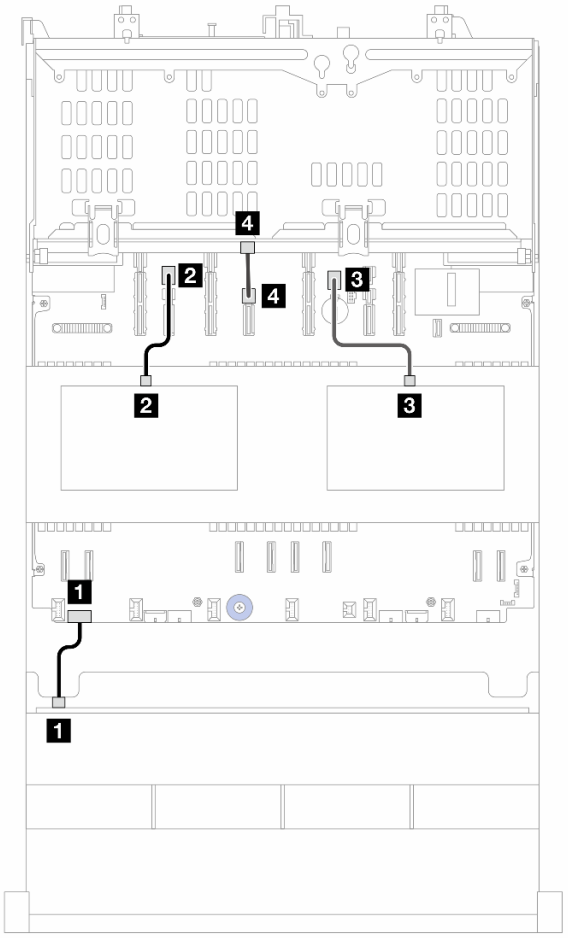


Figure 118. Power cable connections

From	To (processor board)	Length
1 BP1: PWR	1 PWR 1	• SAS/SATA: 250 mm • AnyBay: 280 mm
2 BP10: PWR	2 PWR 23	250 mm
3 BP11: PWR	3 PWR 21	250 mm
4 BP9: PWR	4 PWR 12	250 mm

Signal cable connections

Refer to the specific topic for signal cable connections depending on the backplanes you have installed.

- “12 x 3.5-inch SAS/SATA backplane” on page 112
- “12 x 3.5-inch AnyBay backplane” on page 122

12 x 3.5-inch SAS/SATA backplane

This section provides cable routing information for the server model with the 12 x 3.5-inch SAS/SATA front drive backplane.

- “Front 12 x 3.5"/8 x 3.5" SAS/SATA” on page 113
- “Front 12 x 3.5" SAS/SATA + Middle 8 x 2.5" NVMe” on page 114

- “Front 12 x 3.5" SAS/SATA + Rear 4 x 2.5" AnyBay” on page 115
- “Front 12 x 3.5" SAS/SATA + Rear 4 x 2.5" NVMe” on page 118
- “Front 12 x 3.5" SAS/SATA + Rear 4 x 3.5" SAS/SATA” on page 120

Front 12 x 3.5"/8 x 3.5" SAS/SATA

This topic provides cable routing information for the front 12 x 3.5"/8 x 3.5" SAS/SATA configuration.

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

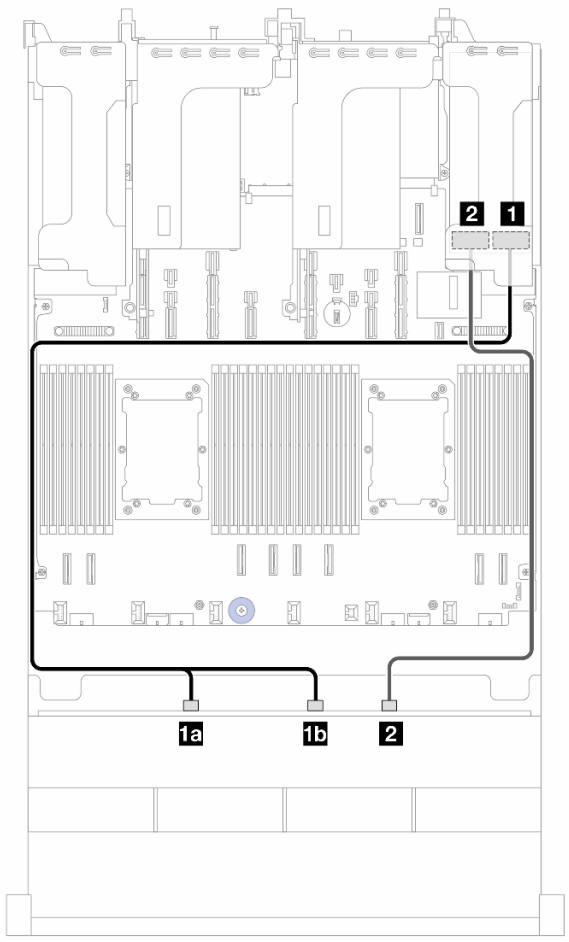


Figure 119. SAS/SATA cable routing to SFF 16i adapter

From (BP1)	To (16i adapter)	Cable length
1a SAS 0	1 • Gen 4: C0 • Gen 3: C0C1	• Gen 4: 900/1020 mm • Gen 3: 820/1020 mm
1b SAS 1		
2 SAS 2	2 • Gen 4: C1 • Gen 3: C2	900 mm

Front 12 x 3.5" SAS/SATA + Middle 8 x 2.5" NVMe

This topic provides cable routing information for the front 12 x 3.5" SAS/SATA + middle 8 x 2.5" NVMe configuration.

- "Front backplane cable routing" on page 114
- "Middle backplane cable routing" on page 115

Front backplane cable routing

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

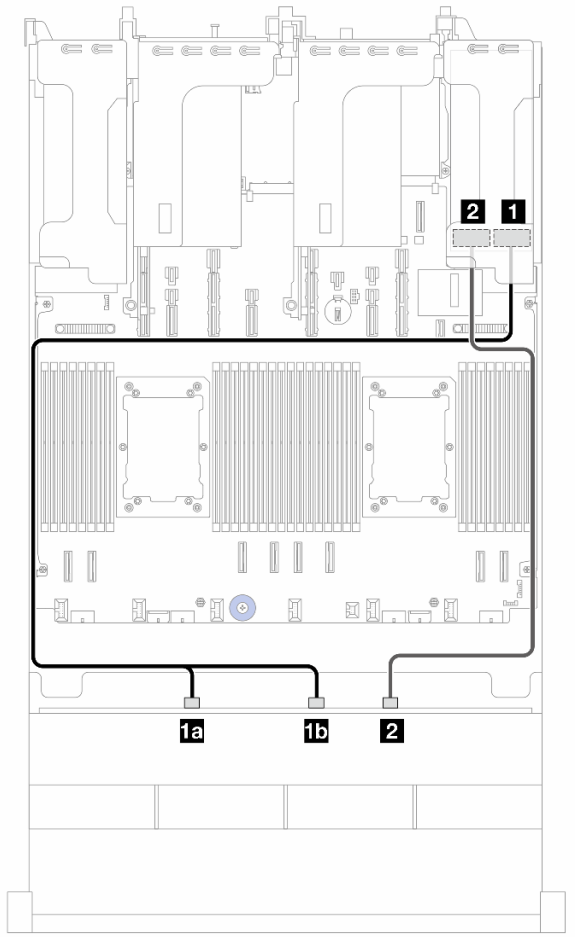


Figure 120. SAS/SATA cable routing to SFF 16i adapter

From (BP1)	To (16i adapter)	Cable length
1a SAS 0	1 • Gen 4: C0 • Gen 3: C0C1	• Gen 4: 900/1020 mm • Gen 3: 820/1020 mm
1b SAS 1		
2 SAS 2	2 • Gen 4: C1 • Gen 3: C2	900 mm

Middle backplane cable routing

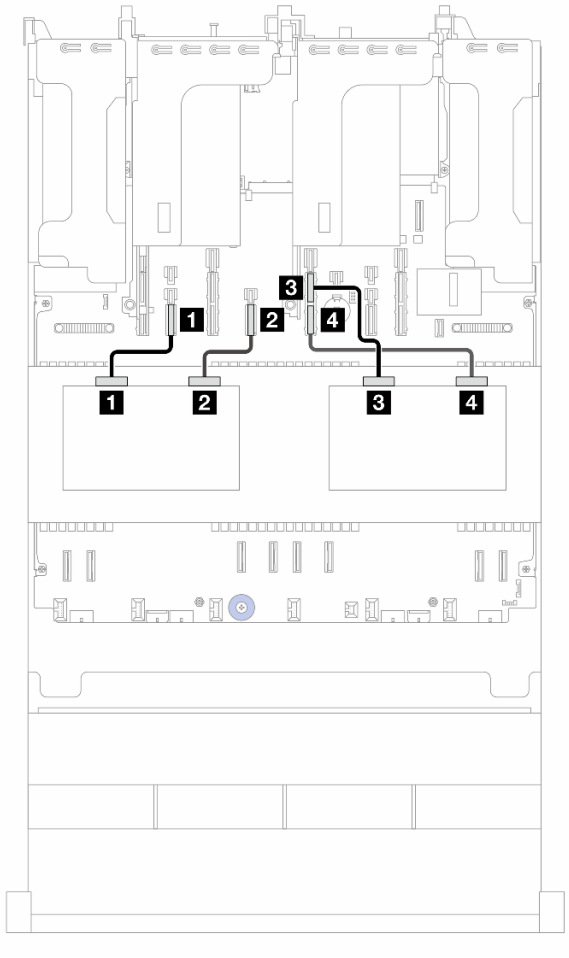


Figure 121. Middle backplane cable routing

From	To (processor board)	Cable length
1 BP10: NVMe 0-1	1 PCIe 14	280 mm
2 BP10: NVMe 2-3	2 PCIe 12	280 mm
3 BP11: NVMe 0-1	3 PCIe 11A	280 mm
4 BP11: NVMe 2-3	4 PCIe 11B	280 mm

Front 12 x 3.5" SAS/SATA + Rear 4 x 2.5" AnyBay

This topic provides cable routing information for the front 12 x 3.5" SAS/SATA + rear 4 x 2.5" AnyBay configuration.

- "SAS/SATA cable routing" on page 115
- "NVMe cable routing" on page 118

SAS/SATA cable routing

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

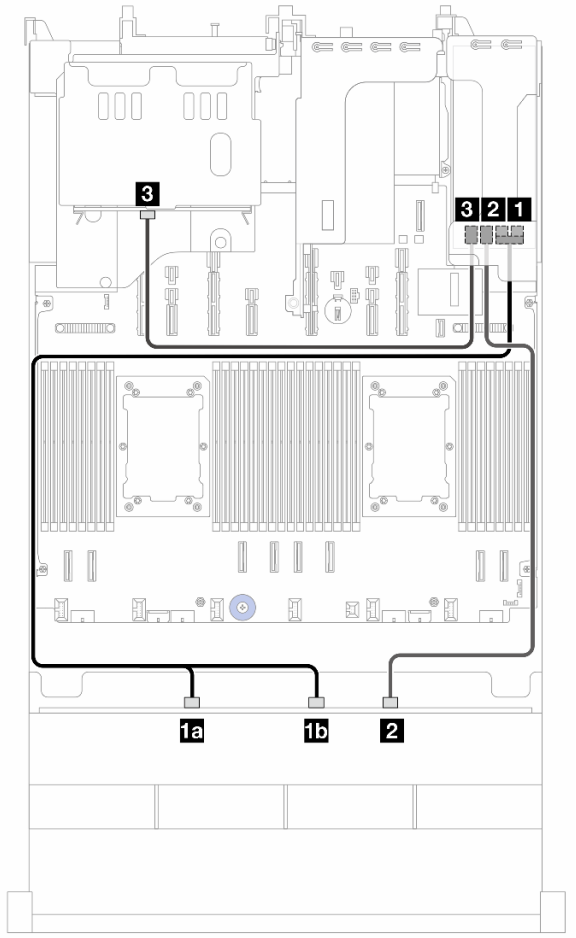


Figure 122. SAS/SATA cable routing to SFF 16i adapter (Gen 3)

From	To (16i adapter)	Cable length
1a BP1: SAS 0	1 C0C1	820/1020 mm
1b BP1: SAS 1		
2 BP1: SAS 2	2 C2	900 mm
3 BP9: SAS	3 C3	450 mm

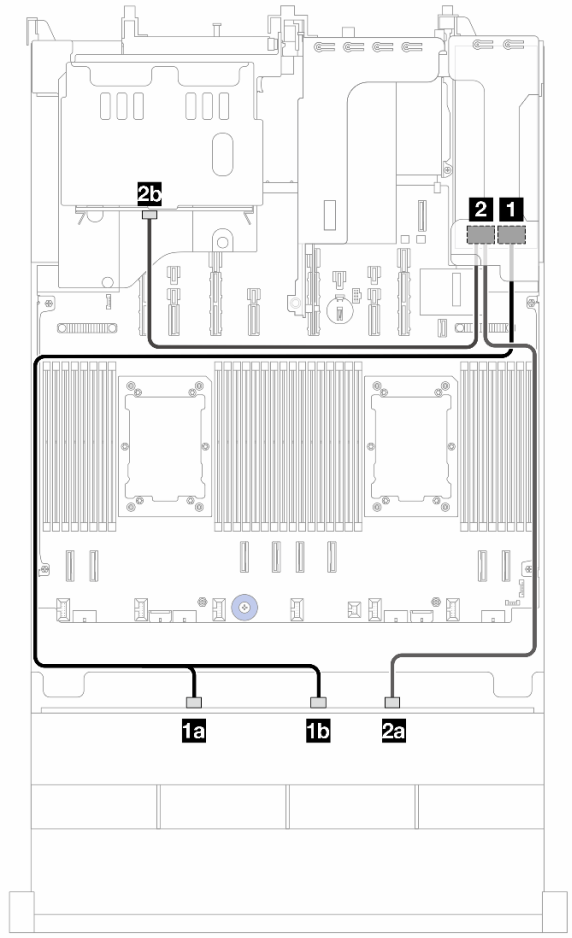


Figure 123. SAS/SATA cable routing to SFF 16i adapter (Gen 4)

From	To (16i adapter)	Cable length
1a BP1: SAS 0	1 C0	900/1020 mm
1b BP1: SAS 1		
2a BP1: SAS 2	2 C1	760/450 mm
2b BP9: SAS		

NVMe cable routing

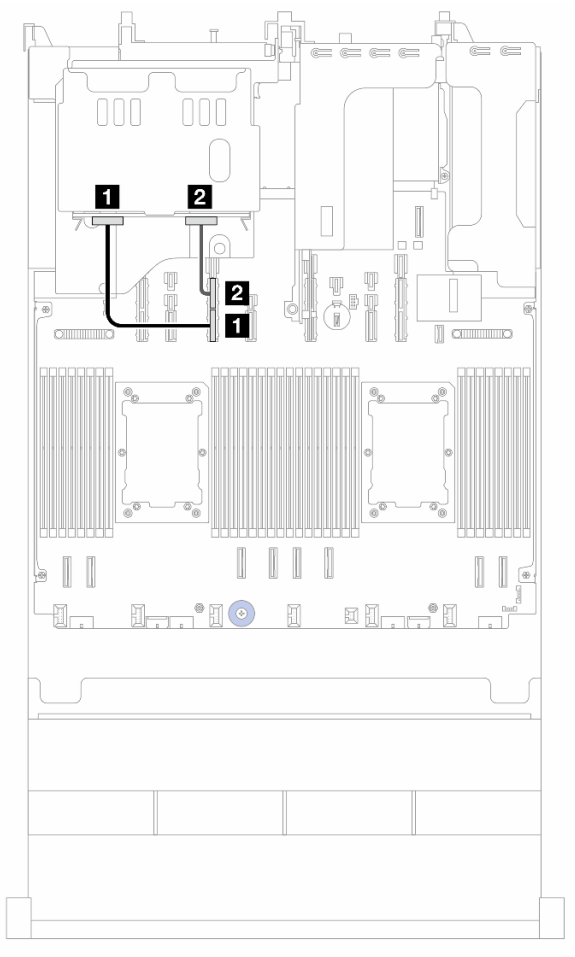


Figure 124. NVMe cable routing

From (BP9)	To (processor board)	Cable length
1 NVMe 2-3	1 PCIe 13B	280 mm
2 NVMe 0-1	2 PCIe 13A	280 mm

Front 12 x 3.5" SAS/SATA + Rear 4 x 2.5" NVMe

This topic provides cable routing information for the front 12 x 3.5" SAS/SATA + rear 4 x 2.5" NVMe configuration.

- "Front backplane cable routing" on page 118
- "Rear backplane cable routing" on page 120

Front backplane cable routing

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

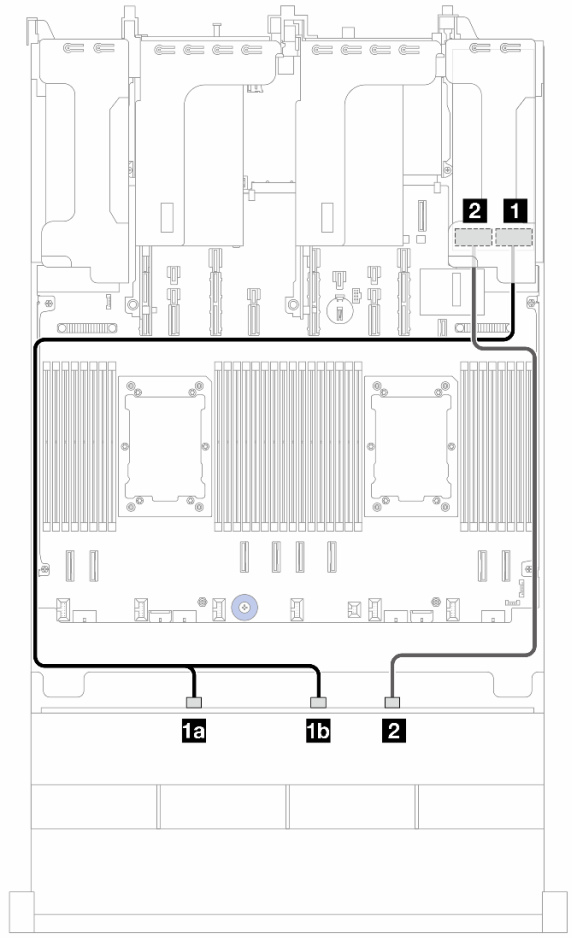


Figure 125. SAS/SATA cable routing to SFF 16i adapter

From (BP1)	To (16i adapter)	Cable length
1a SAS 0 1b SAS 1	1 • Gen 4: C0 • Gen 3: C0C1	• Gen 4: 900/1020 mm • Gen 3: 820/1020 mm
2 SAS 2	2 • Gen 4: C1 • Gen 3: C2	900 mm

Rear backplane cable routing

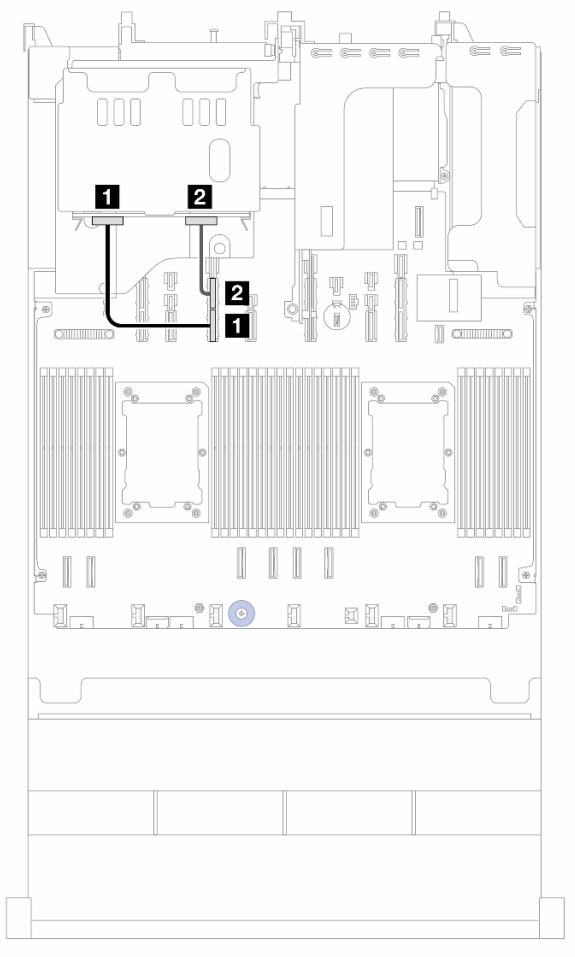


Figure 126. NVMe cable routing

From (BP9)	To (processor board)	Cable length
1 NVMe 2-3	1 PCIe 13B	280 mm
2 NVMe 0-1	2 PCIe 13A	280 mm

Front 12 x 3.5" SAS/SATA + Rear 4 x 3.5" SAS/SATA

This topic provides cable routing information for the front 12 x 3.5" SAS/SATA + rear 4 x 3.5" SAS/SATA configuration.

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

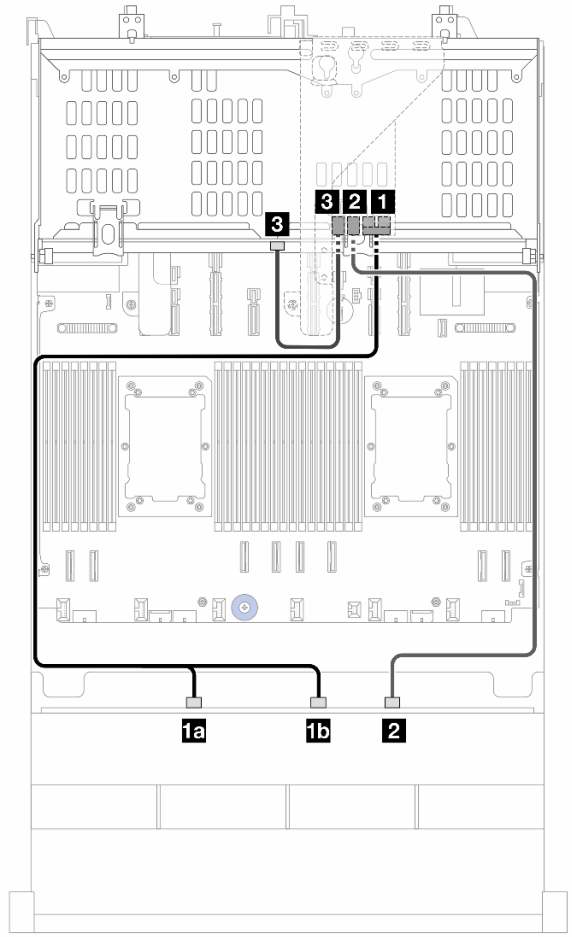


Figure 127. SAS/SATA cable routing to SFF 16i adapter (Gen 3)

From	To (16i adapter)	Cable length
1a BP1: SAS 0	1 C0C1	820/1020 mm
1b BP1: SAS 1		
2 BP1: SAS 2	2 C2	900 mm
3 BP9: SAS	3 C3	300 mm

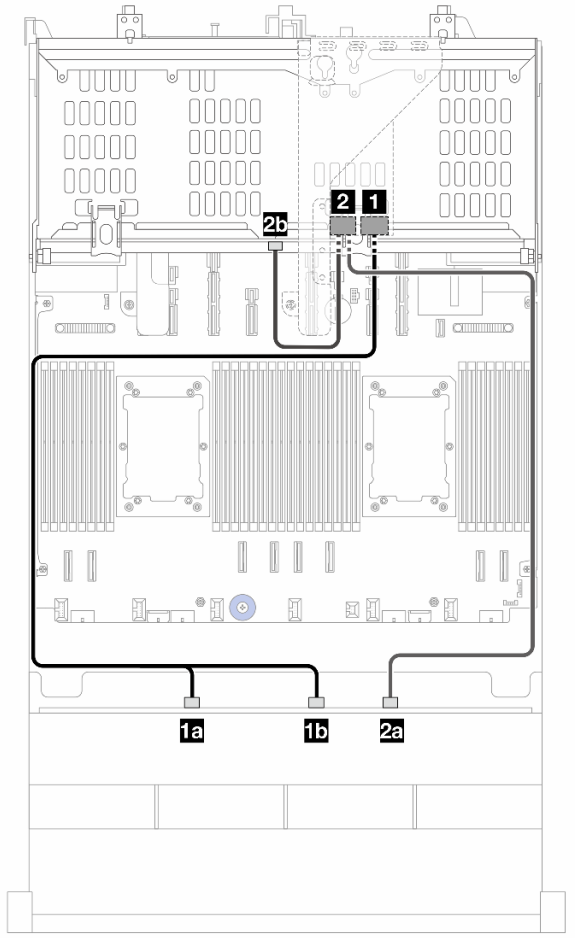


Figure 128. SAS/SATA cable routing to SFF 16i adapter (Gen 4)

From	To (16i adapter)	Cable length
1a BP1: SAS 0	1 C0	900/1020 mm
1b BP1: SAS 1		
2a BP1: SAS 2	2 C1	760/450 mm
2b BP9: SAS		

12 x 3.5-inch AnyBay backplane

This section provides cable routing information for the server model with the 12 x 3.5-inch AnyBay front drive backplane.

- “Front 8 x 3.5" SAS/SATA + 4 x 3.5" AnyBay/NVMe” on page 122
- “Front (8 x 3.5" SAS/SATA + 4 x 3.5" AnyBay) + Rear 4 x 2.5" NVMe” on page 124

Front 8 x 3.5" SAS/SATA + 4 x 3.5" AnyBay/NVMe

This topic provides cable routing information for the front 8 x 3.5" SAS/SATA + 4 x 3.5" AnyBay/NVMe configuration.

- “SAS/SATA cable routing” on page 123

- “NVMe cable routing” on page 124

SAS/SATA cable routing

Notes:
- The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.
- Cable 2 is not needed in the front 8 x 3.5" SAS/SATA + 4 x 3.5" NVMe configuration.

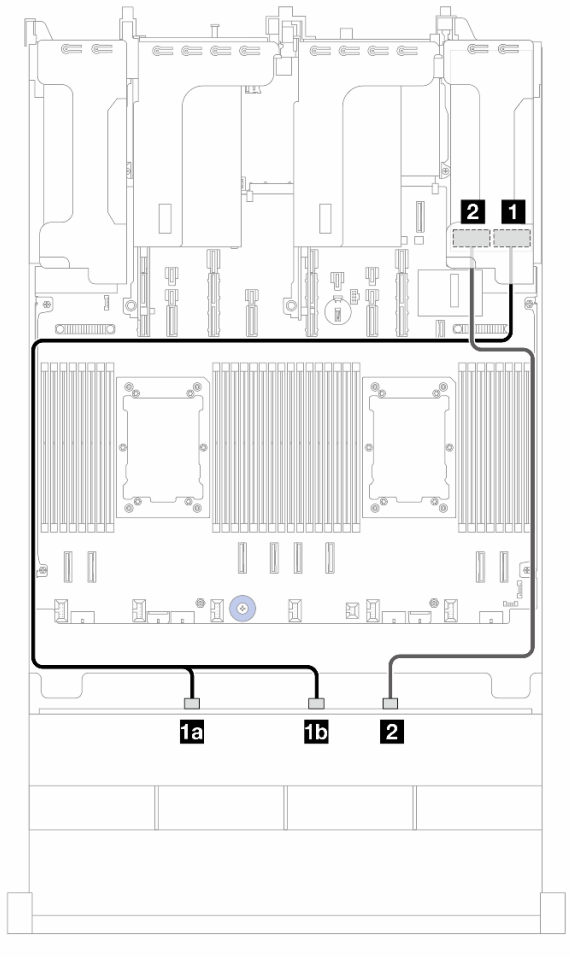


Figure 129. SAS/SATA cable routing to SFF 16i adapter

From (BP1)	To (16i adapter)	Cable length
1a SAS 0	1 • Gen 4: C0 • Gen 3: C0C1	• Gen 4: 900/1020 mm • Gen 3: 820/1020 mm
1b SAS 1		
2 SAS 2	2 • Gen 4: C1 • Gen 3: C2	900 mm

NVMe cable routing

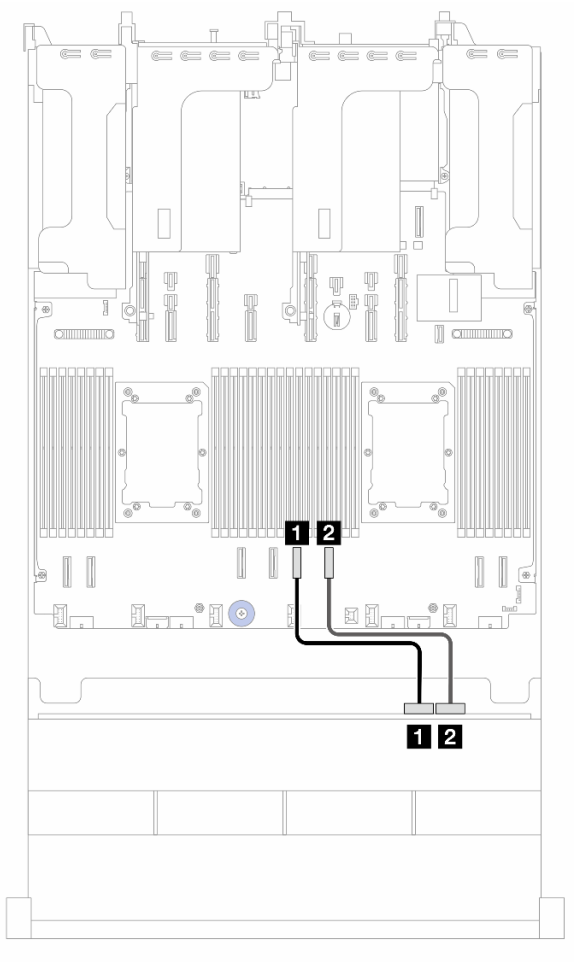


Figure 130. NVMe cable routing

From (BP1)	To (processor board)	Cable length
1 NVMe 8-9	1 PCIe 4	250 mm
2 NVMe 10-11	2 PCIe 3	250 mm

Front (8 x 3.5" SAS/SATA + 4 x 3.5" AnyBay) + Rear 4 x 2.5" NVMe

This topic provides cable routing information for the front (8 x 3.5" SAS/SATA + 4 x 3.5" AnyBay) + rear 4 x 2.5" NVMe configuration.

- "Front backplane cable routing" on page 124
- "Rear backplane cable routing" on page 127

Front backplane cable routing

Note: The location of the adapter and cable connectors on the adapter may differ from those shown in the illustration. For details, see the table below.

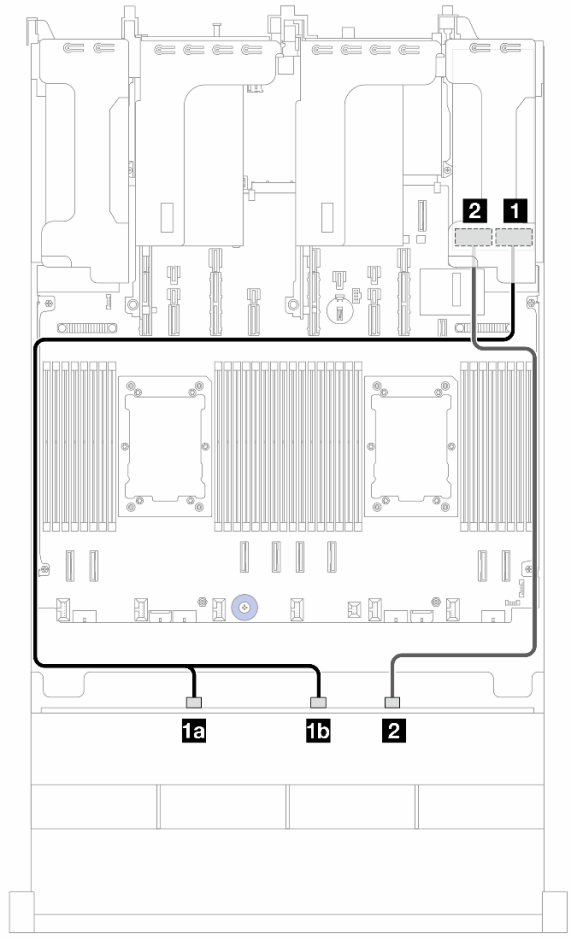


Figure 131. SAS/SATA cable routing to SFF 16i adapter

From (BP1)	To (16i adapter)	Cable length
1a SAS 0 1b SAS 1	1 • Gen 4: C0 • Gen 3: C0C1	• Gen 4: 900/1020 mm • Gen 3: 820/1020 mm
2 SAS 2	2 • Gen 4: C1 • Gen 3: C2	900 mm

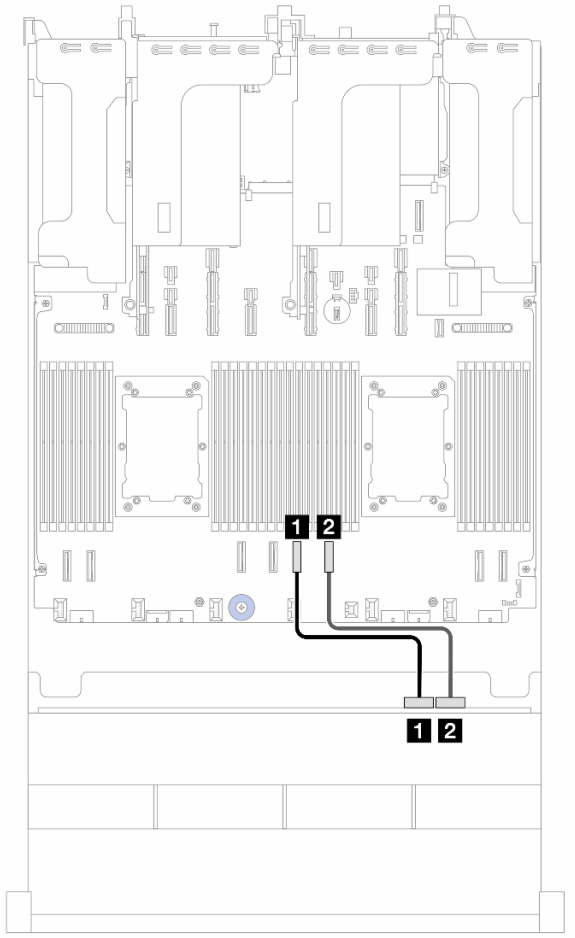


Figure 132. NVMe cable routing

From (BP1)	To (processor board)	Cable length
1 NVMe 8-9	1 PCIe 4	250 mm
2 NVMe 10-11	2 PCIe 3	250 mm

Rear backplane cable routing

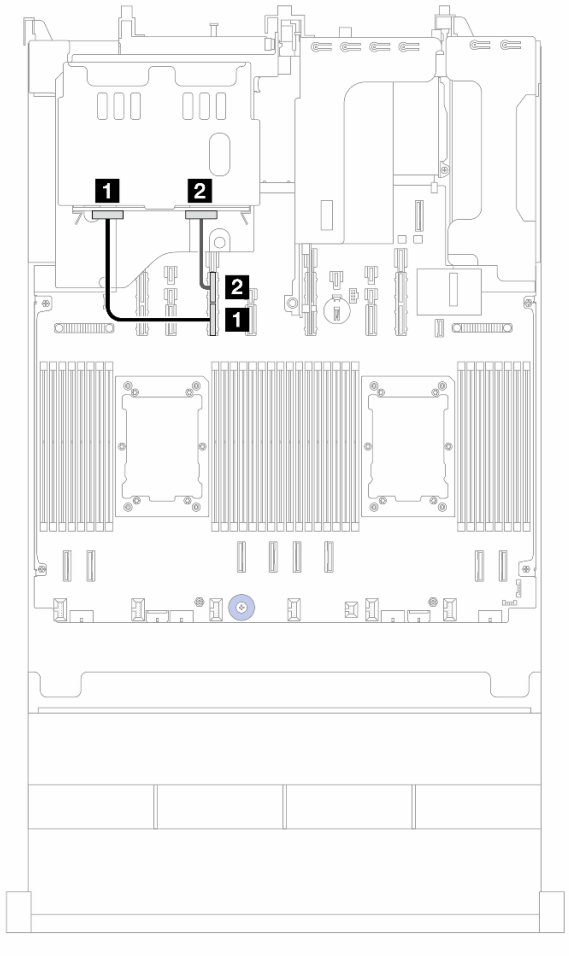


Figure 133. NVMe cable routing

From (BP9)	To (processor board)	Cable length
1 NVMe 2-3	1 PCIe 13B	280 mm
2 NVMe 0-1	2 PCIe 13A	280 mm

E3.S chassis without Compute Complex Neptune Core Module

This section provides backplane cable connection information for server models with front E3.S bays and without Compute Complex Neptune Core Module.

- “Supported E3.S configurations” on page 128
- “Power cable connections” on page 129
- “Signal cable connections” on page 130

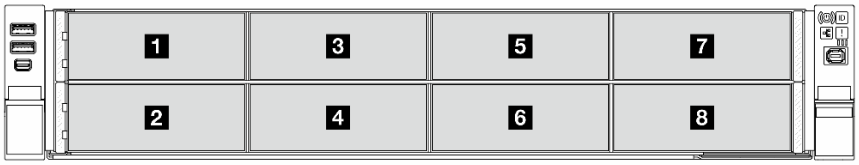


Figure 134. E3.S backplane numbering

Supported E3.S configurations

The table below lists the E3.S configurations supported by servers without Compute Complex Neptune Core Module.

1T: E3.S hot-swap drive; 2T: E3.S non-hot-swap CXL memory (CMM)

BP1	BP2	BP3	BP4	BP5	BP6	BP7	BP8
				Processor 1			
				2x2T			
				4x1T		4x1T	
				2x2T		2x2T	
				4x1T		2x2T	
				2x2T	2x2T	2x2T	
				4x1T	4x1T	4x1T	4x1T
				4x1T	2x2T	4x1T	2x2T
				4x1T	2x2T	2x2T	2x2T
Processor 2				Processor 1			
4x1T				4x1T			
2x2T				2x2T			
4x1T		4x1T		4x1T		4x1T	
2x2T		2x2T		2x2T		2x2T	
4x1T		2x2T		4x1T		2x2T	
4x1T	4x1T	4x1T		4x1T	4x1T	4x1T	
2x2T	2x2T	2x2T		2x2T	2x2T	2x2T	
4x1T	2x2T	2x2T		4x1T	2x2T	2x2T	
4x1T	2x2T	4x1T		4x1T	2x2T	4x1T	
4x1T	4x1T	4x1T	4x1T	4x1T	4x1T	4x1T	4x1T
4x1T	2x2T	2x2T	2x2T	4x1T	2x2T	2x2T	2x2T

BP1	BP2	BP3	BP4	BP5	BP6	BP7	BP8
4x1T	2x2T	4x1T	2x2T	4x1T	2x2T	4x1T	2x2T
4x1T	4x1T	4x1T	2x2T	4x1T	4x1T	4x1T	2x2T

Power cable connections

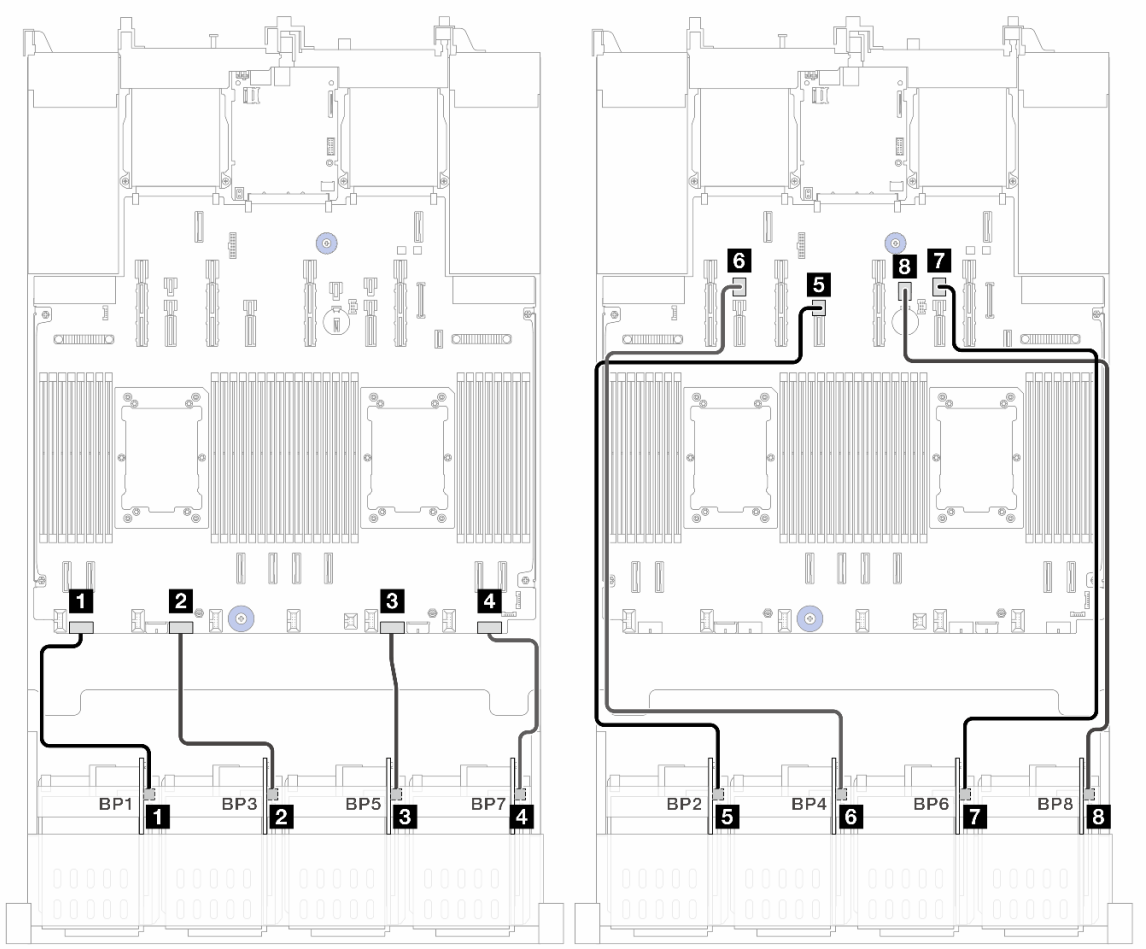


Figure 135. Power cable connections

From	To (processor board)	Cable length
1 BP1: PWR	1 PWR 1	250 mm
2 BP3: PWR	2 PWR 2	250 mm
3 BP5: PWR	3 PWR 3	250 mm
4 BP7: PWR	4 PWR 4	250 mm
5 BP2: PWR	5 PWR 12	700 mm
6 BP4: PWR	6 PWR 23	700 mm
7 BP6: PWR	7 PWR 20	700 mm
8 BP8: PWR	8 PWR 21	700 mm

Signal cable connections

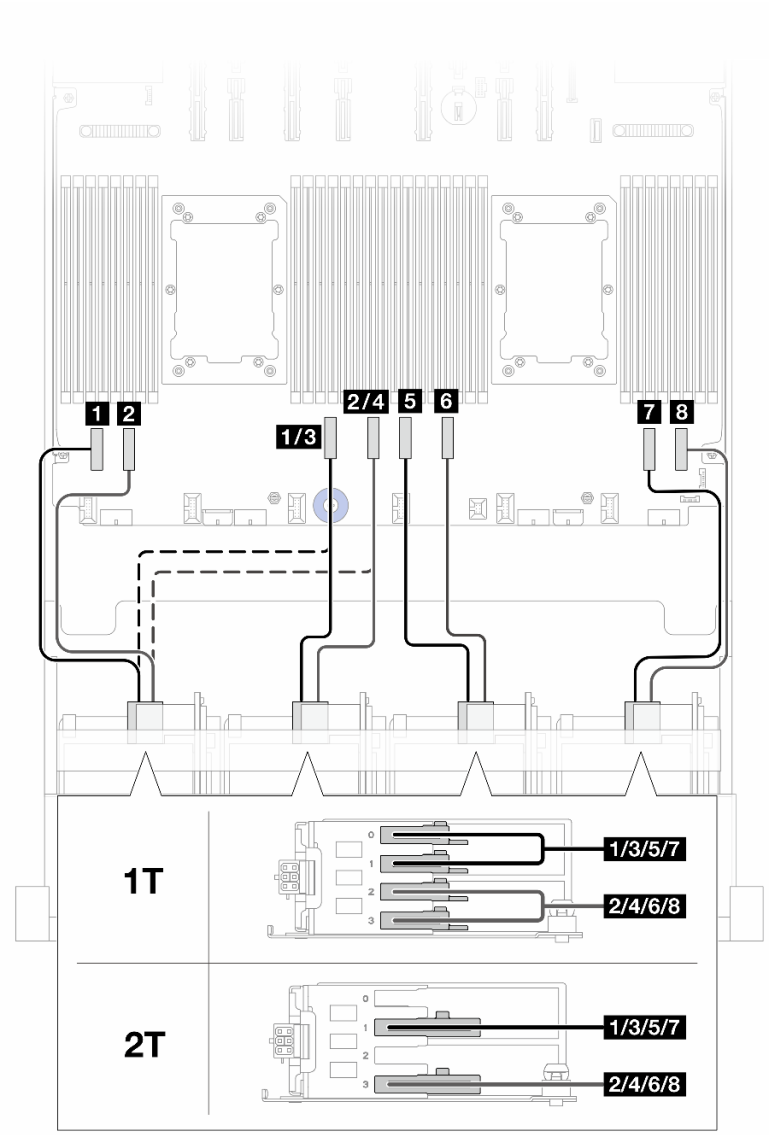


Figure 136. Signal cable connections for BP 1/3/5/7

From	To (processor board)	Cable length
1 • BP1: Bay 0, Bay 1 (1T) • BP1: Bay 1 (2T)	1 • PCIe 8 (when BP3 is installed) • PCIe 6 (when BP3 is not installed)	300 mm
2 • BP1: Bay 2, Bay 3 (1T) • BP1: Bay 3 (2T)	2 • PCIe 7 (when BP3 is installed) • PCIe 5 (when BP3 is not installed)	300 mm
3 • BP3: Bay 0, Bay 1 (1T) • BP3: Bay 1 (2T)	3 PCIe 6	300 mm
4 • BP3: Bay 2, Bay 3 (1T) • BP3: Bay 3 (2T)	4 PCIe 5	300 mm

From	To (processor board)	Cable length
5 • BP5: Bay 0, Bay 1 (1T) • BP5: Bay 1 (2T)	5 PCIe 4	300 mm
6 • BP5: Bay 2, Bay 3 (1T) • BP5: Bay 3 (2T)	6 PCIe 3	300 mm
7 • BP7: Bay 0, Bay 1 (1T) • BP7: Bay 1 (2T)	7 PCIe 2	300 mm
8 • BP7: Bay 2, Bay 3 (1T) • BP7: Bay 3 (2T)	8 PCIe 1	300 mm

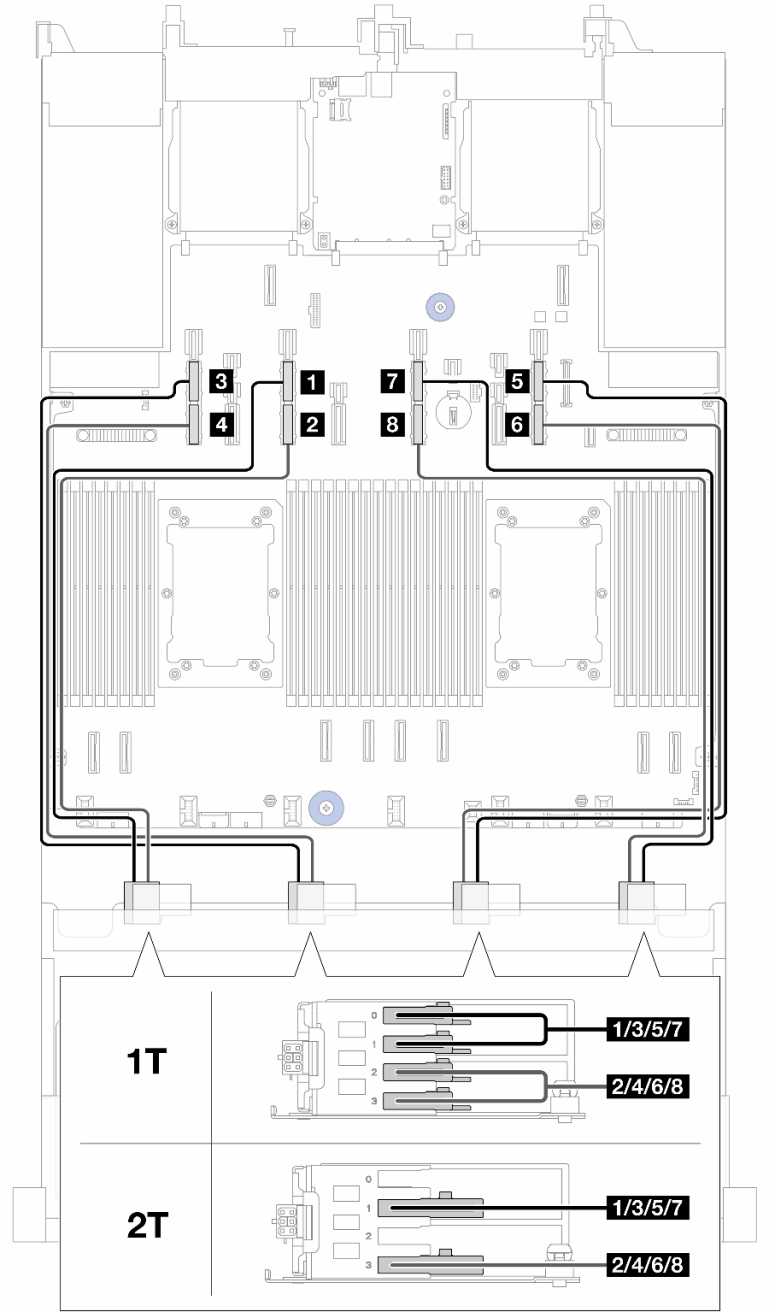


Figure 137. Signal cable connections for BP 2/4/6/8

From	To (processor board)	Cable length
1 • BP2: Bay 0, Bay 1 (1T) • BP2: Bay 1 (2T)	1 PCIe 13A	630 mm
2 • BP2: Bay 2, Bay 3 (1T) • BP2: Bay 3 (2T)	2 PCIe 13B	630 mm
3 • BP4: Bay 0, Bay 1 (1T) • BP4: Bay 1 (2T)	3 PCIe 15A	630 mm

From	To (processor board)	Cable length
4 • BP4: Bay 2, Bay 3 (1T) • BP4: Bay 3 (2T)	4 PCIe 15B	630 mm
5 • BP6: Bay 0, Bay 1 (1T) • BP6: Bay 1 (2T)	5 PCIe 9A	630 mm
6 • BP6: Bay 2, Bay 3 (1T) • BP6: Bay 3 (2T)	6 PCIe 9B	630 mm
7 • BP8: Bay 0, Bay 1 (1T) • BP8: Bay 1 (2T)	7 PCIe 11A	630 mm
8 • BP8: Bay 2, Bay 3 (1T) • BP8: Bay 3 (2T)	8 PCIe 11B	630 mm

E3.S chassis with Compute Complex Neptune Core Module

This section provides backplane cable connection information for server models with front E3.S bays and Compute Complex Neptune Core Module.

- “Supported E3.S configurations” on page 134
- “Power cable connections” on page 135
- “Signal cable connections” on page 136

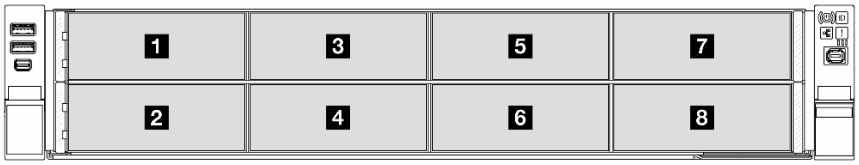


Figure 138. E3.S backplane numbering

Supported E3.S configurations

The table below lists the E3.S configurations supported by servers with Compute Complex Neptune Core Module.

1T: E3.S hot-swap drive

BP1	BP2	BP3	BP4	BP5	BP6	BP7	BP8
Processor 2				Processor 1			
4x1T				4x1T			
4x1T		4x1T		4x1T		4x1T	

Power cable connections

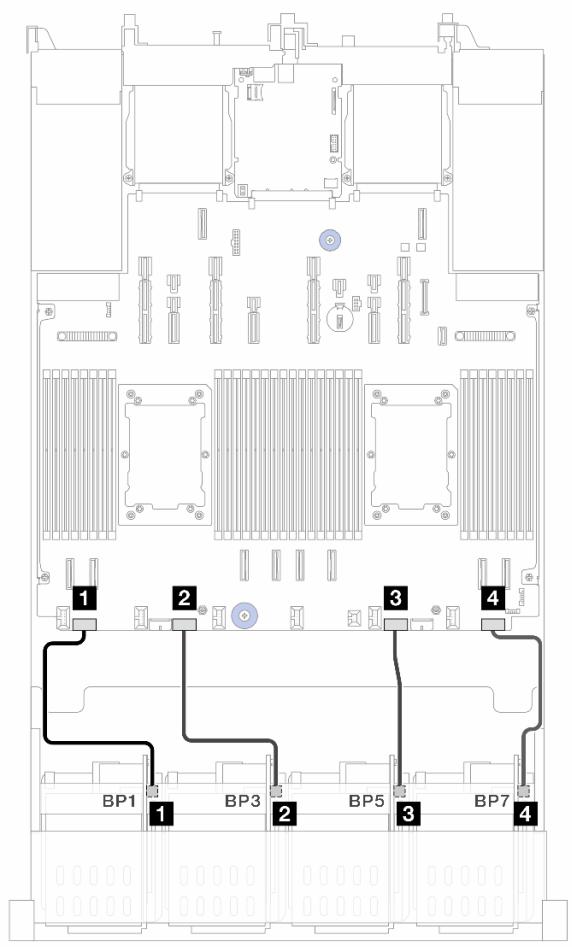


Figure 139. Power cable connections

From	To (processor board)	Cable length
1 BP1: PWR	1 PWR 1	250 mm
2 BP3: PWR	2 PWR 2	250 mm
3 BP5: PWR	3 PWR 3	250 mm
4 BP7: PWR	4 PWR 4	250 mm

Signal cable connections

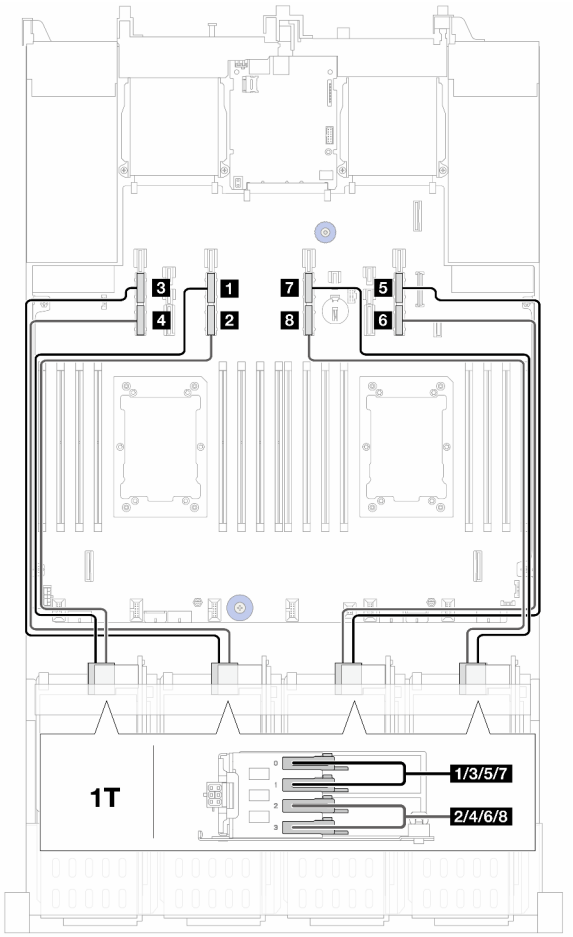


Figure 140. Signal cable connections

From	To (processor board)	Cable length
1 BP1: Bay 0, Bay 1	1 PCIe 13A	630 mm
2 BP1: Bay 2, Bay 3	2 PCIe 13B	630 mm
3 BP3: Bay 0, Bay 1	3 PCIe 15A	630 mm
4 BP3: Bay 2, Bay 3	4 PCIe 15B	630 mm
5 BP5: Bay 0, Bay 1	5 PCIe 9A	630 mm
6 BP5: Bay 2, Bay 3	6 PCIe 9B	630 mm
7 BP7: Bay 0, Bay 1	7 PCIe 11A	630 mm
8 BP7: Bay 2, Bay 3	8 PCIe 11B	630 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/sr650-v4/pdf_files

- ***Rail Installation Guides***
  - Rail installation in a rack
- ***CMA Installation Guide***
  - Cable management arm (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

Note: SR650 V4 configured with Processor Neptune Core Module or Compute Complex Neptune Core Module can be installed in the ThinkSystem Heavy Duty Full Depth Rack Cabinets. For ThinkSystem Heavy Duty Full Depth Rack Cabinets User Guide, see ThinkSystem Heavy Duty Full Depth Rack Cabinets User Guide.

Support websites

This section provides driver and firmware downloads and support resources.

Support and downloads

- Drivers and Software download website for ThinkSystem SR650 V4

© Copyright Lenovo 2025

  - https://datacentersupport.lenovo.com/products/servers/thinksystem/sr650v4/downloads/driver-list/
- Lenovo Data Center Forum
  - https://forums.lenovo.com/t5/Datacenter-Systems/ct-p/sv_eg
- Lenovo Data Center Support for ThinkSystem SR650 V4
  - https://datacentersupport.lenovo.com/products/servers/thinksystem/sr650v4
- Lenovo License Information Documents
  - https://datacentersupport.lenovo.com/documents/lnvo-eula
- Lenovo Press website (Product Guides/Datasheets/White papers)
  - http://lenovopress.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

Appendix B. Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area.

Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service.

Lenovo may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document is not an offer and does not provide a license under any patents or patent applications. You can send inquiries in writing to the following:

Lenovo (United States), Inc.
8001 Development Drive
Morrisville, NC 27560
U.S.A.
Attention: Lenovo Director of Licensing

LENOVO PROVIDES THIS PUBLICATION “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. Lenovo may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

The products described in this document are not intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. The information contained in this document does not affect or change Lenovo product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Lenovo or third parties. All information contained in this document was obtained in specific environments and is presented as an illustration. The result obtained in other operating environments may vary.

Lenovo may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Any references in this publication to non-Lenovo Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Lenovo product, and use of those Web sites is at your own risk.

Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

© Copyright Lenovo 2025

Trademarks

LENOVO, THINKSYSTEM, and XCLARITY are trademarks of Lenovo.

Intel and Xeon are trademarks of Intel Corporation in the United States, other countries, or both. NVIDIA is a trademark and/or registered trademarks of NVIDIA Corporation in the U.S. and/or other countries. Microsoft and Windows are trademarks of the Microsoft group of companies. Linux is a registered trademark of Linus Torvalds. All other trademarks are the property of their respective owners. © 2023 Lenovo.

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.

Lenovo makes no representations or warranties with respect to non-Lenovo products. Support (if any) for the non-Lenovo products is provided by the third party, not Lenovo.

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

TCO Certified

Selected models/configurations meet the requirements of TCO Certified.

Note: TCO Certified is an international third-party sustainability certification for IT products. For details, go to https://www.lenovo.com/us/en/compliance/tco/.