Lenovo

ThinkSystem SR630 V4
Internal Cable Routing Guide

Machine Type: , 7DK1 7DG8, 7DG9, 7DGA, 7DGB

Note

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

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

First Edition (November 2024)

Contents

Safety

Before installing this product, read the Safety Information.

قبل تركيب هذا المنتج، يجب قراءة الملاحظات الآمنية

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

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

安裝本產品之前，請先閱讀「安全資訊」。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

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

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

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

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

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

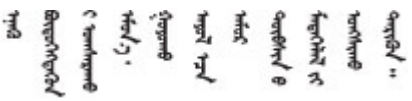
A termék telepítése előtt olvassa el a Biztonsági előírásokat!

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

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

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



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

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

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

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto zariadenia si pečítaje Bezpečnostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

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

Läs säkerhetsinformationen innan du installerar den här produkten.

ཐོན་རྫས་འདི་བདེ་སྐྱོང་མ་བྱས་གོང་། ·སྐྱོ་ཤི་ཡིད་གཟབ· བྱ་འདྲ་མིན་ཡོད་པའི་ཧོད་ཁྱེར་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.

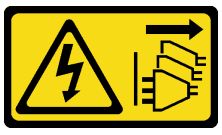
CAUTION:
This equipment must be installed or serviced by trained personnel, as defined by the IEC 62368-1, the standard for Safety of Electronic Equipment within the Field of Audio/Video, Information Technology and Communication Technology. Lenovo assumes that you are qualified in the servicing of equipment 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. If your working condition necessitates the server being powered off or you intend to power off, make sure that the power cord is disconnected.

   S002

   CAUTION:

The power-control button on the device and the power switch on the power supply do not turn off the electrical current supplied to the device. The device also might have more than one power cord. To remove all electrical current from the device, ensure that all power cords are disconnected from the power source.

Note: Under certain circumstances, powering off the server is not a prerequisite. Refer to the precautions before conducting any tasks.

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

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

     a. Go to:

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

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

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

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

Internal cable routing

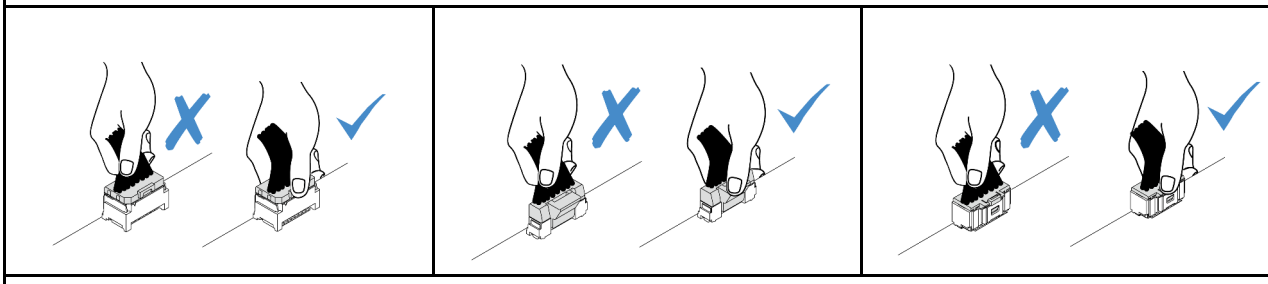
See this section to do cable routing for specific components.

Notes: Follow below guidelines when connecting cables:

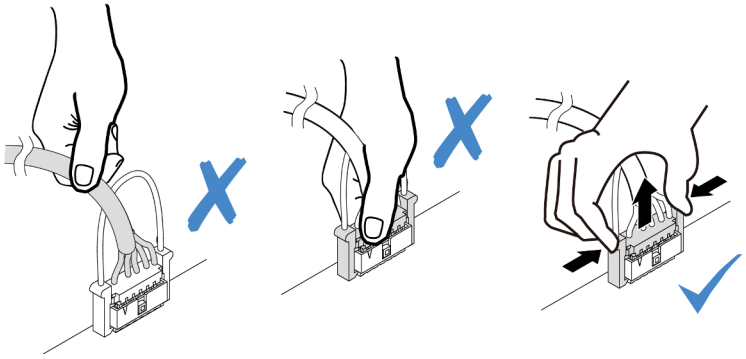
- Turn off the server before you connect or disconnect any internal cables.
- See the documentation that comes with any external devices for additional cabling instructions. It might be easier for you to route cables before you connect the devices to the server.
- Cable identifiers of some cables are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

Note: Disengage all latches, release tabs, or locks on cable connectors when you disconnect cables from the system board assembly. Failing to release them before removing the cables will damage the cable ports on the system board assembly. Any damage to the cable ports might require replacing the system board assembly.

Disconnect cables by pressing the release latches



Disconnect cables by pinching the release latches



Identifying connectors

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

Drive backplane connectors

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

10 x 2.5-inch AnyBay backplane

See this section to locate the connectors on the 10 x 2.5-inch drive backplane.

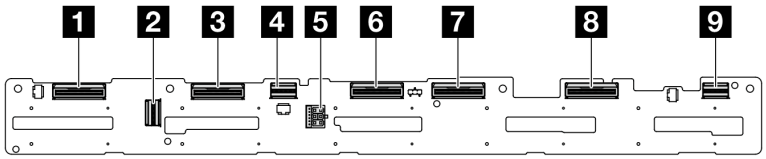


Figure 1. 10 x 2.5-inch AnyBay backplane

1 NVMe 8–9
2 SAS 2
3 NVMe 6–7
4 SAS 1
5 Power
6 NVMe 4–5
7 NVMe 2–3
8 NVMe 0–1
9 SAS 0

4 x 2.5-inch AnyBay backplane

See this section to locate the connectors on the 4 x 2.5-inch drive backplane.

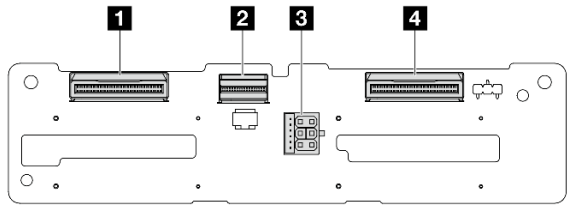


Figure 2. 4 x 2.5-inch AnyBay backplane

1 NVMe 2–3
2 SAS
3 Power
4 NVMe 0–1

Rear 2 x 2.5-inch AnyBay backplane

See this section to locate the connectors on the rear 2 x 2.5-inch drive backplane.

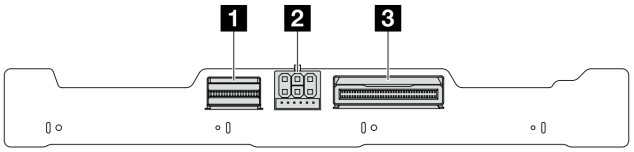


Figure 3. Rear 2 x 2.5-inch AnyBay backplane

1 SAS
2 Power
3 NVMe

Rear M.2 drive backplane

See this section to locate the connectors on the rear M.2 drive backplane.

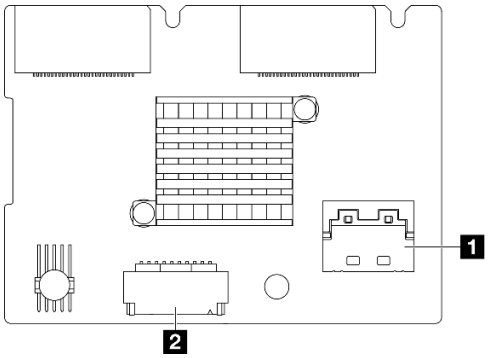


Figure 4. Rear M.2 drive backplane

1 Signal
2 Power

Internal M.2 drive backplane

For the locations of M.2 connectors on the internal backplanes, see “Internal M.2 backplane and M.2 drive replacement” in *User Guide* or *Hardware Maintenance Guide* for details.

Front I/O module

Use the section to understand the cable routing for front I/O modules.

Cable routing for front I/O modules

- For the locations of front I/O module connectors on the processor board, see “System-board-assembly connectors” in *User Guide* or *System Configuration Guide* for details.
- The illustrations show the cabling scenario for server models with 2.5-inch front drive bays. Location of each connector on the front of the server varies by models. For detailed locations of front I/O components for different models, see “Front view” in *User Guide* or *System Configuration Guide* and “Front I/O module” in *User Guide* or *System Configuration Guide*.

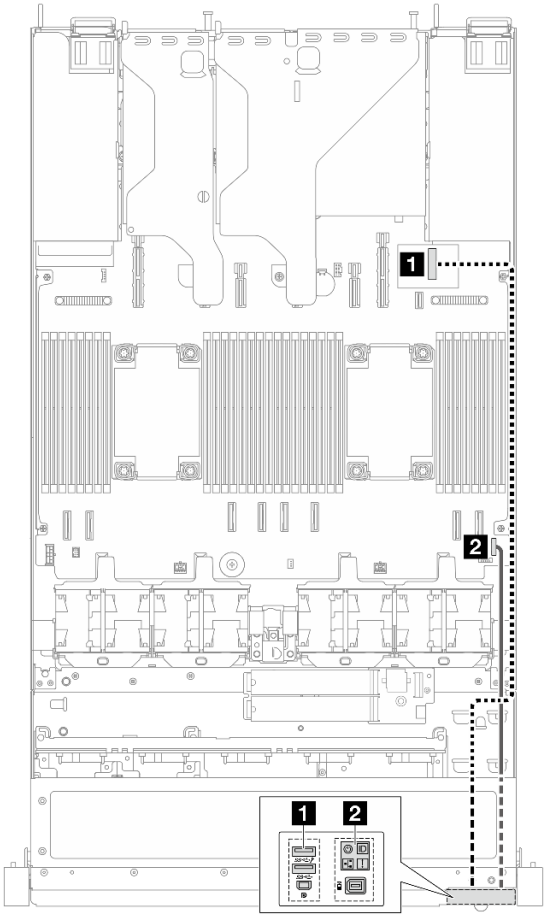


Figure 5. Cable routing for a front I/O module

From	To
1 USB and MiniDP connectors[Note]	1 USB I/O board
2 Front operator panel	2 FIO connector

Note: The USB and MiniDP connectors are not available on certain front I/O modules.

Front adapter assembly

Use the section to understand the power cable and signal cables routing for the front adapter assembly.

For the locations of front adapter assembly connectors on the processor board, see “System-board-assembly connectors” in *User Guide* or *System Configuration Guide* for details.

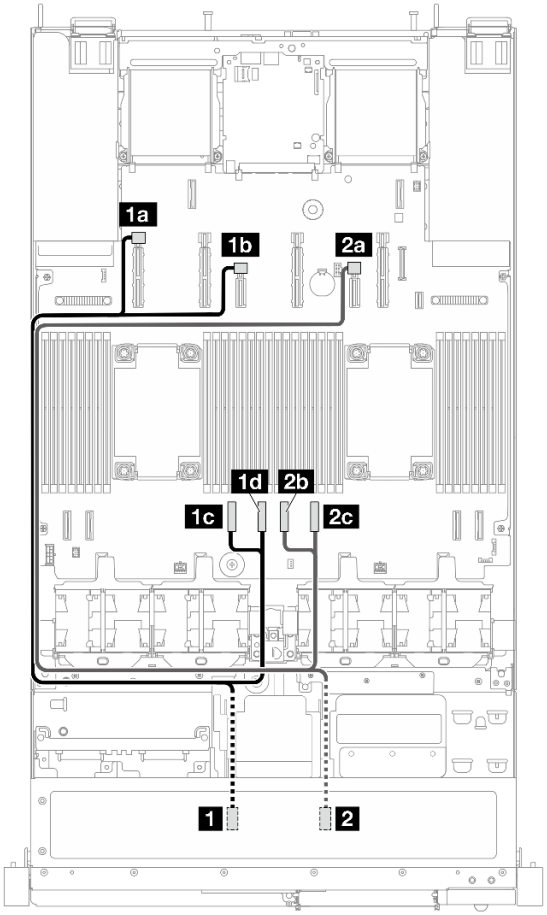


Figure 6. Cable routing for the front adapter assembly

From	To
1 Riser 5–4 card on slot 4	1a Power on Power & PCIe connector 15[Note]
	1b Power on Power & PCIe connector 12[Note]
	1c PCIe connector 6
	1d PCIe connector 5
2 Riser 5–4 card on slot 5	2a Power on Power & PCIe connector 10
	2b PCIe connector 4
	2c PCIe connector 3

Notes: The power connector coming from the front cabled riser goes to:

- 1a when standard or performance heat sinks are installed.
- 1b when NeptCore module is installed.

Internal M.2 drive backplane

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

Cable routing of the M.2 drive backplane

For the locations of M.2 connectors on the backplanes and the processor board, see “Internal M.2 backplane and M.2 drive replacement” in *User Guide* or *Hardware Maintenance Guide* and “System-board-assembly connectors” in *User Guide* or *System Configuration Guide* for details.

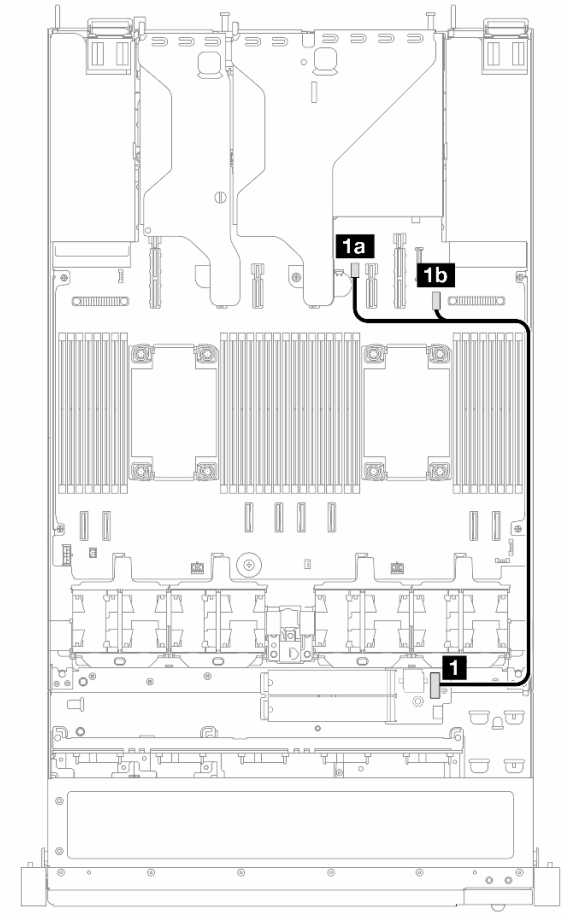


Figure 7. Cable routing for internal M.2 backplane

From	To
1 Internal M.2 backplane	1a M.2 power connector
	1b M.2/7mm BP signal connector

Intrusion switch

Use the section to understand the cable routing for the intrusion switch.

For the locations of the intrusion switch connector on the processor board, see “System-board-assembly connectors” in *User Guide* or *System Configuration Guide* for details.

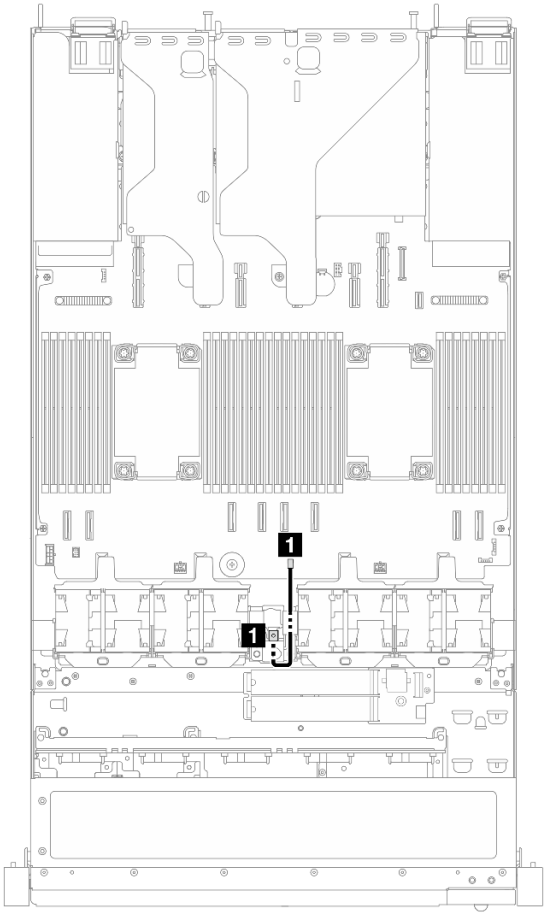


Figure 8. Intrusion switch cable routing

From	To
1 Intrusion switch cable	1 Intrusion switch connector

OCP interposer card

Use the section to understand the cable routing between two OCP interposer cards and the processor board.

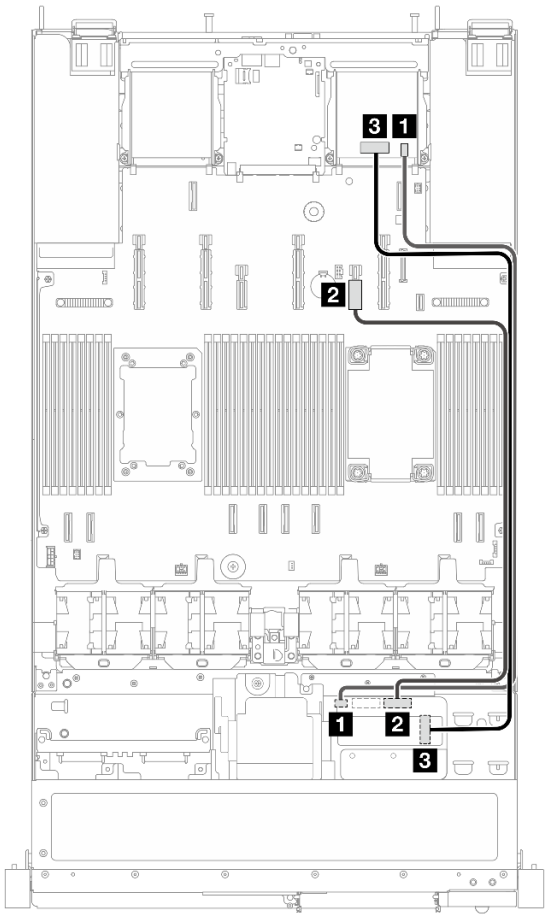


Figure 9. Cable routing for x8 OCP interposer cards

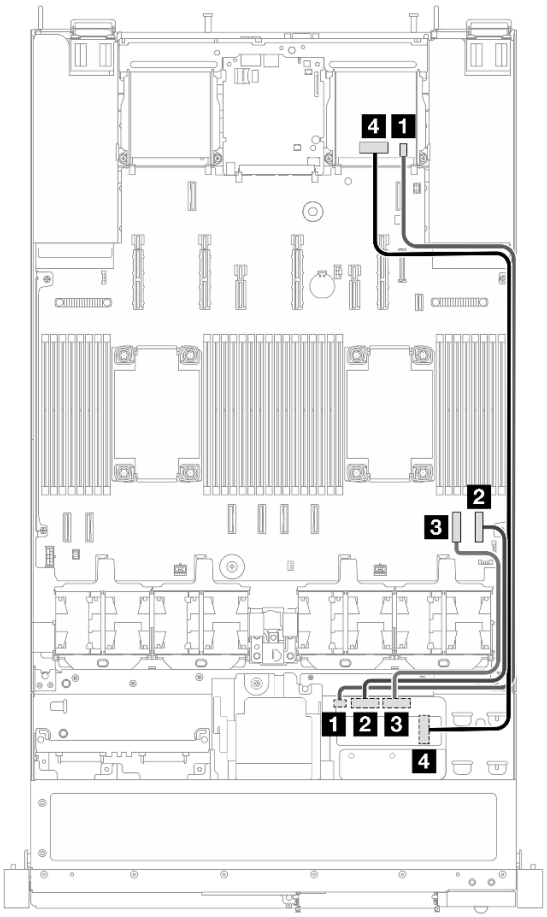


Figure 10. Cable routing for x16 OCP interposer cards

From	To
1 Front OCP interposer power	1 Rear OCP interposer power
2 OCP interposer signal (MCIO 1)	2 Power & PCIe connector 10
3 Front OCP interposer power sideband (SWIFT)	3 Rear OCP interposer power sideband (SWIFT)

From	To
1 Front OCP interposer power	1 Rear OCP interposer power
2 OCP interposer signal (MCIO 2)	2 PCIe connector 1
3 OCP interposer signal (MCIO 1)	3 PCIe connector 2
4 Front OCP interposer power sideband (SWIFT)	4 Rear OCP interposer power sideband (SWIFT)

OCP module

Use the section to understand the cable routing for two OCP modules.

For the locations of OCP module connectors on the processor board, see “System-board-assembly connectors” in *User Guide* or *System Configuration Guide* for details.

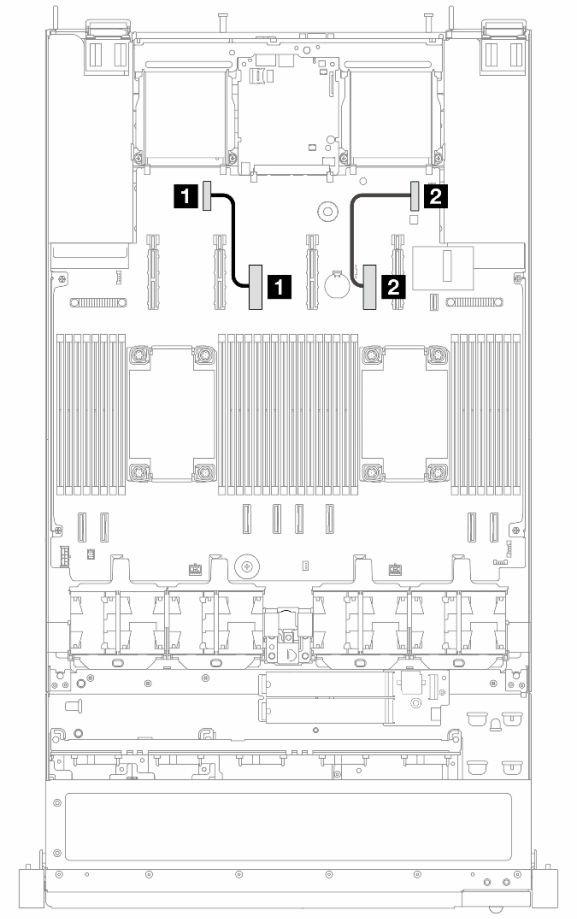


Figure 11. Cable routing for OCP modules

From	To
1 OCP expansion connector 2	1 Power & PCIe connector 12
2 OCP expansion connector 1	2 Power & PCIe connector 10

Processor Neptune™ Air Module

Use this section to understand the cable routing of the Processor Neptune™ Air Module (NeptAir).

- For the locations of the NeptAir module connectors on the processor board, see “System-board-assembly connectors” in *User Guide* or *System Configuration Guide* for details.
- The two pump cables and one cable for the leakage detection sensor module are integrated to the NeptAir module, make sure that all three cables are connected.

Note: For better cable arrangement, it is required to install the 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 Processor Neptune™ Air Module” in *User Guide* or *Hardware Maintenance Guide* for details.

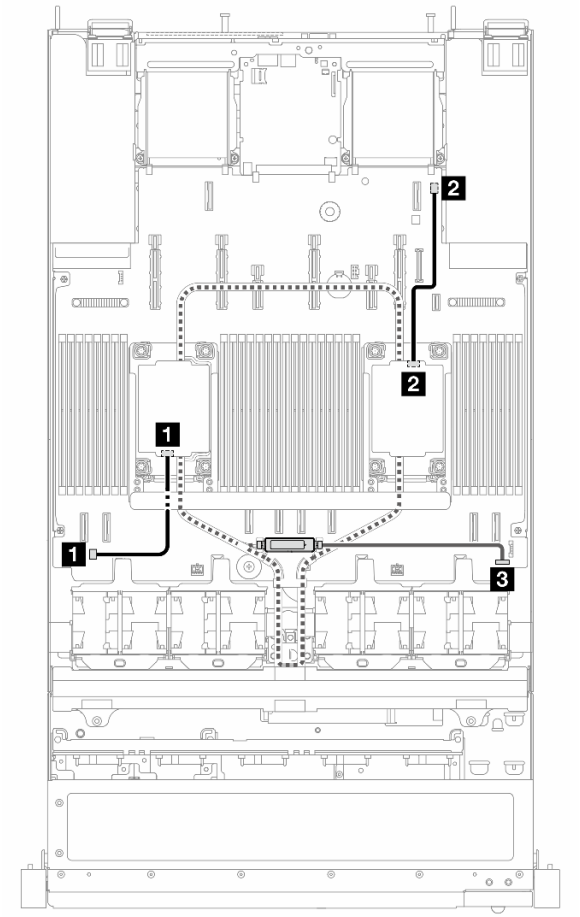


Figure 12. NeptAir module cable routing

From	To
1 Pump 1	1 Pump 1 connector
2 Pump 2	2 Pump 2 connector
3 Leak detection cable	3 Rear leak detection connector

Processor Neptune™ Core Module

Use this section to understand the cable routing of the Processor Neptune™ Core Module (NeptCore).

For the locations of the leakage detection sensor module connector on the processor board, see “System-board-assembly connectors” in *User Guide* or *System Configuration Guide* for details.

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 Processor Neptune™ Core Module” in *User Guide* or *Hardware Maintenance Guide* for details.

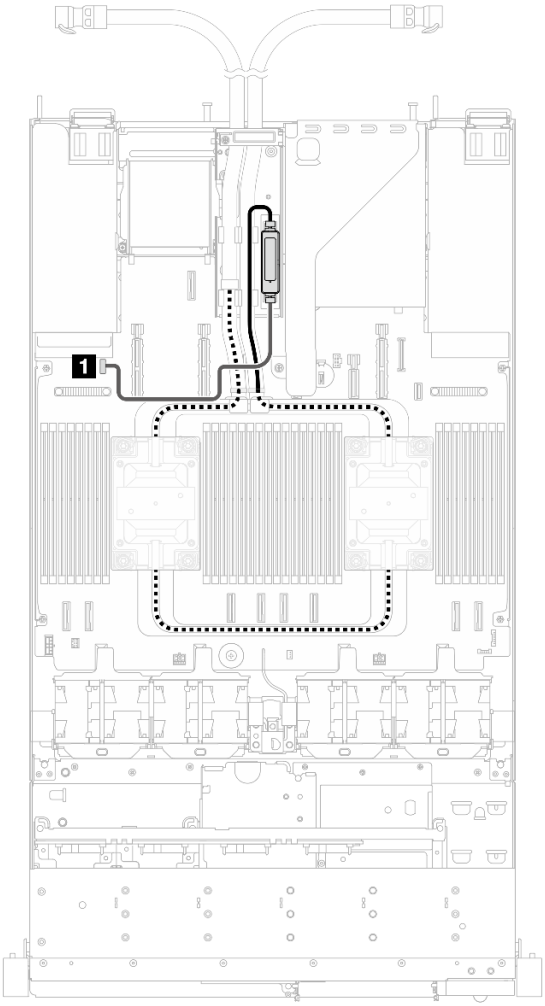


Figure 13. Cable routing for NeptCore module

From	To
1 Leak detection cable	1 Front leak detection connector

Rear cabled riser card

Use the section to understand the cable routing for the rear cabled riser card.

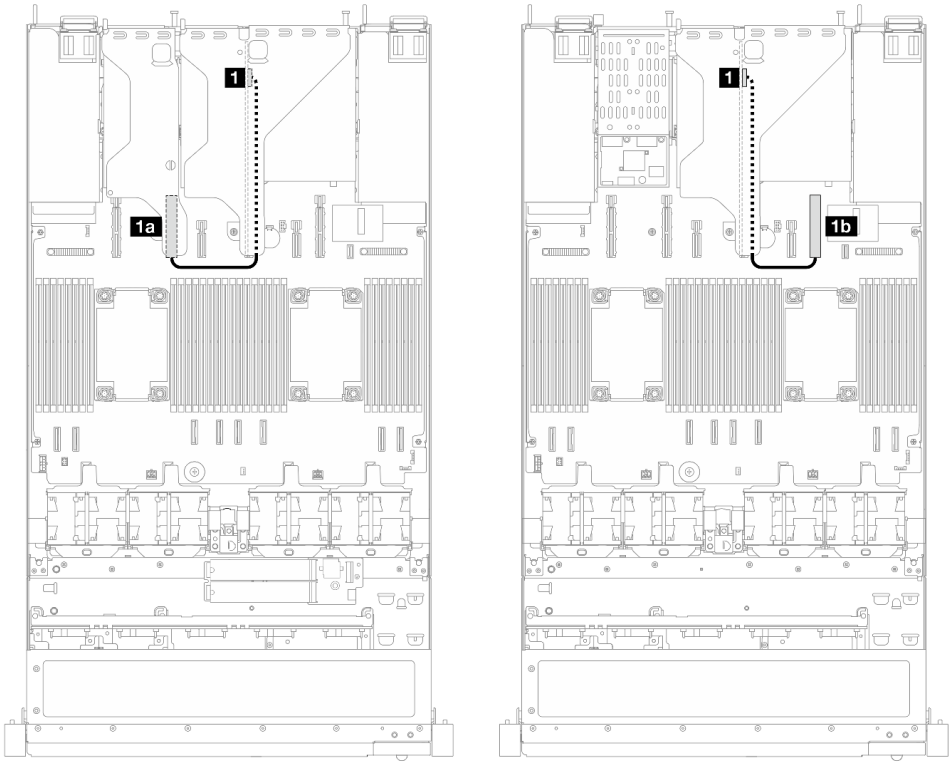


Figure 14. Cable routing for the rear cabled riser card

From	To
1 Rear cabled riser card	1a Power & PCIe connector 13
	1b Power & PCIe connector 9

Notes: The cable routing of the rear cabled riser differs in different configuration:

- When the system has two processors and rear M.2 drive assembly installed, the cable connects to 1a Power & PCIe connector 13.
- When the system has three PCIe adapters installed, or in one-processor configuration, the cable connects to 1b Power & PCIe connector 9.

Rear M.2 drive backplane

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

For the locations of rear M.2 drive backplane connectors on the processor board, see “System-board-assembly connectors” in *User Guide* or *System Configuration Guide* for details.

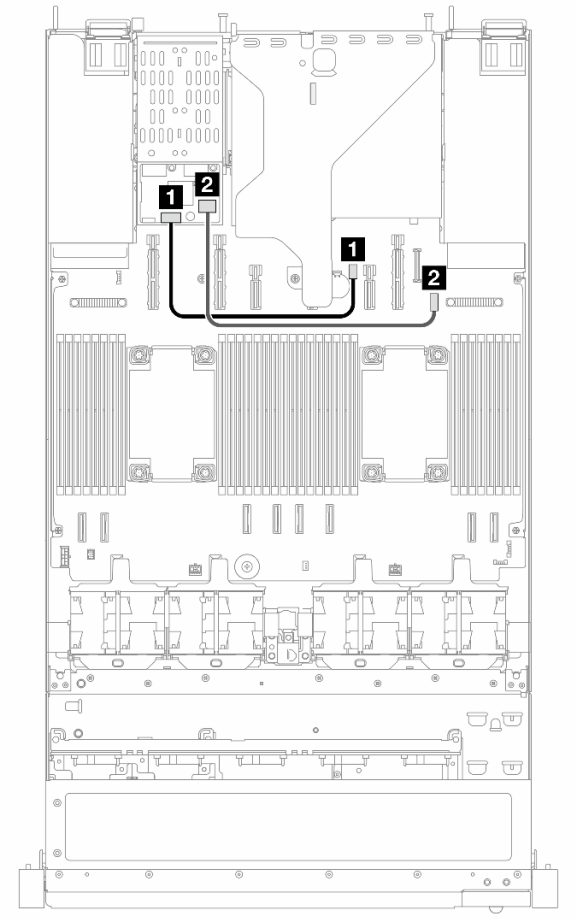


Figure 15. Cable routing for rear M.2 backplane

From	To
1 Rear M.2 drive power	1 M.2 power connector
2 Rear M.2 drive signal	2 M.2/7mm BP signal connector

Serial port module

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

For the locations of the serial port module connector on the system I/O board, see “System-board-assembly connectors” in *User Guide* or *System Configuration Guide* for details.

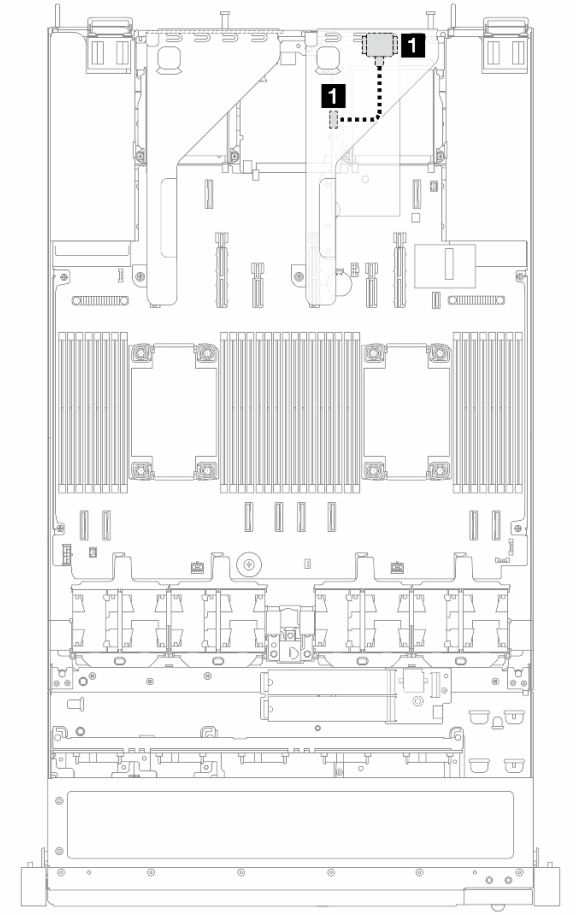


Figure 16. Cable routing for serial port module

From	To
1 Serial port module	1 Serial port connector

Cable routing for backplanes

In this section, you can find cable routings of backplanes in different configuration.

4 x 2.5'' front drives

Use the section to understand the cable routing for signal cable connections for 4 x 2.5-inch drive backplanes.

- “4 x 2.5'' NVMe backplane” on page 14
- “4 x 2.5'' NVMe backplane (one processor)” on page 15
- “4 x 2.5'' NVMe backplane (liquid cooling)” on page 16
- “4 x 2.5'' front drives with front adapter assembly” on page 17

4 x 2.5'' NVMe backplane

Use this section to understand the NVMe backplane cable routing for server model with four 2.5-inch front drives and two processors.

The following table shows the mapping relationship between backplane connectors and processor board connectors for onboard configuration.

The following figure illustrates the cable routing for the onboard configuration of 4 x 2.5-inch front NVMe drive bays. Connections between connectors: 1 ↔ 1, 2 ↔ 2, 3 ↔ 3, ... n ↔ n

Cable routing for onboard configuration

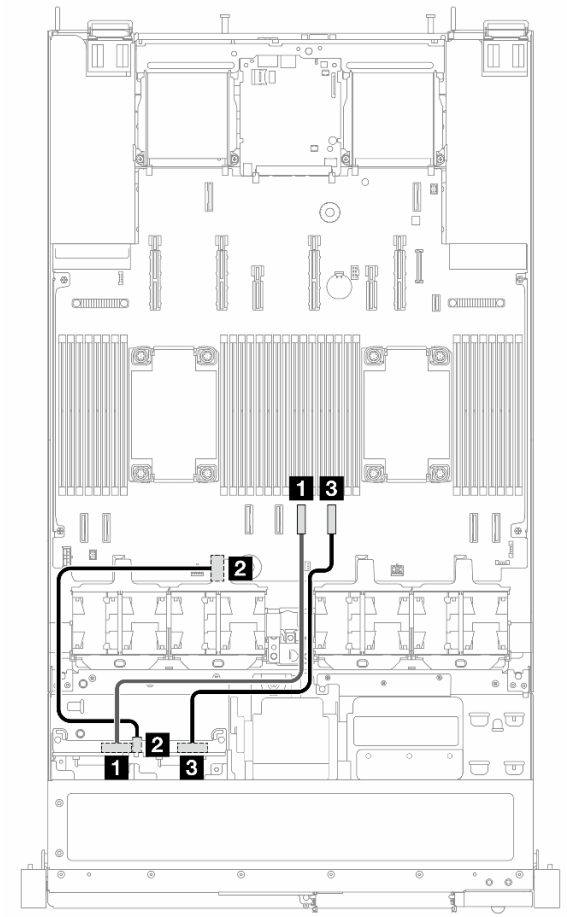


Figure 17. Cable routing for onboard configuration of 4 x 2.5-inch front NVMe drives

Table 1. Mapping between backplane and processor board for onboard configuration

From	To
1 NVMe 0–1	1 PCIe 4
2 Power	2 Power connector 2_A
3 NVMe 2–3	3 PCIe 3

4 x 2.5'' NVMe backplane (one processor)

Use this section to understand the NVMe backplane cable routing for server model with four 2.5-inch front drives and one processor.

The following table shows the mapping relationship between backplane connectors and processor board connectors for onboard configuration.

The following figure illustrates the cable routing for the onboard configuration of 4 x 2.5-inch front NVMe drive bays. Connections between connectors: 1 ↔ 1, 2 ↔ 2, 3 ↔ 3, ... n ↔ n

Cable routing for onboard configuration

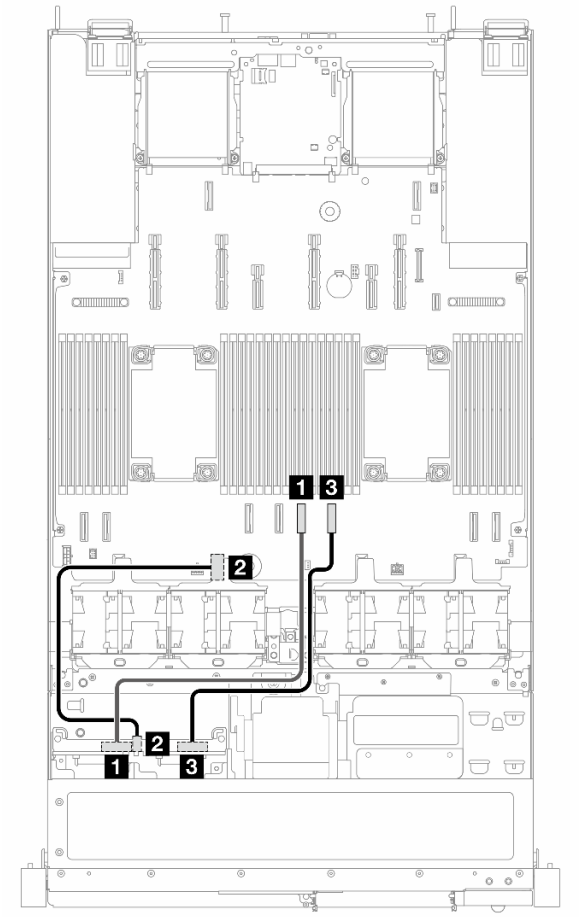


Figure 18. Cable routing for onboard configuration of 4 x 2.5-inch front NVMe drives

Table 2. Mapping between backplane and processor board for onboard configuration

From	To
1 NVMe 0–1	1 PCIe 4
2 Power	2 Power connector 2_A
3 NVMe 2–3	3 PCIe 3

4 x 2.5'' NVMe backplane (liquid cooling)

Use this section to understand the cable routing for four 2.5-inch NVMe drives for liquid cooling (NeptAir module) configuration.

Onboard cabling of four NVMe drives for liquid cooling (NeptAir module)

The following table shows the mapping relationship between backplane connectors and processor board connectors for onboard configuration.

The following figure illustrates the cable routing for the onboard configuration of 4 x 2.5-inch front NVMe drive bays. Connections between connectors: 1 ↔ 1, 2 ↔ 2, 3 ↔ 3, ... n ↔ n

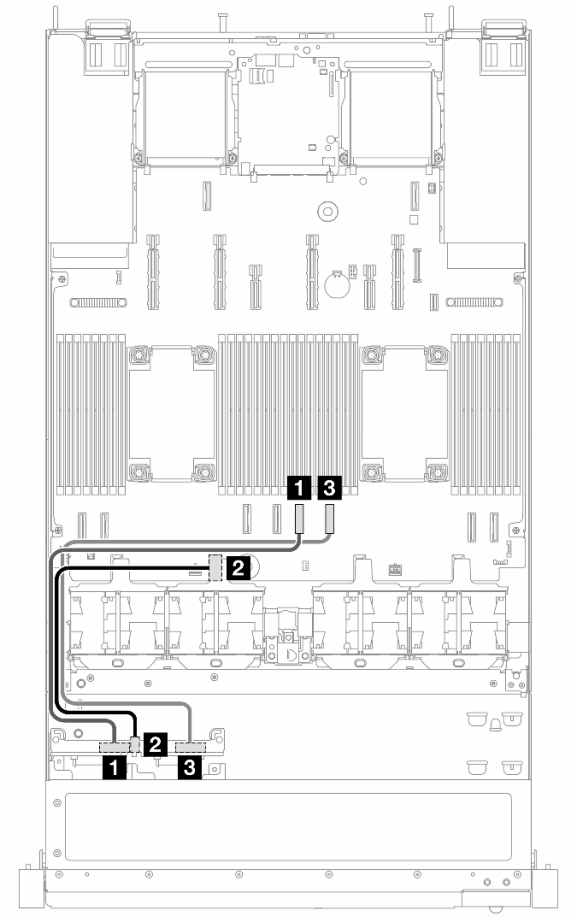


Figure 19. Onboard cabling of four NVMe drives for liquid cooling (NeptAir module)

Table 3. Mapping between backplane and processor board for onboard configuration

From	To
1 NVMe 0–1	1 PCIe 4
2 Power	2 Power connector 2_A
3 NVMe 2–3	3 PCIe 3

4 x 2.5'' front drives with front adapter assembly

Use the section to understand the cable routing for signal cable connections for 4 x 2.5-inch front drives with the front adapter assembly.

4 x 2.5'' NVMe backplane

Use this section to understand the NVMe backplane cable routing for server model with four 2.5-inch front drives and one or two processors.

To connect cables for the front adapter assembly, refer to “Front adapter assembly” on page 4.

The following table shows the mapping relationship between backplane connectors and processor board connectors for onboard configuration.

The following figure illustrates the cable routing for the onboard configuration of 4 x 2.5-inch front NVMe drive bays. Connections between connectors: 1 ↔ 1, 2 ↔ 2, 3 ↔ 3, ... n ↔ n

Cable routing for onboard configuration with one processor

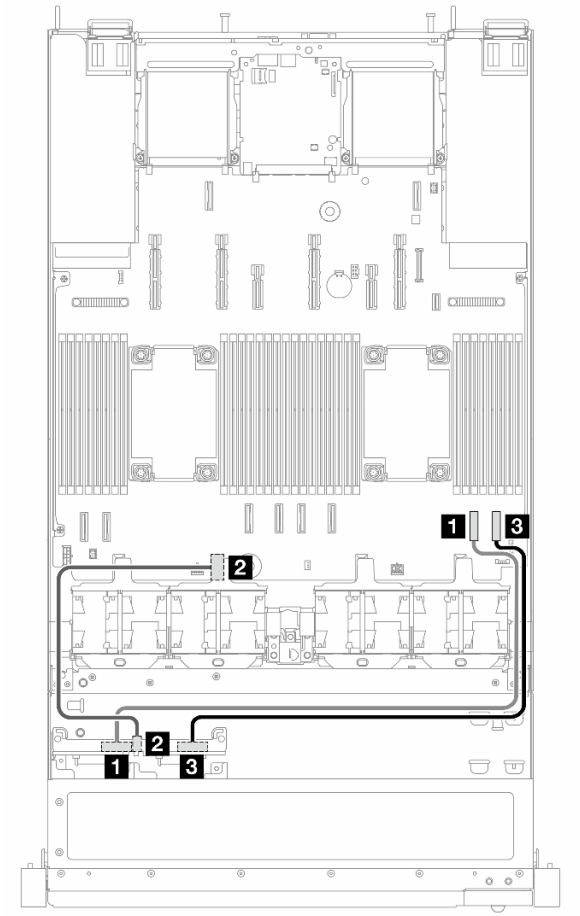


Figure 20. Cable routing for onboard configuration of 4 x 2.5-inch front NVMe drives

Table 4. Mapping between backplane and processor board for onboard configuration

From	To
1 NVMe 0–1	1 PCIe 2
2 Power	2 Power connector 2_A
3 NVMe 2–3	3 PCIe 1

Cable routing for onboard configuration with two processors

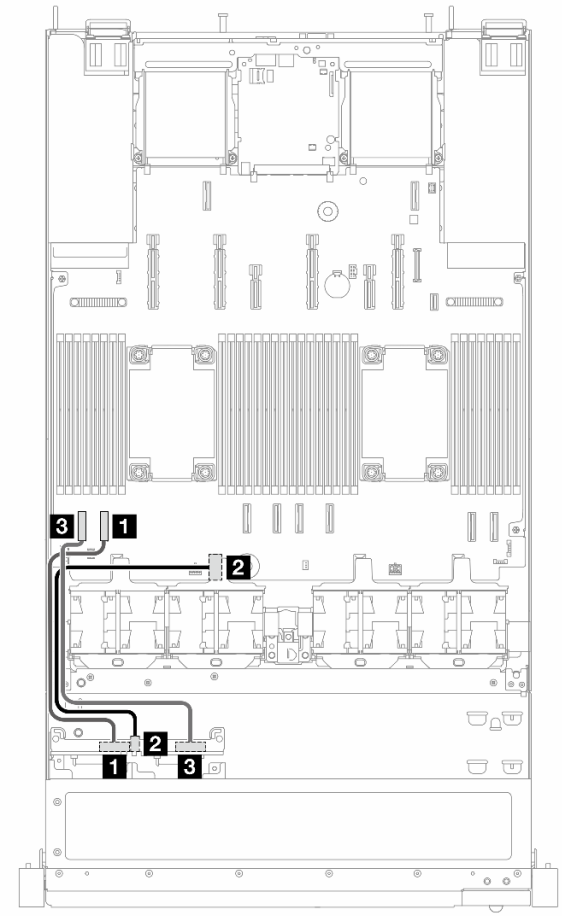


Figure 21. Cable routing for onboard configuration of 4 x 2.5-inch front NVMe drives

Table 5. Mapping between backplane and processor board for onboard configuration

From	To
1 NVMe 0–1	1 PCIe 7
2 Power	2 Power connector 2_A
3 NVMe 2–3	3 PCIe 8

8 x 2.5'' front drives

Use the section to understand the cable routing for signal cable connections for 8 x 2.5-inch drive backplanes.

- “8 x 2.5'' NVMe drives with two 4 x 2.5'' NVMe backplanes” on page 20
- “8 x 2.5'' NVMe drives with two 4 x 2.5'' NVMe backplanes (one processor)” on page 21
- “8 x 2.5'' NVMe drives with two 4 x 2.5'' NVMe backplanes (liquid cooling)” on page 22
- “8 x 2.5'' NVMe drives with two 4 x 2.5'' NVMe backplanes (one processor and liquid cooling)” on page 23

8 x 2.5'' NVMe drives with two 4 x 2.5'' NVMe backplanes

Use this section to understand the cable routing for eight NVMe drives with two 4 x 2.5'' NVMe backplanes and two processors installed.

Cable routing for onboard configuration

The following table shows the mapping relationship between backplane connectors and processor board connectors for onboard configuration.

The following figure illustrates the cable routing for the onboard configuration of 8 x 2.5-inch front NVMe drive bays. Connections between connectors: 1 ↔ 1, 2 ↔ 2, 3 ↔ 3, ... n ↔ n

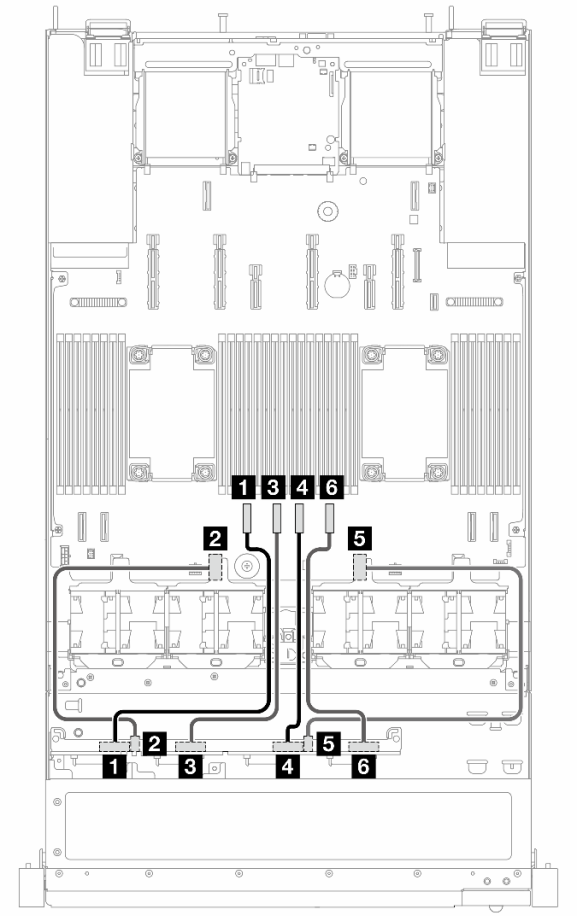


Figure 22. Cable routing for onboard configuration of 8 x 2.5-inch front NVMe drives

Table 6. Mapping between backplane and processor board for onboard configuration

Backplane	From backplane	Cable silkscreen	To
4 x 2.5'' NVMe backplane 1	1 NVMe 0–1	1 NVMe 0–1	1 PCIe 6
	2 Power	2 Power	2 Power connector 2_A
	3 NVMe 2–3	3 NVMe 2–3	3 PCIe 5
4 x 2.5'' NVMe backplane 2	4 NVMe 0–1	4 NVMe 4–5	4 PCIe 4
	5 Power	5 Power	5 Power connector 3_A

Table 6. Mapping between backplane and processor board for onboard configuration (continued)

Backplane	From backplane	Cable silkscreen	To
	6 NVMe 2–3	6 NVMe 6–7	6 PCIe 3

8 x 2.5'' NVMe drives with two 4 x 2.5'' NVMe backplanes (one processor)

Use this section to understand the cable routing for eight NVMe drives with two 4 x 2.5'' NVMe backplanes and one processor installed.

Cable routing for onboard configuration

The following illustrations and tables show the mapping relationship between backplane connectors and processor board connectors for onboard configuration.

The following figure illustrates the cable routing for the onboard configuration of 8 x 2.5-inch front NVMe drive bays. Connections between connectors: 1 ↔ 1, 2 ↔ 2, 3 ↔ 3, ... n ↔ n.

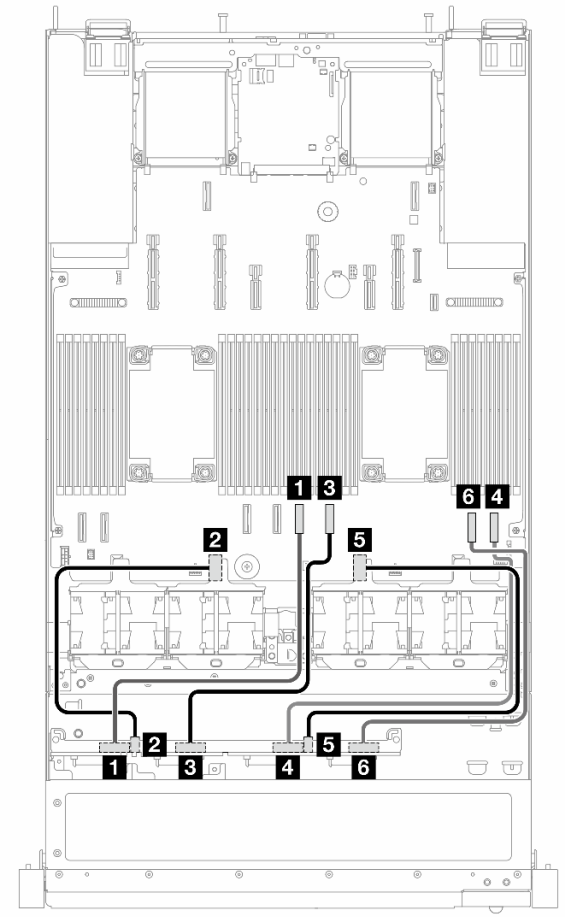


Figure 23. Cable routing for onboard configuration of 8 x 2.5 NVMe front drives

Table 7. Mapping between backplane and processor board for onboard configuration

Backplane	From backplane	Cable silkscreen	To
4 x 2.5'' NVMe backplane 1	1 NVMe 0–1	1 NVMe 0–1	1 PCIe 4
	2 Power	2 Power	2 Power connector 2_A

Table 7. Mapping between backplane and processor board for onboard configuration (continued)

Backplane	From backplane	Cable silkscreen	To
	3 NVMe 2–3	3 NVMe 2–3	3 PCIe 3
4 x 2.5'' NVMe backplane 2	4 NVMe 0–1	4 NVMe 4–5	4 PCIe 1
	5 Power	5 Power	5 Power connector 3_A
	6 NVMe 2–3	6 NVMe 6–7	6 PCIe 2

8 x 2.5'' NVMe drives with two 4 x 2.5'' NVMe backplanes (liquid cooling)

Use this section to understand the cable routing of eight NVMe front drives for liquid cooling (NeptAir module) configuration with two 4 x 2.5'' NVMe backplanes installed.

Cable routing for onboard configuration

The following table shows the mapping relationship between backplane connectors and processor board connectors for onboard configuration.

The following figure illustrates the cable routing for the onboard configuration of 8 x 2.5-inch front NVMe drive bays. Connections between connectors: 1 ↔ 1, 2 ↔ 2, 3 ↔ 3, ... n ↔ n

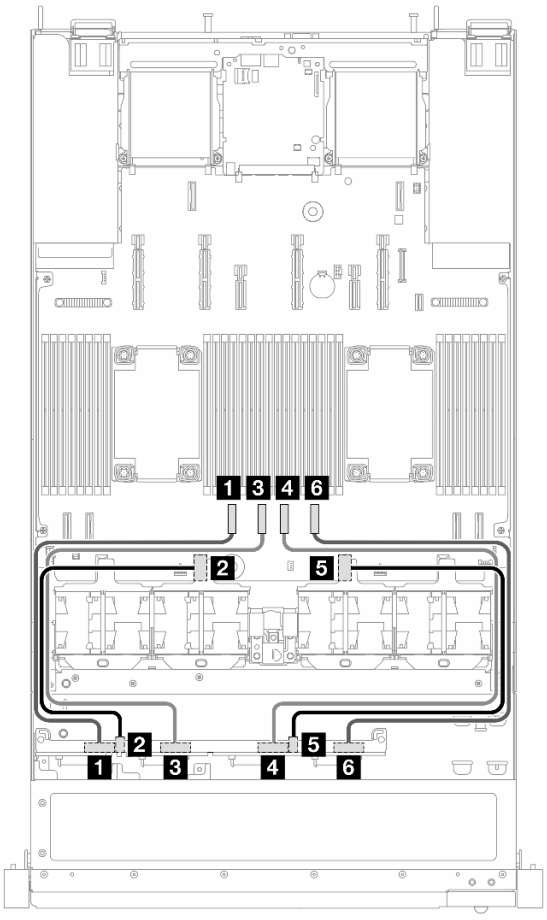


Figure 24. Cable routing for onboard configuration of 8 x 2.5-inch front NVMe drives

Table 8. Mapping between backplane and processor board for onboard configuration

Backplane	From backplane	Cable silkscreen	To
4 x 2.5'' NVMe backplane 1	1 NVMe 0–1	1 NVMe 0–1	1 PCIe 6
	2 Power	2 Power	2 Power connector 2_A
	3 NVMe 2–3	3 NVMe 2–3	3 PCIe 5
4 x 2.5'' NVMe backplane 2	4 NVMe 0–1	4 NVMe 4–5	4 PCIe 4
	5 Power	5 Power	5 Power connector 3_A
	6 NVMe 2–3	6 NVMe 6–7	6 PCIe 3

8 x 2.5'' NVMe drives with two 4 x 2.5'' NVMe backplanes (one processor and liquid cooling)

Use this section to understand the cable routing for eight NVMe drives for liquid cooling (NeptAir module) configuration with two 4 x 2.5'' NVMe backplanes and one processor installed.

Cable routing for onboard configuration

The following table shows the mapping relationship between backplane connectors and processor board connectors for onboard configuration.

The following figure illustrates the cable routing for the onboard configuration of 8 x 2.5-inch front NVMe drive bays. Connections between connectors: 1 ↔ 1, 2 ↔ 2, 3 ↔ 3, ... n ↔ n

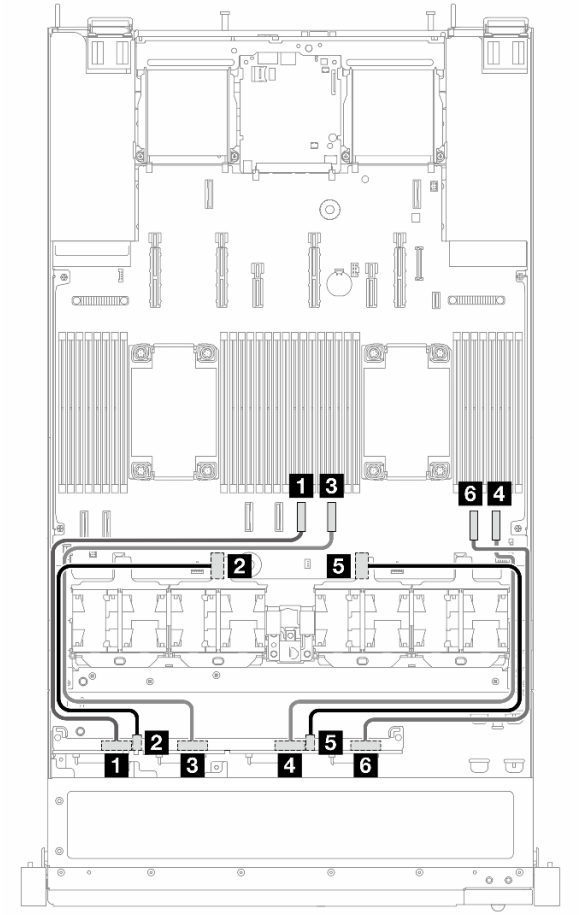


Figure 25. Cable routing for onboard configuration of 8 x 2.5-inch front NVMe drives

Table 9. Mapping between backplane and processor board for onboard configuration

Backplane	From backplane	Cable silkscreen	To
4 x 2.5'' NVMe backplane 1	1 NVMe 0–1	1 NVMe 0–1	1 PCIe 4
	2 Power	2 Power	2 Power connector 2_A
	3 NVMe 2–3	3 NVMe 2–3	3 PCIe 3
4 x 2.5'' NVMe backplane 2	4 NVMe 0–1	4 NVMe 4–5	4 PCIe 1
	5 Power	5 Power	5 Power connector 3_A
	6 NVMe 2–3	6 NVMe 6–7	6 PCIe 2

10 x 2.5'' front drives

Use the section to understand the cable routing for signal cable connections for 10 x 2.5-inch drive backplanes.

- “10 x 2.5'' NVMe” on page 25
- “10 x 2.5'' NVMe (liquid cooling)” on page 26
- “12 x 2.5'' NVMe” on page 27

10 x 2.5'' NVMe

See this section to understand the cable routing of 10 front NVMe drives with 10 x 2.5'' AnyBay backplane installed.

Cable routing for onboard configuration

The following table shows the mapping relationship between backplane connectors and system board connectors for onboard configuration.

The following figure illustrates the cable routing for the onboard configuration of 10 x 2.5-inch front NVMe drive bays. Connections between connectors: 1 ↔ 1, 2 ↔ 2, 3 ↔ 3, ... n ↔ n

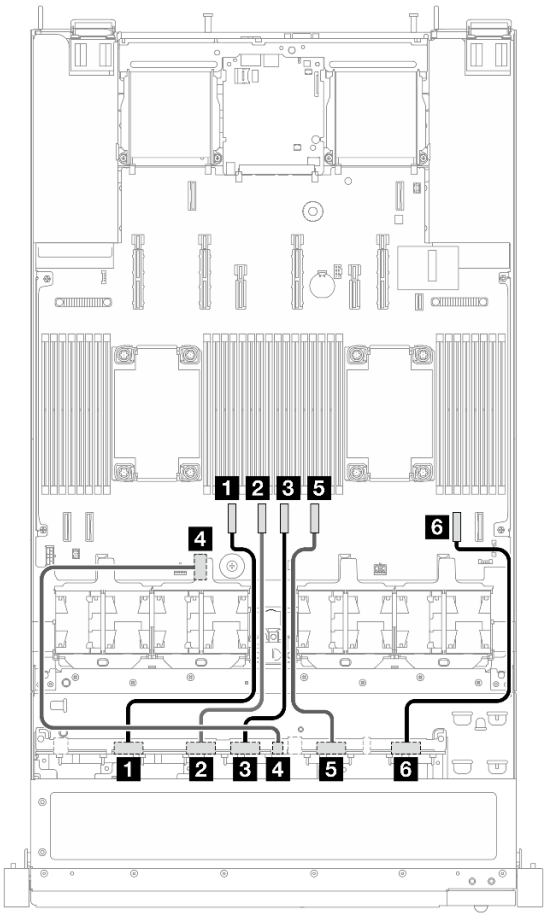


Figure 26. Cable routing for onboard configuration of 10 x 2.5'' NVMe front drives

Table 10. Mapping between one front AnyBay backplane and processor board for onboard configuration

From	To
1 NVMe 0–1	1 PCIe 6
2 NVMe 2–3	2 PCIe 5
3 NVMe 4–5	3 PCIe 4
4 Power	4 Power connector 2_A
5 NVMe 6–7	5 PCIe 3
6 NVMe 8–9	6 PCIe 2

10 x 2.5'' NVMe (liquid cooling)

Use this section to understand the cable routing of 10 NVMe front drives for liquid cooling (NeptAir module) configuration with 10 x 2.5'' AnyBay front backplane installed.

Onboard cabling of 10 NVMe drives for liquid cooling (NeptAir module)

The following table shows the mapping relationship between backplane connectors and system board connectors for onboard configuration.

The following figure illustrates the cable routing for the onboard configuration of 10 x 2.5-inch front NVMe drive bays. Connections between connectors: 1 ↔ 1, 2 ↔ 2, 3 ↔ 3, ... n ↔ n

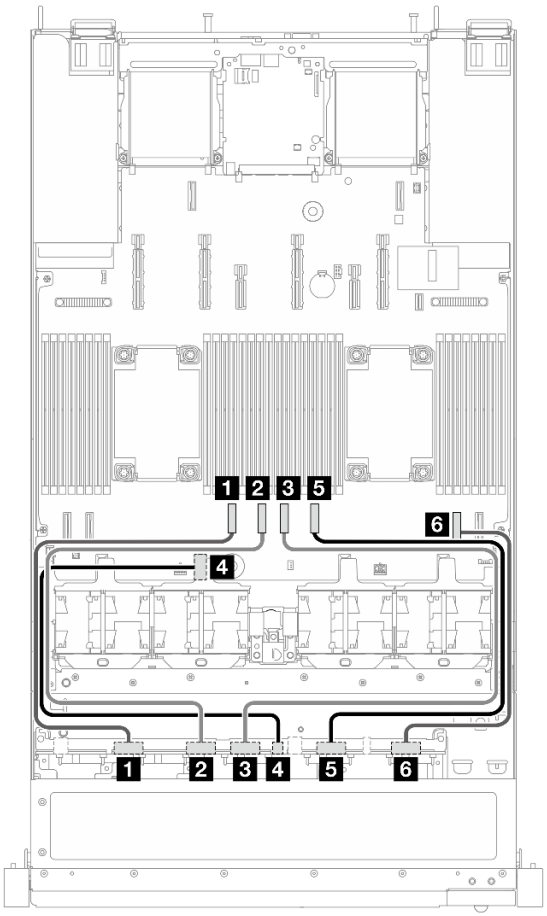


Figure 27. Onboard cabling of 10 NVMe drives for liquid cooling (NeptAir module)

Table 11. Mapping between one front AnyBay backplane and processor board for onboard configuration

From	To
1 NVMe 0–1	1 PCIe 6
2 NVMe 2–3	2 PCIe 5
3 NVMe 4–5	3 PCIe 4
4 Power	4 Power connector 2_A
5 NVMe 6–7	5 PCIe 3
6 NVMe 8–9	6 PCIe 2

12 x 2.5'' NVMe

See this section to understand the cable routing of 12 front NVMe drives with 10 x 2.5'' backplane installed.

Cable routing for onboard configuration

The following table shows the mapping relationship between backplane connectors and system board connectors for onboard configuration.

The following figure illustrates the cable routing for the onboard configuration of 12 x 2.5-inch front NVMe drive bays. Connections between connectors: 1 ↔ 1, 2 ↔ 2, 3 ↔ 3, ... n ↔ n

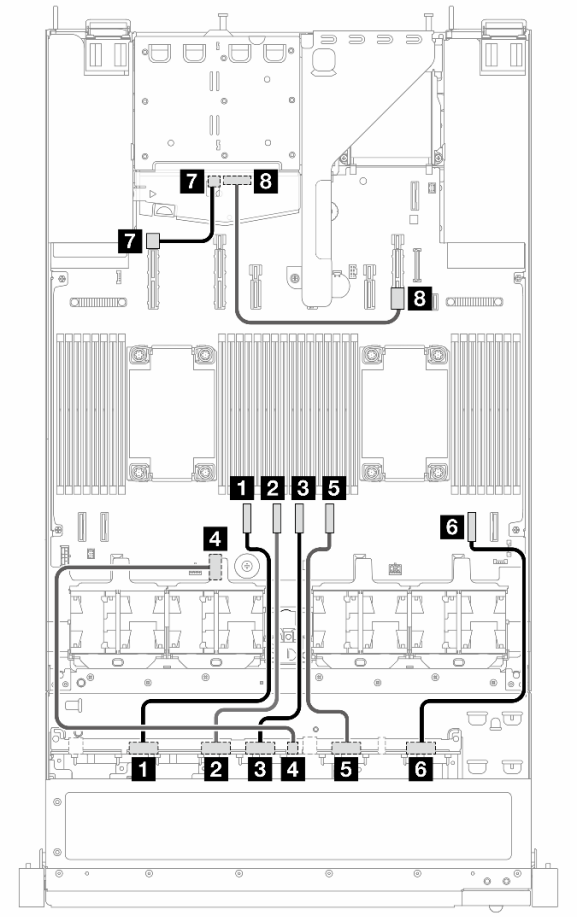


Figure 28. Cable routing for onboard configuration of 12 x 2.5'' NVMe front drives

Table 12. Mapping between one front AnyBay backplane and processor board for onboard configuration

Backplane	From	To
Front backplane	1 NVMe 0–1	1 PCIe 6
	2 NVMe 2–3	2 PCIe 5
	3 NVMe 4–5	3 PCIe 4
	4 Power	4 Power connector 2_A
	5 NVMe 6–7	5 PCIe 3
	6 NVMe 8–9	6 PCIe 2

Table 12. Mapping between one front AnyBay backplane and processor board for onboard configuration (continued)

Backplane	From	To
Rear backplane	7 Power	7 Power on Power & PCIe connector 15
	8 NVMe	8 Signal on Power & PCIe connector 9

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

- ***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 and troubleshooting.
- ***Cable Routing Guide***
  - Cable routing information.
- ***Messages and Codes Reference***
  - XClarity Controller, LXPM, and uEFI events
- ***UEFI Manual***
  - UEFI setting introduction

Support websites

This section provides driver and firmware downloads and support resources.

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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.

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

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

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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.

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Contacts are available for Taiwan Region import and export information.

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