SNR-LE-G4 2U

User manual

SNR
Smart Networking Reliable

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1. Safety Instructions

1.1 General safety precautions

To prevent the risk of serious personal and property damage, be sure to follow the recommendations below.

- Please do not open the system cover by yourself. It should be operated by professionally trained maintenance technicians. Do not touch the marked part because there may be high voltage or electric shock.
- Never push objects of any kind into openings on the system. Doing so could short out internal components and result in a fire or electric shock.
- Remember: Before repairing, Disconnect all cables.(There may be more than one cable)
- It is strictly forbidden to perform live operations such as starting the machine before the cover is closed.
- When you need to open the cover, please wait until the internal device cools down before opening it , otherwise you may get burned.
- Do not use this device in a wet environment.
- If an extension cable needs to be used, Use a three-wire cable and make sure it is properly grounded.
- Make sure the server is well grounded. There are different ways to ground the server, but it must be physically connected to the ground. Is the grounding protection safe? Please contact the relevant agency or electrician for confirmation. Please use a three-core power cord with grounding protection. Socket, improper grounding may cause leakage, burning, explosion or even personal injury.
- Please make sure that the power socket and the power interface are in close contact. Loose contacts could result in a fire hazard.
- Please use 220V Using the equipment under AC voltage. Working under inappropriate voltage will cause electric shock, fire, or even damage to the equipment.
- The device must be well ventilated and away from heat and fire sources. Do not block the cooling fan, otherwise the device may overheat and cause smoke. Risk of fire or other damage.
- Please keep the power cord and plug clean and intact, otherwise there may be a risk of electric shock or fire .
- Notice: Danger of explosion if battery is incorrectly replaced. Only use replacement parts of the same or equivalent type recommended by the manufacturer. Batteries can pollute the environment. Please follow the relevant instructions to set up the old batteries you replace.
- Keep your computer away from electromagnetic fields.
- Stay away from electronic noise and interference caused by high-frequency equipment such as air conditioners, fans, motors, radio stations, television stations, transmission towers, etc.
- Please do not plug or unplug internal connection components or move the device while the device is running. Otherwise, it may cause the device to crash or be damaged.
- Please try to avoid frequent restarts or power ons and off to extend the life of the device.
- Please keep the environment clean and avoid dust. The working temperature of the equipment should be 5℃~35℃ and the humidity should be 8%~90%.

1.2 Hazardous Substances Statement

Exist 10 Within the environmental protection use period of one year, The toxic and hazardous substances or elements contained in the product will not leak or suddenly occur under normal use conditions. The user's use of the equipment will not cause serious pollution to the environment or serious damage to his or her person or property.

Part Name	Hazardous substances					
	lead	mercury	cadmium	Hexavalent Chromium	Polybrominated biphenyls	Polybrominated diphenyl ethers
	(Pb)	(Hg)	(Cd)	(Cr VI)	(PBB)	(PBDE)
Chassis /Baffle	X	O	O	O	O	O
Mechanical components (fans, heat sinks, motors, etc.)	X	O	O	O	O	O
Printed circuit components - PCA*	X	O	O	O	O	O
cable /electric wire /Connectors	X	O	O	O	O	O
Hard Drive	X	O	O	O	O	O
Media Read / Storage devices (CD-ROMs, etc.)	X	O	O	O	O	O
Power supply /Power adapter	X	O	O	O	O	O
power supply	X	O	O	O	O	O
Pointing device (mouse, etc.)	X	O	O	O	O	O
keyboard	X	O	O	O	O	O
Complete rack /Guide rail products	X	X	O	O	O	O

O Indicates that the content of the toxic and hazardous substance in all homogeneous materials of this component is within the limit of GB /T26572-2011 "Limited Use in Electronic and Electrical Products" The limit requirements of the "Limit Requirements for Substances" are as follows.

× Indicates that the content of the toxic and hazardous substance in at least one homogeneous material of the component exceeds GB /T26572-2011 Electronic and electrical products The limit requirements of the "Limit Requirements for Restricted Substances in Products" . However, it complies with the EU RoHS Directive (including its exemptions).

1.3 Warning Notice

warning: Operation of this equipment in a domestic environment may cause radio interference.

Location restrictions: This device is not suitable for use in locations where children may be present.

Fan Warning: When the fan is spinning, keep your body away from the fan blades.

1.4 Climate and environment requirements

temperature	
Operating temperature	5℃ to 35°C with a maximum temperature gradient of 10 °C per hour.
Continuous operating temperature range (Altitude below 950 m or 3117 feet	When the device is not exposed to direct sunlight, 5°C to 35°C.
Storage temperature range	–40℃ to 65°C.
humidity	
Storage humidity	5% Up to 95%, the air must always be non-condensing.
Operating humidity	8% Up to 90%, the air must always be non-condensing.

Caution

- If the device is used in an environment with poor or no lightning protection facilities, please turn off the device in thunderstorm weather and unplug the power cord. Disconnect the power cord, network cable, telephone cable, etc. connected to the device.
- Please use genuine operating systems and software and configure them correctly. We are not responsible for any server failures caused by the operating system and software.
- Please do not disassemble the chassis or add or reduce the server hardware configuration by yourself.
- When the device fails, please first check the contents of this manual to identify and eliminate common faults. If you are unsure of the cause of the problem, Please contact technical support for assistance.
- Choosing a suitable environment for your computer will help it run stably and extend its life.

1.5 Other important descriptions

If the device is marked with this logo, it means that the device with this logo is only designed and evaluated for safety at an altitude of 2000m. Therefore, it is only suitable for safe use below 2000m. There may be safety hazards when used above 2000m.

If the device is marked with this logo,This means that the equipment with this mark is designed and evaluated for safety only under non-tropical climate conditions . Therefore, it is only suitable for safe use in non-tropical climate conditions. There may be safety hazards when used in tropical climate conditions.

2. Product Introduction

2.1 System Introduction

SNR-LE-G4 2U is a 2U dual-socket general-purpose server with a wide range of uses. It is equipped with AMD's latest EPYC™ 9004 series processor. This product adopts a modular design and can be flexibly configured according to business needs. It has excellent computing performance and rich expansion capabilities, and achieves excellent cost-effectiveness and energy efficiency. It is suitable for applications such as cloud computing, virtualization, high-performance computing and artificial intelligence.

2.2 Features

Ultimate performance Meeting key application requirements

- Supports 2 AMD EPYC™ 9004 series processors, each CPU has up to 128 cores, a 100% increase in core count over the previous generation;
- 4 xGMI interconnection links to give full play to the CPU computing power;
- Supports 24 DDR5 memory modules with a maximum frequency of 4800MT/s, providing excellent memory bandwidth and capacity.

Flexible configuration Choose according to your needs

- The hardware module decoupling design enables flexible configuration of computing, storage, and network to meet different business needs;
- Flexible storage configuration, supporting up to 24 U.2 NVMe ;
- Support up to 10 Standard PCIe expansion slots;
- Support OCP NIC 3.0 Network card, optional 4×1 GbE / 2×10 Gb SFP +/4× 10Gb SFP +/ 2×25Gb SFP 28 network configuration.

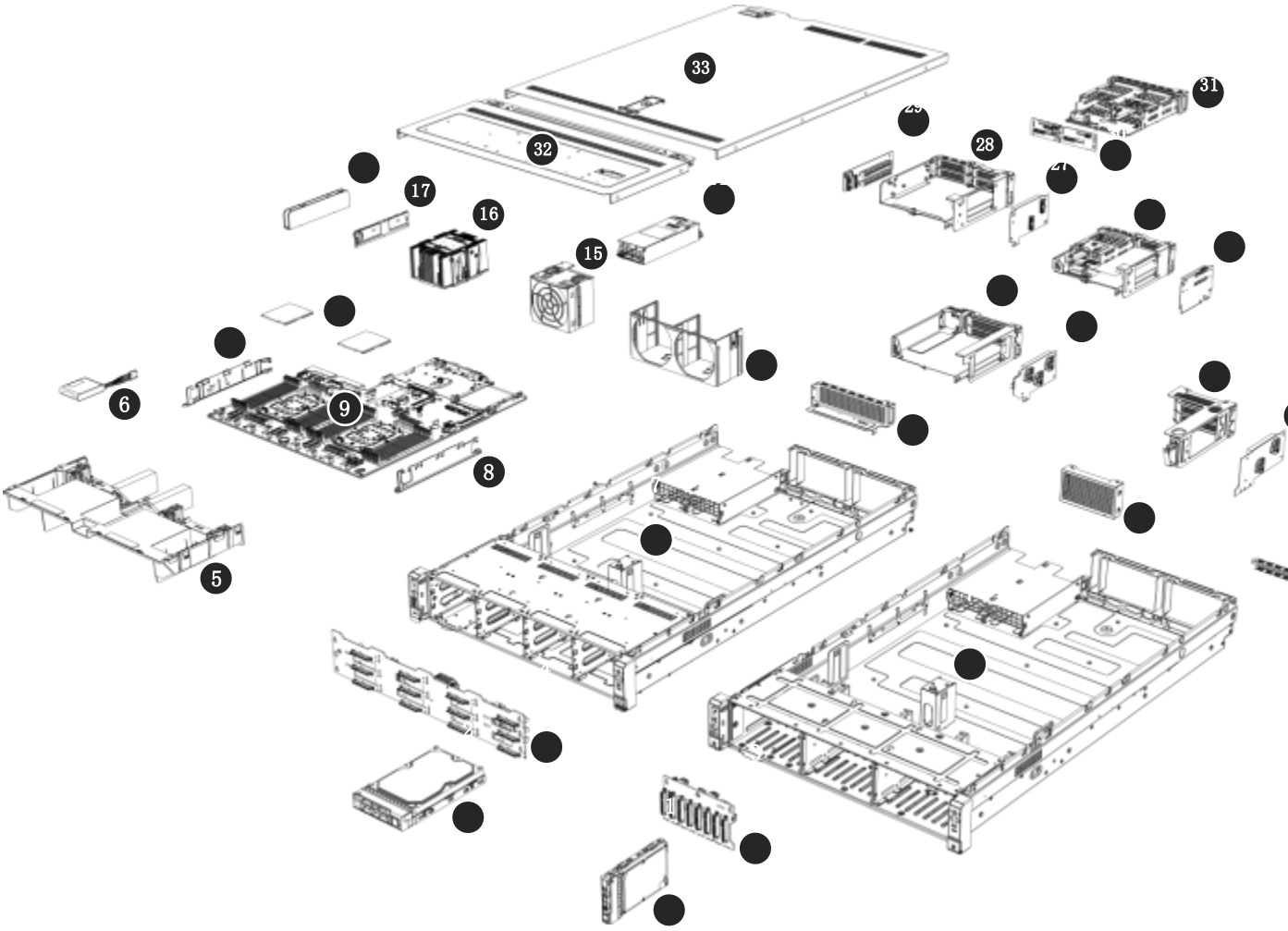
Stable and reliable Smart Management

- The key components of the system are designed with redundancy and hot-swap. It also supports tool-free disassembly and assembly, improving the efficiency of fault maintenance and improving the system Availability;
- Integrated intelligent management chip, providing an open management platform. Support IPMI 2.0, Redfish ,SNMP and other management protocols;
- It supports various management functions such as remote KVM , virtual media, key component status monitoring, abnormal alarm, etc., realizing comprehensive remote system- level intelligent management.

2.3 Product Specifications

For detailed technical specifications of SNR-LE-G4 2U, please refer to the SNR-LE-G4 2U product brochure.

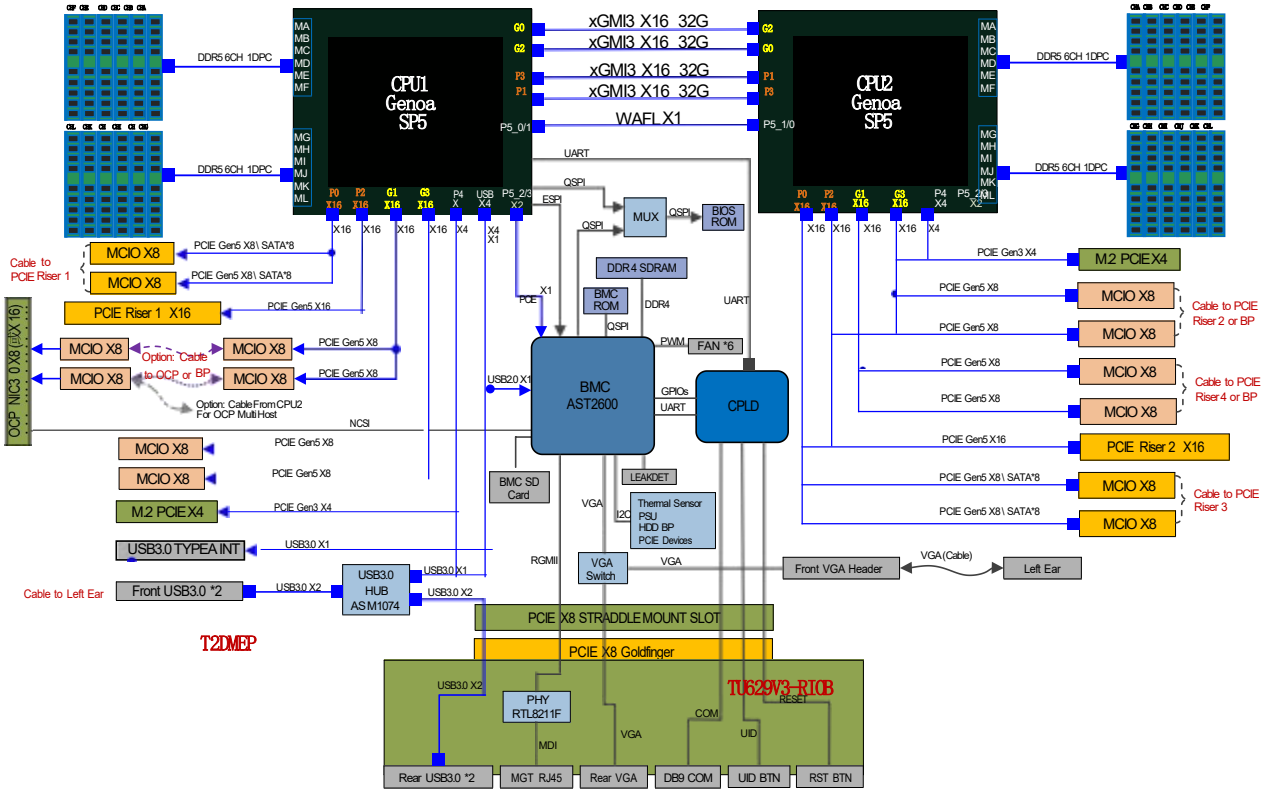
2.4 Physical Structure



serial number	Module Name	serial number	Module Name
1	2.5 inch hard drive	18	Memory air duct
2	3.5 inch hard drive	19	OCP NIC 3.0 Network Card
3	Front 2.5 inch hard drive backplane	20	Riser Card

4	Front 3.5-inch hard drive backplane	21	Riser card module
5	Air guide cover	22	Riser Card
6	Raid card battery pack	23	Riser card module
7	Chassis	24	power supply
8	Cable buckle	25	Riser Card
9	Motherboard	26	Riser card module
10	CPU	27	Riser Card
11	OCP network card fake shield	28	Riser card module
12	IO 1 PCIe Bezel	29	Riser Card
13	IO 2 PCIe Bezel	30	Rear 2.5 inch hard drive backplane
14	Fan frame	31	Rear 2.5 inch hard drive cage
15	fan	32	Front cover
16	heat sink	33	Back cover
17	Memory		

2.5 Motherboard topology diagram

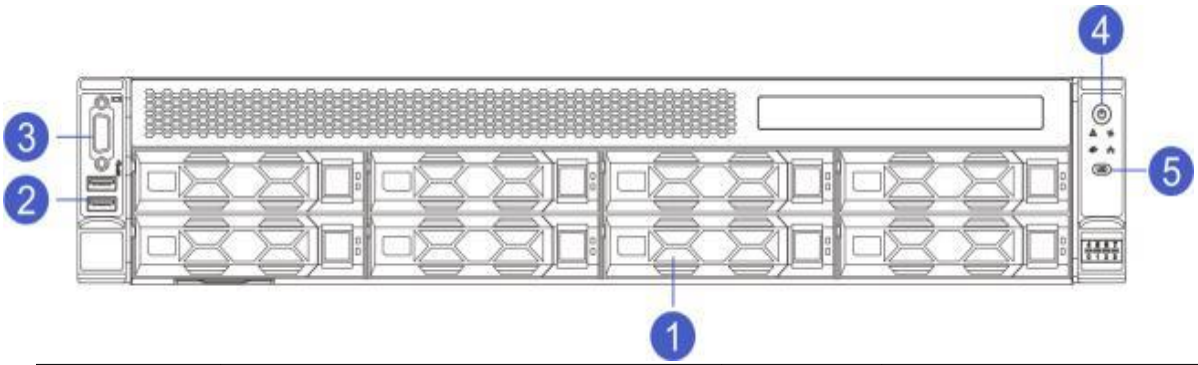


- SNR-LE-G4 2U supports two AMD EPYC™ 9004 series processors and 24 DDR5 DIMMs. The processors are interconnected through four xGMI buses, with a maximum transmission rate of 32GT/s.
- Onboard SATA interface: The board supports 8 SATA 6Gb/s PORTs, which need to be converted to SFF-8643 via MCIO.
- Onboard M.2 interface: provides 2 standard M.2 interfaces, supporting 2280 and 22110 specifications (CPU1/2 PCIe 3.0 x4).
- Onboard MCIO interface: CPU1 provides 6 MCIOx8 interfaces, and CPU2 provides 6 MCIOx8 interfaces, which are interconnected by cables to support RISER expansion and U.2 NVMe.
- PCIe expansion: Provides 2 PCIe Riser expansion slots. Different PCIe expansion combinations can be provided by matching different PCIe Risers.
- Network expansion: Provides a standard OCP NIC 3.0 expansion slot and supports standard OCP NIC 3.0 SFF modules.
- Integrates AST2600 management chip, provides IPMI/KVM management functions, and provides VGA, management network port, debugging serial port and other interfaces.

3. System Components

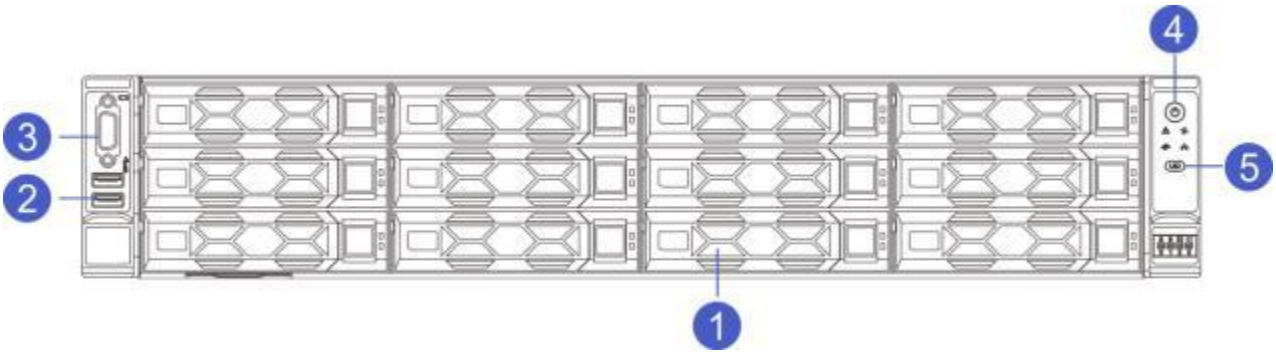
3.1 Front Panel Components

- 2U8 Disk 3.5 Inch disk model



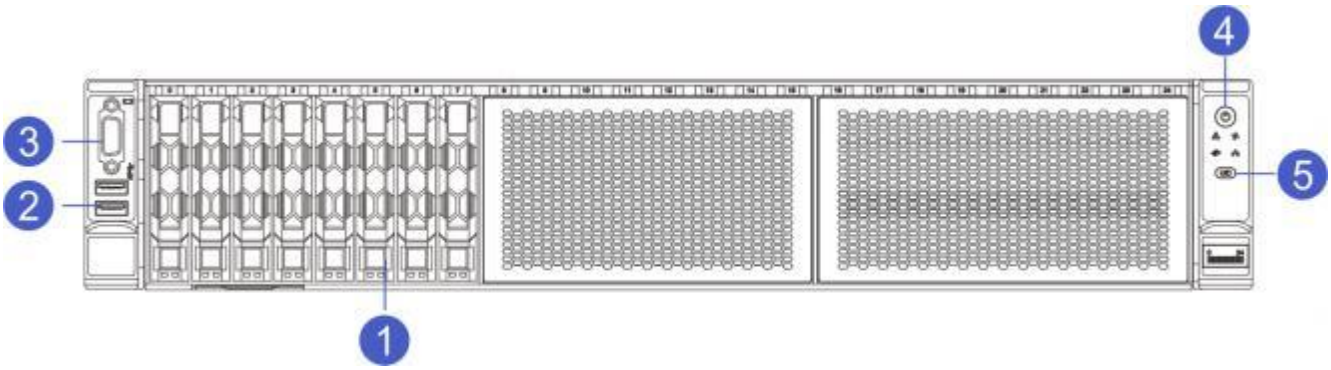
serial number	Module Name	serial number	Module Name
1	3.5-inch hard drive module	2	USB 3.0 Interface
3	VGA interface	4	Power switch button
5	UID button		

- 2U12 Disk 3.5 Inch disk model



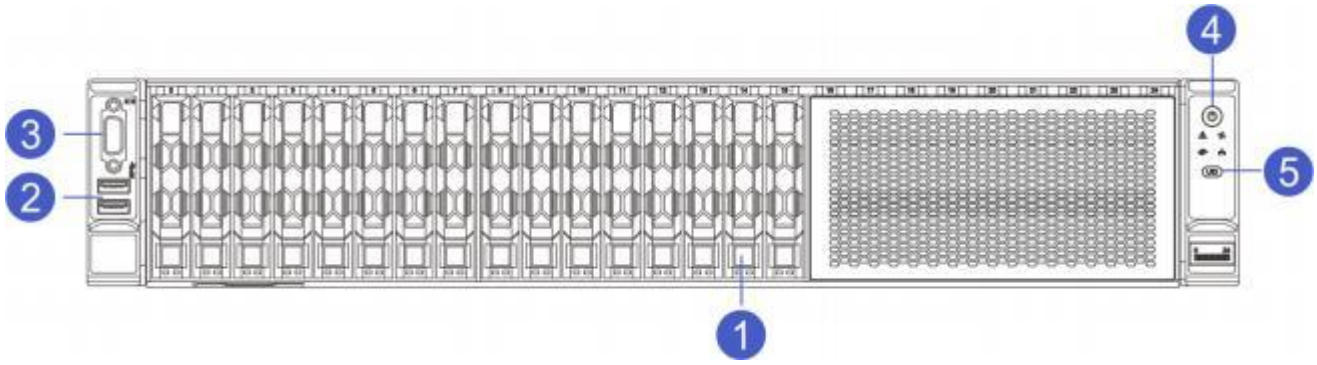
serial number	Module Name	serial number	Module Name
1	3.5-inch hard drive module	2	USB 3.0 Interface
3	VGA interface	4	Power switch button
5	UID button		

- 2U8 Disk 2.5 Inch disk model



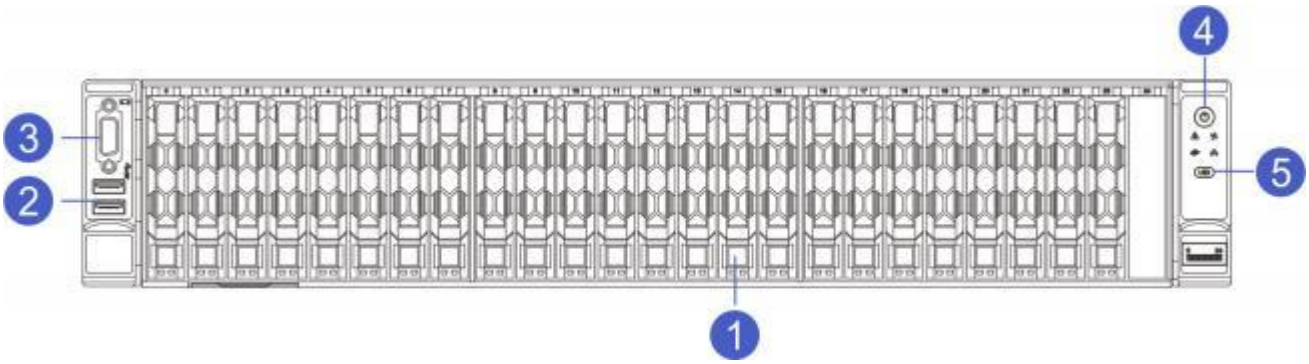
serial number	Module Name	serial number	Module Name
1	2.5-inch hard drive module	2	USB 3.0 Interface
3	VGA interface	4	Power switch button
5	UID button		

- 2U16 Disk 2.5 Inch disk model



serial number	Module Name	serial number	Module Name
1	2.5-inch hard drive module	2	USB 3.0 Interface
3	VGA interface	4	Power switch button
5	UID button		

- 2U24 Disk 2.5 Inch disk model



serial number	Module Name	serial number	Module Name
1	2.5-inch hard drive module	2	USB 3.0 Interface
3	VGA interface	4	Power switch button
5	UID button		

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The 3.5-inch hard drive bay can hold a 3.5/2.5-inch hard drive.

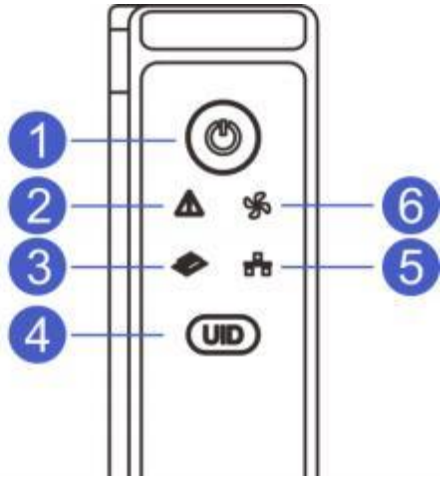
- Front panel interface description

name	type	illustrate
VGA interface	DB 15	For connecting a monitor
USB interface	USB 3.0	USB provided Interface, through which you can connect USB devices.

Caution

When using an external USB device, please make sure that the USB device is in good condition, otherwise it may cause the server to work abnormally.

- Front panel indicators and buttons



serial number	Module Name	serial number	Module Name
1	Power switch button/indicator light	4	UID Buttons/Indicator Lights
2	System fault indicator	5	Network status indicator
3	Memory fault indicator	6	Fan fault indicator

Logo	Indicator light/button	Status Description
	Power switch button/indicator light	Power button description: ✓ When the device is powered on, short press this button to shut down the OS normally. ✓ Long press this button when the device is powered on6 The server can be forced to power off in seconds . ✓ In the power-on state, short press this button to turn on the device. Power indicator light description: ✓ Green (steady on): indicates that the device is powered on normally. ✓ Green (flashing): Indicates the device is in standby mode. ✓ Green off: The device is not powered on.

	UID Buttons/Indicator Lights	UID The buttons/indicators are used to easily locate the server to be operated. Button or BMC Command the remote control to turn the light off or on. UID Button Description: ✓ Short press UID Press the button to turn on/off the positioning light. ✓ Long press UID Button 6 seconds, you can reset the server BMC Management System UID Indicator light description: ✓ Blue (steady on/flashing): Indicates that the server has been located.

		✓ Off: The server has not been located.
	System fault indicator	✓ Off: The device is operating normally. ✓ Flashing red: Indicates a device failure. ✓ Steady red: Indicates that an abnormal alarm has occurred in the device.
	Fan fault indicator	✓ Off: The fan is functioning normally. ✓ Steady red: indicates a fan failure
	Memory fault indicator	✓ Off: The system memory is normal. ✓ Steady red: Indicates a system memory failure.
	Network status indicator	✓ Steady green: Indicates that the network card is connected normally and there is no data communication. ✓ Flashing green: Indicates that the network card is connected normally and there is data communication. ✓ Off: No network connection/no network module

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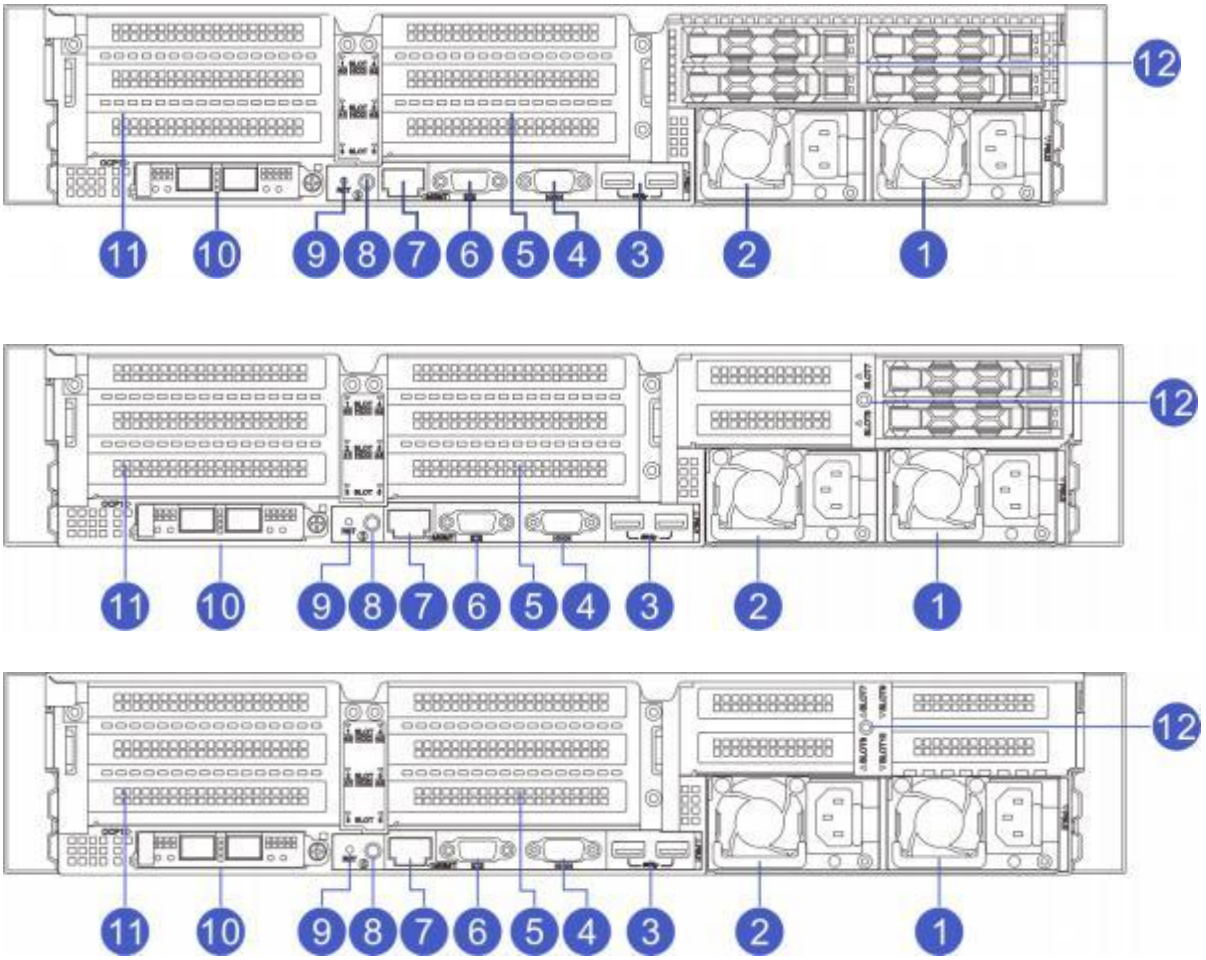
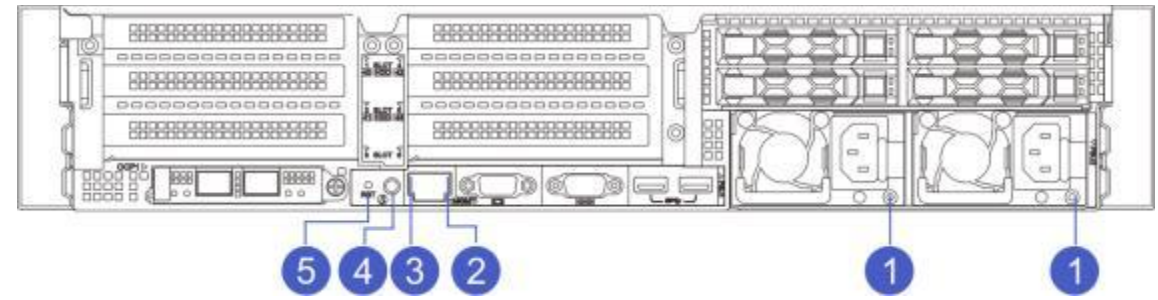
The network status indicator only indicates the rear OCP Network working status of the network card module .

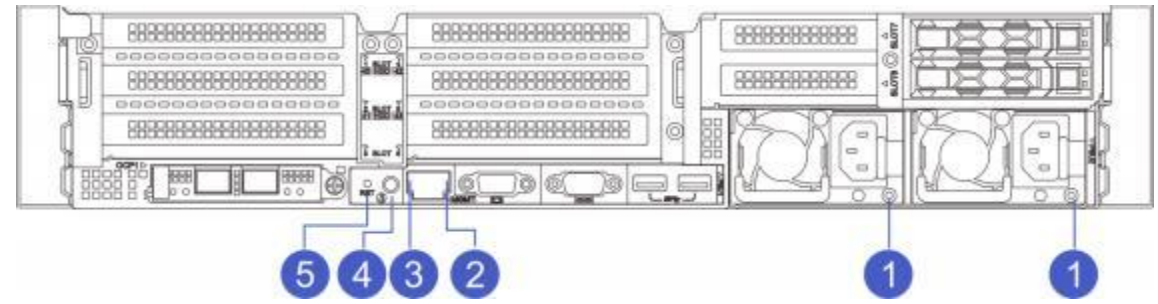
3.2 Rear Panel Components

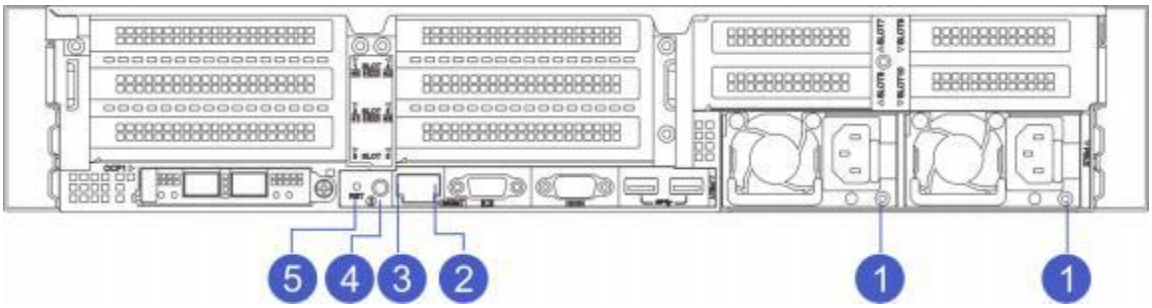


serial number	Module Name	serial number	Module Name
1	PSU2	7	IPMI management network port
2	PSU1	8	UID Buttons and indicators
3	USB3.0 interface	9	System reset button
4	COM interface	10	OCP 3.0 Network Card
5	IO Module 2	11	IO Module 1
6	VGA interface	12	IO Module 3

- Rear panel indicators and button descriptions







serial number	Module Name	serial number	Module Name
1	Power module indicator	4	UID Buttons and indicators
2	Network activity indicator	5	System reset button
3	Network connection status indicator		

Indicator light/button	Status Description
Power module indicator	✓ Green (steady on): indicates that the input and output are normal. ✓ Off: Indicates that there is no AC power input. ✓ Green (flashing/1 Hz): ● Indicates that the server is in standby state; ● Indicates that the power supply is in cold standby state; ✓ Green (flashing/2Hz): Indicates the power supply is upgrading the firmware. ✓ Red (steady on): ● Indicates that the power supply has no output. Possible reasons include power supply over-temperature protection, power supply output over-current/short circuit, output Overvoltage, device failure (not including all device failures), etc. ● Indicates that the power cord is not connected or has fallen off; ✓ Red (flashing/1 Hz): Indicates that a power alarm has occurred. The power module may be overheated or overloaded. The fan may be abnormally loaded, with high current or with low fan speed.
UID Buttons and indicators	✓ UID The indicator light is used to easily locate the server to be operated. UID Button or BMC Command the remote control to turn the light off or on. ✓ Blue (steady on/flashing):Indicates that the server has been located. ✓ Off: The server has not been located.
Network connection status indicator	✓ Steady green: Indicates a Gigabit Link. ✓ Solid orange: Indicates a 100M Link. ✓ Off: 10M Link/no network connection.
Network activity indicator	✓ Yellow (flashing): Indicates data is being transmitted. ✓ Off: No data is being transmitted.
System reset button	✓ Can be used to reset the system. ✓ Short press: reset the system.

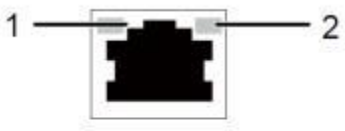
- OCP NIC 3.0 Network Card

SNR-LE-G4 2U server supports standard OCP NIC 3.0 SFF network cards, including the following four self-developed models and other manufacturers' compliant Standard OCP NIC 3.0 network card.

- OCP Network card indicator light description

For the onboard network port, standard network card port, and daughter card series network port, the network indicator lights are designed as follows :

(1) Electrical port series network card:



1: Speed status indicator (green/orange)	2: Data transmission indicator light (yellow)

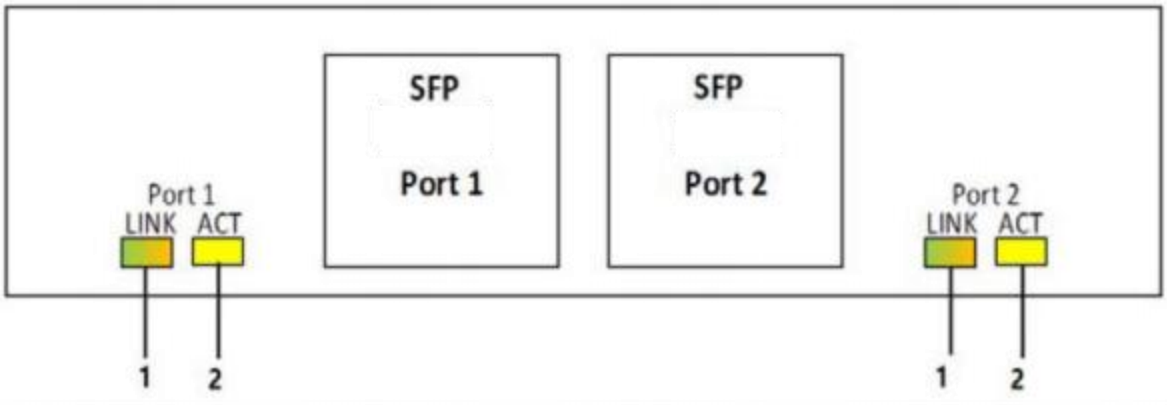
:

ITEM	Indicator Lights	state
1	Speed status indicator	green Steady on: Current Link The link rate is 1G. Orange Steady on: Current Link The link rate is 10 0M. lamp Off: Current Link The link rate is 10M Or not connected.
2	Data transmission indicator	yellow Flashing: Indicates data activity. yellow Off: Indicates no data activity.

10G electrical ports:

ITEM	Indicator Lights	state
1	Speed status indicator	green Steady on: Current Link The link rate is 10G. Orange Steady on: Current Link The link rate is 1G. lamp Off: Current Link The link rate is 100M Or not connected.
2	Data transmission indicator	yellow Flashing: Indicates data activity. yellow Off: Indicates no data activity.

(2) Optical port series network card:



1: Speed status indicator (green/orange)	2: Data transmission indicator (yellow)

SFP Modules:

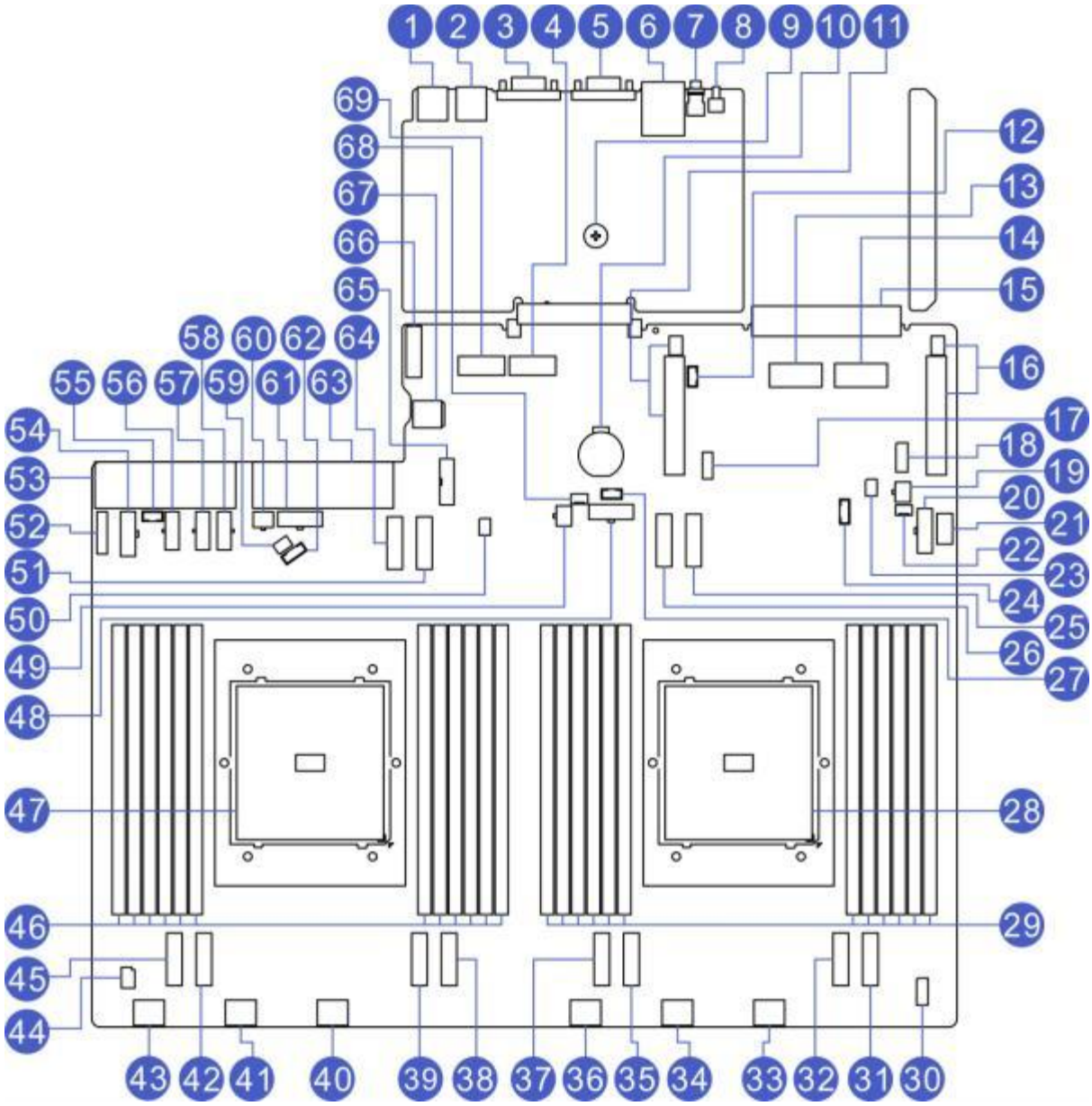
ITEM	Indicator Lights	state
1	Speed status indicator	green Steady on: Current Link The link rate is 10G. Orange Steady on: Current Link The link rate is 1G. lamp Off: Current Link The link rate is 100M Or not connected.
2	Data transmission indicator	yellow Flashing: Indicates data activity. yellow Off: Indicates no data activity.

SFP28 Modules

ITEM	Indicator Lights	state
1	Speed status indicator	green Steady on: Current Link The link rate is 25G. Orange Steady on: Current Link The link rate is 10G. lamp Off: Current Link The link rate is 1G Or not connected.
2	Data transmission indicator	yellow Flashing: Indicates data activity. yellow Off: Indicates no data activity.

3.3. Motherboard components

SNR-LE-G4 2U motherboard components, The interface description is as follows:



serial number	Module Name	serial number	Module Name
1	Rear USB3.0 PORT2	2	Rear USB3.0 PORT1
3	Rear COM	4	CPU1 M.2 Slot (PCIE x4)
5	Rear VGA	6	IPMI Management network port
7	Rear-UID Buttons and their indicators	8	Rear RESET button
9	motherboard tray loose screws	10	CR2032 battery socket

11	RISER2 Slot (FOR CPU2)	12	BMC Debug serial port
13	MCIO Connector 6 (FOR OCP)	14	MCIO Connector 7 (FOR OCP)
15	OCP NIC 3.0 Connectors	16	RISER1 Slot(FOR CPU1)
17	SPI TPM Connectors	18	NCSI Connectors
19	Rear hard drive power connector 1 (HDD PWR 1)	20	GPU POWER Connector 1 (GPU PWR 1)
21	Built-in USB3.0 PORT	22	Rear hard drive backplane I2C Connector 1 (BP I2C1)
23	back Place hard plate back plate letter Number even catch Device 1(LED CONN1)	24	RAID Signal connector 1 (SGPIO)
25	CPU 1 MCIO Connector (MCI O 1)	26	CPU 1 MCIO Connector (MCIO 0)
27	Leak detection connector	28	CPU 1
29	Memory slots (FOR CPU1)	30	Front mounting ear connector (FP CONN)
31	CPU 1 MCIO Connector (MCIO 2)	32	CPU 1 MCIO Connector (MCIO 3)
33	FAN Connector (FAN 10/11)	34	FAN Connector (FAN8/9)
35	CPU 1 MCIO Connector (MCIO 4)	36	FAN Connector (FAN6/7)
37	CPU 1 MCIO Connector (MCIO 5)	38	CPU 2 MCIO Connector (MCIO 2)
39	CPU 2 MCIO Connector (MCIO 3)	40	FAN Connector (FAN4/5)
41	FAN Connector (FAN2/3)	42	CPU 2 MCIO Connector (MCIO 4)
43	FAN Connector (FAN0/1)	44	Intrusion switch interface (INTRUDE R CONN)
45	CPU 2 MCIO Connector (MCIO 5)	46	Memory slot (FOR CPU2)
47	CPU2	48	GPU POWER connector 2 (GPU PWR2)
49	Rear hard drive power connector 2 (HDD PWR2)	50	Rear hard drive backplane signal connector 2 (LED CONN2)
51	CPU 2 MCIO Connector (MCI O 1)	52	Pre VGA Interface (FP VGA)
53	PSU2 interface	54	GPU POWER connector 3 (GPU PWR3)
55	Rear hard drive backplane I2C connector 3 (BP I2C3)	56	Front backplane power connector (BP PWR 1)
57	Front backplane power connector (BP PWR2)	58	Front backplane power connector (BP PWR3)
59	back Place hard plate back plate letter Number even catch Device 3(LED CONN 3)	60	Rear hard drive power connector 3 (HDD PWR3)
61	GPU POWER Connectors 4(GPU PWR 4)	62	RAID Signal connector 2 (SGPIO)
63	PSU 1 interface	64	CPU 2 MCIO Connector (MCIO 0)
65	Front USB 3.0 connector	66	RISER3 Power Connectors
67	BMC SD Slots	68	Rear hard drive backplane I2C connector 2 (BP I2C2)
69	CPU2 M.2 Slot (PCIE x4)		

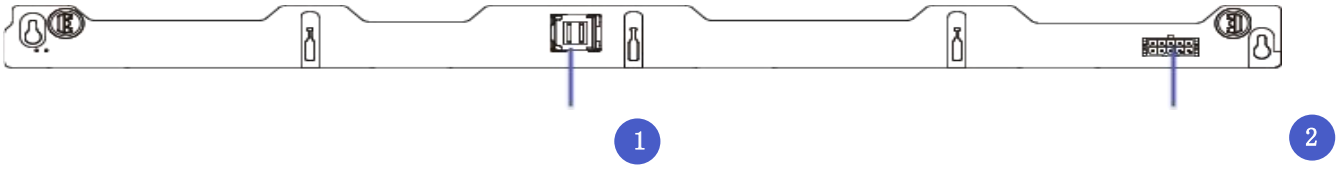
3.4 Backplane components

Depending on your system configuration, the supported drive backplanes are as follows:

system	Supported backplane options
SNR-LE-G4 2U	4 x 3.5-inch SAS or SATA backplane

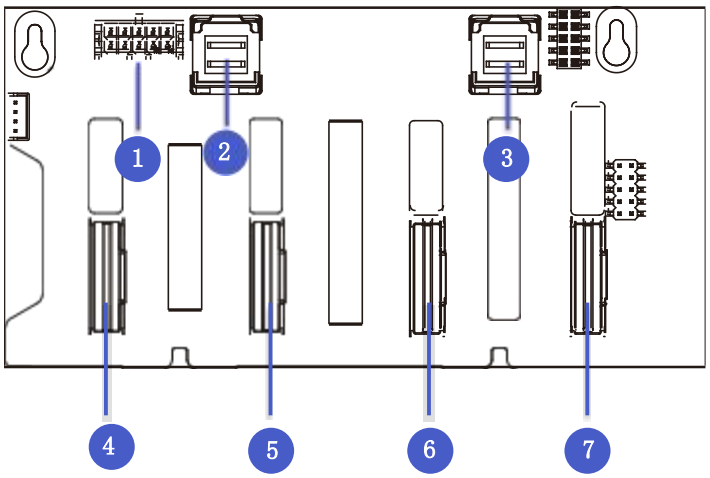
	8 x 2.5 inch SAS or SATA backplane
	8 x 2.5 inch SAS , SATA , NVMe Backplane
	8 x 3.5 inch SAS or SATA backplane
	8 x 3.5 inch SAS , SATA , NVMe Backplane
	12 x 3.5 inch SAS or SATA backplane

4 x 3.5-inch SAS or SATA backplane



Serial number	illustrate	Silkscreen
1	x4 MINISAS HD Interface	PORT0
2	Power interface	BP PWR

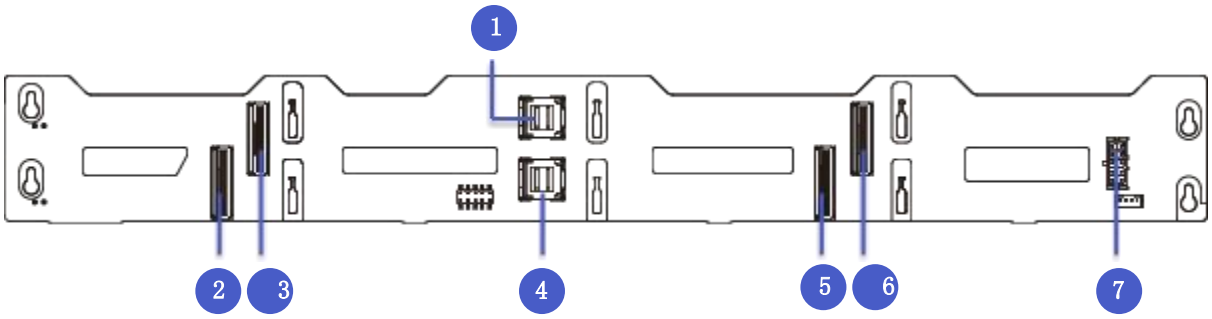
8 x 2.5 inch SAS , SATA , NVMe Backplane



Serial number	illustrate	Silkscreen

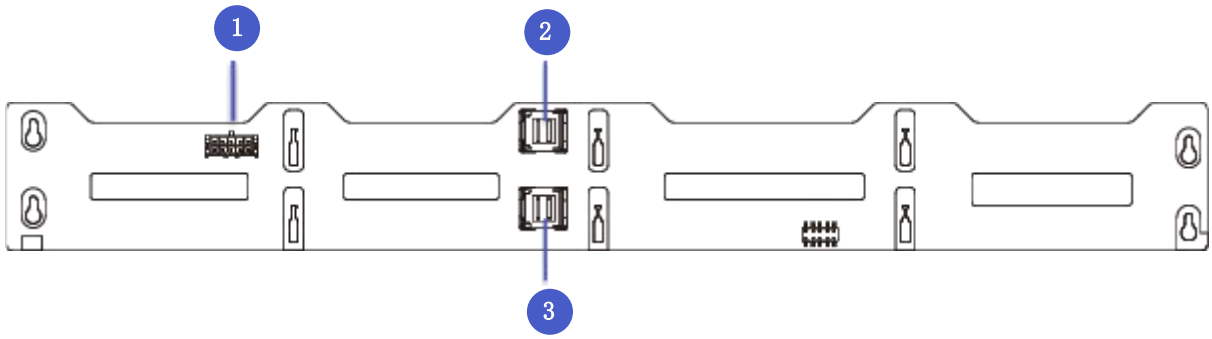
1	Power interface	BP PWR
2	x4 MINISAS HD Interface	PORT1
3	x4 MINISAS HD Interface	PORT0
4	x8 SlimSAS interface	SLIM 3
5	x8 SlimSAS interface	SLIM 2
6	x8 SlimSAS interface	SLIM1
7	x8 SlimSAS interface	SLIM 0

8 x 3.5 inch SAS , SATA , NVMe Backplane



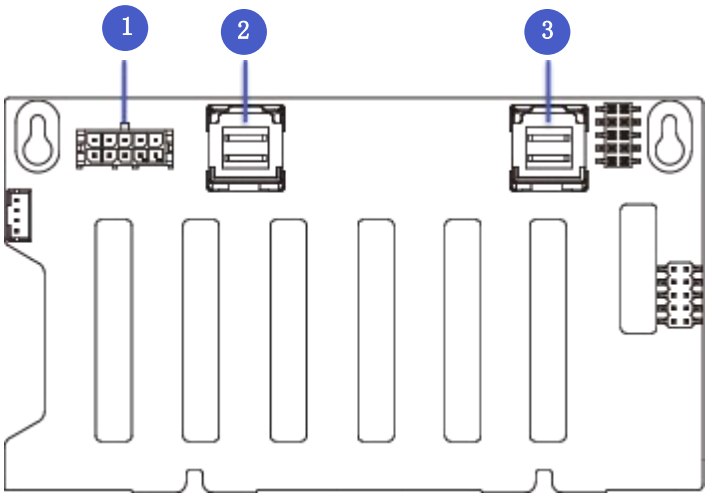
Serial number	illustrate	Silkscreen
1	x4 MINISAS HD Interface	PORT1
2	x8 SlimSAS interface	SLIM1
3	x8 SlimSAS interface	SLIM 3
4	x4 MINISAS HD Interface	PORT0
5	x8 SlimSAS interface	SLIM 0
6	x8 SlimSAS interface	SLIM 2
7	Power interface	BP PWR

8 x 3.5 inch SAS or SATA backplane



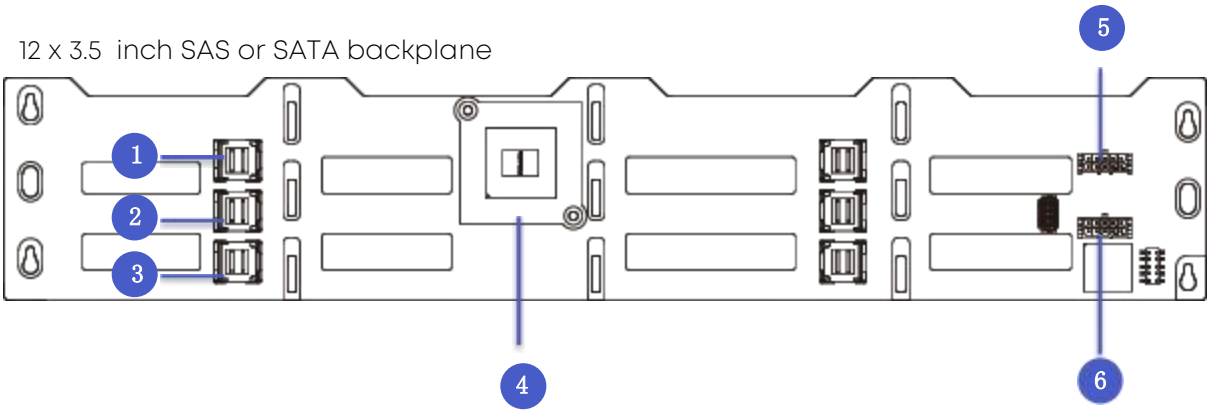
Serial number	illustrate	Silkscreen
1	Power interface	BP PWR
2	x4 MINISAS HD Interface	PORT1
3	x4 MINISAS HD Interface	PORT0

8 x 2.5 inch SAS or SATA backplane



Serial number	illustrate	Silkscreen
1	Power interface	BP PWR
2	x4 MINISAS HD Interface	PORT1
3	x4 MINISAS HD Interface	PORT0

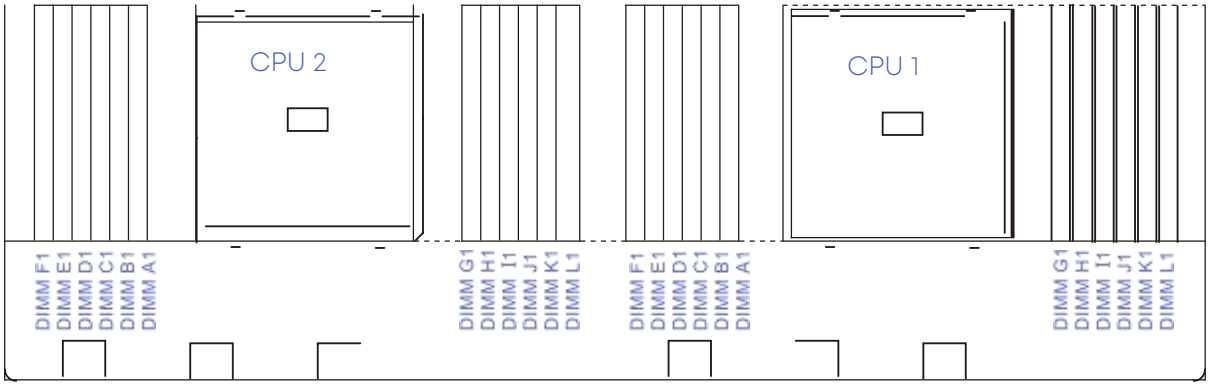
12 x 3.5 inch SAS or SATA backplane



Serial number	illustrate	Silkscreen
1	x4 MINISAS HD Interface	Rear PORT0
2	x4 MINISAS HD interface	SAS PORT1
3	x4 MINISAS HD Interface	SAS PORT0
4	Expander Chip	Expander Chip
5	Power interface	BP PWR1
6	Power interface	BP PWR2

3.5 Memory DIMM Slots

The server provides 24 DIMM slots. Each CPU supports 12 DDR5 memories. The corresponding slot order is shown in the following figure:



Point

- Each CPU must be installed with at least one memory stick. The system installs DIMMs that are evenly distributed to each CPU based on the number of CPUs.
- The same server does not allow the mixing of memory of different types (RDIMM, 3DS RDIMM) and different specifications (capacity, bit width, rank, etc.).

3.5.1 Memory support type

DDR 5 memory types and CPUs supported by the server Related.

- When using AMD EPYC™ 9004 series processors, the supported DDR5 memory is as follows:

Genoa memory support is as shown below:

	Populating RDIMM/3DS RDIMM DDR5 Memory Modules with Genoa Processor				
	DIMM Population	DDR5 Frequency MT/s			Capacity (16 Gb x4 devices)
DIMM Type	DIMM 0				1 channel / 12 channels
RDIMM	1R (1 rank)	4800	4800	4800	32GB / 384GB
	2R (2 ranks)	4800	4800	4800	64GB / 768GB
3DS RDIMM	2S2R (4 ranks)	4800	4800	4800	128GB / 1.5TB
	2S4R (8 ranks)	4800	4800	4800	256GB / 3TB

3.5.2 Memory installation requirements

- At least one CPU per DDR DIMM ;
- The same server must use the same model of DDR 5 memory ;
- RDIMM and 3DS RDIMM cannot be mixed;
- When installing memory, you must follow the memory installation principles

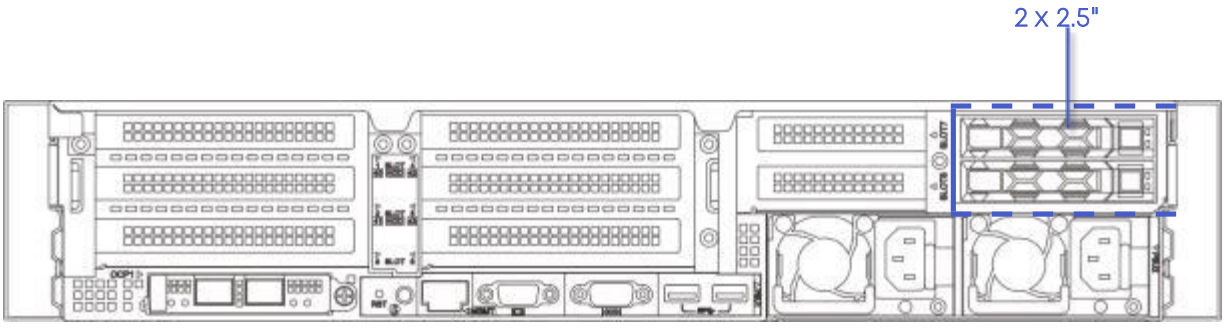
3.5.3 Memory Installation Guidelines

Refer to the following installation principles:

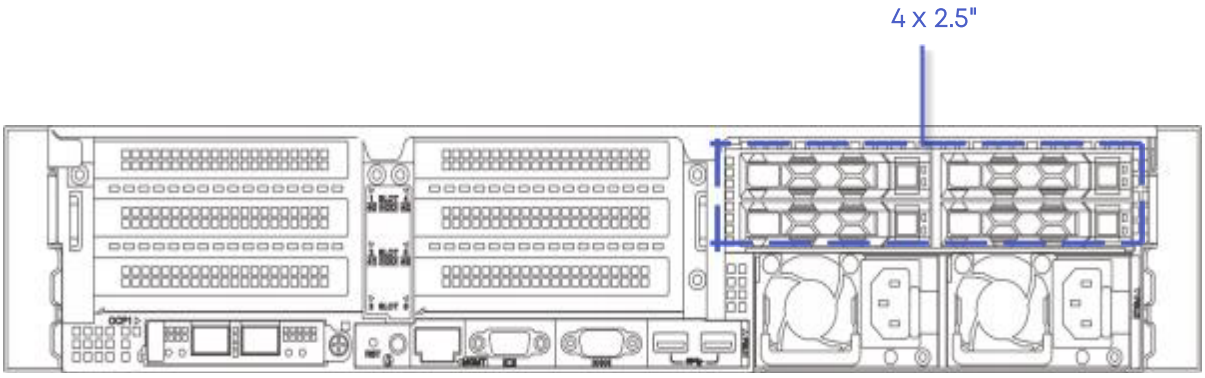
DIMM Population Guide												
Type	Channel											
	F1	E1	D1	C1	B1	A1	G1	H1	I1	J1	K1	L1
When 1 CPU is installed												
CPU1&1DIM M						.						
CPU1&2DIM M						.	.					
CPU1&4DIM M				.		.	.		.			
CPU1&6DIM M				.	.	.	.	.	.			
CPU1&8DIM M		.		.	.	.	.	.	.		.	
CPU1&10DIM M		.	.	.	.	.	.	.	.	.	.	
CPU1&12DIM M	.	.	.	.	.	.	.	.	.	.	.	.
When 2 CPUs are installed												
CPU1&8DIMM				.		.	.		.			
CPU2&8DIMM				.		.	.		.			
CPU1&16DIM M		.		.	.	.	.	.	.		.	
CPU2&16DIM M		.		.	.	.	.	.	.		.	
CPU1&24DIM M	.	.	.	.	.	.	.	.	.	.	.	.
CPU2&24DIM M	.	.	.	.	.	.	.	.	.	.	.	.

3.6 Rear IO Storage Configuration

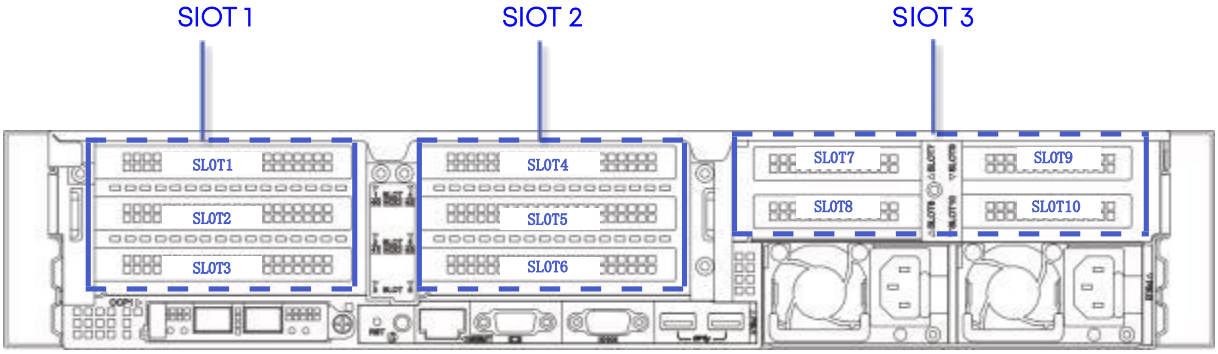
- Rear 2x2.5” configuration



- Rear 4x2.5” configuration



3.7 Rear IO PCIe Configuration



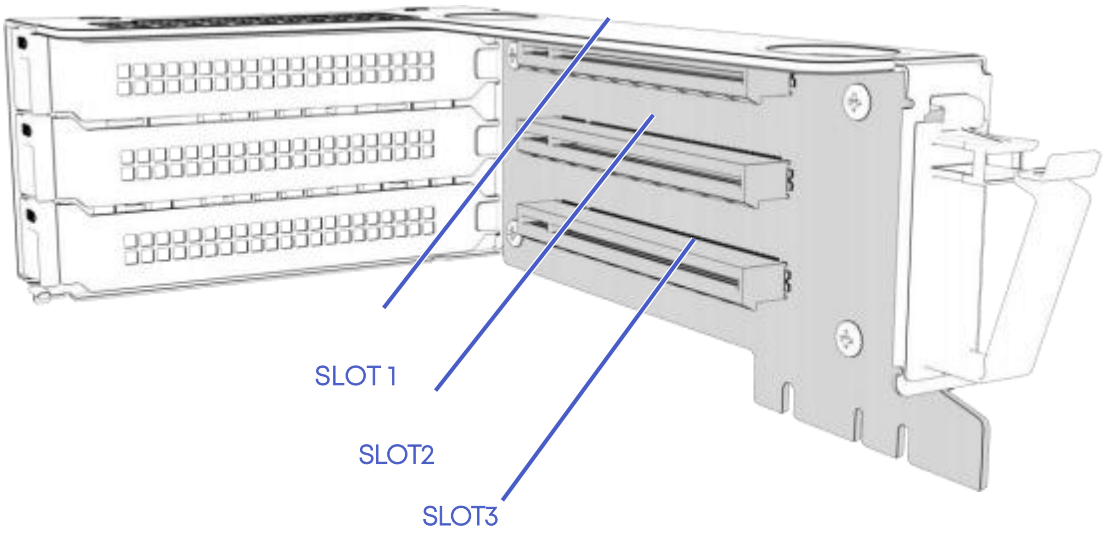
- The slots provided by IO module 1 are Slot 1 to Slot 3.;
- The slots provided by IO module 2 are Slot 4 to Slot 6;
- The slots provided by IO module 3 are Slot 7 to Slot 10;
- IO module 1 and IO module 2 have the same configurable specifications and can be configured as PCIe expansion modules:
  - When configured as a PCIe expansion module, you can choose 2 PCIe x16 or 1 PCIe x16 + 2 PCIe x8;

- IO Module 3 can be configured as a hard drive module or PCIe Extension modules:
  - When configured as 2 x 2.5” hard drive modules, Slot 9 to Slot 10 do not support PCIe expansion cards;
  - When configured as a PCIe expansion module, 2* PCIe X8 or 4* PCIe X8 can be selected;
- IO Module 1, IO module 2, IO module 3 supports PCIe 5.0.

PCIe Riser Modules

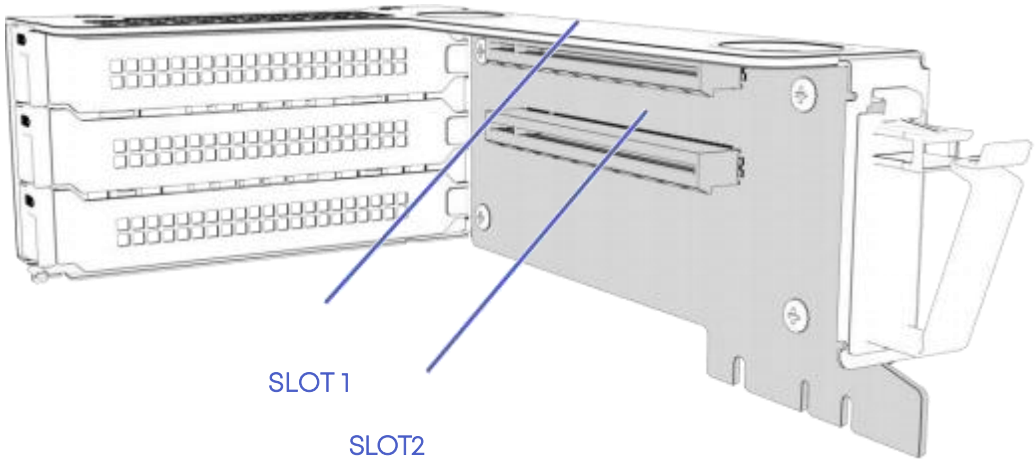
- IO PCIe Riser Module 1--can provide 3 PCIe Slot.

Installed on the IO PCIe Riser module, the provided PCIe slots are Slot1, Slot2, and Slot3.



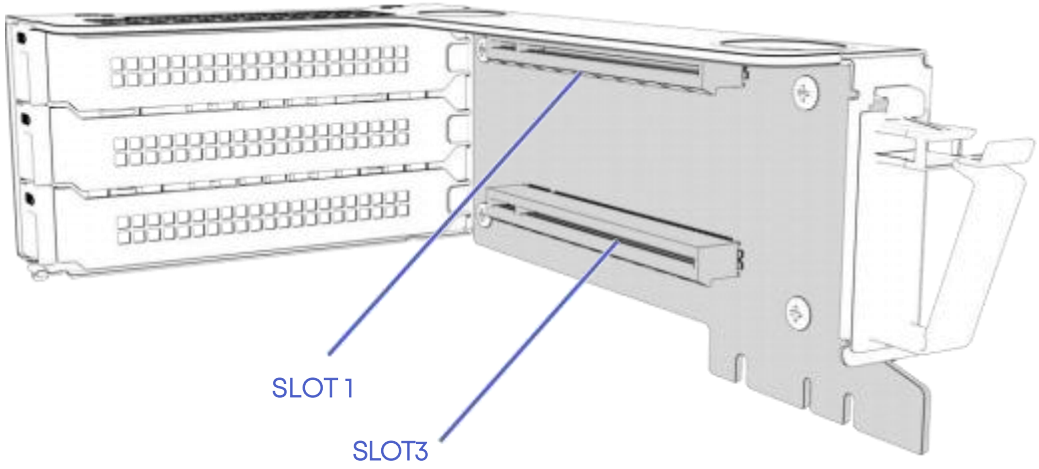
- IO PCIe Riser Module 1--can provide 2 PCIe Slot.

Installed on the IO PCIe Riser module, providing PCIe slots Slot1 and Slot2.



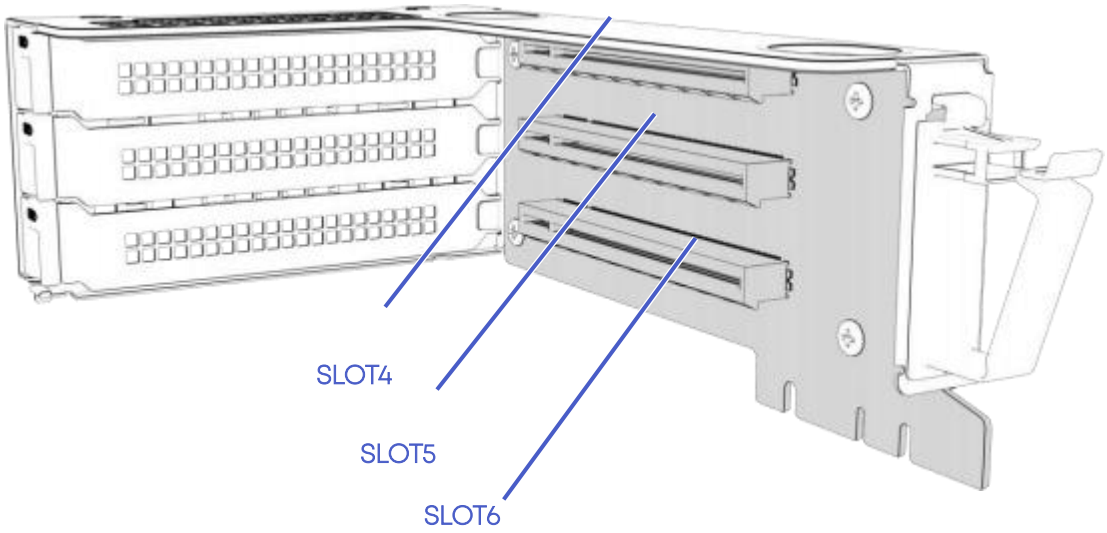
- IO PCIe Riser Module 1--can provide 2 PCIe Slot.

Installed on the IO PCIe Riser module, providing PCIe slots Slot1 and Slot3.



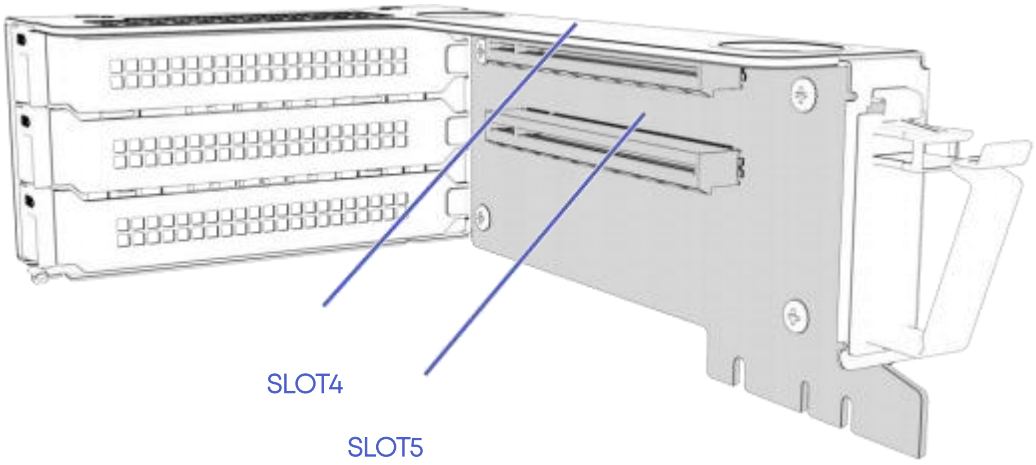
- IO PCIe Riser Module 2 - can provide 3 indivual PCIe Slot.

Installed on the IO PCIe Riser module, the provided PCIe slots are Slot4, Slot5, and Slot6.



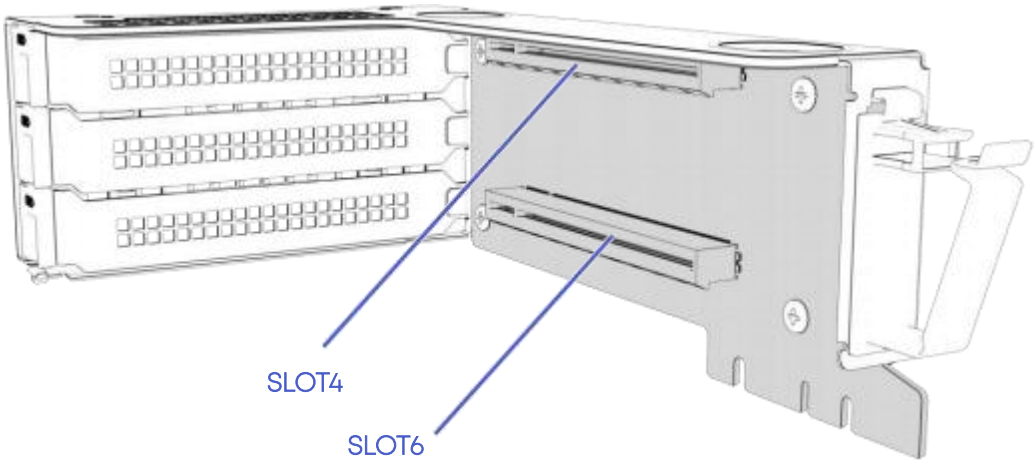
- IO PCIe Riser Module 2 - can provide 2 indivual PCIe Slot.

Installed on the IO PCIe Riser module, providing PCIe slots Slot4 and Slot5.



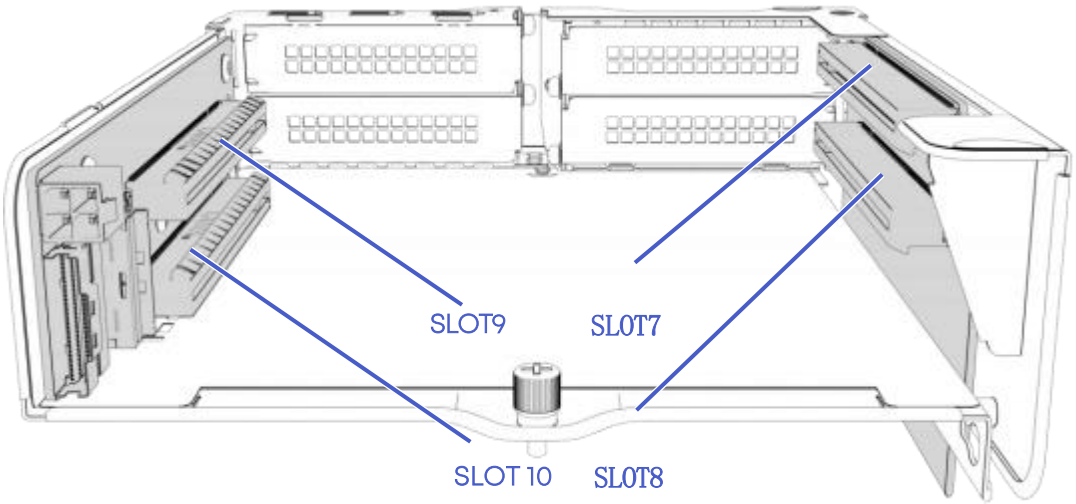
- IO PCIe Riser Module 2 - can provide 2 indivual PCIe Slot.

- Installed in IO PCIe Riser Module, providing PCIe The slot is Slot 4. Slot 6.



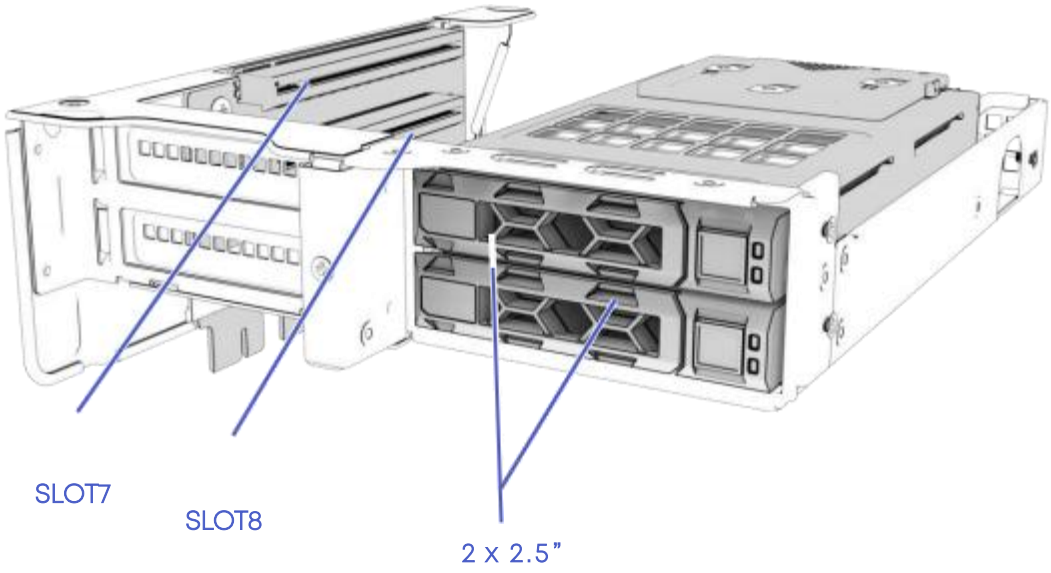
- IO PCIe Riser Module 3 - can provide 4 indivual PCIe Slot.

- Installed in IO PCIe Riser module 3, providing PCIe slots Slot7, Slot8, Slot9, and Slot10.

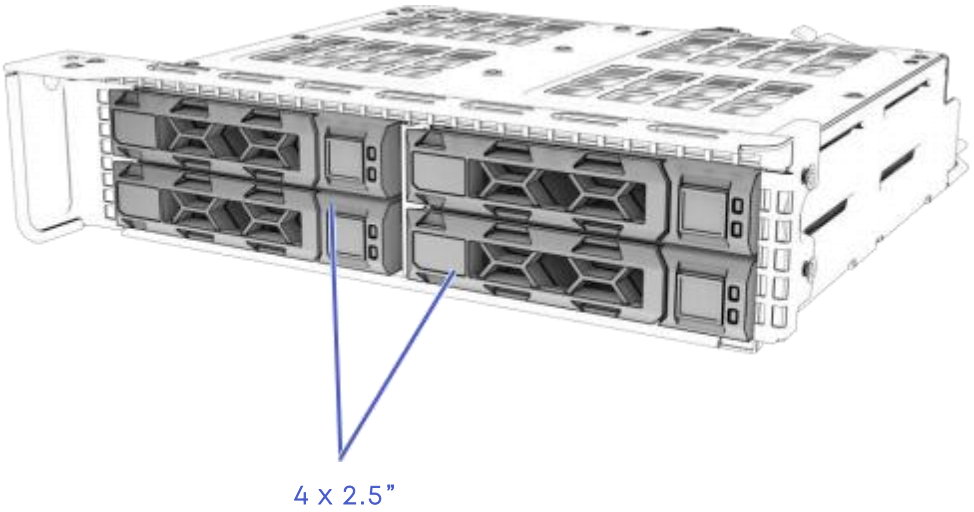


- IO PCIe Riser module 3--can provide 2 PCIe Slot slots + 2 2.5-inch hard drive slots.

- Installed in IO PCIe Riser module 3, providing PCIe slots Slot7 and Slot8.



- IO PCIe Riser Module 3 - can provide 4 2.5-inch hard drive slot.



3.8 PCIe Slot Description

- Server rear panel configuration PCIe Riser Module Model

1. PCIe Slot Description - Rear Window 4 Card Configuration

PCIe Slots	subordinate CPU	PCIe standard	Bus bandwidth	Port Number	Slot size
Slot1	CPU1	PCIe 5.0	x16	P0	Full height and length
Slot 3	CPU1	PCIe 5.0	x16	P2	Full height half length
Slot 4	CPU 2	PCIe 5.0	x16	G3	Full height and length
Slot 6	CPU 2	PCIe 5.0	x16	P2	Full height half length
OCP 3.0 Slots	CPU1	PCIe 5.0	x8/x16	G1	standard OCP 3.0

PCIe Slots	subordinate CPU	PCIe standard	Bus bandwidth	Port Number	Slot size
Slot1	CPU1	PCIe 5.0	x16	P0	Full height and length
Slot 2	CPU1	PCIe 5.0	x16	P2	Full height and length

Slot 4	CPU 2	PCIe 5.0	x16	G3	Full height and length
Slot 5	CPU 2	PCIe 5.0	x16	P2	Full height and length
OCP 3.0 Slots	CPU1	PCIe 5.0	x8/x16	G1	standard OCP 3.0

2. PCIe Slot Description - Rear Window 6 Card Configuration

PCIe Slots	subordinate CPU	PCIe standard	Bus bandwidth	Port Number	Slot size
Slot1	CPU1	PCIe 5.0	x16	P0	Full height and length
Slot 2	CPU1	PCIe 5.0	x8	P2	Full height and length
Slot 3	CPU1	PCIe 5.0	x8	P2	Full height half length
Slot 4	CPU 2	PCIe 5.0	x16	G3	Full height and length
Slot 5	CPU 2	PCIe 5.0	x8	P2	Full height and length
Slot 6	CPU 2	PCIe 5.0	x8	P2	Full height half length
OCP 3.0 Slots	CPU1	PCIe 5.0	x8/x16	G1	standard OCP 3.0

3. PCIe Slot Description - Rear Window 8 Card Configuration

PCIe Slots	subordinate CPU	PCIe standard	Bus bandwidth	Port Number	Slot size
Slot1	CPU1	PCIe 5.0	x16	P0	Full height and length
Slot 2	CPU1	PCIe 5.0	x8	P2	Full height and length
Slot 3	CPU1	PCIe 5.0	x8	P2	Full height half length
Slot 4	CPU 2	PCIe 5.0	x16	G3	Full height and length
Slot 5	CPU 2	PCIe 5.0	x8	P2	Full height and length
Slot 6	CPU 2	PCIe 5.0	x8	P2	Full height half length
Slot 7	CPU 2	PCIe 5.0	x8	P0	Half height half length
Slot 8	CPU 2	PCIe 5.0	x8	P0	Half height half length
OCP 3.0 Slots	CPU1	PCIe 5.0	x8/x16	G1	standard OCP 3.0

4. PCIe Slot Description - Rear Window 10 Card Configuration

PCIe Slots	subordinate CPU	PCIe standard	Bus bandwidth	Port Number	Slot size
Slot1	CPU1	PCIe 5.0	x16	P0	Full height and length
Slot 2	CPU1	PCIe 5.0	x8	P2	Full height and length
Slot 3	CPU1	PCIe 5.0	x8	P2	Full height half length
Slot 4	CPU 2	PCIe 5.0	x16	G3	Full height and length
Slot 5	CPU 2	PCIe 5.0	x8	P2	Full height and length
Slot 6	CPU 2	PCIe 5.0	x8	P2	Full height half length
Slot 7	CPU 2	PCIe 5.0	x8	P0	Half height half length
Slot 8	CPU 2	PCIe 5.0	x8	P0	Half height half length
Slot 9	CPU 2	PCIe 5.0	x8	G1	Half height half length

Slot10	CPU 2	PCIe 5.0	x8	G1	Half height half length
OCP 3.0 Slots	CPU1	PCIe 5.0	x8/x16	G1	standard OCP 3.0

5. PCIe Slot Description - 2 GPU Configuration

PCIe Slots	subordinate CPU	PCIe standard	Bus bandwidth	Port Number	Slot size
Slot1	CPU1	PCIe 5.0	x16	P0	Full height, full length, double width
Slot 4	CPU 2	PCIe 5.0	x16	G3	Full height, full length, double width
OCP 3.0 Slots	CPU1	PCIe 5.0	x8/x16	G1	Standard OCP 3.0

6. PCIe Slot Description - 4 GPU Configuration

PCIe Slots	subordinate CPU	PCIe standard	Bus bandwidth	Port Number	Slot size
Slot1	CPU1	PCIe 5.0	x16	P0	Full height, full length, single width
Slot 2	CPU1	PCIe 5.0	x16	P2	Full height, full length, single width
Slot 4	CPU 2	PCIe 5.0	x16	G3	Full height, full length, single width
Slot 5	CPU 2	PCIe 5.0	x16	P2	Full height, full length, single width

OCP 3.0 Slots	CPU1	PCIe 5.0	x8/x16	G1	Standard OCP 3.0

7. PCIe Slot Description - 8 GPU Configuration

PCIe Slots	subordinate CPU	PCIe standard	Bus bandwidth	Port Number	Slot size
Slot1	CPU1	PCIe 5.0	x16	P0	Half height half length single width
Slot 2	CPU1	PCIe 5.0	x8	P2	Half height half length single width
Slot 3	CPU1	PCIe 5.0	x8	P2	Half height half length single width
Slot 4	CPU 2	PCIe 5.0	x16	G3	Half height half length single width
Slot 5	CPU 2	PCIe 5.0	x8	P2	Half height half length single width
Slot 6	CPU 2	PCIe 5.0	x8	P2	Half height half length single width
Slot 7	CPU 2	PCIe 5.0	x8	P0	Half height half length single width
Slot 8	CPU 2	PCIe 5.0	x8	P0	Half height half length single width
OCP 3.0 Slots	CPU1	PCIe 5.0	x8/x16	G1	Standard OCP 3.0

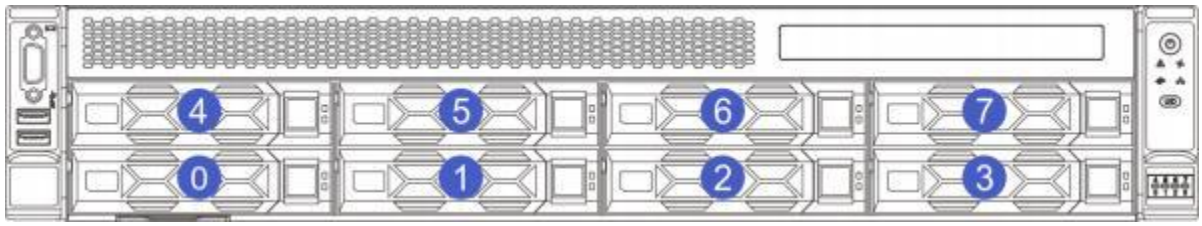
3.9 hard drive configuration

Configuration	Front hard drive	hard drive management method
2U8-3.5 inches SAS / SATA Direct-connect hard drive configuration	Front hard drive (8 × 3.5"):Slot 0 to Slot 7 Support SAS / SATA hard drive	SAS / SATA Hard Drives: 1 × RAID card / Motherboard CPU
2U8-3.5 inches SAS/SATA/NVMe Direct-connect hard drive configuration	Front hard drive (8 × 3.5"):Slot 0 to Slot 7 Supports SAS / SATA / NVMe hard drives	SAS / SATA Hard Drives: 1 × RAID card / Motherboard CPU NVMe Hard Drives: Motherboard CPU

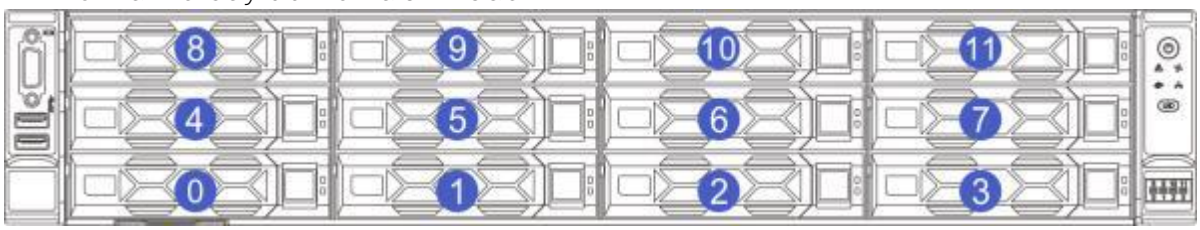
2U12-3.5" SAS / SATA Direct-connect hard drive configuration	Front hard drive (12 × 3.5”）:Slot 0 to Slot 11 Support SAS / SATA hard drive	SAS / SATA Hard Drives: 1 × RAID card / Motherboard CPU
2U12-3.5 inch Direct-connected 8 NVMe hard drive configuration	Front hard drive (12 x 3.5"): Slot 0 to Slot 7 Support NVMe hard plate, groove Bit 0 to groove 11 Support SAS / SATA hard drive	SAS/SATA hard drive: 1 × RAID card/motherboard CPU NVMe Hard Drives: Motherboard CPU
2U12-3.5" SAS / SATA Extended hard drive configuration	Front hard drive (12 × 3.5”):Slot 0 to Slot 11 Support SAS / SATA hard drive	SAS/SATA hard drive: 1 × RAID card
2U8-2.5 inches SAS / SATA Direct-connect hard drive configuration	Front hard drive (8 x 2.5"): Slots 0 to 7 support SAS / SATA hard drives	SAS/SATA hard drive: 1 × RAID card/motherboard CPU
2U8-2.5 inches SAS/SATA/NVMe Direct-connect hard drive configuration	Front hard drive (8 x 2.5"): Slots 0 to 7 support SAS / SATA / NVMe hard drives	SAS/SATA hard drive: 1 × RAID card/motherboard CPU NVMe Hard Drives: Motherboard CPU
2U24-2.5 inch Direct-connect - 16 NVMe hard drive configuration	Front hard drive (16 × 2.5”)Slot 0 to Slot 15 support NVMe hard plate, groove Bit 0 to groove Bit 7 Support SAS / SATA hard drive	SAS/SATA hard drive: 1 × RAID card NVMe Hard Drives: Motherboard CPU
2U24-2.5 inch Direct-connect - 24 NVMe hard drive configuration	Front hard drive (24 × 2.5”):Slot 0 to Slot 23Support NVMe hard drive, slot 0 to slot 7 support SAS / SATA Hard Drive	SAS/SATA hard drive: 1 × RAID card NVMe Hard Drives: Motherboard CPU

3.10 hard drive label

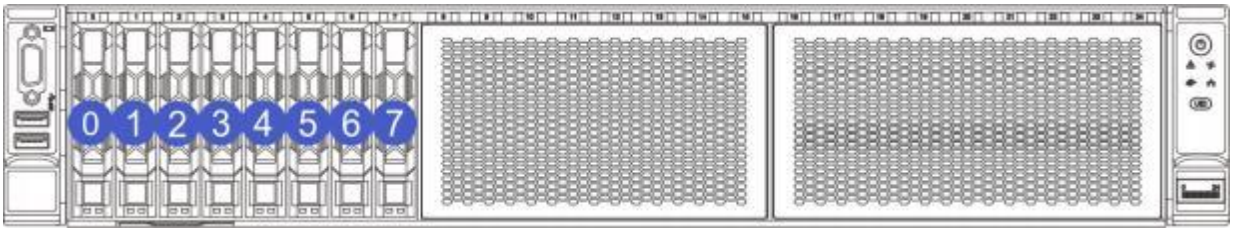
- 2U8 disk slot 3.5 Inch disk model



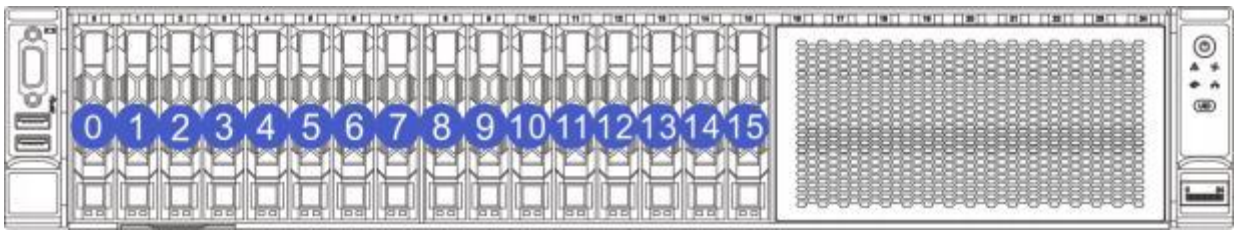
- 2U12 drive bay 3.5 Inch disk model



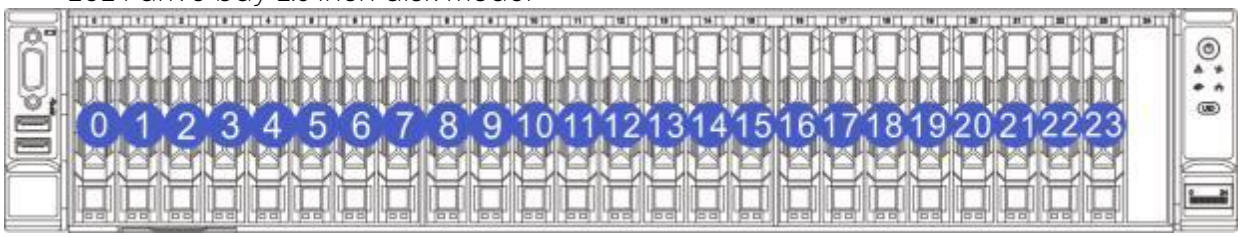
- 2U8 disk slot 2.5 Inch disk model



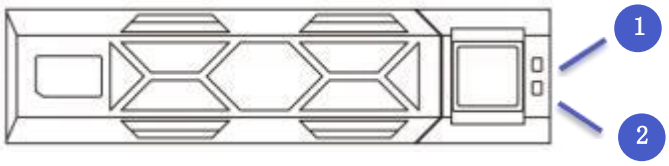
- 2U16 2.5 slots Inch disk model



- 2U24 drive bay 2.5 Inch disk model



3.11 hard drive indicator



1：Disk Fault Indicator Lights	2: hard drive Present / Active Indicator Lights

SAS / SATA hard drive indicator light description:

hard drive status	hard drive Present / Active Indicator light (green)	hard drive Fault Indicator light (yellow)
hard drive not in place	Off	Off
Hard drive is in place, but no data activity	Always on	Off
The hard drive is in place and functioning normally	Flash	Off
Hard Drive Failure	Always on	Always on
The hard drive is located	Always on	Flicker (4Hz)
The hard drive is in rebuilding state	Always on	Flicker (1 Hz)

NVMe hard drive indicator light description:

hard drive status	hard drive Present / Active Indicator light (green)	hard drive Fault Indicator light (yellow)
hard drive not in place	Off	Off
Hard drive is in place, but no data activity	Always on	Off
The hard drive is in place and functioning normally	Flash	Off
Hard Drive Failure	Always on	Always on
The hard drive is located	Always on	Flicker (4Hz)

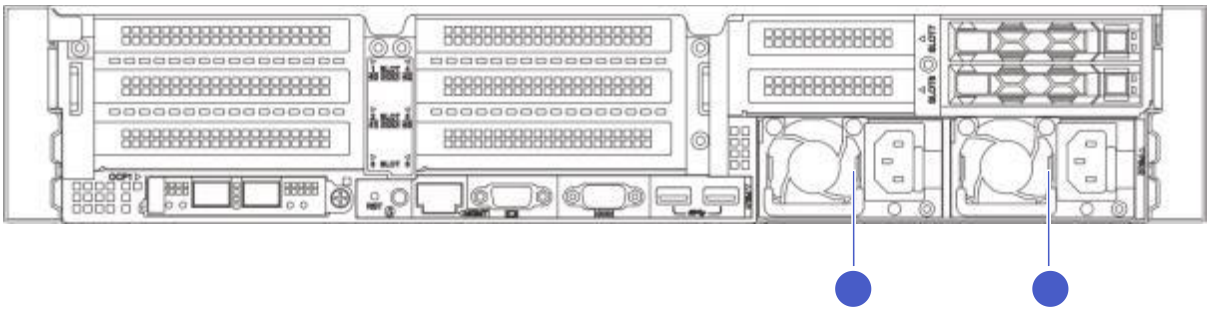
3.12 System Fan

The server supports automatic fan speed regulation function. The fan speed is dynamically adjusted according to the system temperature, effectively reducing system noise and power consumption.

- support 4 fan module, can be matched with 8056 according to different configurations Specifications of the fan.
- Supports hot swap.
- support N+1 Redundancy means that the server can operate normally even if a single fan fails.
- Supports intelligent adjustment of fan speed.
- The fan modules are configured in the same server. Part No. (i.e. P/N encoding) must be the same.

3.13 Power Module

- support 1 or 2 A power supply module.
- Supports AC or DC power modules.
- Supports hot swap.
- Configuration 2 When a power module is support 1+1 Redundant backup.
- The power modules configured in the same server, Part No. (i.e. P/N encoding) must be the same.
- Provide short circuit protection, Supports dual live wire input power module. The following figure shows the location of the power module:



4. Operating system compatibility

For information about operating system and hardware compatibility, please refer to this section for the latest compatibility information and product component models not reflected in this manual. Please consult your local sales representative for details.

4.1 operating system

table 4-1 operating system

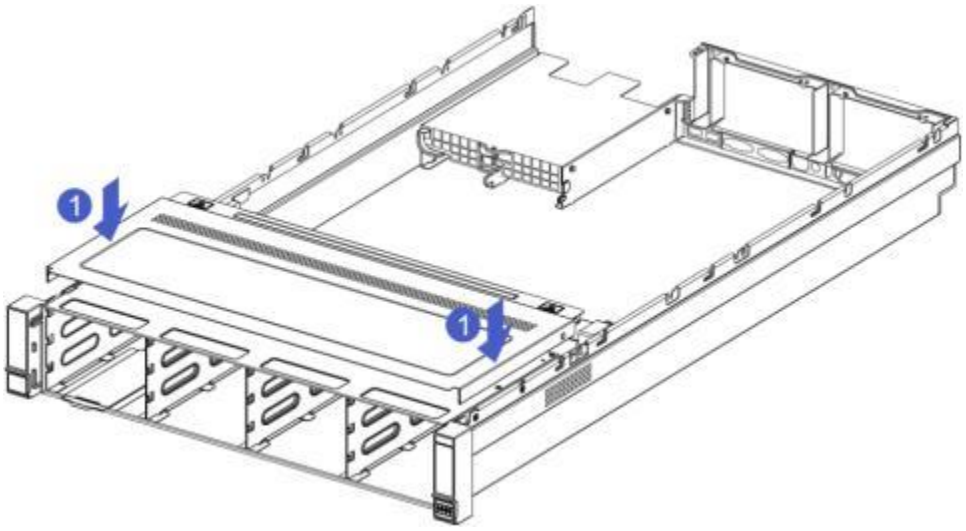
OS factory	OS Version
Windows	Windows Server 2022 Windows Server 2019
Red Hat	Red Hat Enterprise Linux 8.6~8.10 Red Hat Enterprise Linux 9.0~9.3
SUSE	SUSE Enterprise Linux SLE 15 SP4
Ubuntu	Ubuntu 20.04 Server Ubuntu 22.04 Server Ubuntu 24.04 Server
Oracle	Oracle Linux 9.2 Oracle Linux 8.6
VMWare	VMWare ESXi 8.0 VMWare ESXi 7.0
Citrix	Citrix Hypervisor 8.2
UOS	UOS Server V20 1070e UOS Server V20 1070a
Kylinsoft	Galaxy Unicorn kylin V 10 SP 3
Euler	Open Euler 22.03 Open Euler 22.03 SP 3 Open Euler 24.03

5. Installing system components

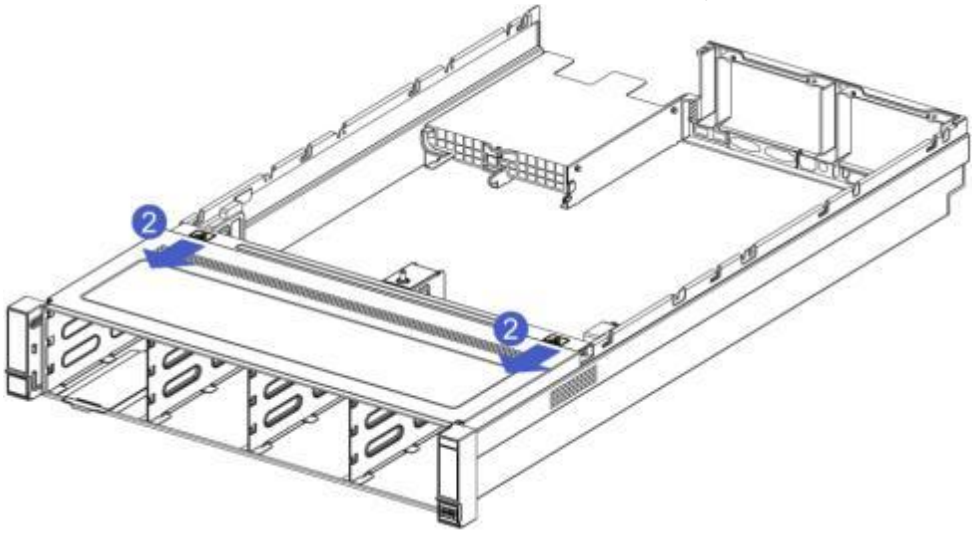
5.1 Chassis cover installation

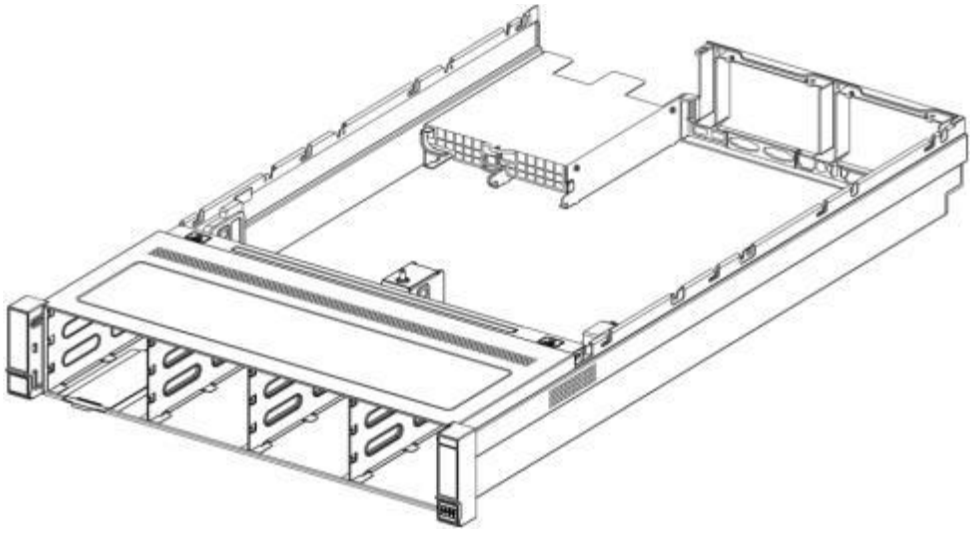
Step 1: Install the front cover of the chassis

1-1. Align the upper cover hanging nails with the opening of the box and place it downwards.



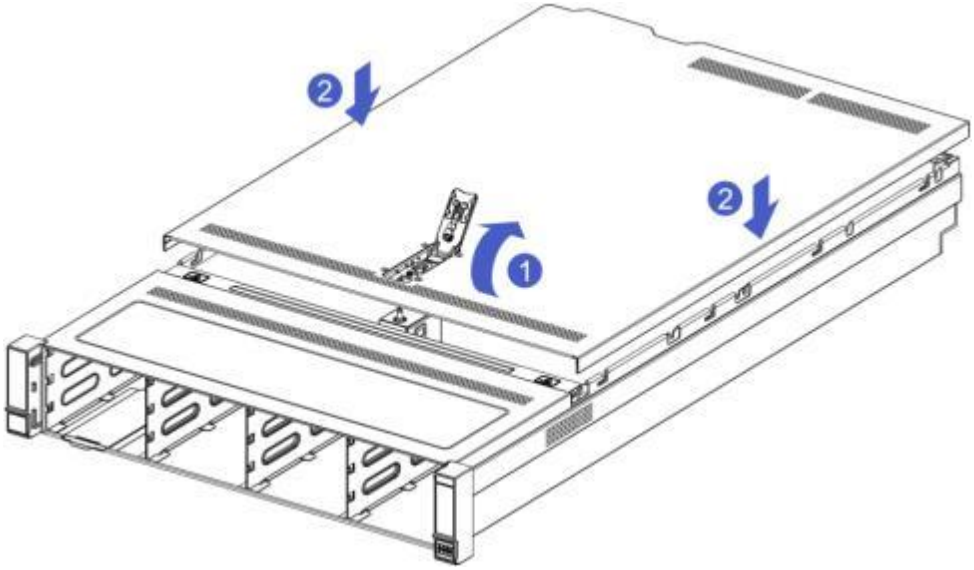
1-2. Push the front cover in the direction of the arrow until it is flush with the front surface of the chassis and the locks on both sides click into place.



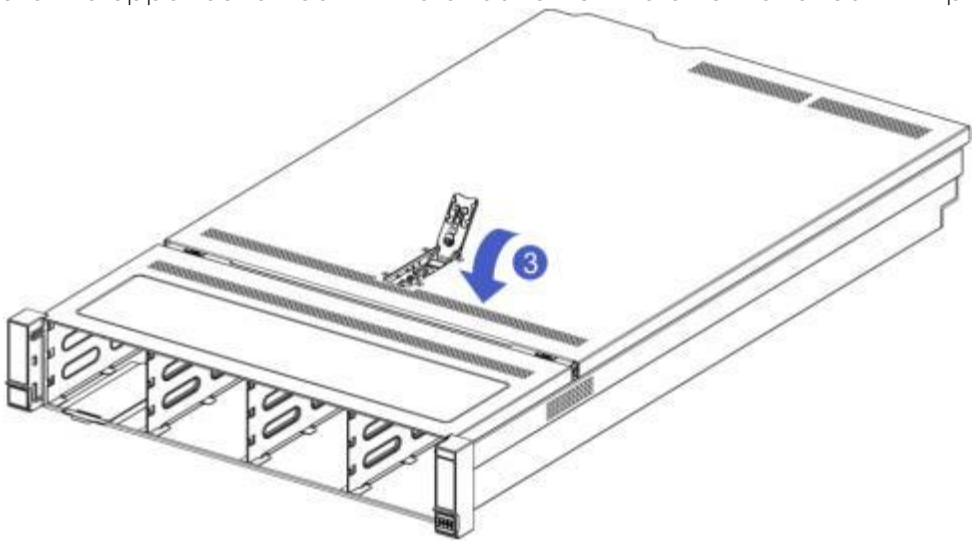


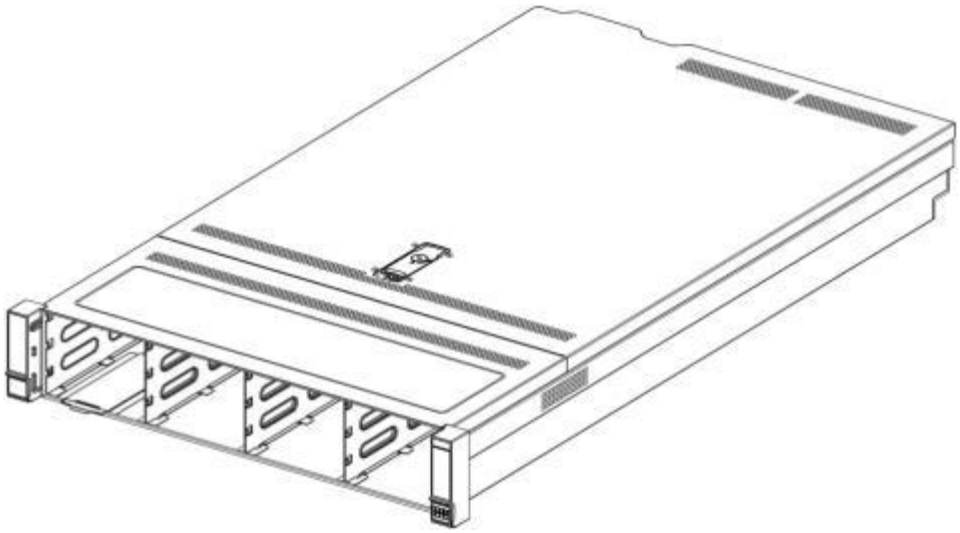
Step 2: Install the rear cover

2-1. Open the chassis lock in the direction of the arrow, align the upper cover hanging nails with the opening of the box, and place it downward.



2-2. Rotate the upper cover lock in the direction of the arrow and lock it in place.





warning

To reduce the risk of personal injury from overheating of the server surface, place the drive and internal system components Allow the components to cool before touching them.

5.2 CPU Installation

Installing the Processor:

Step 1： CPU installation

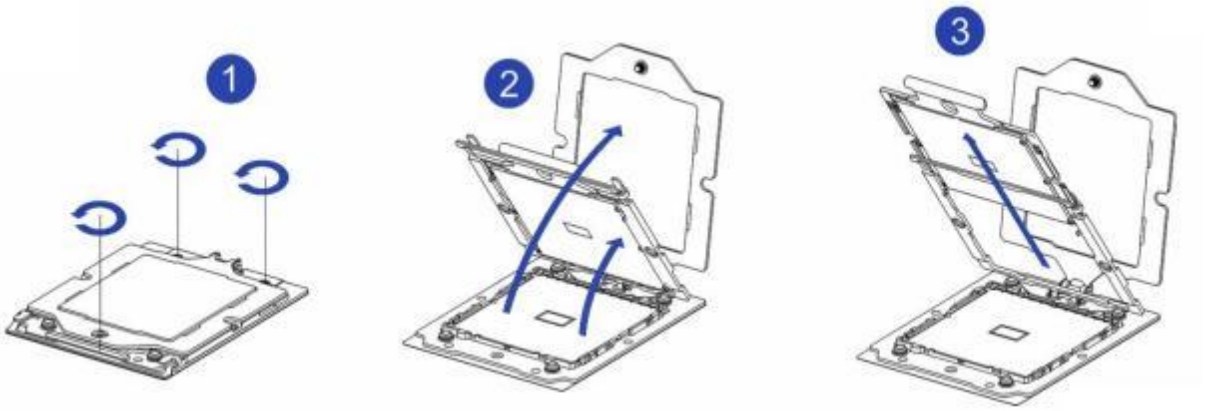
1-1. Tilt the CPU as shown in the figure and clamp it on one end of the clamp. CPU 's A1 corner (triangle mark) To be connected with the triangle on the clamping piece Align the corner of the hole. Make sure the groove on the processor is aligned with the protrusion on the clip;

1-2. Bend the other end of the clamping piece in the direction of the arrow. Fix the CPU to the clamping piece; 1 -3. Loosen the clamping piece so that the other end of the clamping piece hooks into the CPU groove.

Step 2: Install the CPU onto the radiator. Guaranteed CPU The surface of the radiator is clean and free of oil and foreign matter. 2-1. Apply about 0.4 ml on the CPU Volume of thermal grease, evenly spread;

2-2. Alignment A1 corner (triangle mark)place the CPU Buckle on the radiator;

2-3. Carefully check the installation of the clamping plate and the heat sink to ensure that the clamping plate is fully clamped and flat.



5.3 Radiator Installation

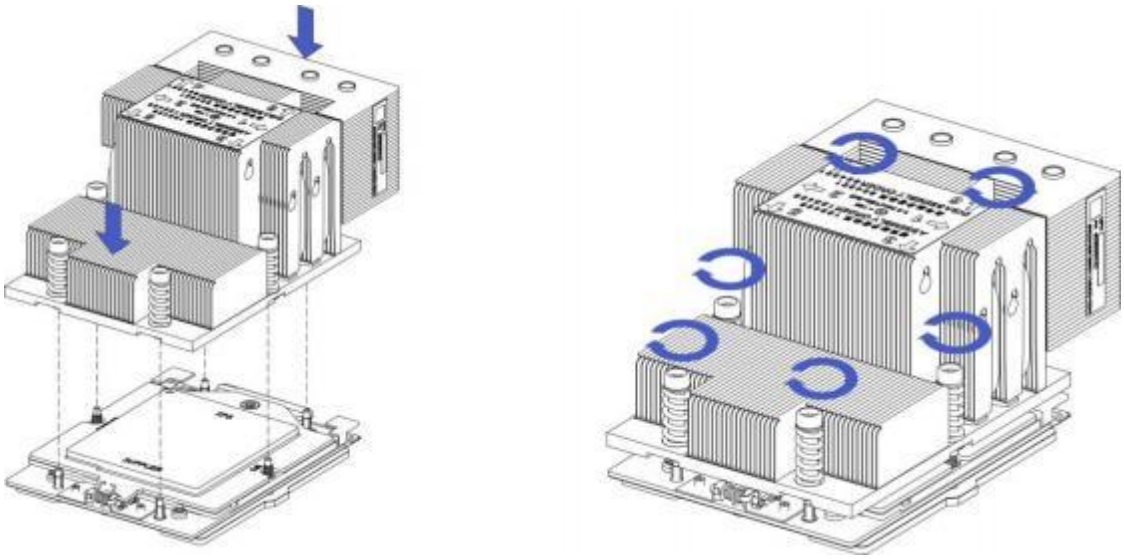
Installation steps:

1. Press the protective cover in the direction of the arrow and remove it upwards;

2. Move the fastening lock on the radiator in the direction of the arrow. The fastening lock is in a vertical position. Place the radiator on the CPU base. Fixing studs aligned, Place vertically downward on the base;

3. Press the fastening lock on the radiator in the direction of the arrow. Make it engage with the hook on the processor base;

4. Using T30 Use a Phillips screwdriver to tighten the screws that secure the heat sink.



Caution

The pins on the motherboard are extremely fragile and easily damaged. To avoid damaging the motherboard, do not touch the processor or Processor socket contacts.

Danger

After disconnecting the server power supply, the heat sink may be hot. Please allow the heat sink to cool for a few minutes before installing it.

5.4 Memory Installation

Step 1 Open the wrenches on both sides of the memory slot and align the memory with the memory slot. Pay attention to the correspondence between the notch on the memory module and the memory slot .

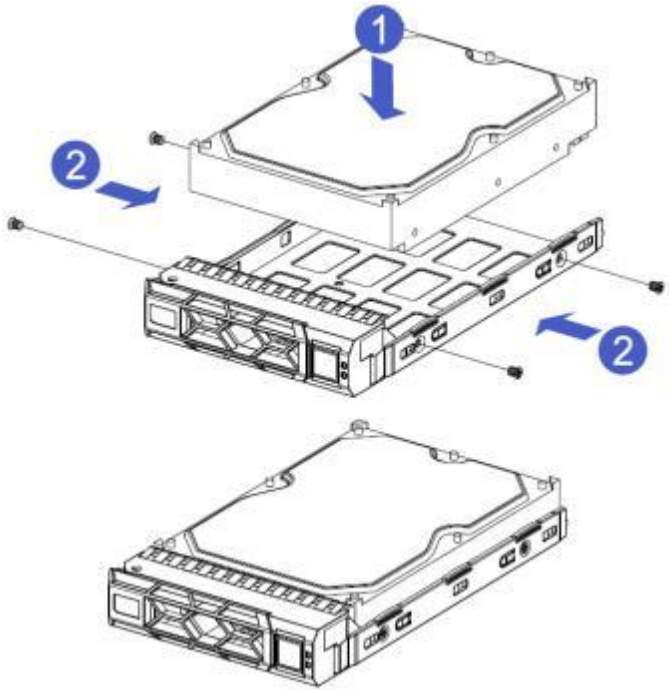
Step 2 Push the memory vertically into the memory slot with force until you hear the memory key lock.

5.5 hard drive installation

- Installing a 3.5-inch hard drive

1-1. Place the hard drive in the tray;

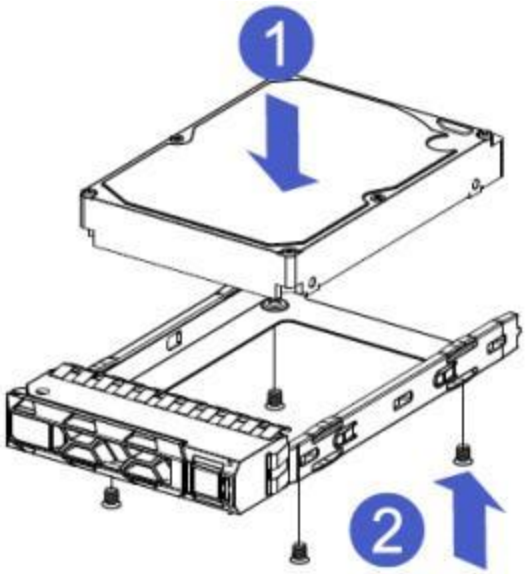
1-2. Left and right sides 4 Use countersunk screws to lock the hard drive (the screw heads must not protrude from the surfaces of the guide rails on both sides of the tray).



- Install 2.5 inch hard drive

1-1. Place the hard drive in the tray;

2-2. bottom Use 4 countersunk screws to secure the hard drive (the screw heads protrude from the bottom of the tray).

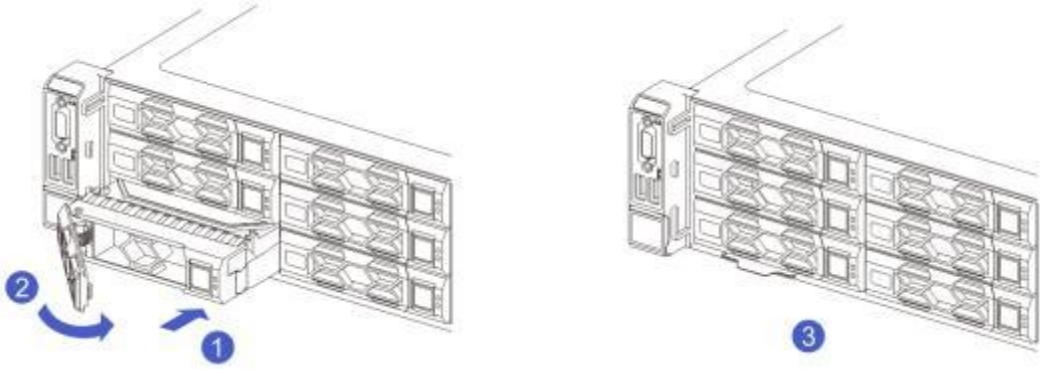


- Install the hard drive tray assembly into the chassis

1. With the hard drive wrench open, push it into the chassis;

2. When the hard drive gold finger touches the backplane component, turn the wrench in the direction of the arrow;

3. Schematic diagram of hard drive installed in place:

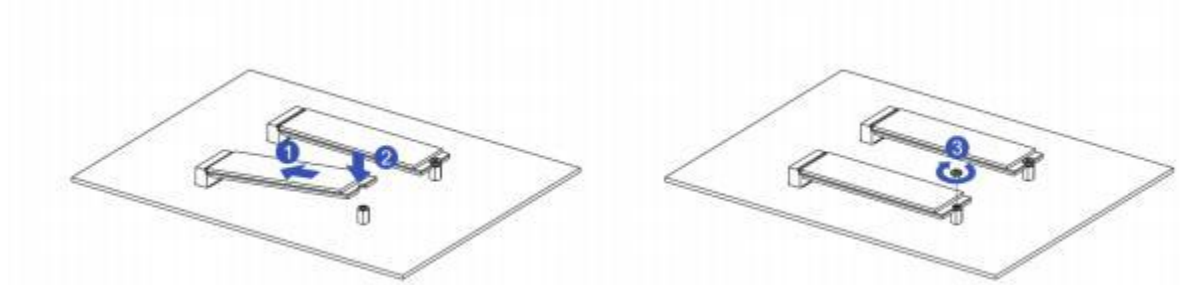


5.6 M.2 Installation

Step 1. Install the positioning studs according to the length of the M.2 card to be installed; Step 2: Install the M.2 card

2-1. As shown in the figure, insert the M.2 card connector into the motherboard connector;
2-2. Press the other end of the M.2 card onto the flat surface of the locating studs in step 1.

Step 3: Install the M.2 card's retaining screws.

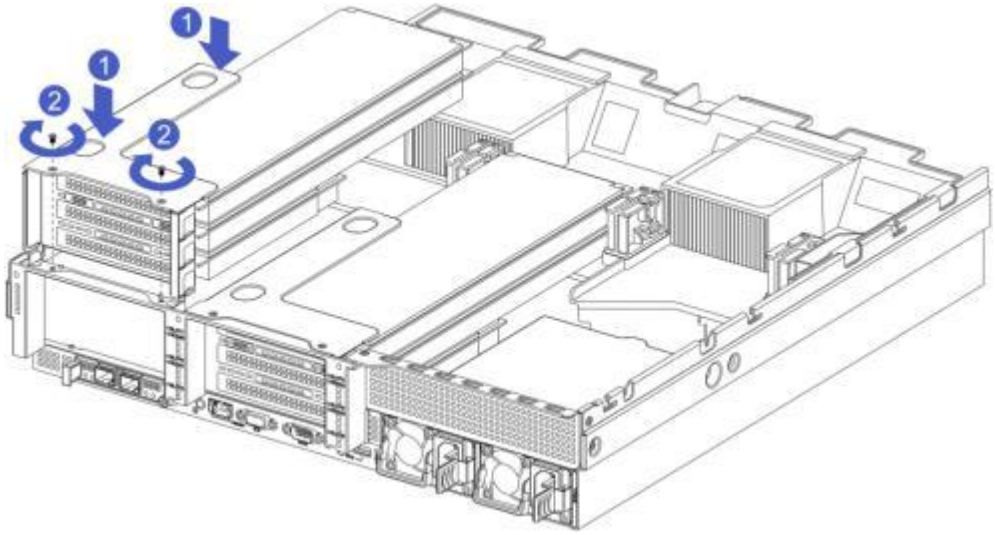


5.7 IO 1 and IO 2 Module Installation

- IO 1 and IO 2 Module 1 (3 xPCIe & 2 PCIe Module) installation method:

Step 1. Place the rear window PCIe assembly vertically downward, align it with the PCIe slot, align it with the positioning hole, and place it flush with the rear window.

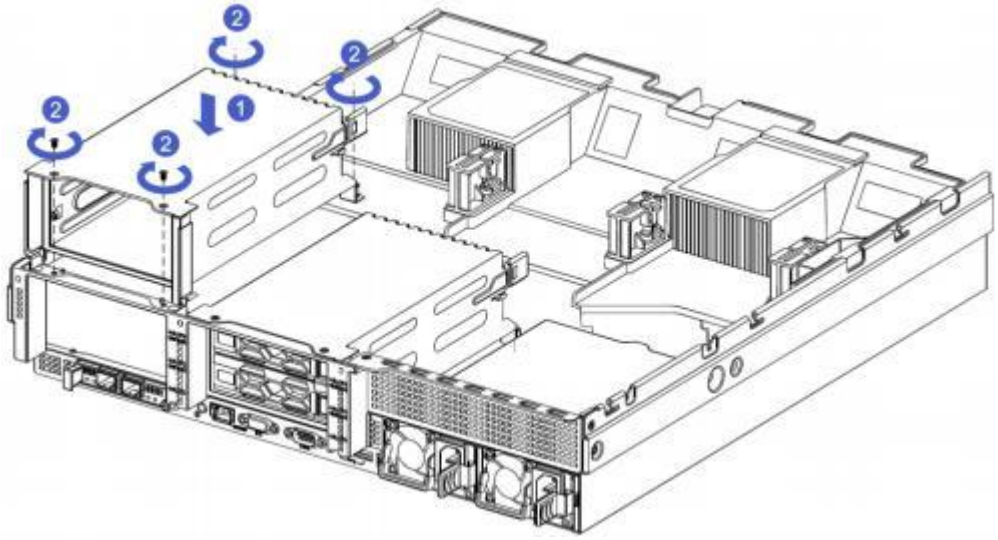
Step 2. Use a Phillips screwdriver to tighten the screws that secure the module.



- IO 1 and IO 2 Module 2 (2x3.5 hard drive module) Installation method:

Step 1. The hard drive box is placed vertically downward and flush with the rear window.

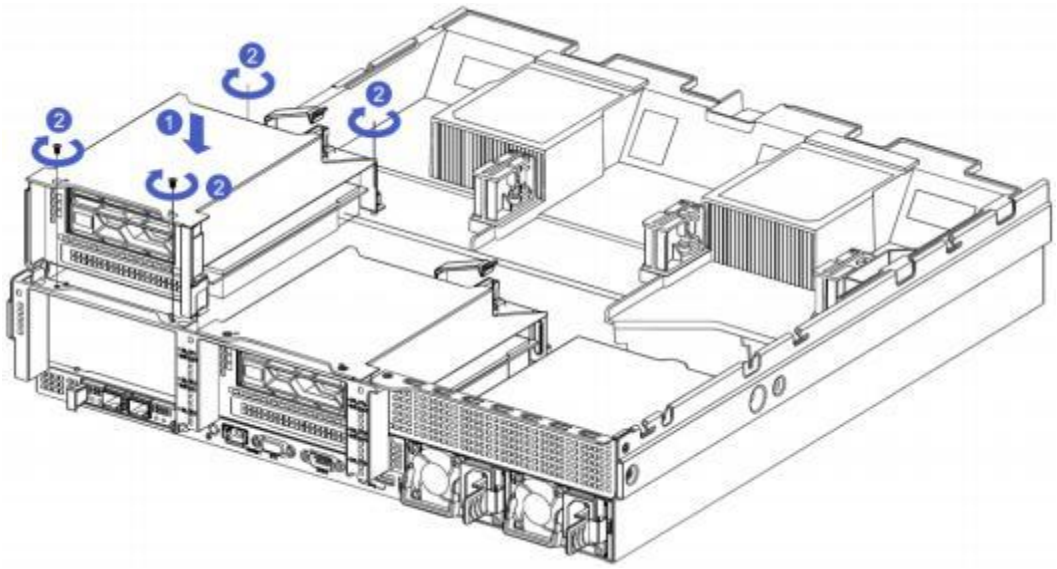
Step 2. Use a Phillips screwdriver to tighten the screws that secure the module.



- IO 1 and IO 2 Module 3 (2x2.5 HDD + PCIe module) Installation method:

Step 1. The hard drive box is placed vertically downward and flush with the rear window.

Step 2. Use a Phillips screwdriver to tighten the screws that secure the module.



5.8 IO 3 Module Installation

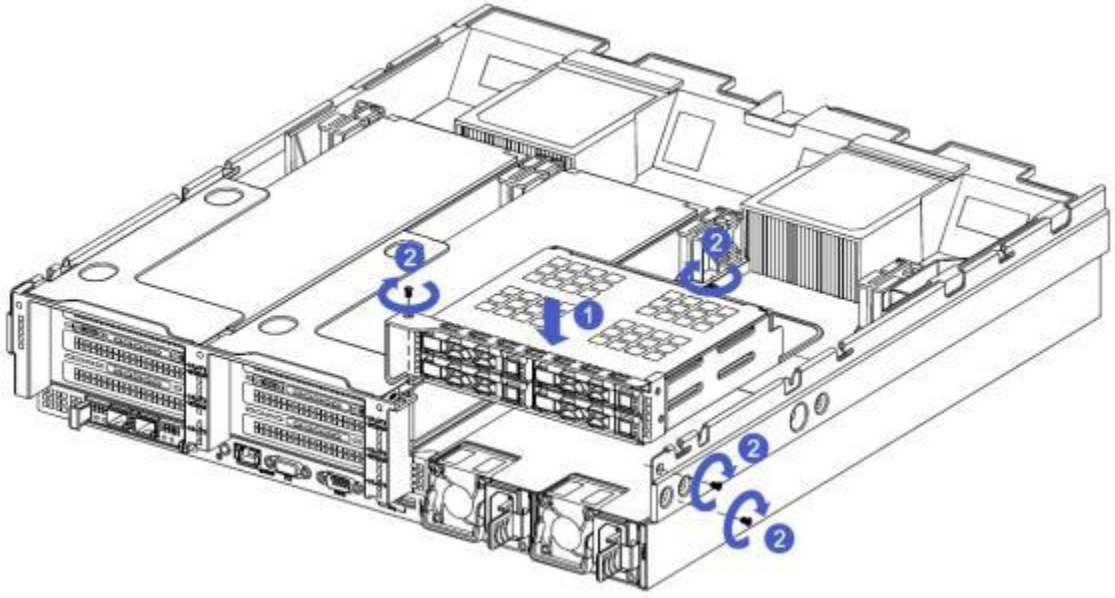
- IO 3 Installation method of module 1

(4x2.5-inch hard drive box):

Step 1. Place vertically downwards,

Align the guide pins at the lower end.

Step 2. After it is laid flat, use a Phillips screwdriver to tighten the screws that secure the module .



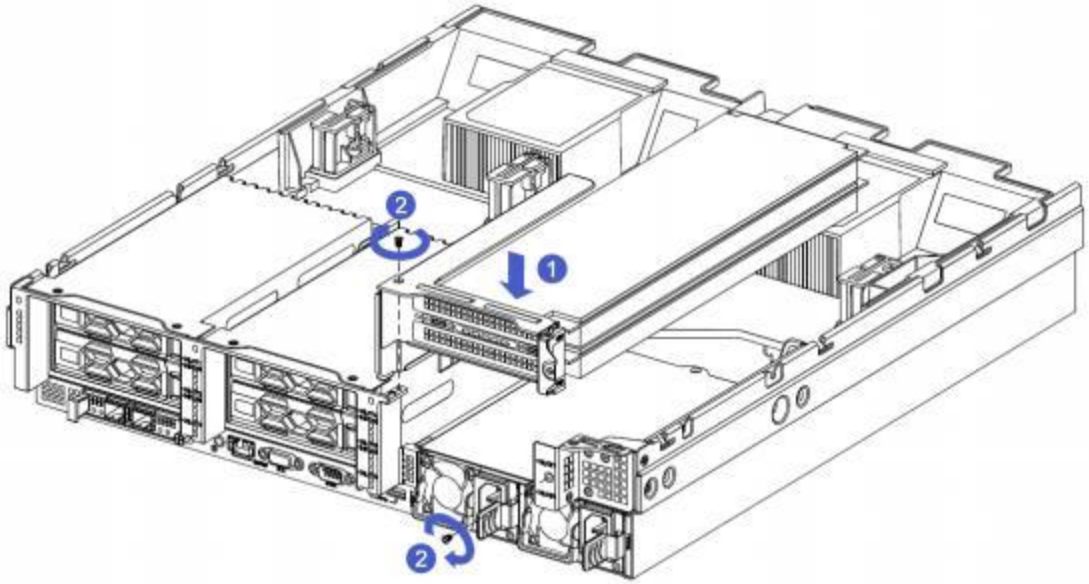
- IO 3 Installation method of module 2 (2

xPCIe full-height modules): Step 1. Place

vertically downwards, Align the guide pins

at the lower end.

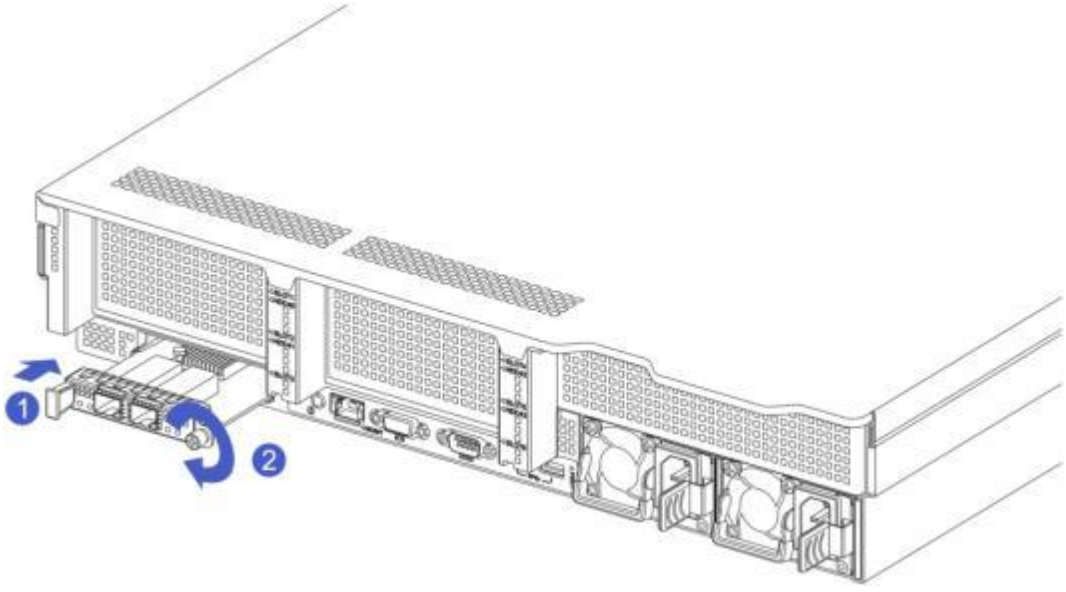
Step 2. After it is laid flat, use a Phillips screwdriver to tighten the screws that secure the module .



5.9 OCP Network card installation

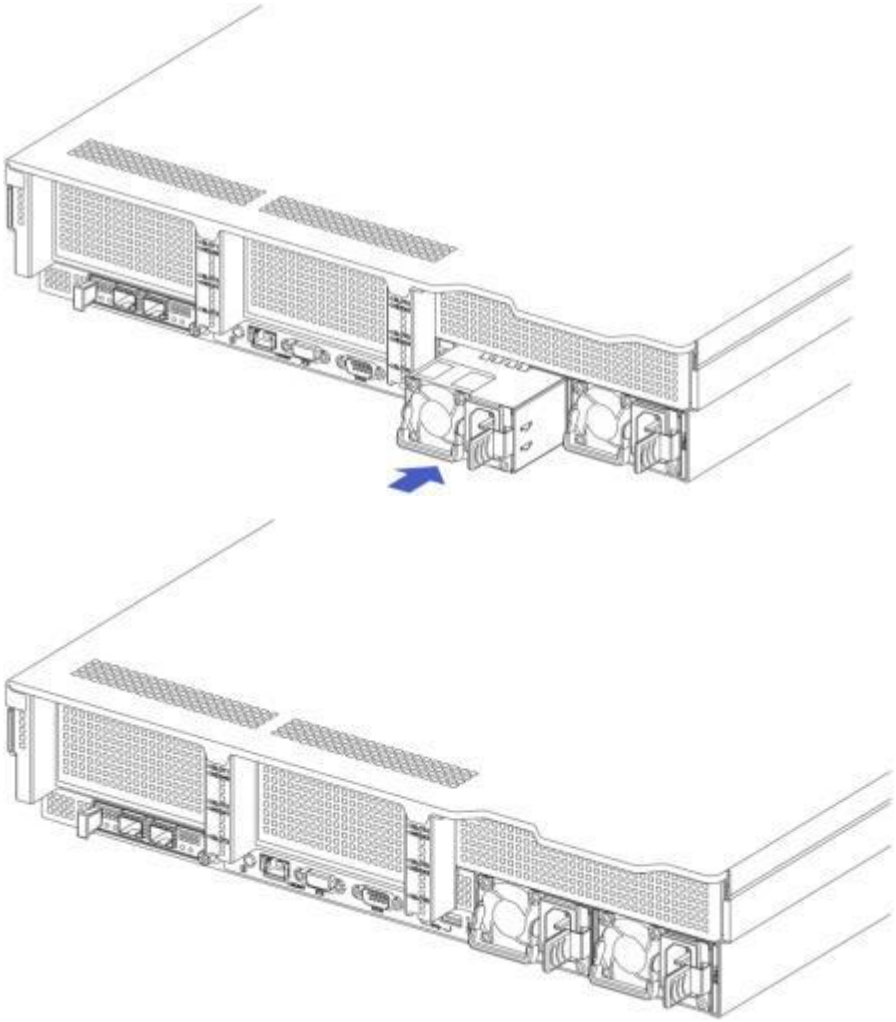
Step 1.Align the OCP expansion network card with the chassis rear window guide and push it in until it can no longer be pushed in. Check whether the mounting surface with the captive screws is in close contact with the rear window surface.

Step 2. Use a Phillips screwdriver to tighten the fixing screw of the Flex IO card.



5.10 Installation of the power module

Steps: Push the power supply all the way in the direction of the arrow. When the spring wrench on the right clicks, Indicates that the installation is in place;

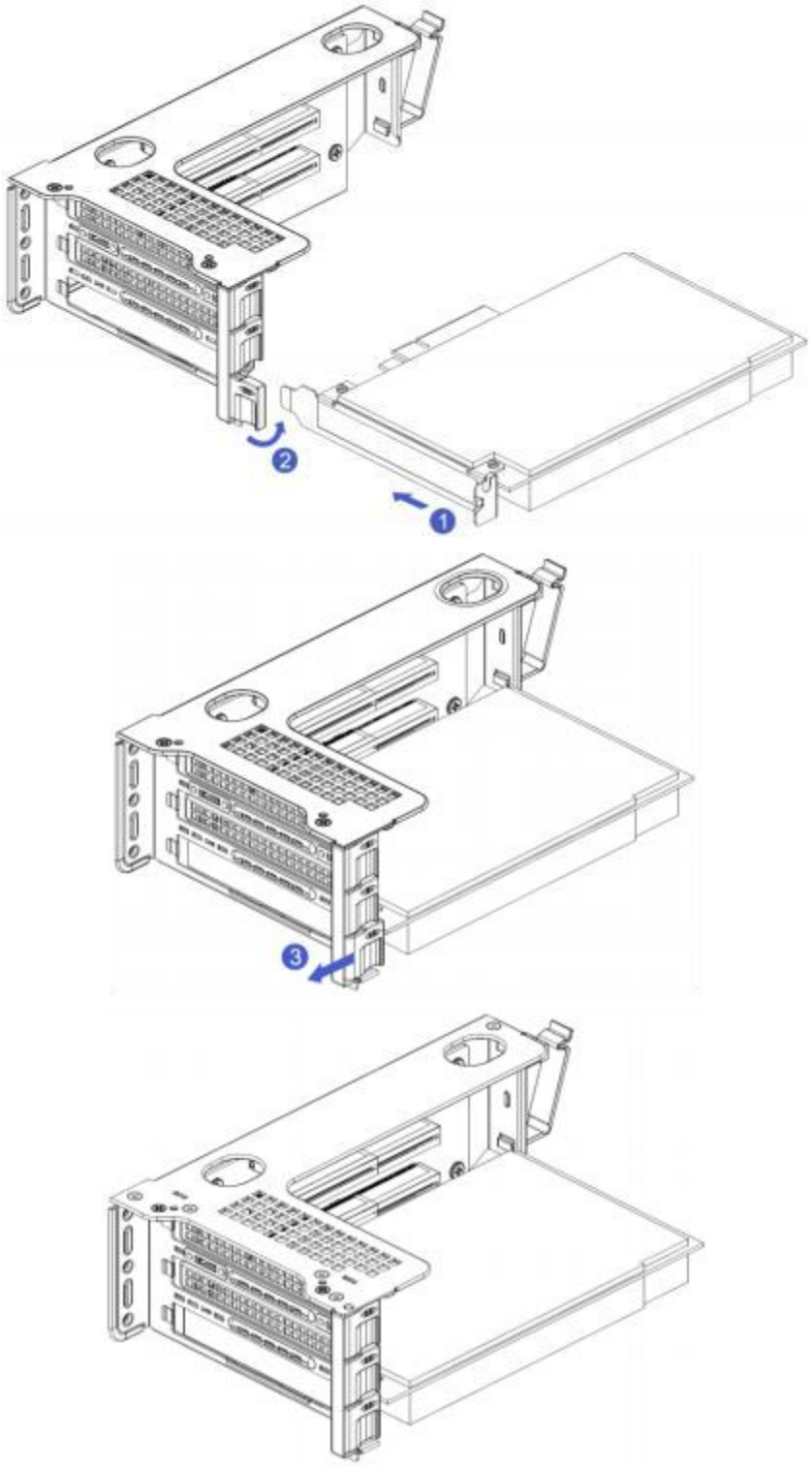


5.11 PCIe Installation of expansion card

1-1. Install the PCIe card in the direction shown in the figure ;

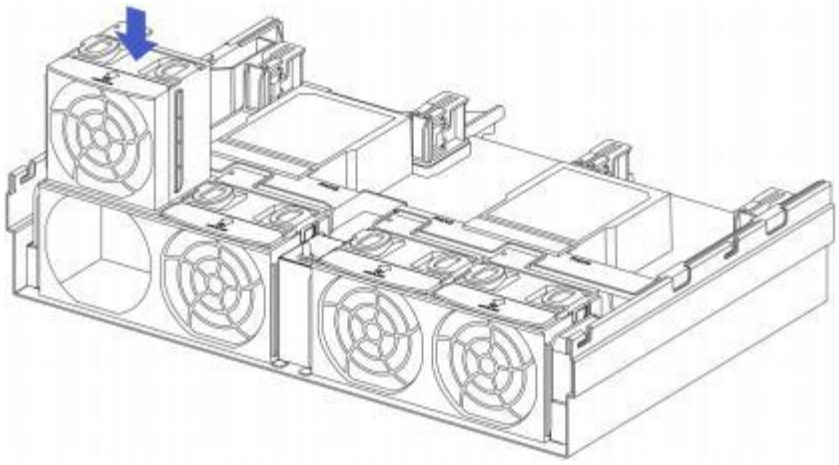
1-2. Rotate the PCIe card lock;

1-3. Follow the arrows to lock the PCIe card latch.



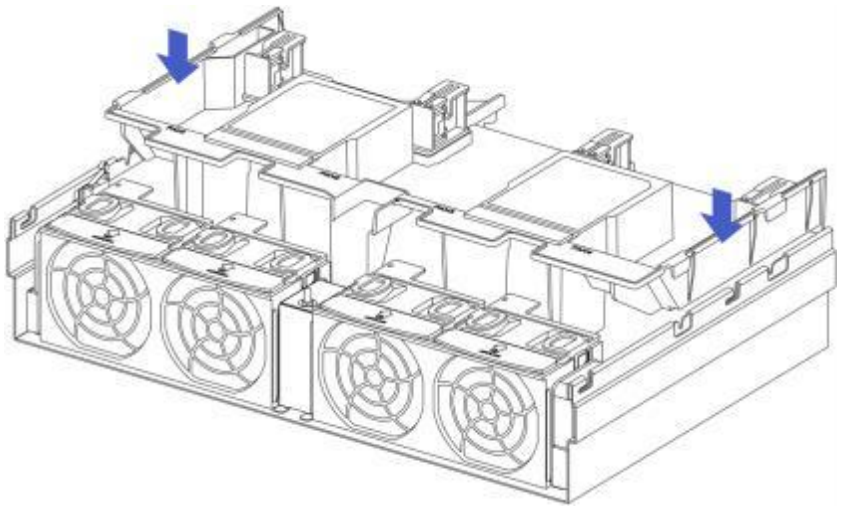
5.12 Fan Module Installation

Steps: Place the fan module vertically downward in the direction of the arrow (note the direction of the fan module) .



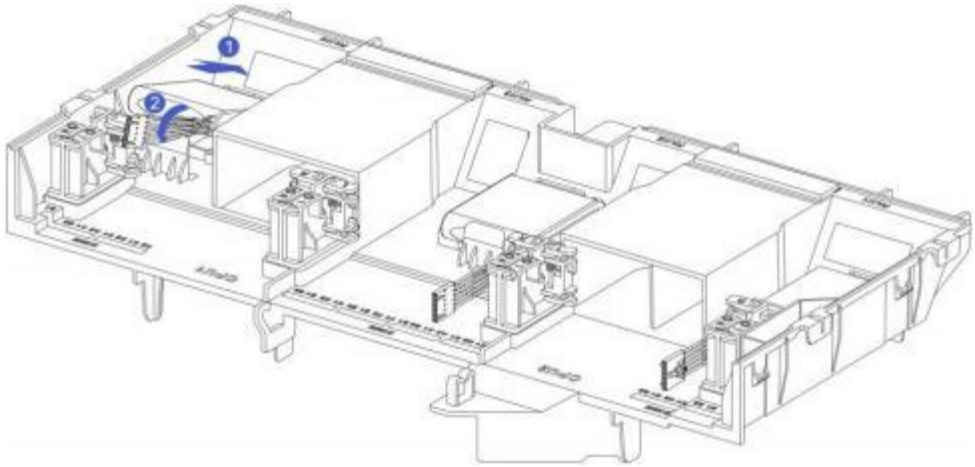
5.13 Air guide cover installation

Steps: Align the air guide module with the hanging points on the left and right sides and place it vertically downward - the height should be lower than the height of the cabinet.



5.14 RAID Card battery pack installation

There are 3 Battery pack placement, can support up to 3 A Raid card battery pack. Installation steps: Place the battery pack in the battery pack installation slot on the air guide cover in the direction of the arrow.



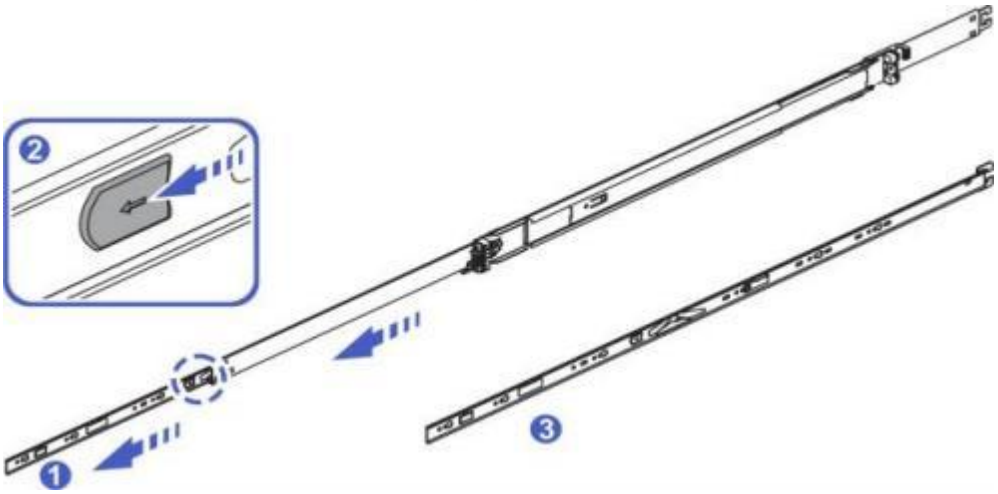
5.15 Guide rail assembly installation

Step 1. After removing the inner rail from the guide rail, push the middle rail into the guide rail

1-1. Pull the inner rail out from the guide rail until it stops with a click.

1-2. Push the white button in the direction of the arrow and pull out the inner rail completely ;

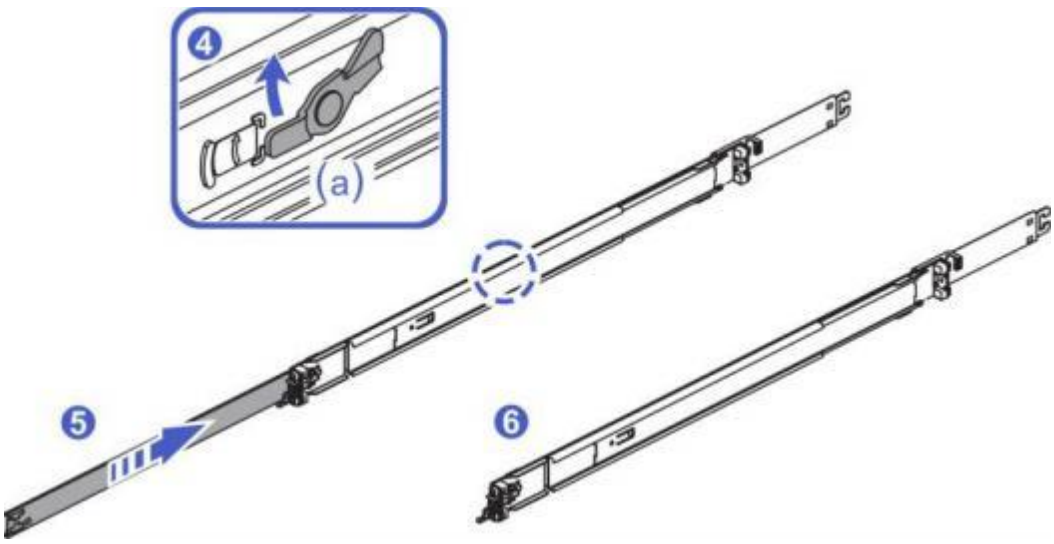
1-3. Complete the removal of the inner rail;



1-4. Push the a buckle in the guide rail in the direction of the arrow;

1-5. At the same time, push the middle rail into the slide rail;

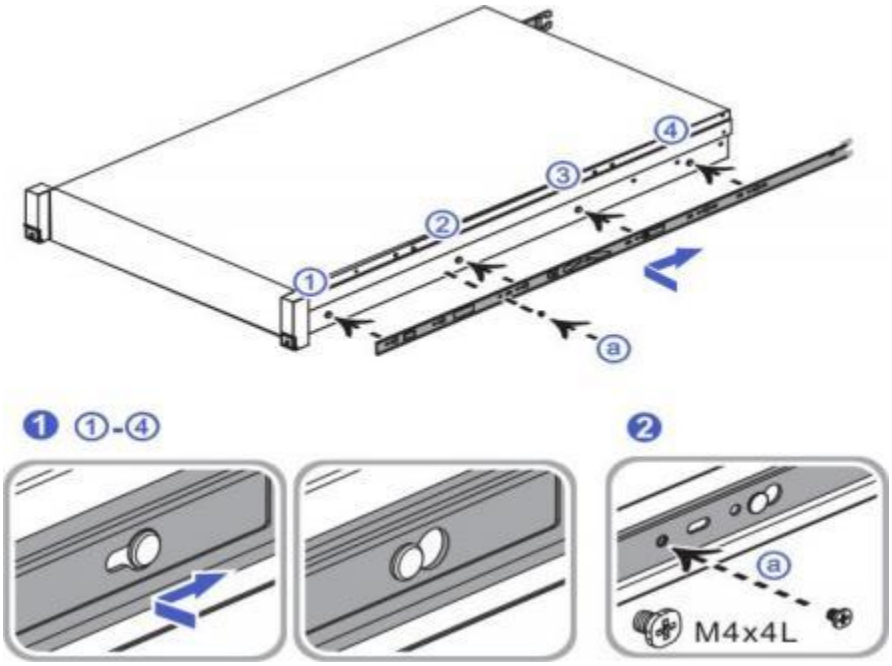
1-6. Complete step 1.



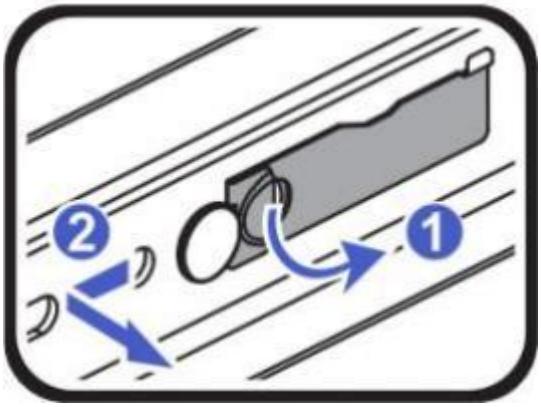
Step 2. Install the inner rails onto the chassis (the installation method for the left and right inner rails is the same)

2-1. Align the ①-④ positioning holes of the inner rail with the 4 Install the inner rail to the chassis according to the diagram. There was a click. Ensure that it is installed in place;

2-2. In chassis a Place the M4x4 The screw is locked into the chassis at a. Complete step 2.



When removing the inner rail from the chassis, you need to unlock the buckle in the inner rail as shown in the figure:

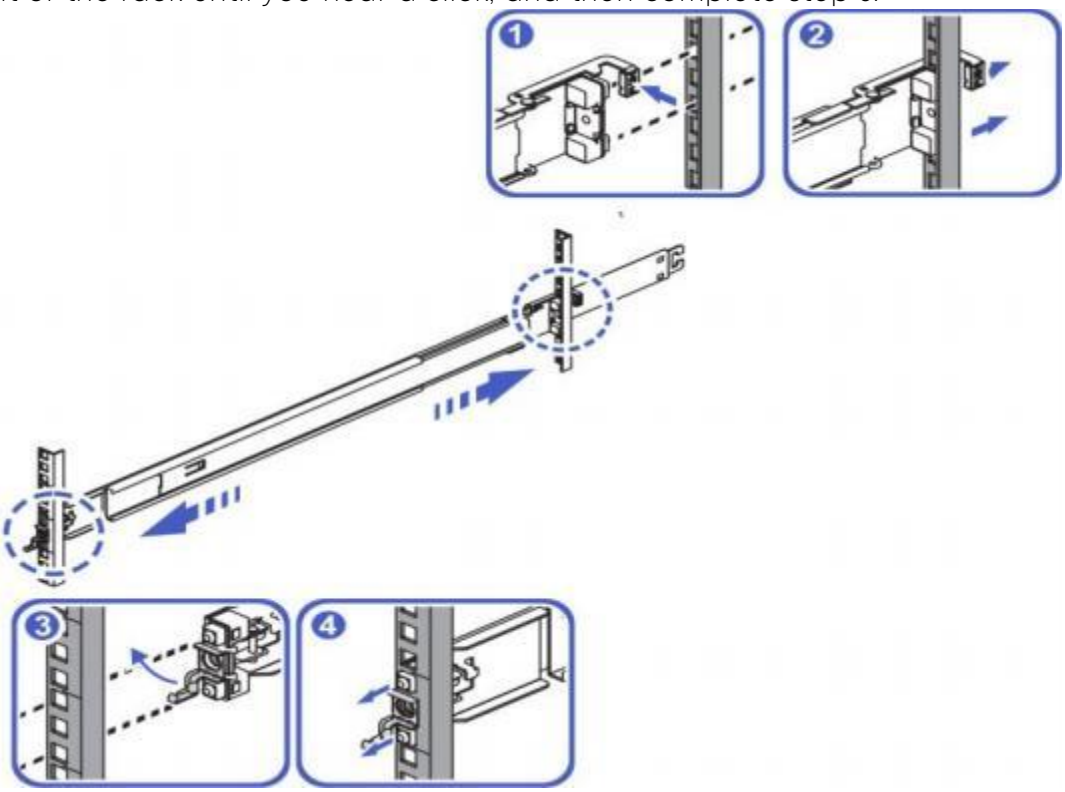


Step 3. Install the guide rails into the rack (the left and right guide rails are symmetrical, please repeat the installation)

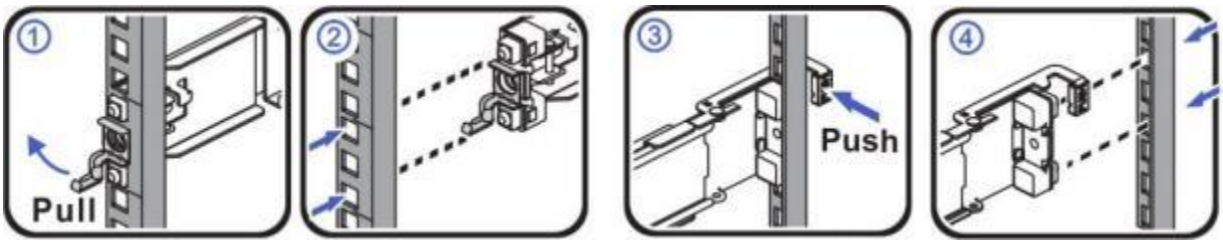
3-1. Push the hook at the rear end of the guide rail as indicated by the arrow, align it with the rack hole, and install the guide rail into the rack;

3-2. Install the guide rail into the rear end of the rack until you hear a click .

3-3. Push the hook at the front end of the guide rail as indicated by the arrow, align it with the rack hole and install the guide rail into the rack; 3-4. Install the guide rail into the front of the rack until you hear a click, and then complete step 3.



When removing the guide rail from the rack, you need to unlock the buckle in the guide rail as shown in the figure:



step 4. Install the server into the rack

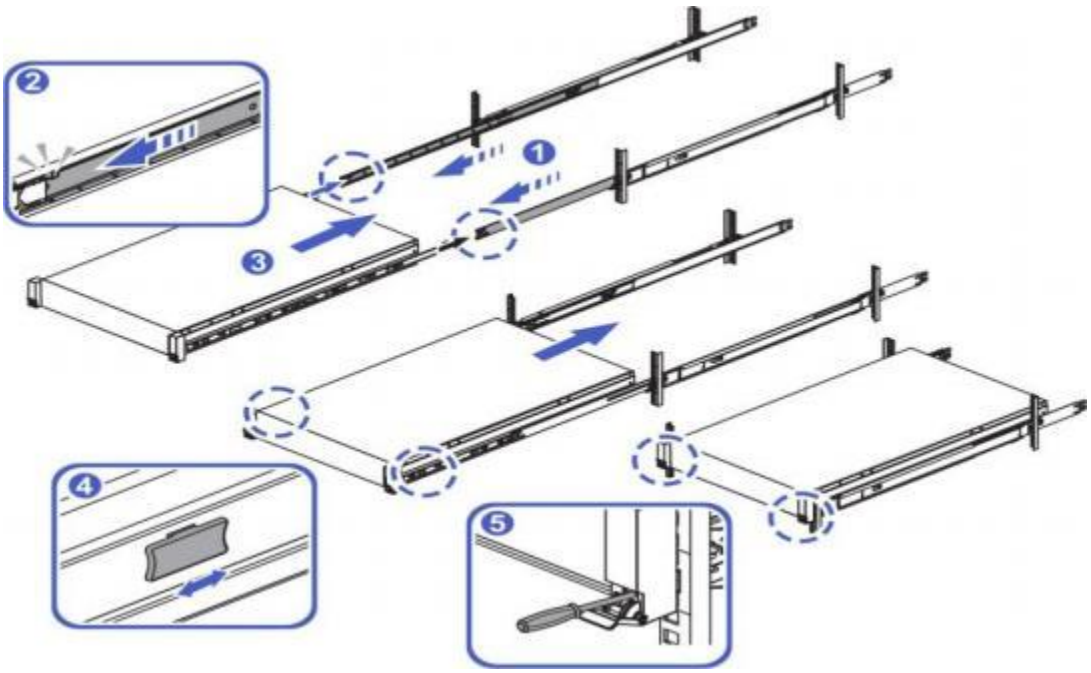
4-1. Pull out the middle rails on both sides installed in the rack until they stop in place with a click .

4-2. Lift the server and align the inner rail of the guide rail with the middle rail. Push the server into the rack in the direction of the arrow to ensure that the inner rail fits smoothly into the middle rail.

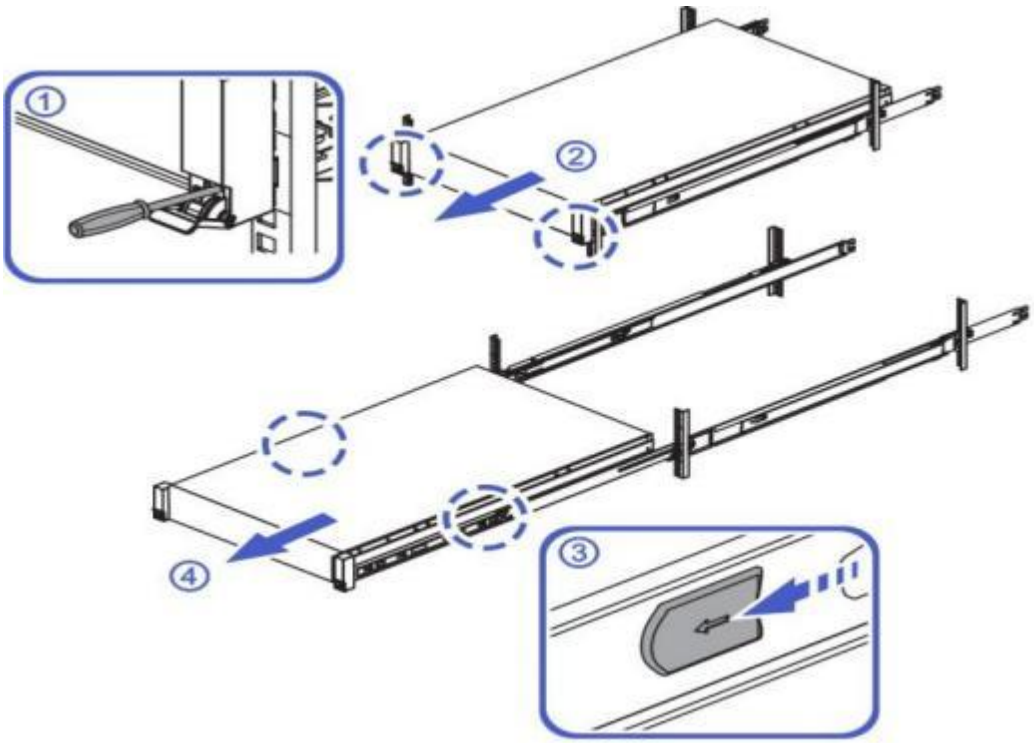
4-3. After pushing the server into the middle rail, you can hear a click and it stops;

4-4. Push the blue button in the direction of the arrow, and push the server into the rack while pressing the button;

4-5. Open the front ears on both sides. Use a screwdriver to tighten the screws and complete the steps 4.



To remove the server from the rack, you need to unlock the screws and white buttons on both sides. As shown in the figure :


1
2
3
4

6. Operation precautions and common troubleshooting

6.1 Operation Notes

- SNR-LE-G4 2U is a dual BMC Flash chip design. By default, Flash1 is used for startup. If Fash1 fails to start normally, it will automatically switch to Flash2 for startup;
- When hot-plugging a hard drive in BIOS setup, the BMC will not record the hard drive plug-in and plug-out log;
- When logging in to the BMC WEB via http, it will automatically jump to https for login;
- Due to the limitation of BMC's hard drive plug-in and pull-out log mechanism, it is not advisable to quickly plug and unplug multiple hard drives at the same time, otherwise some plug-in and pull-out logs may not be recorded in time;
- BMC WEB interface GPU device information, GPU power consumption display requires the installation of drivers in the OS, NVIDIA GPU devices need to use the command nvidia-smi-pm 1 to set the GPU card to persistent mode, so that the corresponding GPU power consumption can be obtained normally.
- The manufacturers of SATA hard drives in the BMC webpage RAID management are all displayed as ATA according to the specifications;
- SNR-LE-G4 2U server memory must strictly follow POR Rules for installation;
- Broadcom/LSI MegaRAID 9560-8i does not support Legacy mode management;
- When the direct-connect backplane is used with Broadcom/LSI MegaRAID 9560-8i, the hard drive fault light will not light up after the hard drive is set to offline state. The fault light can light up on the expander backplane with the same operatio.;
- SNR-LE-G4 2U FCH SATA does not support creating RAID;
- In Legacy mode, when using Broadcom/LSI MegaRAID 9560-8i to install OS, you need to first change the disk where OS is installed to the first boot item in UEFI mode, otherwise it will not boot normally.
- NVIDIA desktop platform chip GPU does not have a driver for Windows Server 2019/2022, so you can use the Windows 10/11 version;
- The language supported by BIOS Setup is English, not Chinese;
- After the 9560 RAID card is connected to the RAID directly, the hard drive fault light will not light up after the disk is set to offline state. The same operation can light up the expander backplane;
- Because the backplane (RM2112-SHDB-S) of the two rear expansion disk slots of the 2U25 cannot be recognized by the BMC, the two rear expansion disks will not be displayed in the BMC interface - hard drive device;
- The disk plugging and unplugging logs of the two rear expansion disks (RM2112-SHDB-S) of 2U25 show drive presence Front BP1 Slot25, 26;
- The waiting time between hot-plugging of NVMe disks must be more than 20 seconds;
- The locate, failure, and rebuild lights of NVMe disks are not supported in the OS;
- Under OS, the FCH SATA disk does not support the rebuild indicator, but only supports the locate indicator and failure indicator;

- When hot-plugging a U.2 NVMe disk, a PCIe error may be reported in the OS, and PCI PERR may appear in the BMC SEL;
- Do not install different models of GPUs on the same server at the same time; GPU speed adjustment will only randomly match one model;
- If only one CPU is installed, do not install the memory on the corresponding CPU2;
- Before installing the OS, it is recommended to format the disk to be installed. Otherwise, the installation may not be performed normally due to other data in the disk.
- After installing Ubuntu 24.04, it takes a long time to enter the OS for the first time after restarting. (It depends on the network environment and may take more than 10 minutes.);
- When using RHEL9.4 for NVMe hot-swap, there is a probability that the NVMe disk rate will drop to Gen1 (2.5GT/s), which requires a kernel upgrade;
- When using the IPMI tool to burn the FRU file for the first time, there will be a "bad header CHECKSUM" prompt, which will not appear in subsequent updates;

6.2 Thermal Limitations

Front hard drive configuration	Fan Configuration	Maximum operating temperature 30℃	Maximum operating temperature 35℃
12x3.5 inch hard drive	8056	● Supports up to 400W CPU ● CPU power consumption ≤ 400W when supporting 8 single-width full -length GPUs	● Supports up to 360W CPU ● CPU power consumption ≤ 360 W when supporting 8 single-width full-length GPUs
8x3.5-inch hard drives	8056	● Supports up to 400W CPU ● Maximum support 450W graphics card,CPU power consumption ≤ 360 W ● With 350 W When using passive dual-width GPU , CPU power consumption ≤ 360 W	● Maximum support 400W CPU ● Support maximum support 450W graphics card, CPU power consumption ≤ 290W ● With 350W When using passive dual -width GPU , CPU power consumption ≤ 290W

6.3 Common troubleshooting

6.3.1 Common hardware failures

- Server backend VGA cannot display

Fault description: After the server is powered on, the status indicator shows normal, but the rear VGA has no display output;

Fault cause: When the front VGA and rear VGA are connected at the same time, only one of the two VGAs can be output, and the front VGA takes priority;

Solution: Unplug the front VGA, and the rear VGA can display normally;

- The operating system cannot start

Fault description: After the RAID card configures RAID and installs the operating system, the operating system cannot start;

Fault reason: The RAID card does not configure the installation disk as the preferred boot hard disk;

Solution: Enter the LSI RAID card management interface, set the RAID disk where the system is installed as the preferred boot disk, and you can enter the system normally;

- GPU card PCIe speed reduction

Fault description: GPU is viewed as Gen1 (2.5GT/s) under OS;

Fault cause: GPU energy saving mode is enabled under system, and after GPU card is loaded, it will automatically increase to SPEC rate;

Solution: Normal phenomenon, no solution required;

- The server fault indicator is red or flashing

Fault description: The server fault indicator light is red or flashing;

Fault cause: There are four possible fault causes:

- Fan abnormality alarm
- PSU abnormal alarm
- Memory abnormality warning
- Chassis cover opening abnormal alarm

Solution: Follow the steps below to determine the fault

- If the fault indicator is solid red, you need to check whether the memory is abnormal, whether there is a high temperature alarm, whether the hard disk is abnormal, and whether the chassis intrusion is abnormal;
- If the fault indicator light flashes red, you need to check whether the fan is abnormal, whether the PSU is in place, and whether the PSU power cable connection is abnormal;

- After manually offline the hard disk through the RAID card, the hard disk warning light is not on

Fault description: The server uses a direct hard disk backplane configuration and is connected with an LSI 9560 RAID card. After manually offline the hard disk in the BIOS RAID card setup, the hard disk warning light does not light up;

Fault cause: The LSI 9560 RAID card is designed in this way;

Solution: RAID itself is limited and cannot be solved;

●When the hard disk location light is on, the other status lights of the hard disk will be replaced

Fault description: After the hard disk's Locate light is turned on, the hard disk's other status lights such as rebuild and failure will be replaced;

Fault cause: The server is designed in this way, using the hard disk Locate light high priority mechanism. When the hard disk locator light is on, other status lights will be replaced, making it easier for users to locate abnormal hard disks

Solution: Normal phenomenon, no solution required;

6.3.2 Common software failures

- BMC log time is inconsistent with actual time

Fault description: The BMC log generation time is abnormal and inconsistent with the current Beijing time; Cause of failure: time configuration is not synchronized;

Solution: There are two solutions:

- Set the OS time to Beijing time and enable NTP synchronization;
- In the Linux operating system, execute the command timedatectl set-local-rtc 1 to synchronize the time.

- BMC Web unable to log in

Fault description: BMC Unable to log in to the WEB ;

Cause: There may be two reasons:

- The username and password are incorrect;
- BMC IP DHCP has changed;

Solution: First, confirm that the BMC username and password are correct. After the system is turned on, check the current BMC IP address in the server POST interface or BIOS Setup, and use this IP address to log in to the BMC Web again；

- PXE function is not available

Fault description: The server is equipped with an Intel X710 network card. In Legacy mode, the PXE function cannot be used normally;
Fault reason: BIOS does not configure above 4G decode;
Solution: Enter BIOS Setup configuration, Disable above 4G decode option, save BIOS settings and restart, PXE can be used normally in Leagcy mode;
Tip: Turning off Above 4G decode may cause some models of PCIe devices to not work properly

- BMC Web Unable to manage RAID card or SAS HBA Card

Fault description: The server is in BIOS Setup state, and the BMC WEB cannot obtain RAID management and SAS management functions;

Fault cause: In the BIOS Setup stage, the BMC has not yet initialized the RAID management and SAS management functions. After entering the operating system, the BMC can manage the RAID and SAS functions normally;

Solution: This is a normal phenomenon and no action is required;

- BMC Web RAID card management function is abnormal

Fault description: When LSI and PMC RAID cards or SAS HBA cards are used on the same server, the BMC Web management function is abnormal;

Fault cause: AMI code function limitation, on the same machine, BMC management function cannot adapt to cards from different manufacturers;

Solution: Use a single brand of RAID card or SAS HBA card in the same server