SNR-LSG-G4 8U

User manual

SNR
Smart Networking Reliable

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1. Safety statement

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. The triangle marked part with a lightning symbol may have high voltage or electric shock. Do not touch it.
- 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.
- IMPORTANT: 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 ensure it is properly grounded.
- Ensure that the server is well grounded. You can use different grounding methods, but it must be actually connected to the ground. If you are not sure whether it is safely grounded, please contact the relevant agency or electrician for confirmation. Please use a three-core power cord and socket with grounding protection. 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 contact may cause a fire hazard.
- Please use the device under 220V AC voltage. Working under inappropriate voltage may cause electric shock, fire, or even damage to the device.
- 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, 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.
- Note: There is a risk of explosion if the battery is not replaced properly. Only use

replacement parts of the same or equivalent type recommended by the manufacturer. Used batteries will pollute the environment. Please set up the replaced old batteries according to the relevant instructions.

- 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 operating temperature of the equipment should be 5 ℃~35℃ and the humidity should be 8 %~ 90 %.
- Please back up important data in time. Tongtaiyi Information Technology Co., Ltd. is not responsible for data loss caused by any circumstances.

1.2 Hazardous Substances Statement

During the 10-year environmental protection use period, the toxic and hazardous substances or elements contained in the product will not leak or mutate under normal use conditions, and the user's use of the equipment will not cause serious pollution to the environment or serious damage to their personal and 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 Assemblies - PCA*	X	O	O	O	O	O
Cables / Wires / Connectors	X	O	O	O	O	O
Hard Drive	X	O	O	O	O	O
Media reading / 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 / Rail Products	X	X	O	O	O	O

O Indicates that the content of the toxic and hazardous substance in all homogeneous materials of the component is below the limit requirements specified in GB/T26572-2011 "Limit Requirements for Restricted Substances in Electrical and Electronic Products".

× Indicates that the content of the toxic and hazardous substance in at least one homogeneous material of the component exceeds the limit requirements specified in

GB/T26572-2011 "Limit Requirements for Restricted Substances in Electronic and Electrical Products". However, it complies with the EU RoHS Directive (including its exemption clauses).

Description

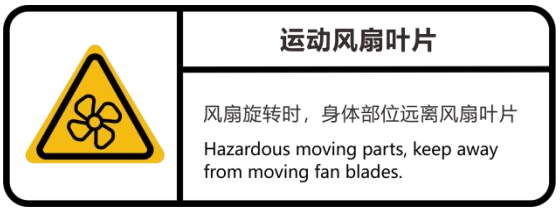
At present, many OSS may enter the standby state by default by clicking ; The network status indicator light only indicates the

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 (below 950 meters or 3117 feet above sea level)	When the device is not exposed to direct sunlight, 5°C to 35 ℃.
Storage temperature range	–40 °C to 65 °C.
humidity	
Storage humidity	5% to 95% , the air must always be non-condensing.
Operating humidity	8% to 90% , the air must always be non-condensing.

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, it means that the device with this logo has been designed and evaluated for safety only under non-tropical climate conditions. Therefore, it is only suitable for safe use in non-tropical climate conditions and may pose safety hazards when used in tropical climate conditions .

2. Product Introduction

2.1 Introduction

SNR-LSG-G4 is an ultra-high-density GPU server that supports the fourth or fifth generation Intel® Xeon® Scalable processors and the industry's highest single-machine 16-card GPU density. It has the characteristics of excellent performance, strong scalability, high cost performance and high reliability. It is suitable for a variety of application scenarios such as deep learning reasoning, GPU cloud services, graphics rendering, cloud games, etc.

2.2 Features

New platform, excellent performance

- Adopting Intel's latest processor platform, the CPU computing power, PCIe speed, and memory bandwidth are fully upgraded to fully release the GPU computing power;
- Supports 16 double-width GPUs, providing efficient heterogeneous computing power ;
- CPU-GPU pass-through design, high efficiency and low latency, greatly improves data transmission efficiency compared to PCIe Switch architecture .

The industry's highest GPU density

- A single machine supports 16 full-height, full-length, double-width GPUs with a TDP of 450W, providing extreme computing power density ;
- Significantly reduce the total cost of ownership, reducing the cost of a single card by 20% compared to an 8-card machine .

Flexible configuration, on-demand selection

- Supports up to 19 PCIe 5.0 standard slots, with multiple PCIe configurations available ;
- Optional 1 OCP 3.0 network card with multiple speeds available ;
- Supports 8 3.5"/2.5" SAS/SATA hard disks and optionally supports 2/4 NVMe SSDs, taking into account both large-capacity and high-performance local storage .

Stable, reliable and intelligent management

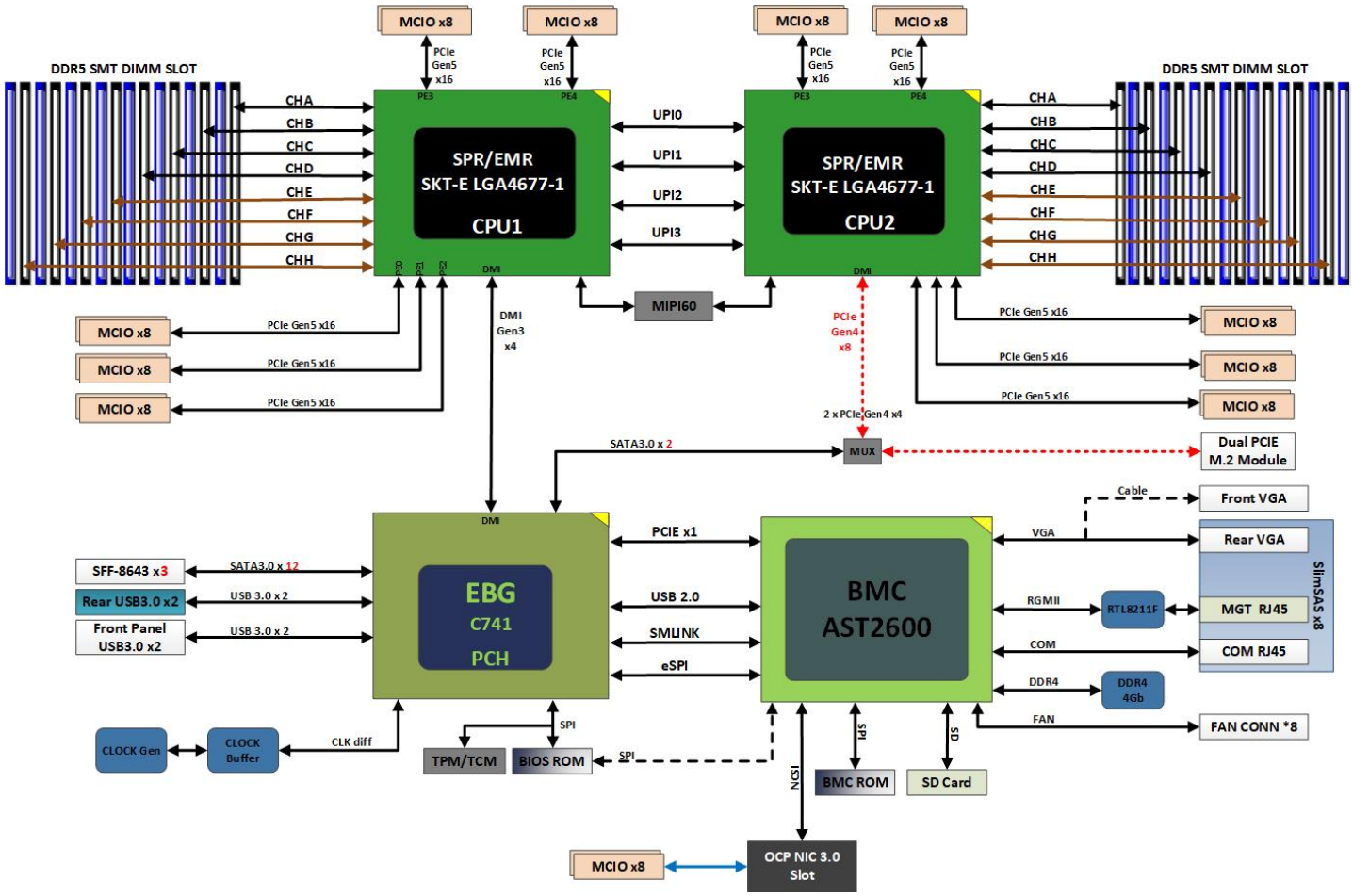
- The key components of the system are designed to be redundant and hot-swappable, and support tool-free disassembly and assembly, which improves the efficiency of fault maintenance and the availability of the system.
- Integrated intelligent management chip, providing an open management platform, supporting multiple management protocols such as IPMI2.0, Redfish, and SNMP;
- It supports various management functions such as remote KVM, virtual media, key component status monitoring, abnormal alarm, etc., and has comprehensive remote

system-level intelligent management capabilities.

2.3 Product Specifications

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

2.4 Mainboard topology diagram



2.5 GPU configuration scheme

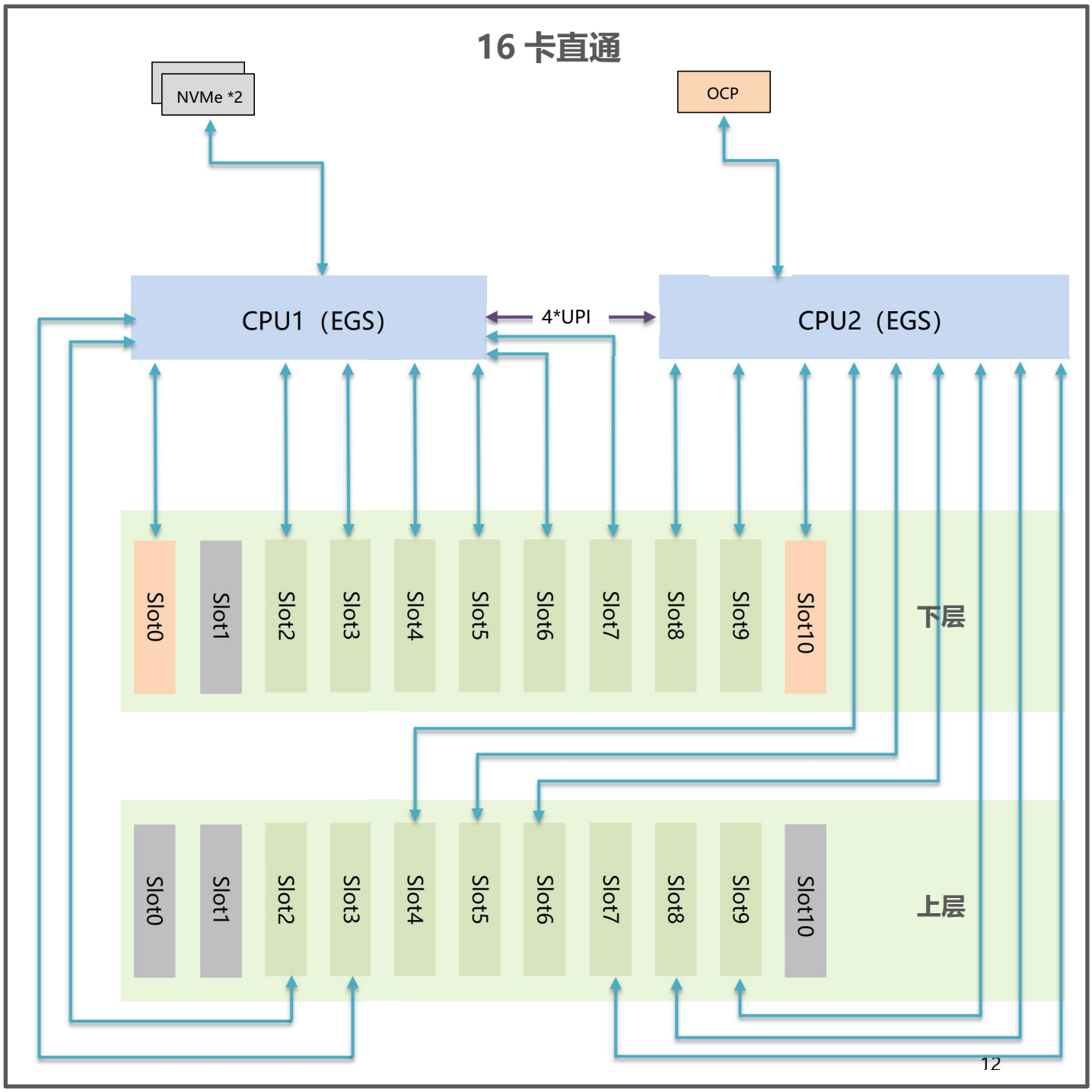
The server includes three GPU configuration options to meet the needs of different application scenarios.

2.5.1 Direct-through model - 1

The GPU and CPU do not need to communicate through PCIe Switch, and the concurrent bandwidth is high. This GPU configuration solution supports up to 16 full-height full-frame

Long double-width GPU card, 16 GPU cards are subordinate to 2 CPUs, as shown in the figure below. The cable connection method of this GPU configuration scheme

See also 3.8.1 Connect 16GPU+2x8+2xNVMe+1xOCP pass-through cable



PCIe X8

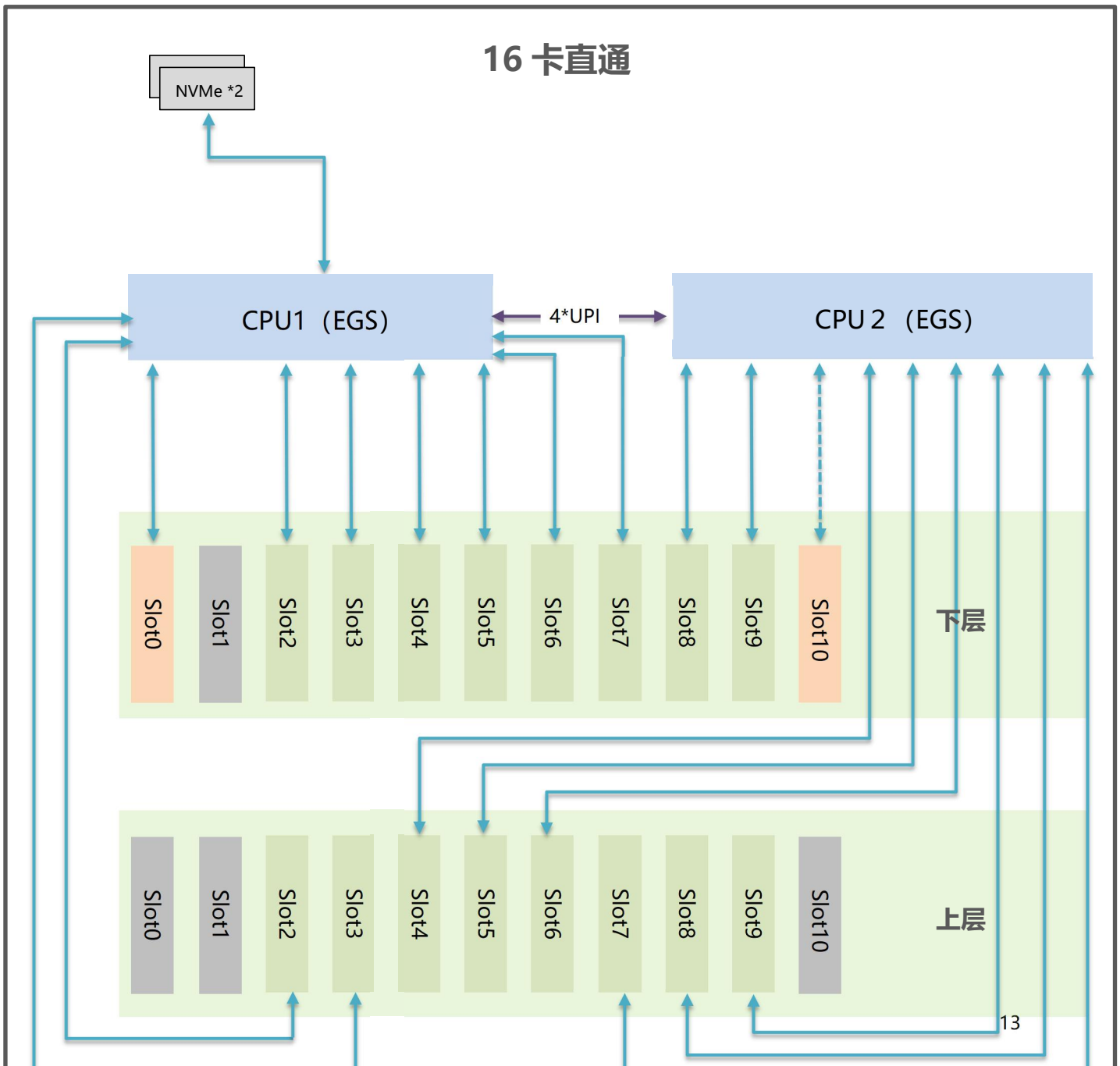
Description of dotted/solid lines in GPU configuration topology diagram

2.5.2 Direct-through model - 2

The GPU and CPU do not need to communicate through PCIe Switch, and the concurrent bandwidth is high. This GPU configuration solution supports up to 16 full-height full-frame

Long double-width GPU card, 16 GPU cards are subordinate to 2 CPUs, as shown in the figure below. The cable connection method of this GPU configuration scheme

See also 3.8.2 Connecting 16GPU+1x8+1x16+2xNVMe pass-through cables

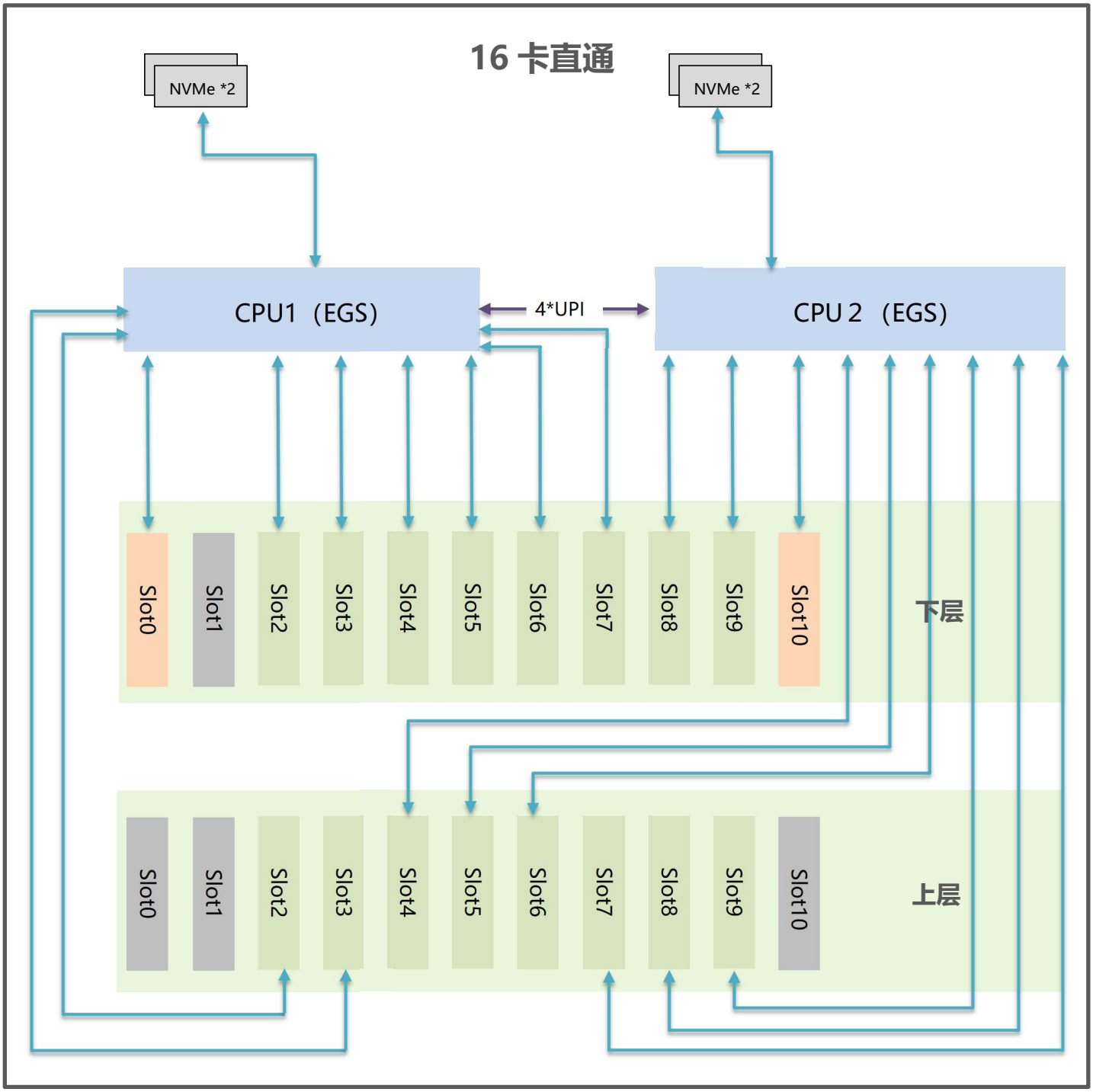


2.5.3 Direct-through model - 3

The GPU and CPU do not need to communicate through PCIe Switch, and the concurrent bandwidth is high. This GPU configuration solution supports up to 16 full-height full-frame

Long double-width GPU card, 16 GPU cards are subordinate to 2 CPUs, as shown in the figure below. The cable connection method of this GPU configuration scheme

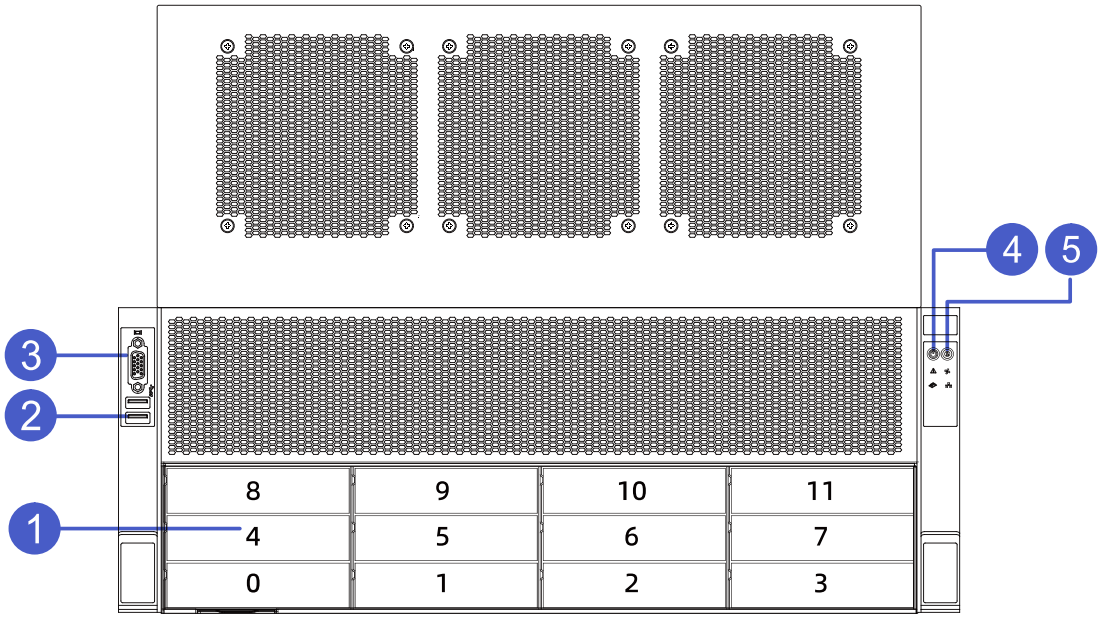
See also 3.8.3 Connecting 16GPU+2x8+4xNVMe pass-through cables



3. System Components

3.1 Front Panel Components

- 8 U12 3.5-inch disk model



serial number	Module Name	serial number	Module Name
1	3.5-inch hard disk slot	2	Front USB port
3	Front VGA port	4	Power switch
5	UID button		

Description

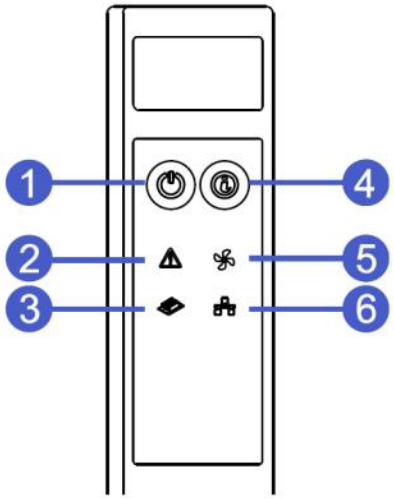
The 3.5-inch hard drive bay can hold a 3.5-inch or 2.5-inch hard drive.

- Front panel interface description

name	type	illustrate
VGA interface	DB15	For connecting a monitor.
USB interface	USB 3.0	Provides a USB interface through which USB devices can be connected.

Note: 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

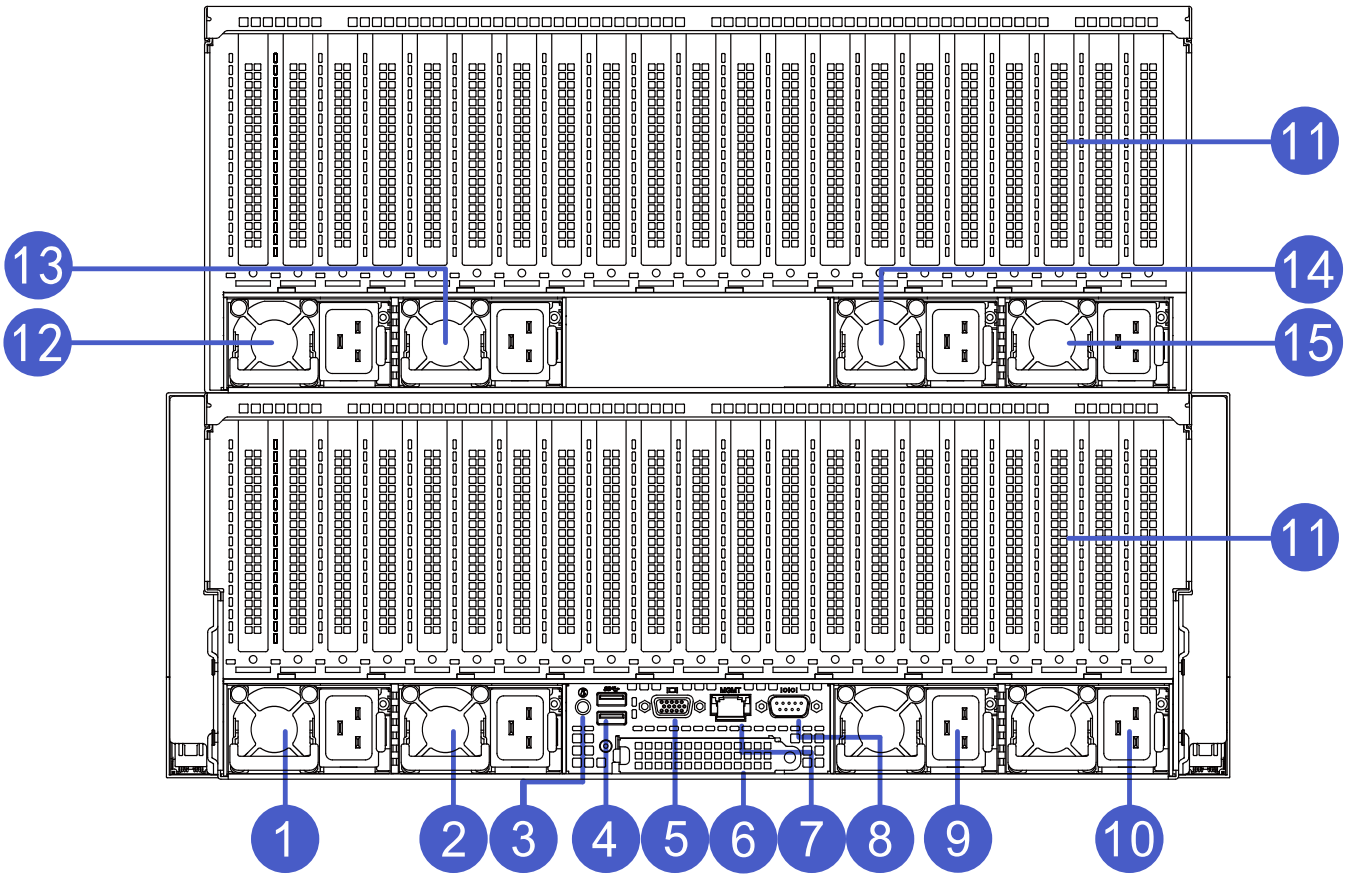


serial number	Module Name	serial number	Module Name
1	Power button and indicator light	4	UID button and indicator light
2	System alarm indicator	5	Fan alarm indicator
3	Memory warning indicator	6	Network port status indicator

Logo	Indicator light / button	Status Description
	Power switch button / indicator light	Power button description: ✓ When the system is powered on, short press this button to shut down the OS normally. ✓ Press and hold the button for 6 seconds in the power-on state to force the server to power off. ✓ 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 button / indicator	UID button / indicator is used to easily locate the server to be operated. The indicator can be turned off or on by manually pressing the UID button or by remote control using the iBMC command. UID button description: ✓ Short press the UID button to turn on / off the positioning light. ✓ Press and hold the UID button for 6 seconds to 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. ✓ Steady red: Indicates a device failure. ✓ Flashing red: Indicates that the device has an abnormal alarm.
	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: Indicates no network connection/no network module.

3.2 Rear Panel Components



serial number	Module Name	serial number	Module Name
1	Power Supply PSU1	9	Power Supply PSU3
2	Power Supply PSU2	10	Power Supply PSU4
3	Rear UID button indicator	11	PCIe slot
4	Rear USB port	1 2	Power Supply PSU 5
5	Rear VGA port	1 3	Power Supply PSU 6
6	OCP NIC 3.0 network card	1 4	Power Supply PSU 7
7	IPMI management network port	1 5	Power Supply PSU 8
8	COM Interface		

- Rear panel interface description:

name	type	quantity	illustrate
VGA interface	DB15	1	Used to connect a display terminal, such as a monitor or KVM.
COM interface	D B9	1	Used to connect serial mouse and communication equipment
Management network port	GE BASE-T	1	Provides an outbound 1000Mbit/s Ethernet port. This port can be used to manage the server.
USB interface	USB 3.0	2	Provides an external USB interface through which USB devices can be connected.
Power interface	CRPS	8	You can select the number of power supplies according to your actual needs, but make sure that the rated power of the power supply is greater than the maximum power of the whole machine.

- Rear panel indicator lights and button description:

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 /1Hz): ● 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): ● Indicates that the power supply has no output. Possible reasons include power supply over-temperature protection, power supply output over-current / short circuit, output over-voltage, component failure (not including all component failures), etc. ● Indicates that the power cord is not connected or has fallen off. ✓ Red (flashing /1Hz): Indicates that an alarm signal has appeared in the power supply. The power module may have abnormalities such as high temperature, high load, high current, or low fan speed.
UID button and indicator light	✓ UID indicator is used to easily locate the server to be operated. You can turn the indicator off or on manually by pressing the UID button or by remotely controlling the iBMC command. ✓ 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	✓ It can be used to reset the system or perform NMI function. ✓ Short press: reset the system. ✓ Long press (more than 6 seconds): Execute the NMI function and trigger the server to generate a non-maskable interrupt.

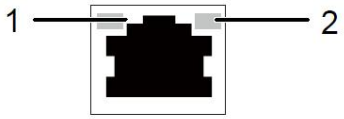
- OCP NIC 3.0 network card

The SNR-LSG-G4 server supports standard OCP NIC 3.0 SFF network cards, including the following four TT self -developed network cards and standard OCP NIC 3.0 network cards from other manufacturers.

- 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 (yellow)

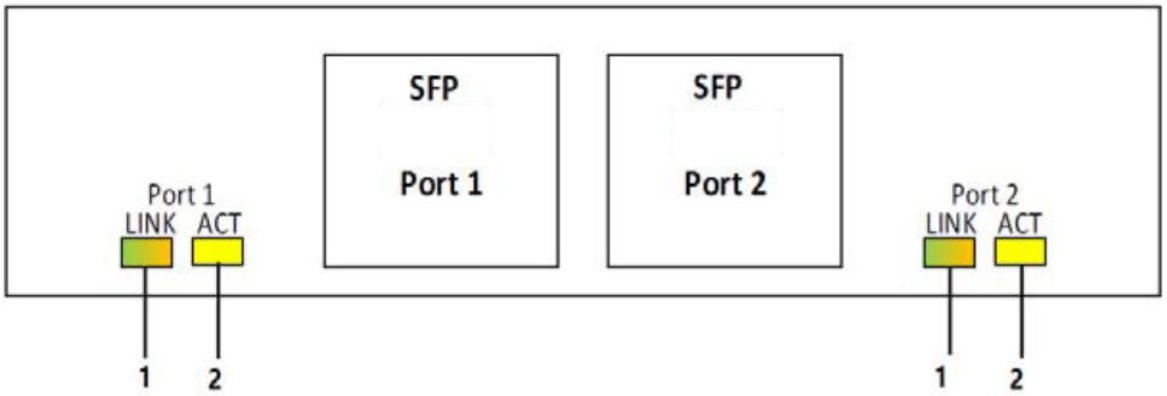
Gigabit electrical port:

ITEM	Indicator Lights	state
1	Speed status indicator	Green light: The current link rate is 1G. Orange light is always on: The current Link rate is 100M. Light off: The current Link rate is 10M or not connected.
2	Data transmission indicator	yellow : Indicates data activity . Yellow Off: Indicates no data activity .

10G electrical ports:

ITEM	Indicator Lights	state
1	Speed status indicator	Green light: The current Link rate is 10G. Orange light: The current link rate is 1G. Light off: The current Link rate is 100M or not connected.
2	Data transmission indicator	yellow : 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 Module:

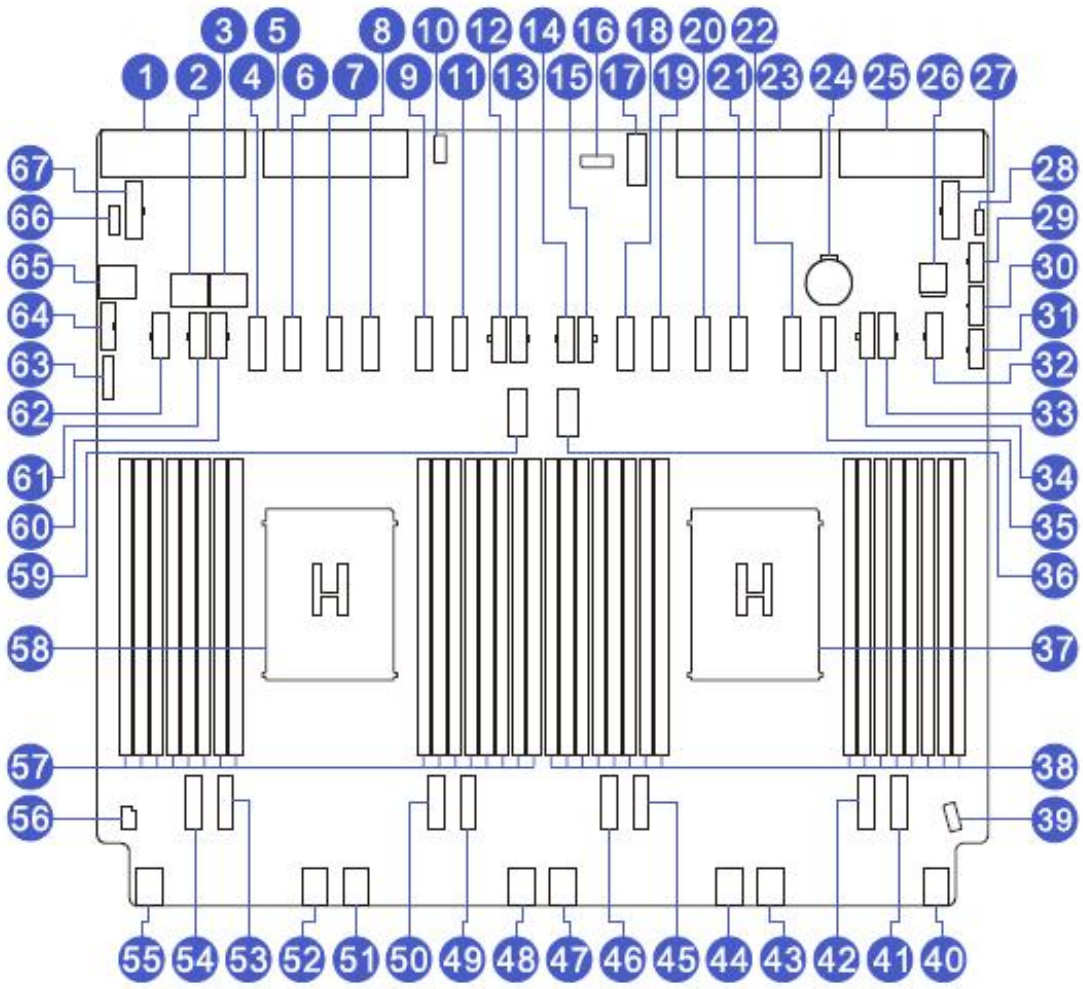
ITEM	Indicator Lights	state
1	Speed status indicator	Green light: The current Link rate is 10G. Orange light: The current link rate is 1G. Light off: The current Link rate is 100M or not connected.
2	Data transmission indicator	yellow : Indicates data activity . Yellow Off: Indicates no data activity .

SFP28 Module:

ITEM	Indicator Lights	state
1	Speed status indicator	Green light: The current link rate is 25G. Orange light: The current link rate is 10G. Light off: The current Link rate is 1G or not connected.
2	Data transmission indicator	yellow : Indicates data activity . Yellow Off: Indicates no data activity .

3.3 Motherboard components

SNR-LSG-G4 motherboard components, interface description is as follows:



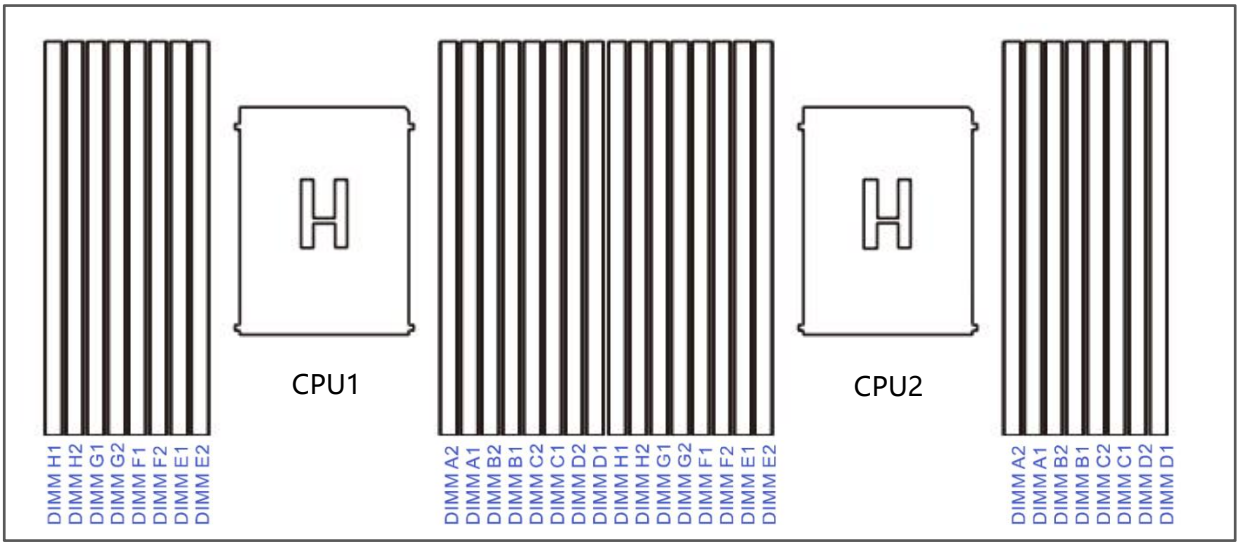
serial number	Module Name	serial number	Module Name
1	PSU4 interface	2	MiniSAS HD connector (SATAPORT0)
3	MiniSAS HD connector (SATA PORT1)	4	CPU1MCIO connector (CPU1 MCIO5)
5	PSU3 connector	6	CPU1 MCIO connector (CPU1 MCIO4)
7	CPU1 MCIO connector (CPU1 MCIO2)	8	CPU1 MCIO connector (CPU1 MCIO3)
9	CPU1 MCIO connector (CPU1 MCIO1)	10	OCP SBC Connectors

11	CPU1 MCIO connector (CPU1 MCIO0)	12	GPU power connector (GPU PWR4)
13	GPU power connector (GPU PWR5)	14	GPU power connector (GPU PWR6)
15	GPU power connector (GPU PWR7)	16	NCSI Connector
17	Rear IO interface	18	CPU2 MCIO connector (CPU2 MCIO5)
19	CPU2 MCIO connector (CPU2 MCIO4)	20	CPU2 MCIO connector (CPU2 MCIO2)
twenty one	CPU2 MCIO connector (CPU2 MCIO3)	twenty two	CPU2 MCIO connector (CPU2 MCIO1)
twenty three	PSU2 connector	twenty four	Battery socket
25	PSU1 connector	26	BMC SD slot
27	GPU adapter board power connector (EP PWR2)	28	RAID KEY connector (VROC RAID KEY)
29	Front backplane power connector (BP PWR3)	30	Front backplane power connector (BP PWR2)
31	Front backplane power connector (BP PWR1)	32	GPU power connector (GPU PWR10)
33	GPU power connector (GPU PWR9)	34	GPU power connector (GPU PWR8)
35	CPU2 MCIO connector (CPU2 MCIO0)	36	M.2 slot (M.2 SLOT1)
37	CPU2	38	Memory slot (corresponding to CPU2)
39	Front light board signal connector (FP CONN)	40	Fan connector (FAN14/15)
41	CPU2MCIO connector (CPU2 MCIO8)	42	CPU2 MCIO connector (CPU2 MCIO9)
43	Fan connector (FAN12/13)	44	Fan connector (FAN10/11)
45	CPU2 MCIO connector (CPU2MCIO7)	46	CPU2 MCIO connector (CPU2 MCIO6)

47	Fan connector (FAN8/9)	48	Fan connector (FAN6/7)
49	CPU1 MCIO connector (CPU1 MCIO8)	50	CPU1 MCIO connector (CPU1 MCIO9)
51	Fan connector (FAN4/5)	52	Fan connector (FAN2/3)
53	CPU1 MCIO connector (CPU1 MCIO7)	54	CPU1 MCIO connector (CPU1 MCIO6)
55	Fan connector (FANO/1)	56	Intruder switch interface (INTRUDER CONN)
57	Memory slot (corresponding to CPU1)	58	CPU1
59	M.2 slot (M.2 SLOT0)	60	GPU power connector (GPU PWR3)
61	GPU power connector (GPU PWR2)	62	GPU power connector (GPU PWR1)
63	Front VGA interface (FP VGA)	64	Front USB3.0 interface (FP USB3.0)
65	Mini SAS HD connector (SATA PORT2)	66	TPM/TCM interface (SPITPM)
67	GPU adapter board power connector (EP PWR1)		

3.4 Memory DIMM slot

The server provides 32 DIMM slots . Each CPU supports 16 DDR5 memory. The corresponding slot order is shown in the following figure :



Tips

- Each CPU must be installed with at least 1 memory stick. The system installs DIMMs that are evenly distributed to each CPU one by one according to the number of CPUs.
- The same server does not allow the mixing of memories of different types (RDIMM) and different specifications (capacity, bit width, rank, etc.).

3.4.1 Memory support type

DR5 memory types supported by the server are related to the CPU .

- When using Intel 4th or 5th Generation Intel® Xeon® Scalable Processors, the supported DDR5 memory is as follows:

  S PR-SP memory support is as follows:

Type	Ranks Per DIMM and Data Width	DIMM Capacity (GB)	Speed (MT/s) ; Voltage (V); DIMM Per Channel (DPC)	
			1DPC*	2DPC
		16 GB	1.1V	
RDIMM	SRx8 (RC D)	16 GB	4800	4400
	SRx4 (RC C)	32 GB		
	SRx4 (RC F) 9x4	32 GB		
	DRx8 (RC E)	32 GB		
	DRx4 (RC A)	64 GB		
	DRx4(RC B) 9x4	64 GB		
RDIMM-3DS	(4R/8R) x4 (RC A)	2H - 128 GB 4H - 256 GB		

E MR-SP memory support is as follows:

Type	Ranks Per DIMM and Data Width	DIMM Capacity (GB)		Speed (MT/s) ; Voltage (V); DIMM Per Channel (DPC)	
				1DPC*	2DPC
		16 GB	24 Gb	1.1V	
RDIMM	SRx8 (RC D)	16 GB	24 GB	5600	4800
	SRx4 (RC C)	32 GB	4 8 GB		
	SRx4 (RC F) 9x4	32 GB	Not POR		
	DRx8 (RC E)	32 GB	4 8 GB		
	DRx4 (RC A)	64 GB	96 GB		
	DRx4(RC B) 9x4	64 GB	9 6 GB		
RDIMM-3DS	(4R/8R) x4 (RC A)	2H - 128 GB 4H - 256 GB	Not POR		

3.4.2 Memory installation requirements

- At least one DDR DIMM is required for each CPU;
- When there is only one DIMM on the memory channel, it must be inserted into the blue slot;
- In normal use, the loading of DIMM0 in the same channel will be greater than that of DIMM1. If a dual DIMM is used for DIMM0 in the application, a single rank DIMM can be used for DIMM1.
- Each channel allows up to 8 logical ranks;

3.4.3 Memory Installation Guidelines

Refer to the following installation principles

Memory Configuration	Memory slot (CPU1)															
	C H7		C H6		C H5		C H4		C H0		C H1		CH2		C H3	
Amount of memory	H 1	H2	G 1	G 2	F 1	F 2	E 1	E 2	A 1	A 2	B 1	B 2	C 1	C 2	D 1	D 2
2DIMMs									●							
											●					
							●									
					●											
4DIMMs			●						●							
							●						●			
8DIMMs			●				●		●				●			
12DIMMs			●		●		●		●				●		●	
	●		●				●		●		●		●			
	●				●		●				●		●		●	
	●		●		●				●		●				●	
16DIMMs	●		●		●		●		●		●		●		●	
24DIMMs	●		●	●	●		●	●	●	●	●		●	●	●	
	●	●	●		●	●	●		●		●	●	●		●	●
32DIMMs	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Memory Configuration	Memory slot (CPU 2)															
	C H7		C H6		C H5		C H4		C H0		C H1		CH2		C H3	
Amount of memory	H 1	H2	G 1	G 2	F 1	F 2	E 1	E 2	A 1	A 2	B 1	B 2	C 1	C 2	D 1	D 2
2DIMMs									●							
											●					
							●									
					●											
4DIMMs			●						●							
							●						●			
8DIMMs			●				●		●				●			
12DIMMs			●		●		●		●				●		●	
	●		●				●		●		●		●			
	●				●		●				●		●		●	
	●		●		●				●		●				●	
16DIMMs	●		●		●		●		●		●		●		●	
24DIMMs	●		●	●	●		●	●	●	●	●		●	●	●	
	●	●	●		●	●	●		●		●	●	●		●	●
32DIMMs	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

The Eagle Stream platform supports mixed memory insertion with the following restrictions:

1、The memory banks on the same CPU channel must have the same rank

2、x8 and x4 DIMMs cannot be mixed on the same CPU or the same channel.

3、Non-3DS and 3DS DIMMs cannot be mixed

4、9x4RDIMM cannot be mixed with other types

5、All DIMMs on the same CPU socket must be of the same speed

6、When all memory modules of a single CPU are fully populated, except for the 1 Rank + 2 Rank combination, other Rank categories are not allowed to be mixed.

7、When the operating frequencies of DDR DIMM and CPS are inconsistent, BIOS will detect and set the lowest frequency as the setting.

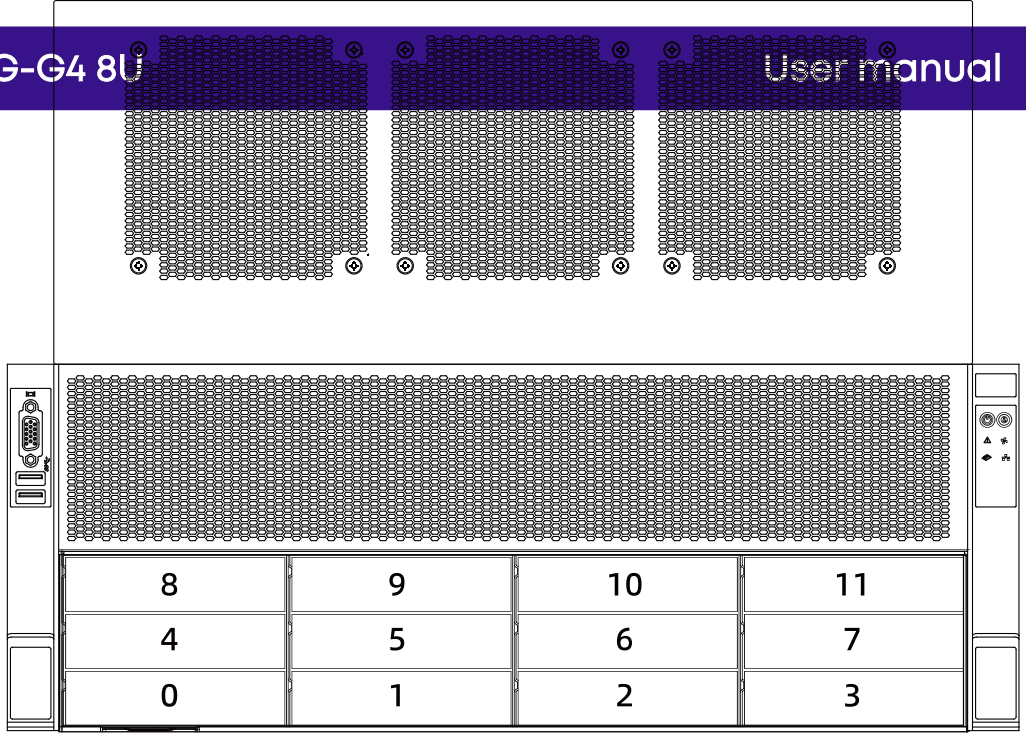
8、RDIMM supports mixed insertion of different manufacturers, but 3DS-RDIMM of different manufacturers cannot be mixed inserted

9、NVDIMM cannot be mixed with CPS

3.4.4 DDR5 memory RAS characteristics

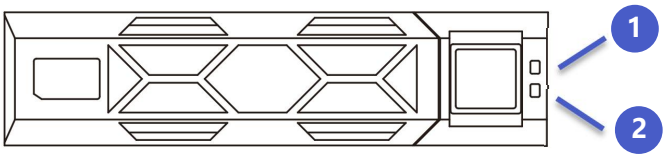
SNR-LSG-G4 server DDR5 memory supports the following memory protection technologies:

- ECC
- Memory Mirroring
- Memory Single Device Data Correction (SDDC, +1)
- Failed DIMM Isolation
- Memory Thermal Throttling
- Command/Address Parity Check and Retry
- Memory Demand/Patrol Scrubbing
- Memory Data Scrambling
- Memory Multi Rank Sparing
- Post Package Repair (PPR)
- Write Data CRC Protection
- Adaptive Data Correction - Single Region (ADC-SR)



- Adaptive Double Device Data Correction - Multiple Region(ADDDC-MR, +1)

3.5 Hard disk indicator



1: Hard disk fault indicator	2: Hard disk Present/Active indicator

SAS/SATA hard disk indicator light description:

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

N VMe hard disk indicator light description :

Hard disk status	Hard disk Present /Active indicator (green)	Hard disk fault indicator (yellow)
Hard disk not in place	Off	Off
Hard drive is in place, but	Always on	Off

no data activity		
The hard disk is in place and functioning normally	Flash	Off
Hard Drive Failure	Always on	Always on
The hard disk is located	Always on	Flicker (4Hz)
The hard disk is in the rebuilding state	Always on	Flicker (1Hz)

3.6 Post I O expansion kit

3.6.1 GPU Computing Module

The server 's GPU configuration supports different GPU computing modules:

- 16GPU pass-through computing module: supports installation of 16 full-height full-length double-width GPU cards and 2 standard full-height full-length single-width PCIe cards

3.6.2 Adapter Board Layout

The lower PCIe expansion component slot numbers are as shown in the following figure:

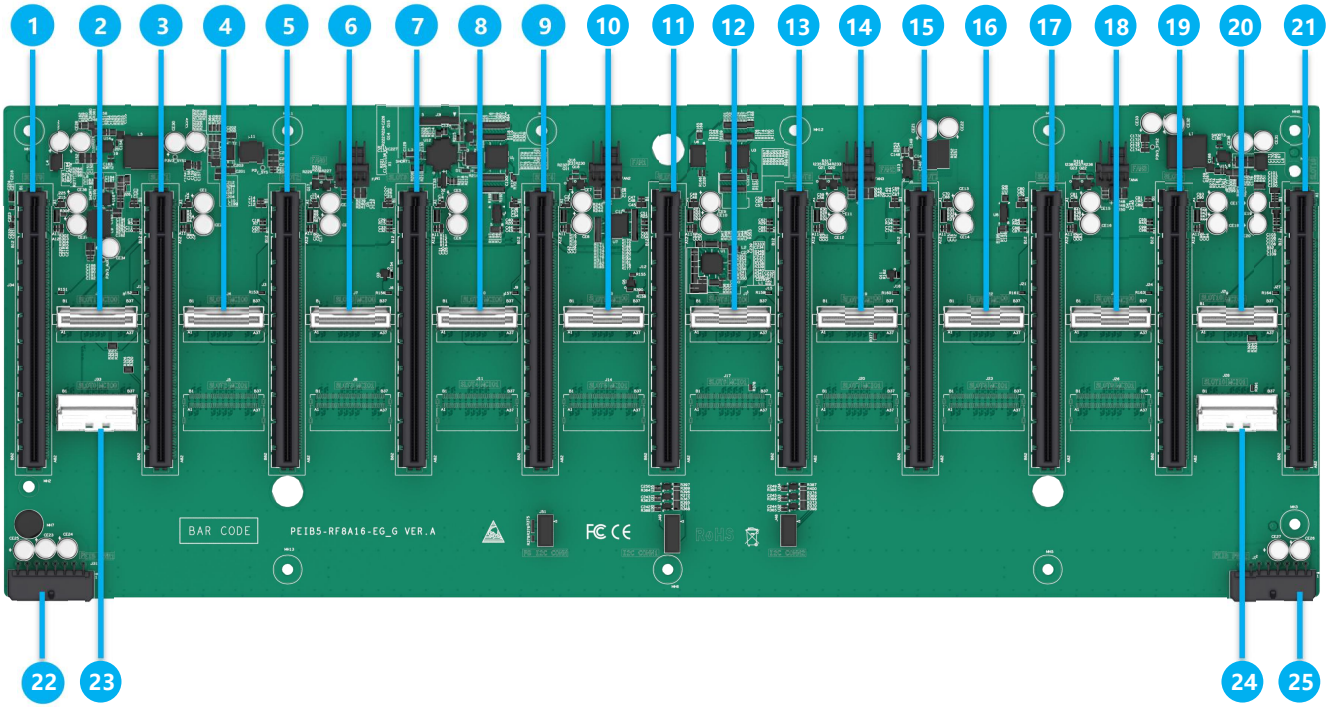
No.	Silkscreen
1	SLOT0
2	SLOT1 MCIO0
3	SLOT1
4	SLOT2 MCIO0
5	SLOT2
6	SLOT3 MCIO0
7	SLOT3
8	SLOT4 MCIO0
9	SLOT4
10	SLOT5 MCIO0
11	SLOT5
12	SLOT6 MCIO0
13	SLOT6
14	SLOT7 MCIO0
15	SLOT7
16	SLOT8 MCIO0
17	SLOT8
18	SLOT9 MCIO0
19	SLOT9

20	SLOT10 MCIO0
21	SLOT10
22	PEIB PWR1
23	SLOT0 MCIO0-
24	SLOT10 MCIO1
25	PEIB PWR2

The relationship between the slots of the lower PEIB board and the CPU

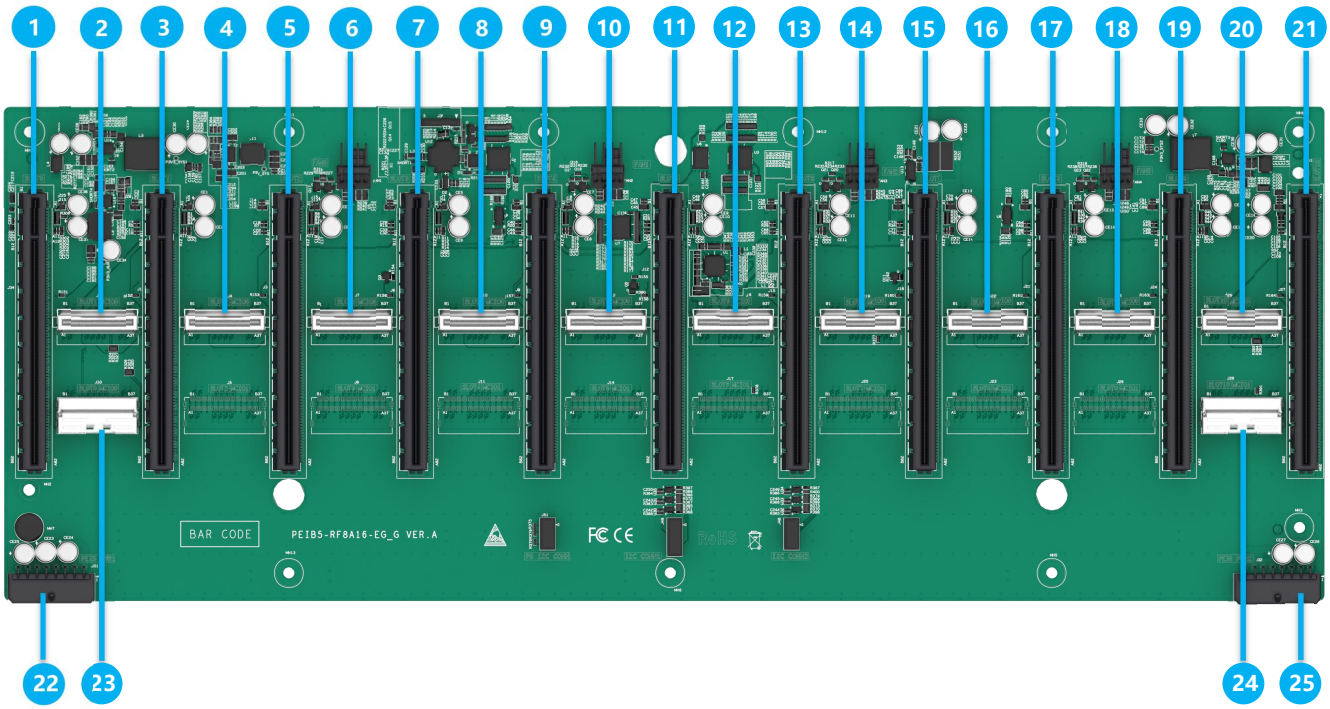
Slot No.	CPU
SLOT0	CPU1
SLOT1	N/A
SLOT2	CPU1
SLOT3	CPU1
SLOT4	CPU1
SLOT5	CPU1
SLOT6	CPU1
SLOT7	CPU1
SLOT8	CPU2
SLOT9	CPU2
SLOT10	CPU2

The upper PCIe expansion component slot numbers are shown in the following figure:



3.6.3 Adapter Board Layout

The lower PCIe expansion component slot numbers are as shown in the following figure:



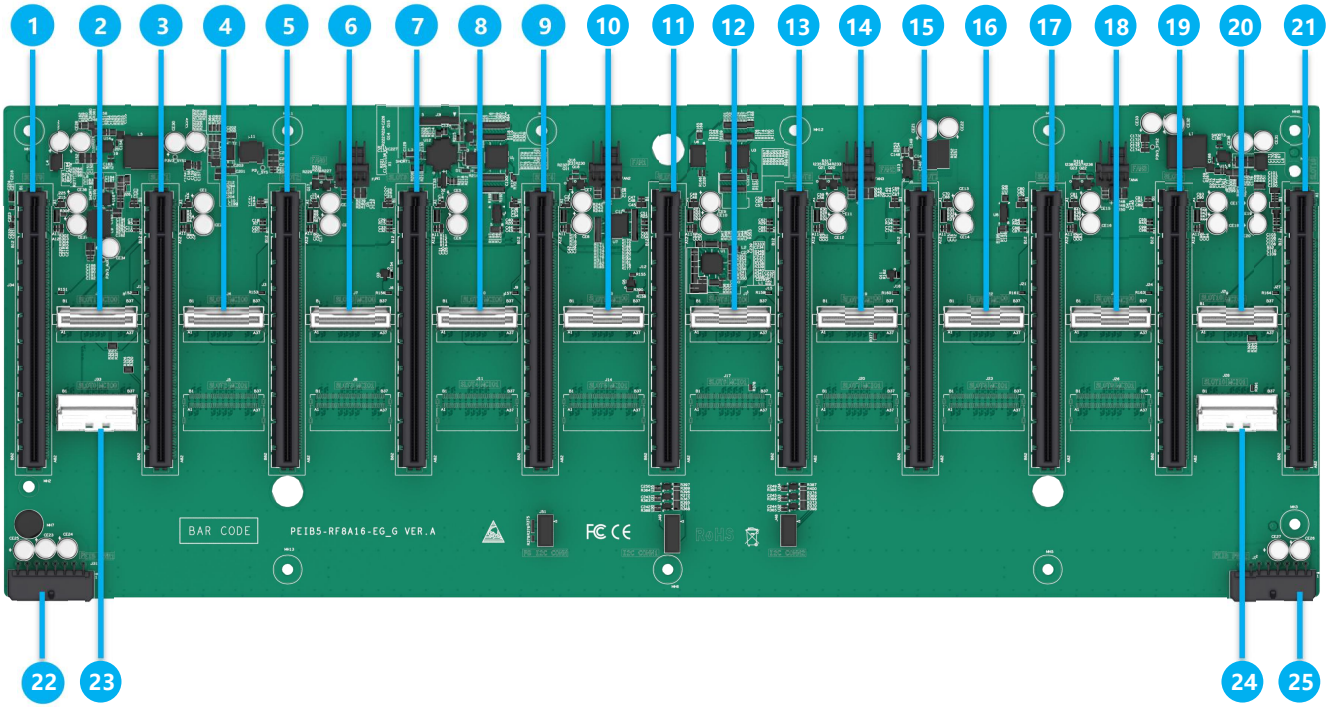
No.	Silkscreen
1	SLOT0
2	SLOT1 MCIO0
3	SLOT1
4	SLOT2 MCIO0
5	SLOT2
6	SLOT3 MCIO0
7	SLOT3
8	SLOT4 MCIO0
9	SLOT4
10	SLOT5 MCIO0
11	SLOT5
12	SLOT6 MCIO0
13	SLOT6
14	SLOT7 MCIO0
15	SLOT7
16	SLOT8 MCIO0
17	SLOT8
18	SLOT9 MCIO0
19	SLOT9

20	SLOT10 MCIO0
21	SLOT10
22	PEIB PWR1
23	SLOT0 MCIO0-
24	SLOT10 MCIO1
25	PEIB PWR2

The relationship between the slots of the lower PEIB board and the CPU

Slot No.	CPU
SLOT0	CPU1
SLOT1	N/A
SLOT2	CPU1
SLOT3	CPU1
SLOT4	CPU1
SLOT5	CPU1
SLOT6	CPU1
SLOT7	CPU1
SLOT8	CPU2
SLOT9	CPU2
SLOT10	CPU2

The upper PCIe expansion component slot numbers are shown in the following figure:



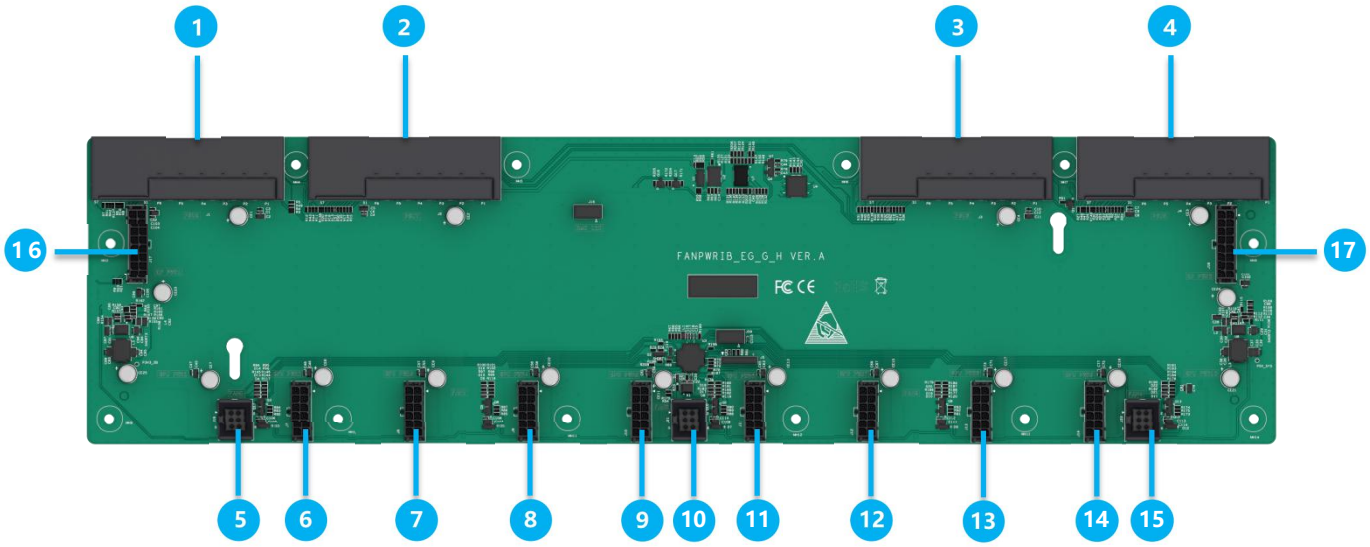
Serial number	Silkscreen
1	S LOT0
2	S LOT1 MCIO0
3	S LOT1

4	S LOT2 MCIO0
5	S LOT2
6	S LOT3 MCIO0
7	S LOT3
8	S LOT4 MCIO0
9	S LOT4
1 0	S LOT5 MCIO0
1 1	S LOT5
1 2	S LOT6 MCIO0
1 3	S LOT6
1 4	S LOT7 MCIO0
1 5	S LOT7
1 6	S LOT8 MCIO0
1 7	S LOT8
1 8	S LOT9 MCIO0
1 9	S LOT9
2 0	S LOT10 MCIO0
twenty one	S LOT10
twenty two	P EIB PWR1
twenty three	S LOT0 MCIO0-
twenty four	S LOT10 MCIO1
2 5	P EIB PWR2

The relationship between the slots of the upper PE I B board and the CPU

Slot number	Slave CPU
S LOT0	N /A
S LOT1	N /A
S LOT2	CPU1
S LOT3	CPU1
S LOT4	CPU2
S LOT5	CPU2
S LOT6	CPU2
S LOT7	CPU2
S LOT8	CPU2
S LOT9	CPU2
S LOT10	N /A

The slot numbers of the power adapter board are shown in the following figure:



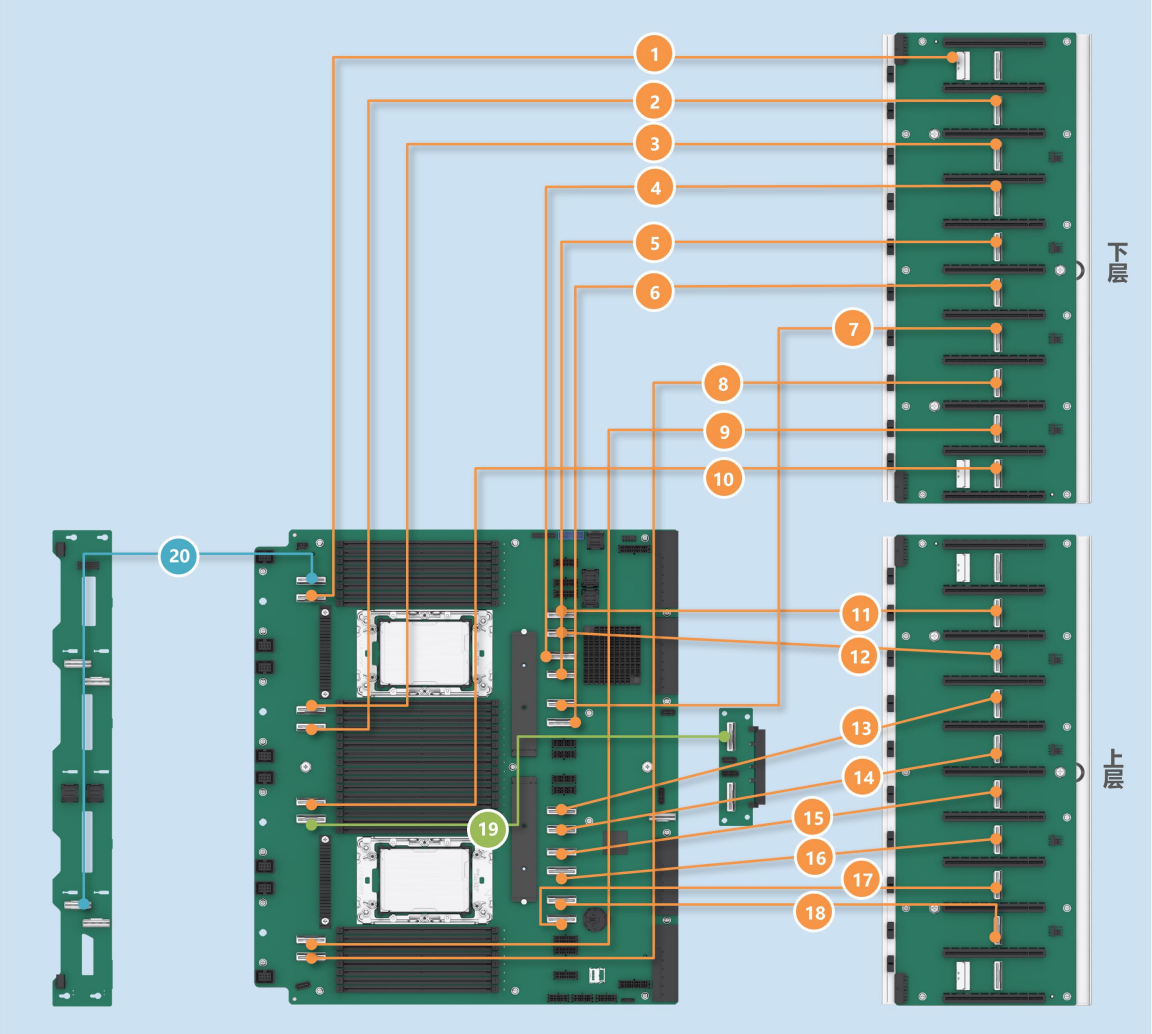
serial number	Silkscreen
1	PSU8
2	PSU7
3	PSU6
4	PSU5
5	FAN0
6	GPU PWR2
7	GPU PWR3
8	GPU PWR4
9	GPU PWR5
10	FAN2
11	GPU PWR6
12	GPU PWR7
13	GPU PWR8
14	GPU PWR9
15	FAN4
16	EPPWR1
17	EPPWR2

3.6.4 PCIe card installation suggestions

Slot number	Slot-0	Slot-1	Slot-2	Slot-3	Slot-4	Slot-5	Slot-6	Slot-7	Slot-8	Slot-9	Slot-10
Upper PEIB			GPU-1	GPU-2	GPU-3	GPU-4	GPU-5	GPU-6	GPU-7	GPU-8	
Lower PEIB	RAID		GPU-1	GPU-2	GPU-3	GPU-4	GPU-5	GPU-6	GPU-7	GPU-8	NIC

3.7 Connect the GPU computing module cable

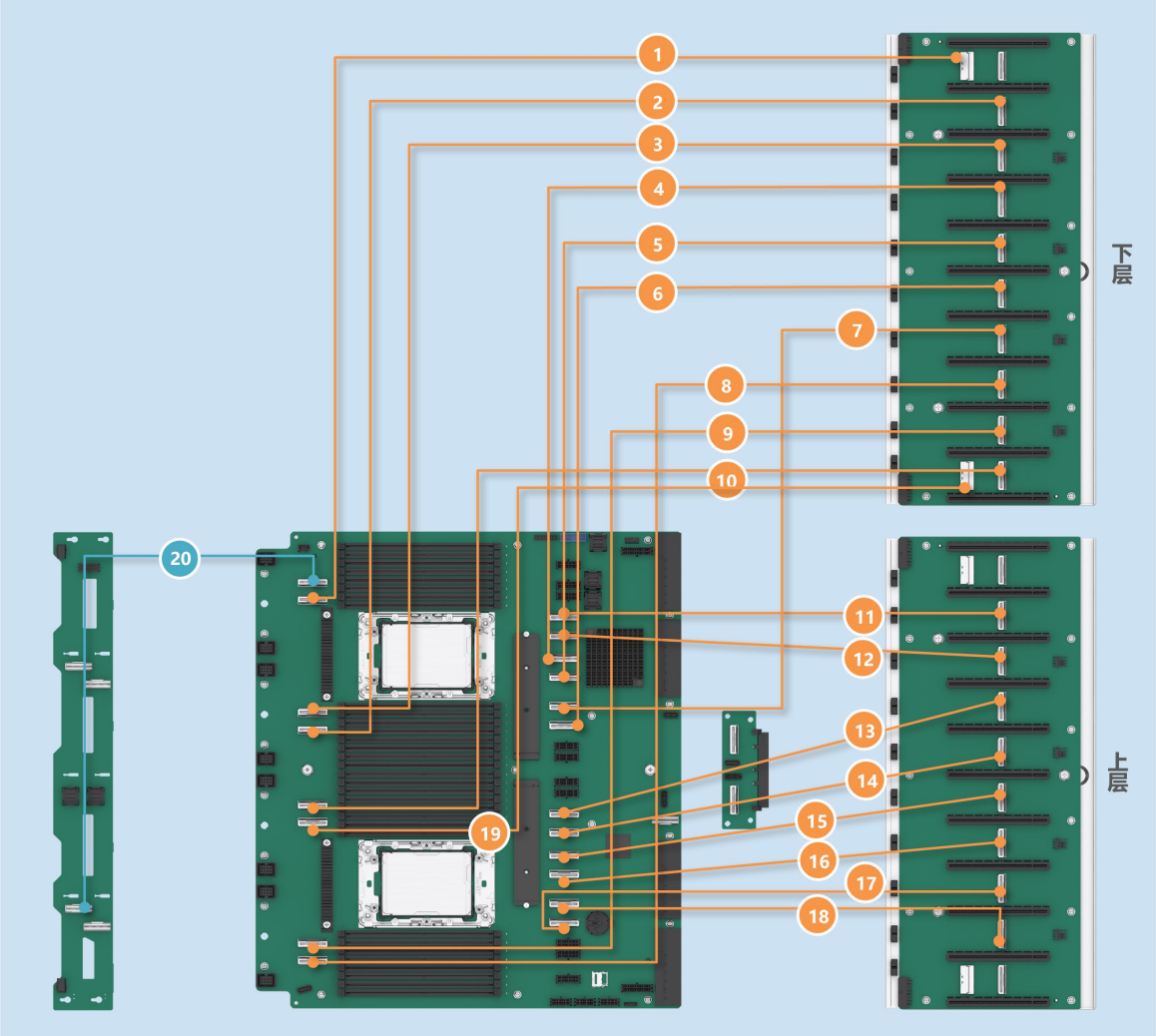
3.7.1 Connect 16GPU+2x8+2xNVMe+1xOCP direct cable



Cable number	Motherboard silk screen	Adapter board silk screen
1	CPU1 MCIO7	S LOT0 MCIO0
2	CPU1 MCIO8	S LOT2 MCIO0
3	CPU1 MCIO9	S LOT3 MCIO0
4	CPU1 MCIO2	S LOT4 MCIO0
5	CPU1 MCIO3	S LOT5 MCIO0
6	CPU1 MCIO0	S LOT6 MCIO0
7	CPU1 MCIO1	S LOT7 MCIO0
8	CPU2 MCIO8	S LOT8 MCIO0
9	CPU2 MCIO9	S LOT9 MCIO0
1 0	CPU2 MCIO6	S LOT10 MCIO0
1 1	CPU1 MCIO5	S LOT2 MCIO0
12	CPU1 MCIO4	S LOT3 MCIO0

1 3	CPU2 MCIO5	S LOT4 MCIO0
1 4	CPU2 MCIO4	S LOT5 MCIO0
1 5	CPU2 MCIO2	S LOT6 MCIO0
1 6	CPU2 MCIO3	S LOT7 MCIO0
1 7	CPU2 MCIO0	S LOT8 MCIO0
1 8	CPU2 MCIO1	S LOT9 MCIO0
1 9	CPU2 MCIO7	O CP adapter board M CIO0
2 0	CPU1 MCIO6	Front back panel S LIM3

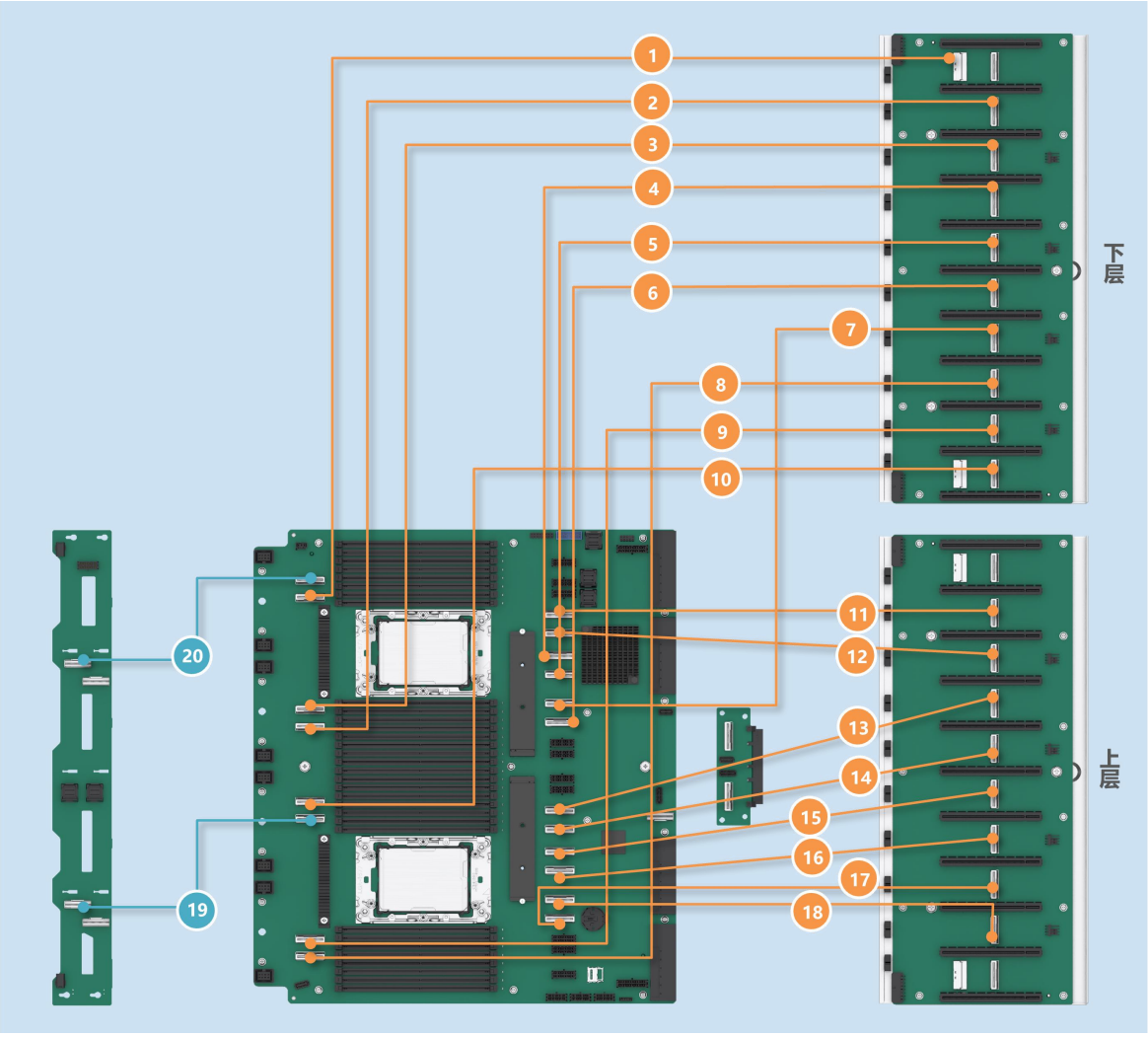
3.7.2 Connect 16GPU+1x8+1x16+2xNVMe pass-through cables



Cable number	Motherboard silk screen	Adapter board silk screen
1	CPU1 MCIO7	S LOT0 MCIO0
2	CPU1 MCIO8	S LOT2 MCIO0
3	CPU1 MCIO9	S LOT3 MCIO0
4	CPU1 MCIO2	S LOT4 MCIO0
5	CPU1 MCIO3	S LOT5 MCIO0
6	CPU1 MCIO0	S LOT6 MCIO0
7	CPU1 MCIO1	SLOT7 MCIO0
8	CPU2 MCIO8	SLOT8 MCIO0
9	CPU2 MCIO9	SLOT9 MCIO0
1 0	CPU2 MCIO6	SLOT10 MCIO0
1 1	CPU1 MCIO5	SLOT2 MCIO0
12	CPU1 MCIO4	SLOT3 MCIO0
1 3	CPU2 MCIO5	SLOT4 MCIO0

14	CPU2 MCIO4	SLOT5 MCIO0
15	CPU2 MCIO2	SLOT6 MCIO0
16	CPU2 MCIO3	SLOT7 MCIO0
17	CPU2 MCIO0	SLOT8 MCIO0
18	CPU2 MCIO1	SLOT9 MCIO0
19	CPU2 MCIO7	S LOT10 MCIO1
20	CPU1 MCIO6	Front back panel S LIM3

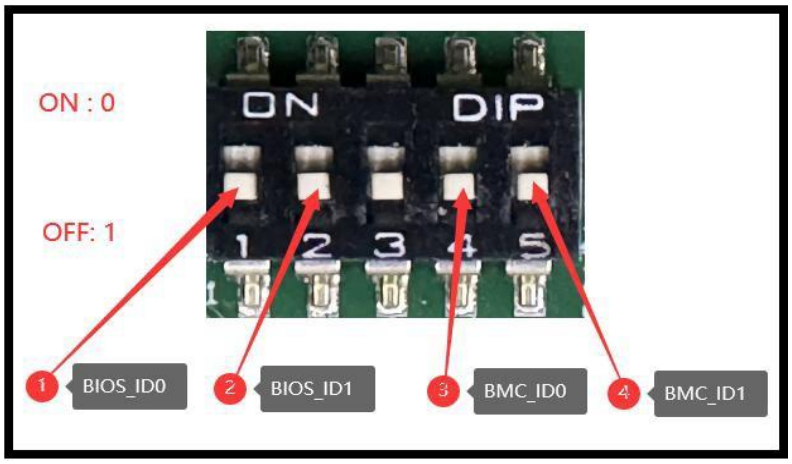
3.7.3 Connect 16GPU+2x8+4xNVMe pass-through cables



Cable number	Motherboard silk screen	Adapter board silk screen
1	CPU1 MCIO7	S LOT0 MCIO0
2	CPU1 MCIO8	S LOT2 MCIO0
3	CPU1 MCIO9	S LOT3 MCIO0
4	CPU1 MCIO2	S LOT4 MCIO0
5	CPU1 MCIO3	S LOT5 MCIO0

6	CPU1 MCIO0	S LOT6 MCIO0
7	CPU1 MCIO1	S LOT7 MCIO0
8	CPU2 MCIO8	S LOT8 MCIO0
9	CPU2 MCIO9	S LOT9 MCIO0
1 0	CPU2 MCIO6	S LOT10 MCIO0
1 1	CPU1 MCIO5	S LOT2 MCIO0
12	CPU1 MCIO4	S LOT3 MCIO0
1 3	CPU2 MCIO5	S LOT4 MCIO0
1 4	CPU2 MCIO4	S LOT5 MCIO0
1 5	CPU2 MCIO2	S LOT6 MCIO0
1 6	CPU2 MCIO3	S LOT7 MCIO0
1 7	CPU2 MCIO0	S LOT8 MCIO0
1 8	CPU2 MCIO1	S LOT9 MCIO0
1 9	CPU2 MCIO7	Front back panel S LIM3
2 0	CPU1 MCIO6	Front back panel S LIM2

3.8 Dip switch



BIOS ID Definition :

ID1	ID0	illustrate
0	0	SNR-LSG-G4 Model ID

BMC ID definition:

ID1	ID0	illustrate
0	0	SNR-LSG-G4 Model ID

4. Installing system components

4.1 Chassis cover installation

Step 1: Install the rear cover

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

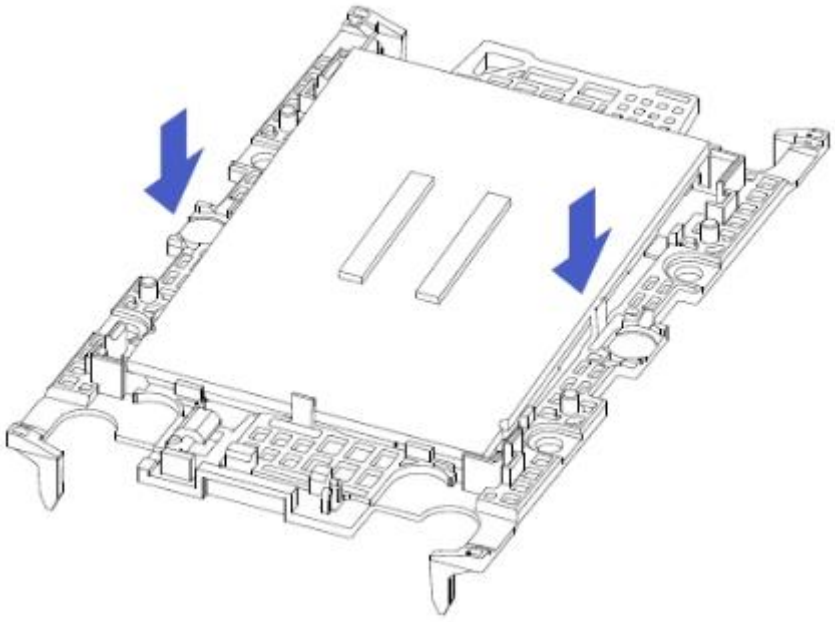
1-2. Turn the countersunk screw in the direction of the arrow to lock it in place.

4.2 CPU Installation

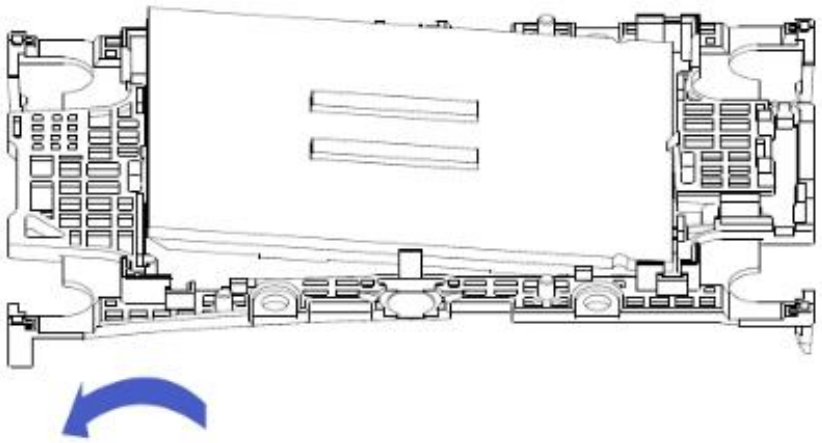
Installing the Processor:

Step 1: CPU Installation

1-1. Tilt the CPU as shown in the figure and clamp it on one end of the clamp. Align the A1 corner (triangle mark) of the CPU with the corner with the triangular hole on the clamp. Make sure the groove on the processor is aligned with the protrusion on the clamp buckle.



1-2. Bend the other end of the clamping piece in the direction of the arrow and fix the CPU onto the clamping piece.

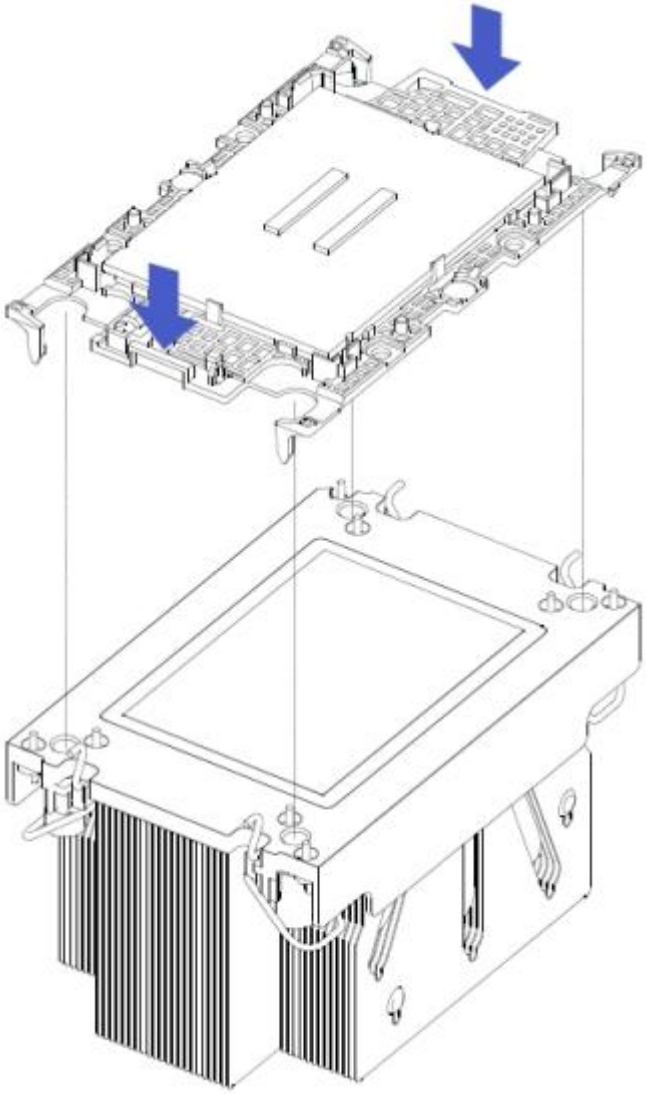


1-3. Release the clamping piece and hook the other end of the clamping piece into the CPU groove.

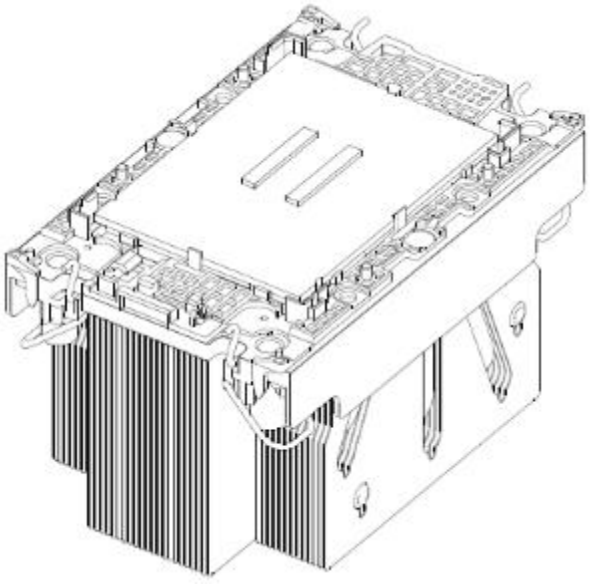
Step 2: Install the CPU onto the radiator, making sure the CPU and radiator surfaces are clean, free of oil and foreign matter.

2-1. Apply about 0.4ml of thermal grease on the CPU and spread it evenly.

2-2. Align the A1 corner (triangle mark) and buckle the CPU onto the heat sink.



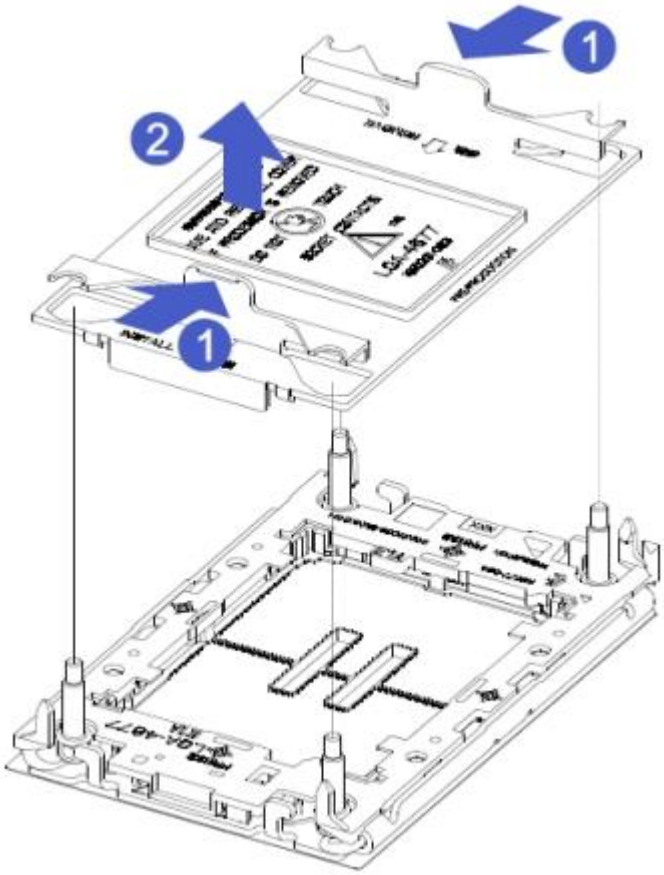
2-3. Carefully check the installation of the clamping plate and the heat sink to ensure that the clamping plate is completely clamped and flat.



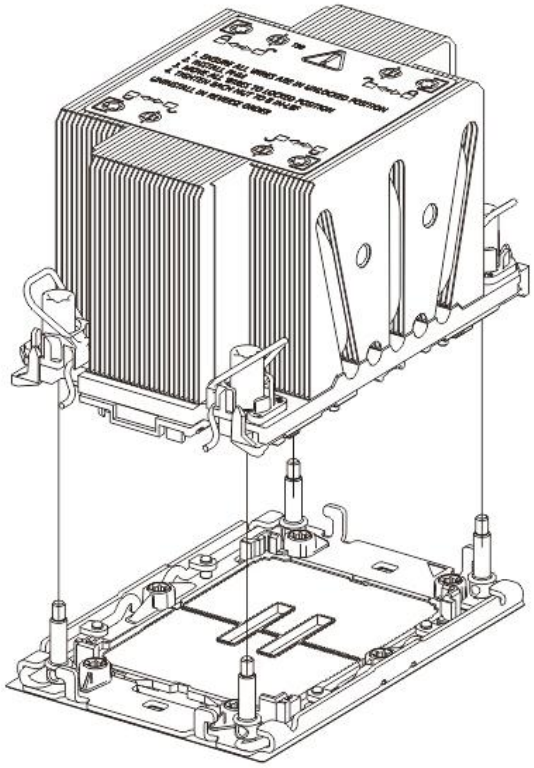
4.3 Radiator Installation

- Installation steps:

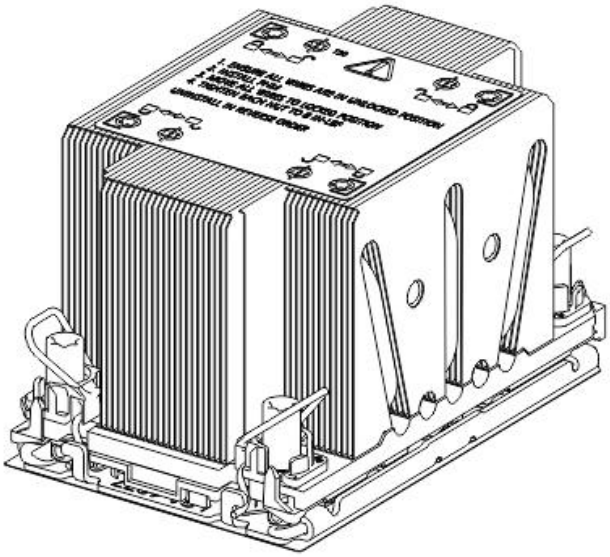
1. Press the protective cover in the direction of the arrow and remove it upwards.



2. Move the fastening lock on the radiator so that it is in a vertical position. Align the radiator with the radiator fixing studs on the CPU base and place it vertically downward on the base.

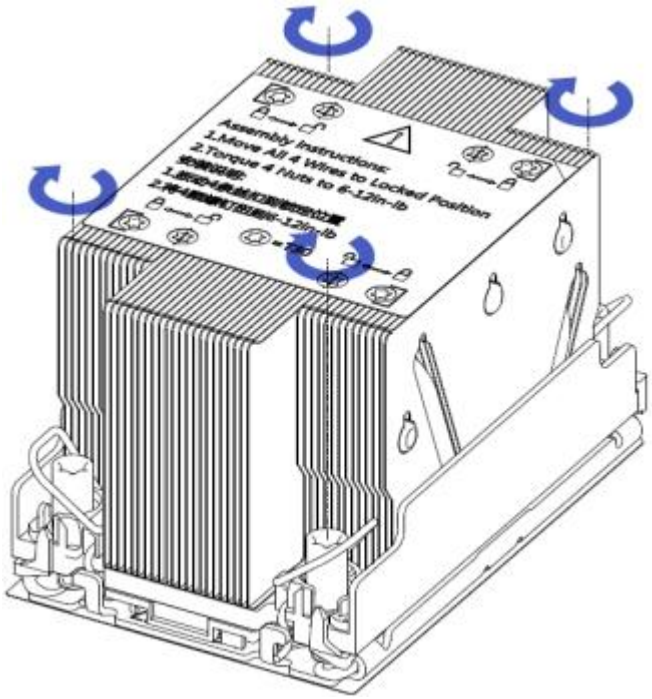


3. Press the fastening latch on the heat sink to lock it into the hook on the processor



base.

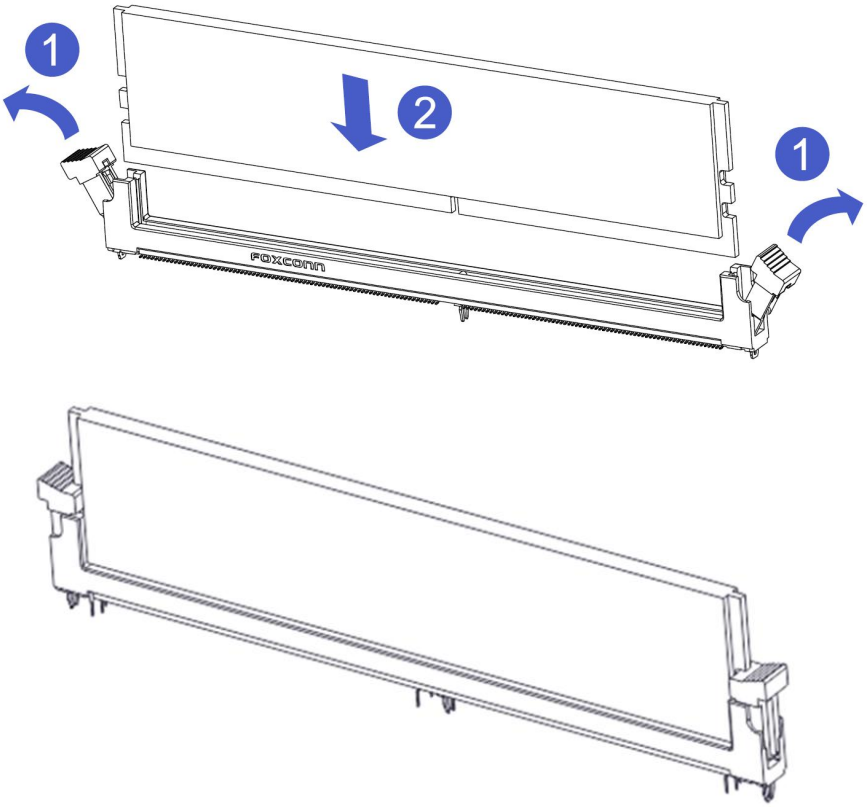
4. Use a T30 Torx screwdriver to tighten the screws that secure the heat sink.



4.4 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 stick and the memory slot;

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

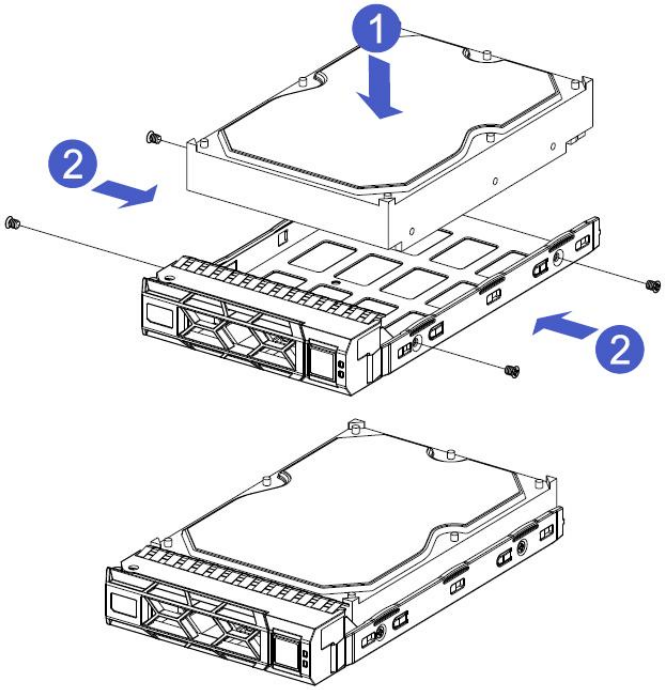


4.5 Hard disk installation

- Installing a 3.5-inch hard drive

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

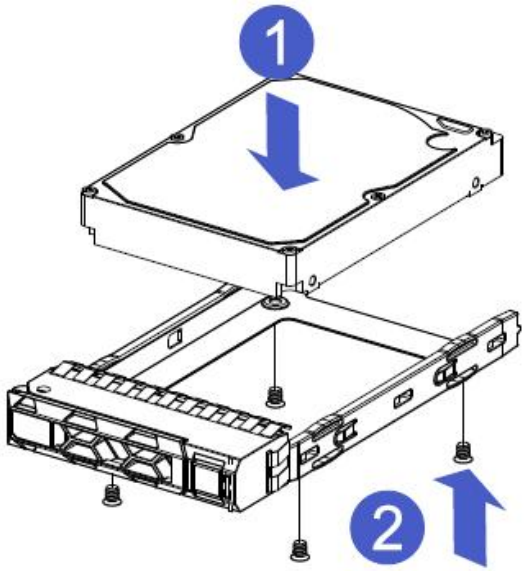
1-2. Use a total of 4 countersunk screws on the left and right sides to lock the hard disk (the screw heads must not protrude from the surface of the guide rails on both sides of the tray).



- Installing a 2.5-inch hard drive

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

2-2. The four countersunk screws at the bottom lock the hard drive (the screw heads protrude from the bottom of the tray).

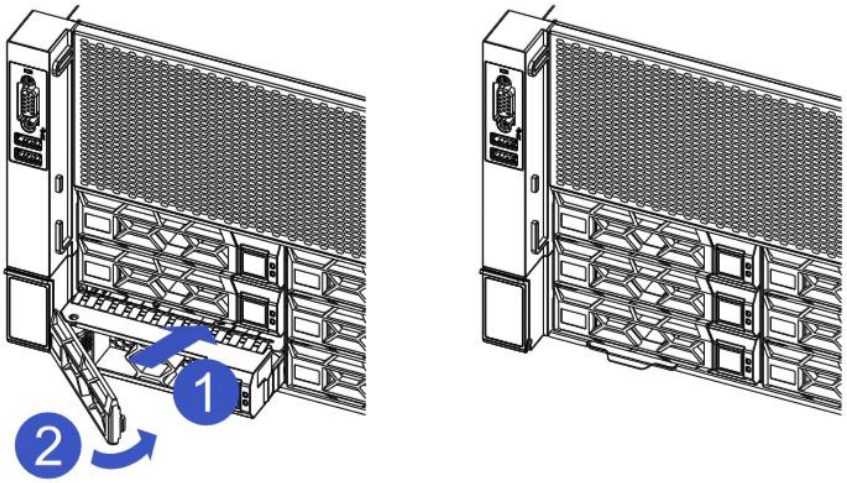


- Install the hard drive tray assembly into the chassis

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

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

3. Diagram of the hard disk being installed.



4.6 M.2 Installation

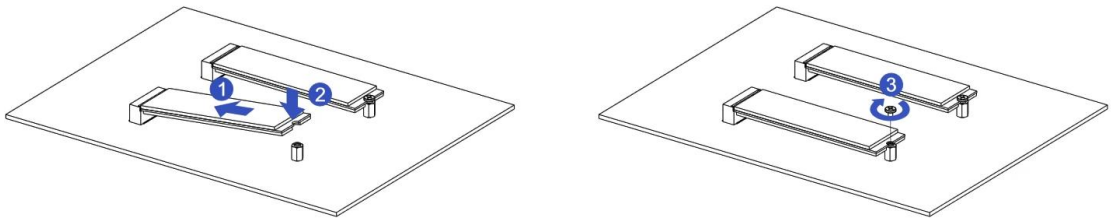
Step 1. Install the positioning studs according to the length of the M.2 card to be installed;

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 fixing screws of the M.2 card.



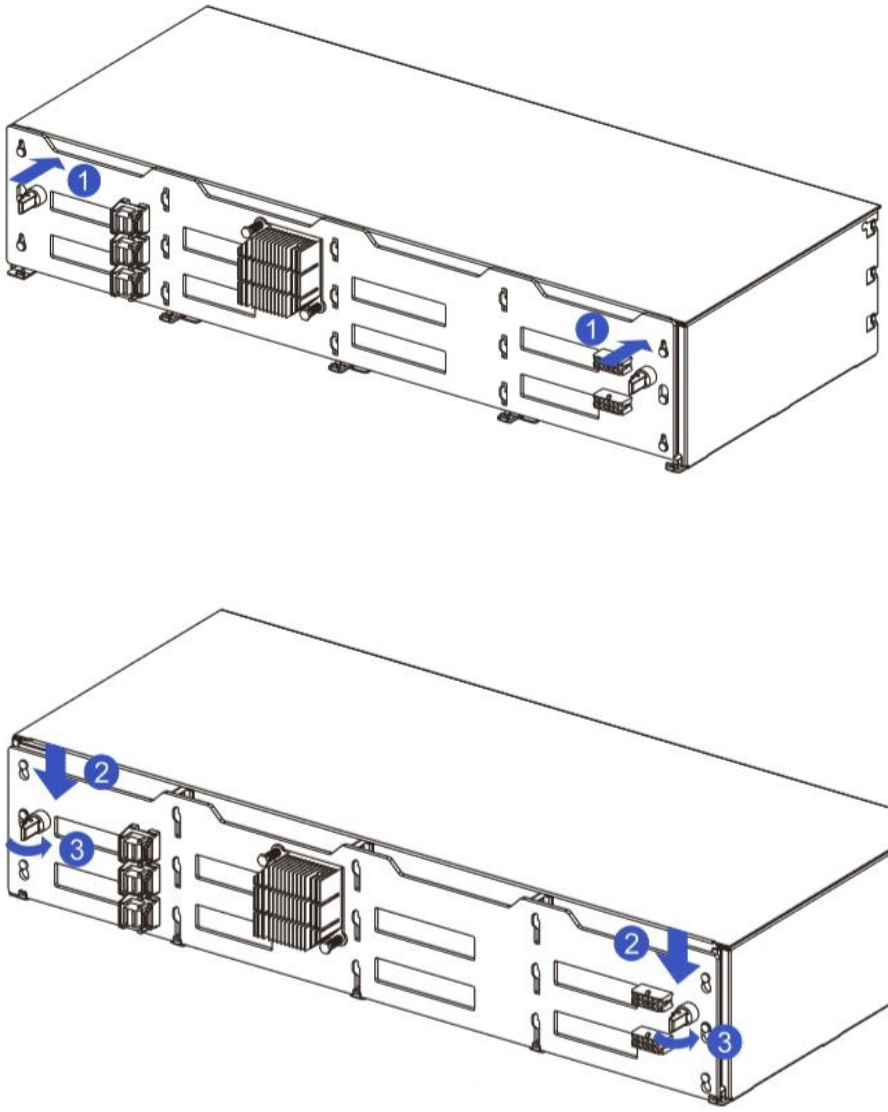
4.7 Hard disk backplane installation

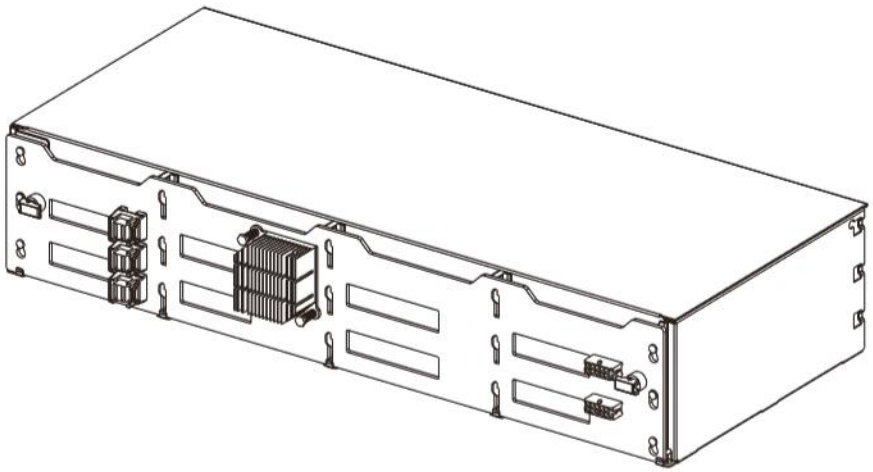
- Front hard disk backplane installation

Step 1. Align the gourd holes and hanging holes on the left and right sides of the hard disk backplane with the hanging nails of the hard disk frame and push in the direction of the arrow;

Step 2. After the hard disk backplane is pushed into place, press the backplane downward until the gourd nails and hanging holes on both sides are in place;

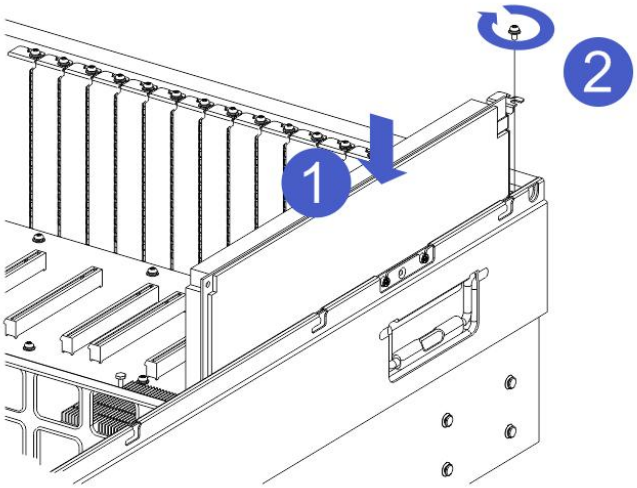
Step 3. Flip the fixings on the left and right sides of the hard disk backplane and lay them flat.





4.8 PCIe expansion card installation

step. Place the rear window PCIE module vertically downward, align it with the PCIE slot, and tighten the fixing screws.



4.9 Guide rail assembly installation

Step 1. Install the guide rails into the rack (the left and right guide rails are symmetrical, please repeat the installation)

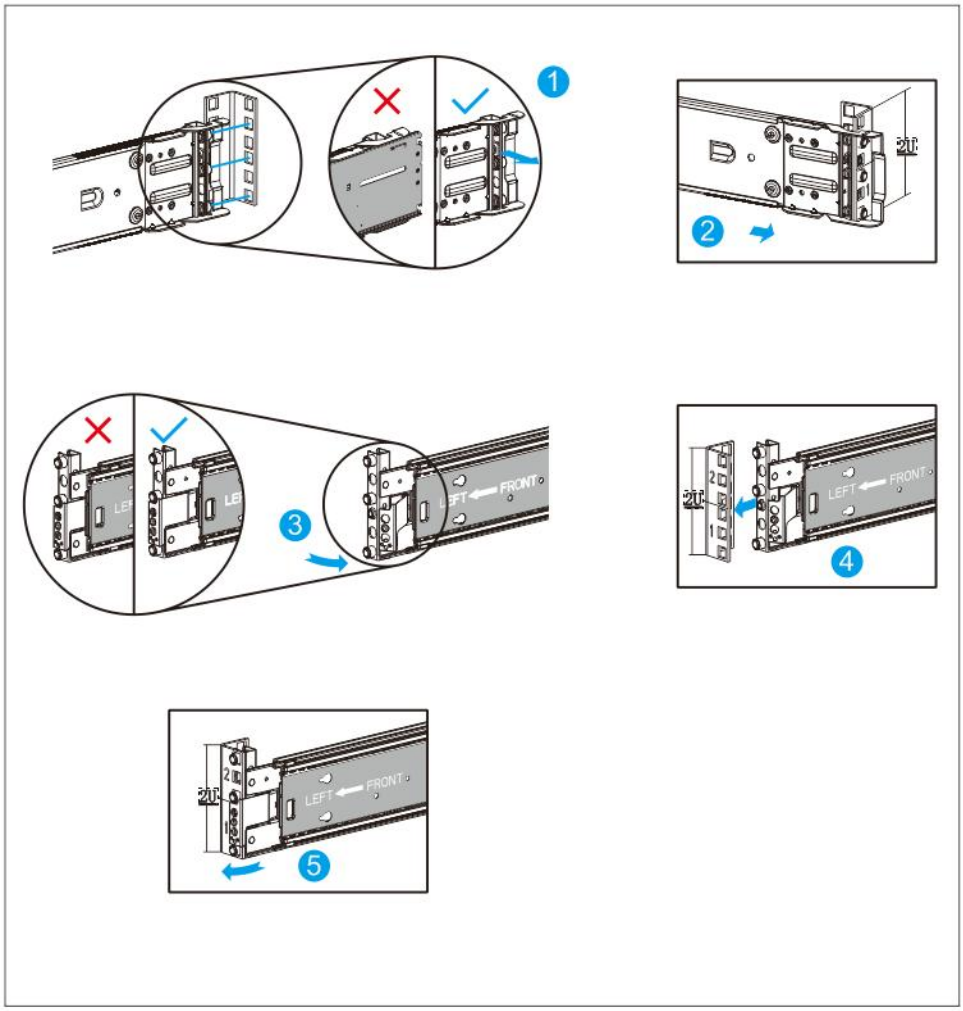
1-1. Push the hook at the rear end of the guide rail as indicated by the arrow, align it with the rack hole and install the guide rail into the rack;

1-2. Install the guide rail into the rear end of the rack until you hear a click.

1-3. Push the hook at the front end of the guide rail according to the arrow, align it with the rack hole and install the guide rail into the rack;

1-4. Install the guide rail into the front of the rack until you hear a click. This completes the process.

1-5.Reset the hook at the front end of the guide rail.

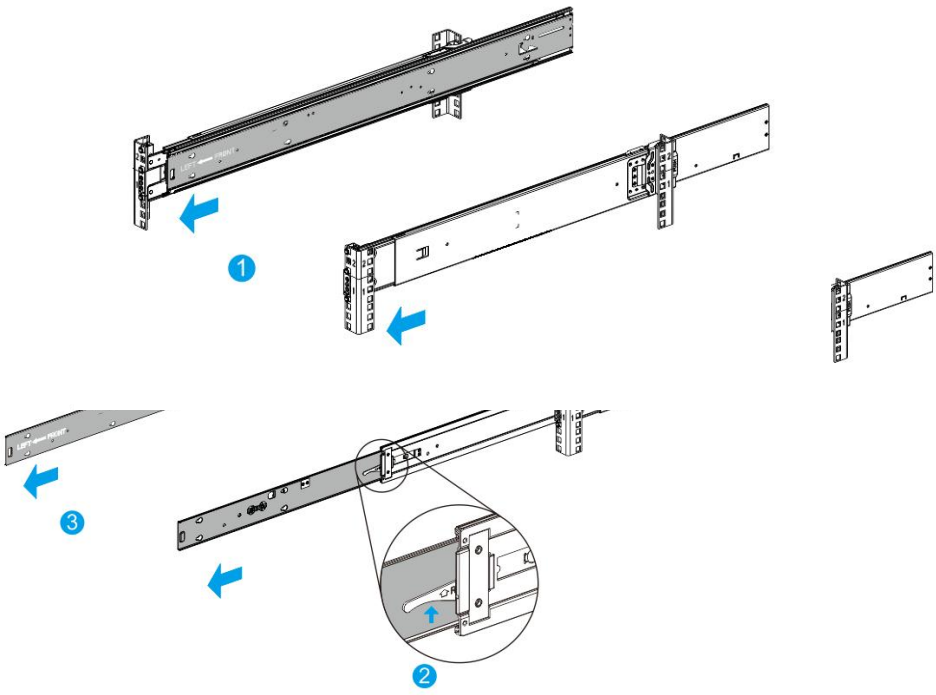


Step 2. Remove the inner rail from the guide rail

2-1. Pull the inner rail out from the guide rail until it stops with a click.

2-2. Push the button in the direction of the arrow (indicated by the arrow on the button) and pull out the inner rail completely;

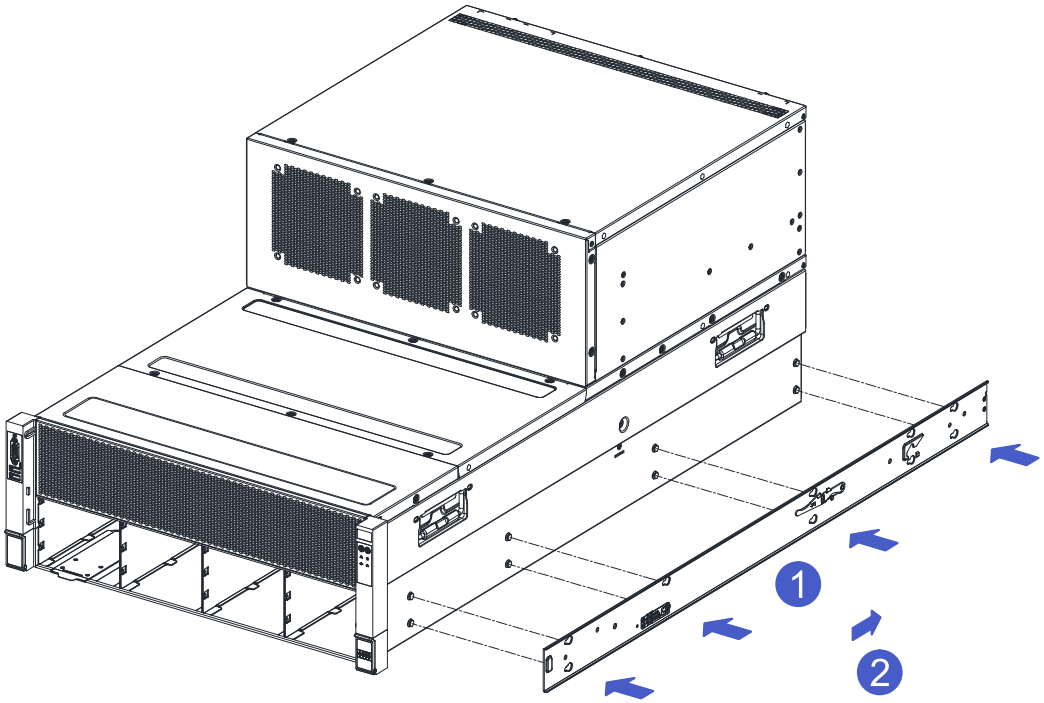
2-3. Complete the removal of the inner rail.



Step 3. Install the inner rails on the chassis (the left and right inner rails are the same, please repeat the installation)

3-1. Align the positioning holes of the inner rail with the four rows of nails on one side of the chassis and install it on the chassis in the direction of the arrow;

3-2. Push the inner rail in the direction of the arrow. You can hear a click when the installation is completed. Make sure it is installed in place.



Step 4. Install the server into the rack.

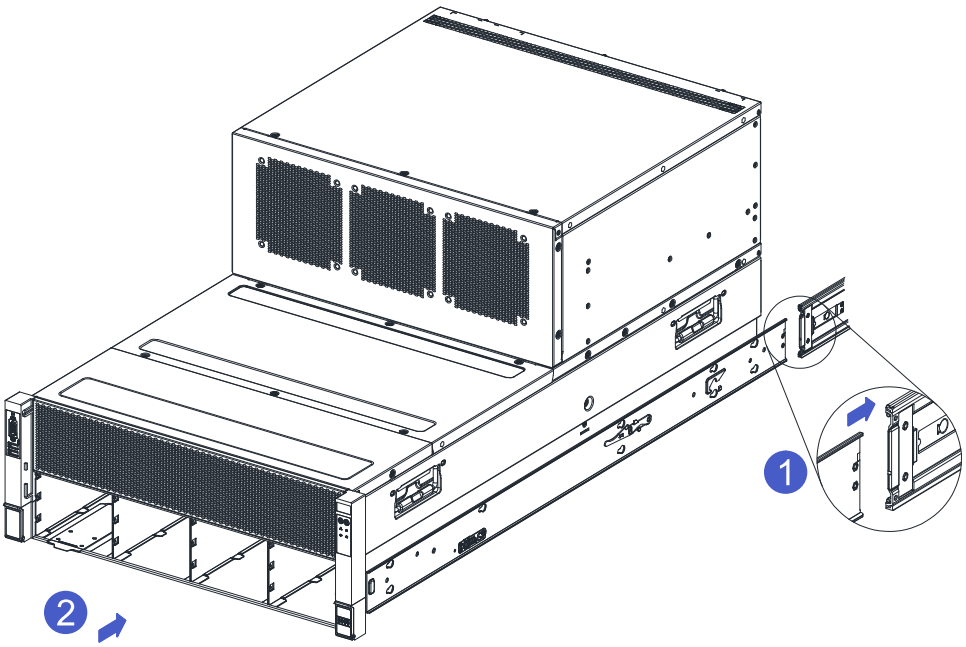
4-1. Align the chassis with the inner rail installed with the middle rail on the rack;

4-2. After alignment, push the chassis into the guide rail in the direction of the arrow;

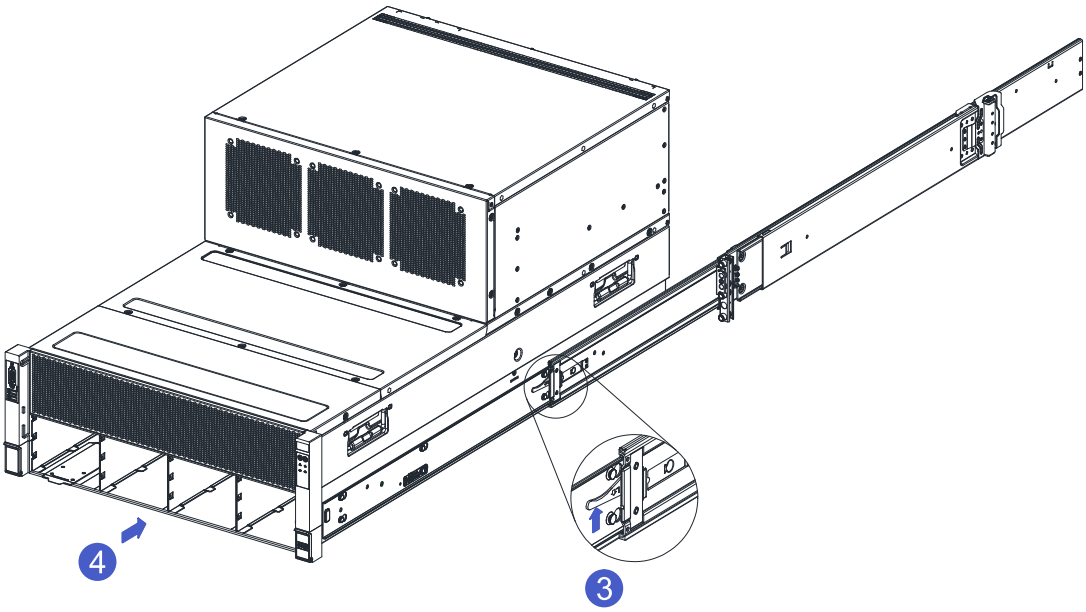
4-3. After pushing the chassis into the middle rail stop position, push the button in the direction of the arrow;

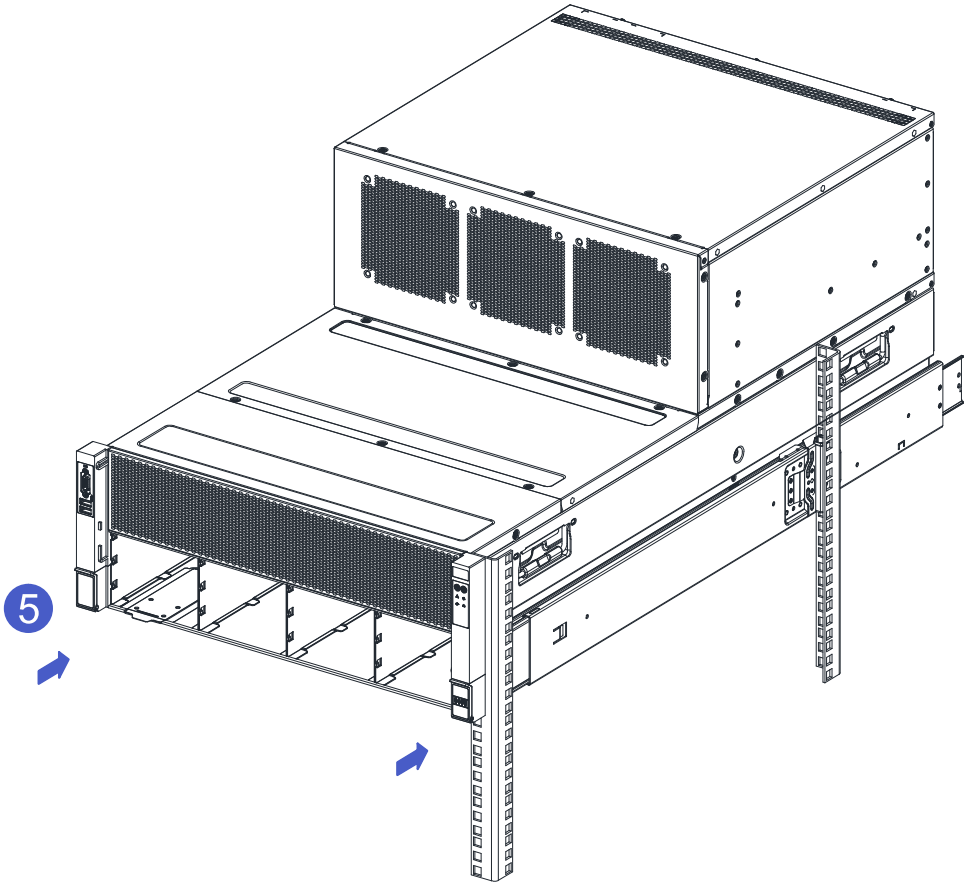
4-4. Press and hold the button while pushing the server into the rack;

4-5. Open the front mounting ears on both sides and tighten the screws with a



screwdriver to complete step 4.





5. Operation precautions and common troubleshooting

5.1 Operation Notes

- Replace DIMM Note: Since DDR5 DIMM is powered directly by 12V and 3.3V of the motherboard, and the working power of the memory is converted by its own PWM, in order to avoid 12V being charged when plugging and unplugging the DIMM, which may cause damage to the DIMM, it is required to disconnect the AC power supply for more than 20 seconds before inserting or unplugging the memory stick to ensure that the 12V and 3.3V on the motherboard are completely discharged;
- SNR-LSG-G4 needs to be connected to four PSUs to start up; BMC can be used normally when powered by a single PSU ;
- The upper fans of SNR-LSG-G4 are designed with three 12038 single cells , and the lower fans are designed with eight 8056 double cells , and the maximum speeds of the upper and lower fans are different;
- SNR-LSG-G4 is designed with dual BIOS and BMC chips . By default, flash 1 is used for booting. If flash 1 is abnormal, it will automatically switch to flash 2 for booting.
- The network indicator on the SNR-LSG-G4 mounting ear only supports displaying the network status of the OCP network card ;
- When the hard disk lights are controlled by the RAID card, there will be a delay in information synchronization on the BMC Web interface;
- Product definition: Slot 0 of the GPU board is used to connect a network card or RAID card. The B MC does not support GPU information display.
- Due to the limitation of the BMC hard disk plug-in and pull-out log mechanism, it is not advisable to quickly plug and unplug multiple hard disks at the same time, which will result in the inability to correspond to the log;
- When hot-swapping hard disks, it is not advisable to quickly plug in and out multiple hard disks at the same time;
- When the hard disk is hot-plugged when the server is in BIOS Setup state, the BMC will not record the hard disk plug-in and plug-out log;

(When the model is configured as direct-connect NVMe or direct-connect SATA , hot-swapping of the hard disk is not supported in BIOS Set Up state)

- On SNR-LSG-G4, NVME U.2 SSD only displays information in the Hard Disk Device-NVME Settings list;
- BMC WEB interface GPU device information. GPU power consumption display requires

the driver to be installed in the OS. For NVIDIA GPU devices, the command nvidia-smi -pm 1 needs to be used to enable the GPU card to be in persistent mode, so that the corresponding GPU power consumption can be obtained normally.

- the BMC webpage wants to record the SOL log , it is necessary to connect the SD card and partition it correctly as required;
- When the server is installed with a GPU or graphics card, it needs to be used with an air guide cover;
- The memory must be installed according to the POR rules, and the actual memory frequency is related to the platform design and the CPU model used;
- BIOS through U EFI Shell, only the currently active BIOS can be upgraded (the server supports dual BIOS flash);
- LSI The 9560 RAID card does not support Legacy mode management of the RAID card;
- connecting the 9560 to the direct backplane to form a RAID, the hard disk will not light up the fault light after setting the disk to offline state. The same operation can light up the light on the expander backplane .
- LSI 9560 JBOD mode, the failure light will be on. However, you need to wait for a while before plugging it back in. If you plug it in too quickly, the failure light will not be on.
- PCH SATA does not support creating RAID in Legacy mode;
- M.2 interface of the SNR-LSG-G4 motherboard supports both PCIe4.0 NVMe protocol and SATA 3.0 protocol;
- To enable mdns for a certain network port, the "Register BMC" function item of the corresponding network port must be enabled .
- Configuring DNS information for BMC will cause network reconnection. You need to wait for a certain period of time (recommended 1 to 2 minutes) before performing the next operation.
- BMC After NTP related configuration is performed on WEB, the corresponding service will be restarted. You need to wait for a certain period of time (recommended 1 minute) before performing the next operation, otherwise an error may occur;
- SNMP permissions of the admin user need to change the password first, because the SNMP password length must be more than 8 characters, and the default password length of the admin user does not meet the requirement;
- After installing the in-band software (querying hard disk usage), BMC There is a certain error in the device usage rate read from the WEB;
- The SSL certificate uploaded on the SSL page and the SSL file on the LDAP settings

page cannot be used together;

- When operating the hard disk connected to the SAS card, there will be a certain delay in the generation of SAS IT logs;
- Try to avoid installing multiple operating systems on one machine. If you must install them, make sure that the boot partition and data partition of each system belong to the same hard disk;
- To install Windows Server 2019, you need to change Limit CPU PA to 46 bits under BIOS to Enable.
- When the server power cable is removed, the mounting ear system alarm light will turn red and flash
- The product supports all cards that comply with the OCP NIC 3.0 specification. Cards that comply with the specification and support NCSI can use the NCSI BMC shared management network function .

5.2 Thermal Limitations

Front hard disk configuration	Maximum operating temperature 35°C
8 x 3.5-inch hard drives	· 8 3.5 SAS/SATA hard disks · CPU≤350W · GPU supports NVIDIA A800, H100, H800, L20, L4

5.3 Common troubleshooting

5.3.1 Common hardware failures

- The server's rear VGA cannot display

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

Cause of the problem: 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 will display normally;

- The operating system cannot start

Fault description: After the RAID card is configured with RAID and the operating system is installed, the operating system cannot be started;

Cause of the problem: The RAID card does not configure the installation disk as the preferred boot hard disk;

Solution: Enter LSI In the 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;

- BMC Unable to obtain N CSI IP from Web

Fault description: BMC WEB cannot obtain N CSI IP;

Cause: There may be two reasons:

  - If the server is equipped with a standard PCIE network card, it does not support the NCSI function ;
  - The OCP network card itself does not support the NCSI function ;

Solution: First, confirm that if a standard PCIE network card is used , the server itself is designed in this way and does not support the NCSI function ;

If you use an OCP network card, you need to confirm whether the network card itself supports the NCSI function . If it does not support it, replace it with a network card that supports the NCSI function to obtain the NCSI IP normally ;

- G PU card PCI e speed reduction

2 under OS ;

Cause: The system starts the energy-saving mode of the GPU card or graphics card. After the GPU card or graphics card is loaded, it will automatically increase to the Spec rate.

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

- configuring RAID , all physical disks can still be seen when installing the operating system

Fault description: After configuring RAID through the PCH RAID controller, When using ESXI or Ubuntu Server operating system, you can still see all physical disks instead of the virtual disks after RAID is formed;

Cause: VMware ESXI and Ubuntu Server do not support PCH RAID;

Solution: Platform limitation, cannot be solved;

- The memory status light on the motherboard is red

Fault description: The mainboard memory status light is red, and there is a red memory warning on the BIOS POST interface;

Cause of failure: There are three possible causes of failure:

- Memory failure or abnormality
- Mainboard slot failure or abnormality
- Memory is not installed according to POR rules

Solution: First confirm whether the memory installation complies with the P OR rule. If not, reinstall the memory according to the P OR rule.

If the memory installation complies with the P OR rule, the memory status indicator is still red . Confirm the memory slot with the error in the WEB log, then shut down the server, swap the memory in the slot with the memory in another slot to confirm whether the error is with the memory slot or the memory itself.

- The server mounting ear indicator lights up red

Fault description: The status indicator on the right mounting ear of the server is red;

Cause of failure: There are four possible causes of failure:

- 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 memory status indicator and system status indicator of the mounting ear are both on alarm, you need to enter the memory fault handling link
- If the system status light is always red, you need to check whether the PSU is in place and whether the chassis intrusion is abnormal.
- If the system status light flashes red, you need to check whether the PSU power cable connection is abnormal.

- through the RAID card , the hard disk warning light is off

Fault description: The server is configured with a direct hard disk backplane and 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.

Cause of failure: The LSI 9560 RAID card is designed like this;

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 indicator is turned on, other status indicators of the hard disk, such as rebuild and failure, will be replaced;

Cause of failure: 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: This is a normal phenomenon and no solution is required;

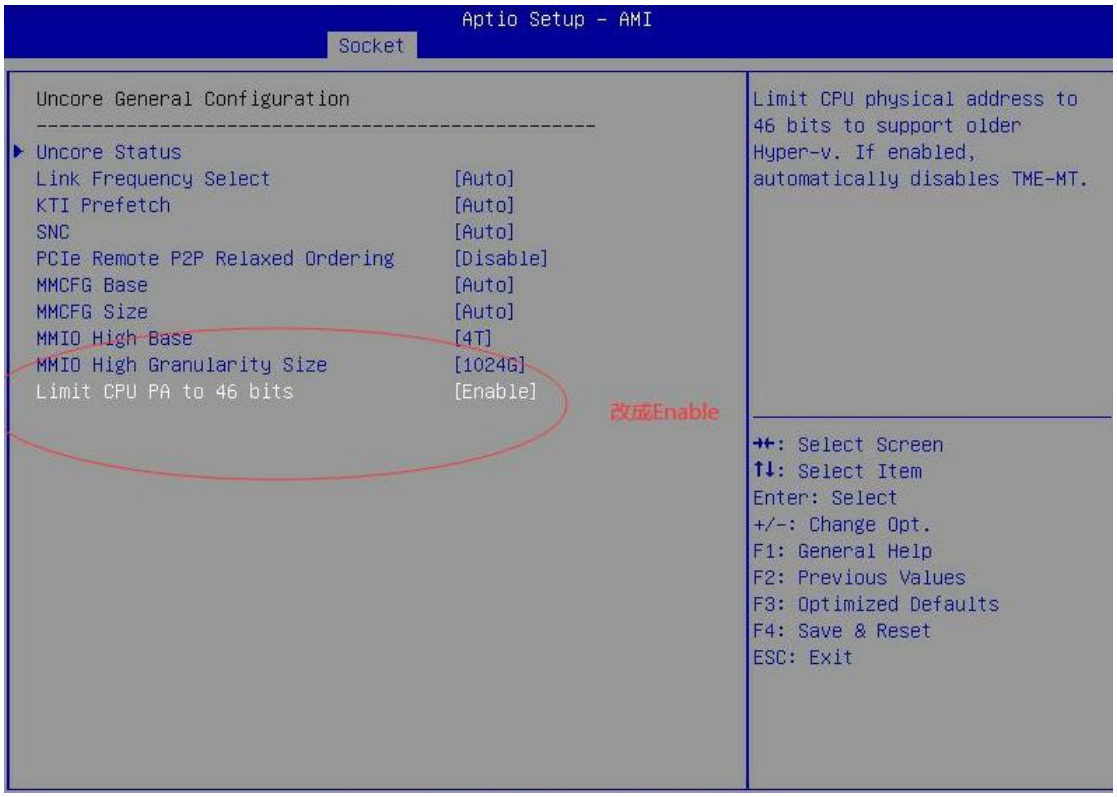
5.3.2 Common software failures

- System installation error

Fault Description: Windows Server 2019 An error occurred during the installation and the installation failed ;

Cause of the fault: BIOS did not configure the CPU PA address;

Solution: Enter BIOS Setup --> Socket --> Uncore General Configuration, set Limit CPU PA to 46 bits to Enable;



- B MC 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;
- Run the command timedatectl set-local-rtc 1 in the Linux operating system to synchronize the time.

- BMC Unable to log in to the Web

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 user name and password are correct. After the system is turned on, enter the correct password on the server POS interface or BIOS. Check the current IP of BMC under Setup, and use this IP to log in to BMC Web again ;

- PXE function is not available

Fault description: Server with Intel X 710 network card, in Legacy mode, the PXE function cannot be used normally;

Cause: BIOS does not configure above 4G decode;

Solution: Enter BIOS Setup , Disable above 4G decode option, save BIOS settings and reboot, PXE can be used normally in Leagcy mode;

Tip: Disabling Above 4G decode may cause some models of PCI e devices to not work properly.

- BMC Web cannot manage RAID cards or SAS HBA Card

Fault description: The server is in BIOS Setup status, BMC The RAID management and SAS management functions cannot be obtained from the WEB;

Cause: In BIOS In the Setup stage, the BMC has not yet initialized the RAID management and SAS management functions. Only after entering the operating system can the BMC 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

RAID card or SAS HBA card of LSI and PMC is used on the same server, the BMC Web management function is abnormal;

Cause: AMI code function limitation. On the same machine, the 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 ;

- BMC GPU device information cannot be obtained after S N

Fault description: BMC WEB does not support displaying the SN number of the graphics card , and only supports obtaining the SN number of the GPU ;

Cause of the fault: The device actually connected is a graphics card;

Solution: Graphics card limitation, design limitation;