SNR-LS-G3 2U

User manual

SNR
Smart Networking Reliable

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Chapter I Security Statement

1.1 General safety matters

- To prevent the risk of significant personal and property losses, be sure to follow the following recommendations.
- Please do not open the system cover plate by yourself. It should be operated by professionally trained maintenance technicians. The triangle mark with lightning symbol may have high voltage or shock, do not touch.
- Remember: Disconnect all cables before performing repairs.(There may be more than one cable.)
- It is strictly prohibited to start up before the cover plate is closed.
- When the cover opening treatment is required, please wait for the internal equipment to cool down before performing, otherwise it is easy to cause burns to you.
- Do not use this equipment in a wet environment.
- If the extension cable needs to be used, use the third-wire cable and ensure that it is properly grounded.
- Ensure that the computer is well grounded. It can be grounded by different means, but it must be actually connected to the ground. If you are not sure of the safe grounding protection, please contact the appropriate organization or electrician for confirmation. If winch cable wiring is required, please contact Tongcompany for advice.
- Please use the three-core power cord and socket with grounding protection. Improper grounding may lead to electricity leakage, burning, explosion and even personal injury.
- Please sure the power socket and power interface are in close contact; loose contact may cause fire.
- Please use the equipment at 220V AC voltage, working at inappropriate voltage will cause electric shock, fire and even damage.
- The equipment is required to be well ventilated and stay away from the heat source, fire source, and do not block the cooling fan, otherwise the equipment may cause smoke, fire or other damage due to overheating.
- If you smell or see smoke from the device, unplug the power cord and turn off the device immediately.
- It is required to easily plug and plug the power cord from the power supply and power socket. Please keep the power cord and plug clean and intact, otherwise there is a risk of electric shock or fire.
- Note: If the battery is replaced improperly, there will be an explosion risk, only the same or equivalent replacement parts recommended by the manufacturer should be used. The waste battery will cause pollution to the environment. The old battery under the replacement should be set according to the relevant instructions.
- Keep the computer away from the electromagnetic fields.
- Keep away from the electronic noise and interference caused by air conditioning, fans, motors, radio, television stations and transmission towers.
- Do not plug internal connection components or move the device while the device is running, which may cause device downtime or damage.
- Please avoid frequent restart or switching to extend the service life of the equipment.

- Please keep the environment clean and avoid dust. The working environment temperature of the equipment is 5℃ ~35℃, and the humidity is 35%~80%.
- Please back up important data in time. Tongyi Information Technology Co., Ltd. will not be responsible for the data loss caused by any circumstances.
- This product uses such as the configuration of optical drive, optical drive for class 1 laser equipment.

1.2 Name and content identification table of toxic and harmful substances or elements of the product

During the 10-year environmental protection use period, the toxic and harmful substances or elements contained in the product will not be leaked or changed under normal use conditions, and the use of the equipment will not cause serious pollution to the environment or serious damage to their people and property.

Part name	hazardous material					
	lead	mercury	cadmium	hexavalent chromium	Polybrominated biphenyl	PBDE
	(Pb)	(Hg)	(Cd)	(Cr VI)	(PBB)	(PBDE)
Chassis / baffle plate	X	O	O	O	O	O
Mechanical components (fan, radiator, motor, etc.)	X	O	O	O	O	O
Print Circuit Parts-PCA *	X	O	O	O	O	O

Part name	hazardous material					
	lead	mercury	cadmium	hexavalent chromium	Polybrominated biphenyl	PBDE
	(Pb)	(Hg)	(Cd)	(Cr VI)	(PBB)	(PBDE)
Cable / wire / connector	X	O	O	O	O	O
hard disc drive	X	O	O	O	O	O
Media read / storage device (CD,.)	X	O	O	O	O	O
Power supply	X	O	O	O	O	O

device / power adapter						
source	X	O	O	O	O	O
Fixed-point equipment (mouse, etc.)	X	O	O	O	O	O
fingerboard	X	O	O	O	O	O
Complete machine rack / guide rail products	X	X	O	O	O	O

O Represents that the content of the toxic and harmful substances in all homogeneous materials of the components is below the limit requirements stipulated in GB / T26572-2011 Limits Requirements for Restricted Substances in Electronic and Electrical Products.

It means that the content of the toxic and harmful substance in at least one of the homogeneous materials of the component exceeds the limit requirements stipulated in GB / T26572-2011 Limits Requirements for Restricted Substances in Electronic and Electrical Products. But comply with the EU RoHS Directive (including its exemption clause).

Note: This table is the condition of the toxic and harmful substances in all possible components of the equipment. The customer can check the toxic and harmful substances of the purchased products according to this table.

1.3 Warning notice

This product meets the EMC Class A standard.

1.4 Climate and environmental requirements

- The best operating temperature of the equipment is 5℃ -35℃;
- System battery

  3V CR2032 lithium battery

Note: Some configurations have been performance verified at 40℃ temperature and 90% (29℃ maximum dew point) humidity.

temperature	
working temperature	5℃ to 35℃ with a maximum temperature gradient of 10℃ per hour.

Continuous operating temperature range (below 950 m or 3117 ft)	5℃ to 35℃ without direct illumination on the device.
Storage temperature range	From 40℃ to 65℃.
humidity	
memory	At a maximum dew point of 33℃, the relative humidity is from 5% to 95%. The air must always condense.
Continuous operating humidity percentage range	At a maximum dew point of 26℃, the relative humidity is 10% to 80%.

- If the use environment of the equipment is bad or not, please shut down and unplug the power cord, network cable and telephone line connected with the equipment.
- Please use the legitimate operating system and software, and configure them correctly. Tongtaiyi Information Technology Co., Ltd. is not responsible for the maintenance of the server failures caused by the operating system and software.
- Please do not disassemble the chassis or add or decrease the server hardware configuration by yourself. Tongyi Information Technology Co., Ltd. is not responsible for the hardware and data damage caused thereby.
- When the equipment fails, please first check the contents of this manual to determine and eliminate common faults. If you cannot determine the cause of the failure, contact Technical Support for assistance.
- Choosing a suitable environment for the computer is conducive to the stable operation of the computer, and can extend the service life of the computer.

1.5 Other important descriptions

"If the equipment is marked with a mark, it means that the equipment with the sign is only designed and evaluated at an altitude of 2000m, so it is only suitable for safe use below 2000m and may have safety risks when used above an altitude of 2000m".

"If the equipment is marked with this sign, it means that the equipment is only designed and evaluated according to non-tropical climate conditions. Therefore, it is only suitable for safe use in non-tropical climate conditions, and there may be safety risks when used in tropical climate conditions."

Chapter 2: Product Introduction

2.1 System profile

SNR-SR-LS Gen3 is a 2U dual-processor general-purpose rack server independently developed based on the Intel® Whitley platform. SNR-SR-LS Gen3 adopts modular design, flexible configuration, and can be widely used in applications such as cloud computing, virtualization, database, big data and artificial intelligence. Support 2 Intel® Xeon® Scalable Processors (ICE LAKE), 32 DDR4 memory slots and 10 PCIe 4.0 expansion slots, and 39 2.5-inch or 20 3.5-inch + 4 2.5-inch disk slots. Integrating BMC remote management functions and supporting power capping technology can effectively reduce operating costs and improve return on investment.

2.2 System configuration

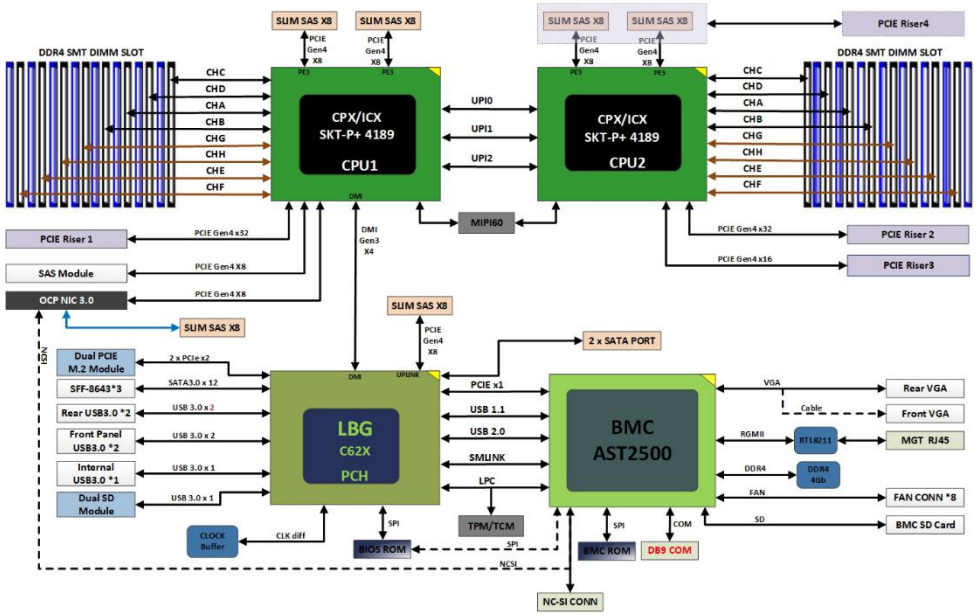
SNR-SR-LS Gen3 server adopts modular design, the front hard disk module and rear IO module can be configured on demand, including 2U12 (3.5" hard disk), 2U24 (2.5 "hard disk), 2U25 (2.5" hard disk) and other models.

2.2.1 System parameter:

Unit	Specifications
CPU	1/2 3rd Generation Intel® Xeon® Scalable Processor (ICE Lake), up to TDP 270W
Chipset	Intel C621A
Memory quantity	32 memories, 16 memory channels, up to 3200MHz
Memory type	Support RDIMM/LRDIMM/ Intel Optane DC Persistent Memory
Memory Capacity	16GB，32GB，64GB，128GB，256GB，MAX 8.0TB
Storage controller	Integrated 6Gb/s SATA controller; optional support for 12Gb/s SAS HBA and 12Gb/s SAS RAID controller
Storage	Front: Supports up to 12 3.5-inch or 25 2.5-inch hard drives, supports up to 12NVME hard drives Rear: Maximum support for 4 3.5-inch + 4 2.5-inch hard drives or 10 2.5-inch hard drives Built-in: Support 4 3.5-inch hard drives (compatible with 2.5-inch) Support 2 M.2 (2280, PCIe 3.0 x2), optional support 1 SD module (support RAID1 dual Micro SD)
PCI-E extension	Supports up to 10 PCIe 4.0 expansion slots
GPU	Up to 4 double-width full-height full-length accelerator cards or 10 half-height halflength accelerator cards
Network	An OCP3.0 NIC network sub-card is required to support NC-SI: 4*1Gb RJ45/2*10Gb RJ45/2*10Gb SFP+/4*10Gb SFP+/2*25Gb SFP28 or other
Management	Reserve TPM/TCM interface, support Trusted Platform Module or Trusted Management Module

Power supply	1 or 2 power supply modules, support 1+1 redundancy, support hot swap Optional 220V AC/240V DC/336V DC/-48V DC input Optional 550W/800W/1300W/1600W/2000W power efficient platinum power supply
Port	Front: 1 VGA, 2 USB3.0, 1 LCD Mini USB Rear: 1 VGA, 2 USB3.0, 1 RJ45 management network port, 1 COM, 1 standard OCP NIC 3.0 slot
System Management	Integrated BMC management chip, supports IPMI2.0, Redfish, SOL, KVM, virtual media and other functions, Provide one 1Gbps RJ45 dedicated management port, optional LCD management module
Size	With mounting ear: W (width) 483mm; H (height) 87mm; D (depth) 808mm Without ears: W (width) 463mm; H (height) 87mm; D (depth) 763mm With package: length 1065mm, width 665mm, height 280mm
Weight	12*3.5” configuration (including rear 2.5” hard drive) Host (excluding packaging): 28kg Gross weight (including packaging): 37.5kg (including packaging + guide rail + accessory box) 25*2.5” configuration (including rear 2.5-inch hard disk) Host (excluding packaging): 25.5kg Gross weight (including packaging): 35kg (including packaging + guide rail + accessory box)
Temperature	Working temperature: 5~35℃, the maximum temperature gradient is 10℃ per hour.
Humidity	Working humidity: 8%~90% (non-condensing) Storage humidity: 5%~95% (non-condensing) Humidity change is less than 20%RH per hour.
OS	Microsoft Windows Server、Microsoft Hyper-V Server、Red Hat Enterprise Linux、SUSE Linux Enterprise Server、CentOS、Ubuntu、Fedora、Solaris 、Oracle Linux、FreeBSD、VMware ESXi、Citrix XenServer

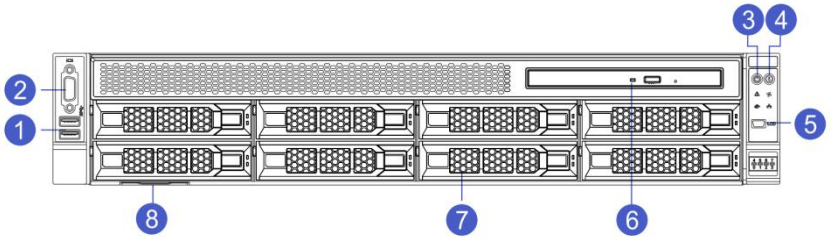
2.2.2 The block diagram of the system architecture motherboard is as follows:



2.3 System component introduction

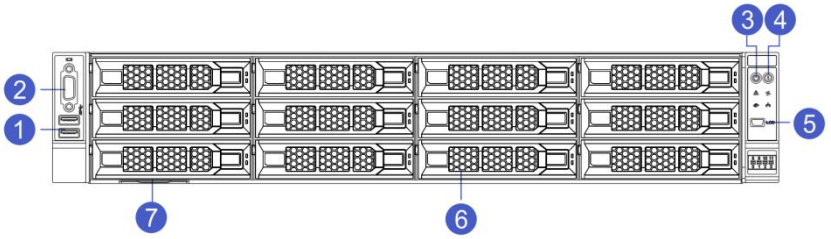
2.3.1 Front panel components

- Front view of the front panel of the 2U8*3.5” model



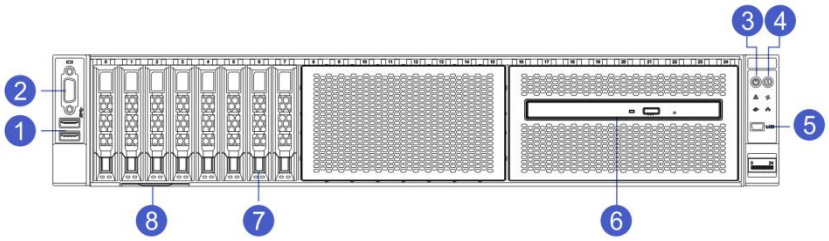
1	USB 3.0 interface	2	VGA port
3	Power button	4	UID
5	MiniUSB LCD interface	6	CD-ROM
7	Hard disk	8	Asset label

- Front view of the front panel of the 2U12*3.5” model



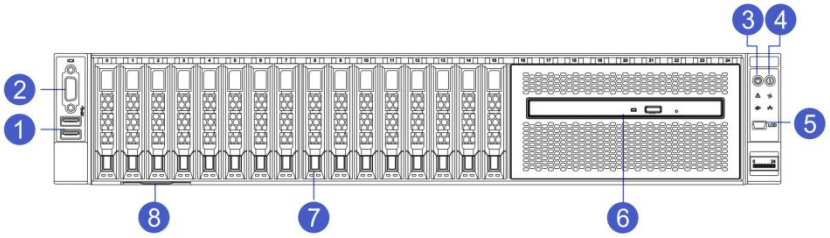
1	USB 3.0 interface	2	VGA port
3	Power button	4	UID
5	MiniUSB LCD interface	6	Hard disk
7	Asset label		

- Front view of the front panel of the 2U8*2.5” model



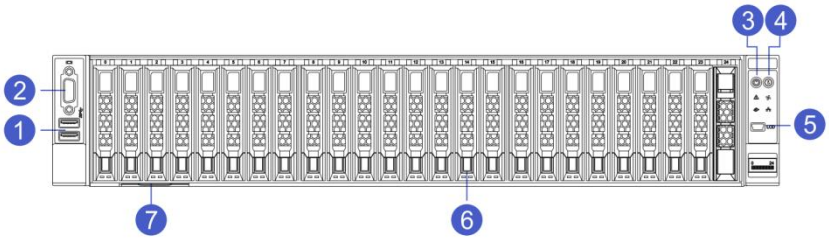
1	USB 3.0 interface	2	VGA port
3	Power button	4	UID
5	MiniUSB LCD interface	6	CD-ROM
7	Hard disk	8	Asset label

- Front view of the front panel of the 2U16*2.5” model



1	USB 3.0 interface	2	VGA port
3	Power button	4	UID
5	MiniUSB LCD interface	6	CD-ROM
7	Hard disk	8	Asset label

- Front view of the front panel of the 2U25*2.5” model

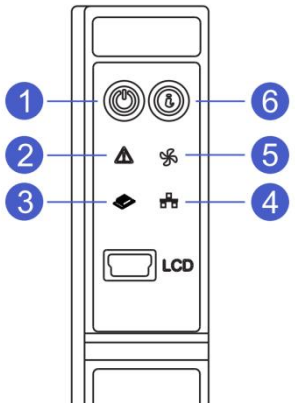


1	USB 3.0 interface	2	VGA port
3	Power button	4	UID
5	MiniUSB LCD interface	6	Hard disk
7	Asset label		

- Description of the front board interface:

name	type	explain
VGA interface	DB15	Used to connect to the display terminals, such as a display perhaps KVM.
USB interface	USB 3.0	Provide an outbound USB interface, through which USB devices can be accessed. pay attention to When using the external USB device, please confirm that the USB device is in good condition, otherwise the server may work abnormally.
LCD specific interface	Mini USB	Used to connect external LCD modules, mainly used to reflect the position and running status of the server component, and can be used to set the IP address of the server iBMC management network port and query device status information and alarm. The LCD and the iBMC management module on the server together form the LCD subsystem. LCD, obtaining device information directly from the iBMC management module. The LCD subsystem does not store the device data.

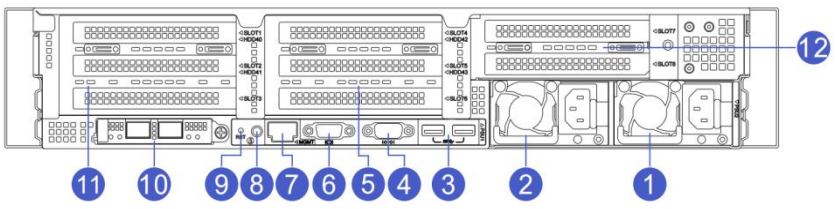
- Front panel indicator light and push-button description



1	Power switch push button / indicator light	4	The OCP network card status indicator light
2	System fault indicator light	5	Fan fault indicator lamp
3	Memory fault indicator light	6	The UID push button / indicator light

character istic	Light / push button	State description
	Power switch push button / indicator light	Power supply indicator light description: ✓ Green (Chang liang): it means that the device has been powered on normally. ✓ Green (flashing): It means that the device is in the standby state. ✓ Green goes out: it means that the device is not powered up. Power supply push button description: ✓ Press the button briefly under the startup state, and the OS will shut down normally. ✓ Press the button for 6 seconds to power the server. ✓ Press the button in the power state.
	The UID push button / indicator light	The UID button / indicator light is used to easily locate the operating server or to remotely control it by manually pressing the UID button or the iBMC command. The UID indicator light description: ✓ Blue (bright / flashing): means that the server is located. ✓ Off: indicates that the server is not located. The UID push-button description: ✓ Press the button short to turn the positioning light on / off. ✓ Press the UID button for 6 seconds to reset the server BMC management system
	System fault indicator light	✓ Off: It means that the equipment is operating normally. ✓ Red flashing: indicates a device failure. ✓ Red: indicates abnormal alarm.
	Fan fault indicator lamp	✓ Off: The fan is normal. ✓ Red constant light: indicates that the fan is faulty
	Memory fault indicator light	✓ Off: This means that the system memory is normal. ✓ Red constant light: indicates that the system memory failure.
	The OCP network port connection status indicator lamp	The OCP network card status indicator light. ✓ Green: the OCP network card connection is normal and no data communication. ✓ Green flashing: it means that the OCP network card connection is normal and has data communication. ✓ Off: It means that the OCP network card is not connected to the network

2.3.2 Rear panel components



1	PSU2	7	IPMI Manage the network port
2	PSU1	8	The UID key and the indicator light
3	The USB 3.0 interface	9	RST key
4	COM interface	10	O CP 3.0 network card
5	IO module 2	11	IO module 1
6	VGA interface	12	IO module 3

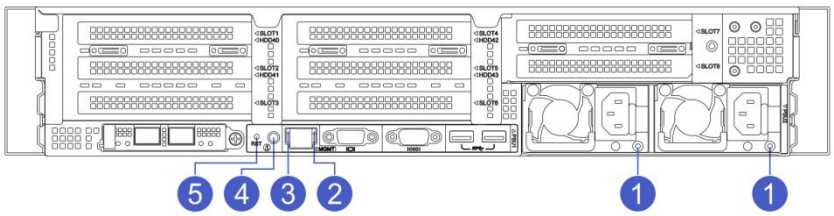
✧ explain:

IO module 1 and IO module 2 can be configured with 3.5 "or 2.5" hard disk module, and IO module 3 can only be configured with 2.5 " hard disk module. PCIe expansion is optional rear hard disk module or Riser module. This drawing is for reference only, and it is subject to the actual configuration.

- Description of the rear board interface:

name	type	quantity	explain
VGA interface	DB15	1	For connecting the display terminals, such as a display or a KVM.
Management network port	GE BASE-T	1	Provide an outbound 1000 Mbit/s Ethernet port. This interface can manage the present server.
USB interface	USB 3.0	2	Provide an outbound USB interface, through which USB devices can be accessed. pay attention to: When using the external USB device, please confirm that the USB device is in good condition, otherwise the server may work abnormally.
Power supply module AC interface	/	1 Or 2	You can choose the number of power supply according to your actual needs, but make sure that the rated power supply is greater than the rated power of the whole machine.

- Rear panel indicator and push button description: (to be updated)



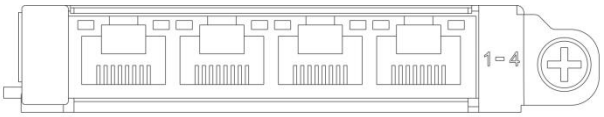
1	Power supply module indicator light	4	UID pilot lamp
2	Connect the status indicator light	5	System reset key
3	Data transfer status indicator light		

Light / push button	State description
Power supply module indicator light	✓ Green (often bright): it means that the input and output are normal. ✓ Off: means no AC power input. ✓ Green (1Hz / flashing): It means that the server is in the standy state. ✓ Green (4Hz / flashing): means the power module is in cold standby state. ✓ Red (Chang Liang): ● It means that the power supply has no output, and the possible reasons are power supply overtemperature protection, power supply output overcurrent / short circuit, output overvoltage, device failure (excluding all device failure), etc. ● It means that the power cord is not connected or that the power cord is detached. ✓ Red (flashing): indicates an alarm signal of the power supply, and the power supply module may have high temperature, high load, high current or low fan speed
UID, pilot lamp	✓ The UID indicator is used to easily locate the pending server and can be turned off or on remotely by manually pressing the UID button or iBMC command. ✓ Blue (bright / flashing): means that the server is located. ✓ Off: indicates that the server is not located.
Connect the status indicator light	✓ Green long light: means Gigabit Link. ✓ Orange long light: means 100 MB Link. ✓ Out: ten MB Link.
Data transfer status indicator light	✓ Yellow (flashing): indicates data being transferred. ✓ Out: It means no data transfer.
System reset key	✓ Can be used to reset the system or to have the NMI function ✓ Short press: Reset the system ✓ Long press (over 6 seconds): perform the NMI function, trigger the server to produce a non-masking interrupt Note: ✓ The NMI button is mainly used when the operating system is not available. This feature should not be used while the server is running normally. ✓ The NMI button is only used for internal testing, and when using, the corresponding NMI interrupt processing program in the operating system, otherwise it may cause the system crash. Please use it carefully.

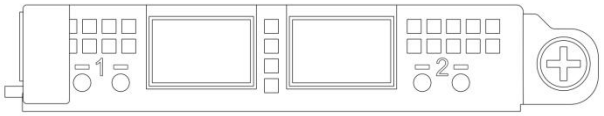
2.3.3 Expand network card card:

The SNR-LS-G3 server supports standard OCP NIC 3.0 SFF network cards, including OCP NIC 3.0 network cards from any manufacturer.

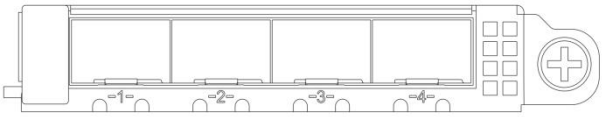
- Four-gigabit electrical port network card



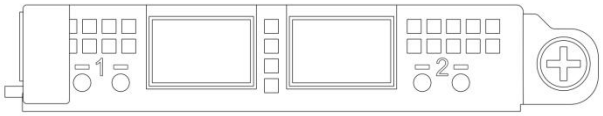
- Double ten million trillion light port network card



- Forty thousand port network card

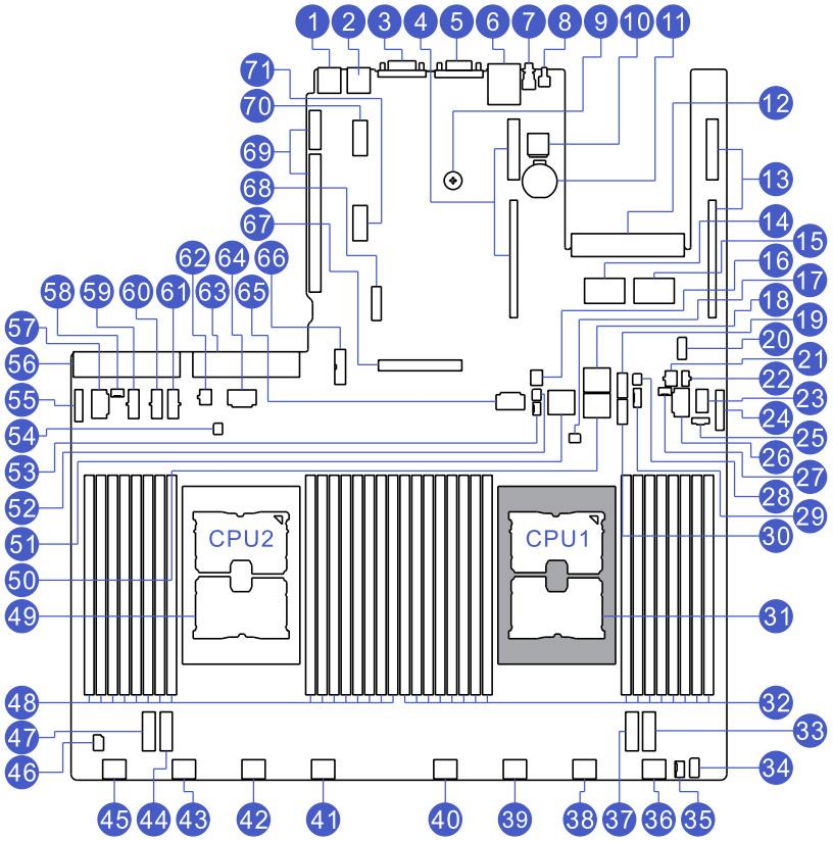


- Double 25G optical port network card



2.3.4 Main board components

- SNR-SR-LS Gen3 All models share the motherboard components, and the interface description is as follows:

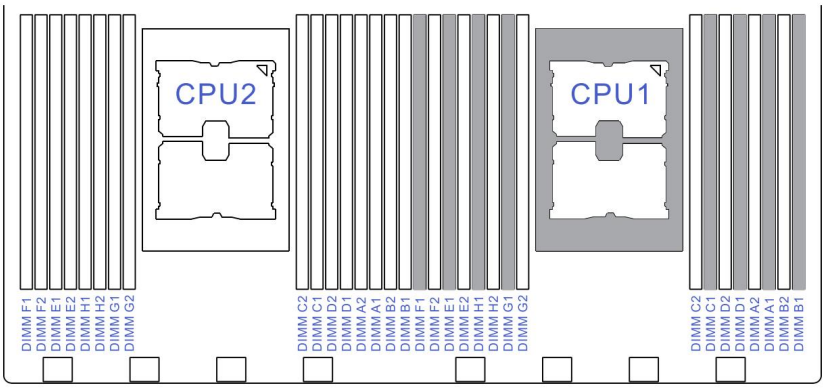


1	USB3.0 interface 2	2	USB3.0 interface 1
3	COM interface	4	Riser card slot 2 (corresponds to CPU2)
5	VGA port	6	IPMI management network port
7	UID button indicator	8	RST button
9	Motherboard fixing screws	10	BMC SD slot
11	Battery connector	12	OCP3.0 NIC network card connector
13	Riser card slot 1 (corresponds to CPU1)	14	QAT SlimSAS Connector
15	OCP SlimSAS connector	16	Rear HDD power connector 2 (HDD PWR2)
17	JATG TO BP connector	18	Mini SAS HD connector (SATA Port1)
19	SATA signal connector 2 (HDD2)	20	NCSI connector
21	Rear HDD power connector (HDD PWR1)	22	Optical drive power connector(CDPWR)
23	Built-in USB3.0 connector	24	TPM/TCM interface (LPC)
25	NVMe RAID KEY connector	26	GPU power connector 0 (GPU

	(Intel VROC RAID KEY)		PWR0)
27	Rear HDD Backplane I2C Connector 0 (BP I2C0)	28	Rear HDD backplane signal connector 1 (LED CONN1)
29	RAID signal connector 1 (SGPIO)	30	SATA signal connector 1 (HDD1)
31	CPU1	32	Memory slot (corresponding to CPU1)
33	CPU1 Slim SAS connector (CPU1 SLIM0)	34	Front Light Board Signal Connector (FP CONN)
35	Water cooling radiator signal interface (Water Cooling CONN)	36	fan connector (FAN14/15)
37	CPU1 Slim SAS connector (CPU1 SLIM1)	38	fan connector (FAN12/13)
39	fan connector (FAN10/11)	40	fan connector (FAN8/9)
41	fan connector (FAN6/7)	42	fan connector (FAN4/5)
43	fan connector FAN2/3)	44	CPU2 Slim SAS connector (CPU2 SLIM0)
45	fan connector (FAN0/1)	46	Intrusion switch interface (Intruder CONN)
47	CPU2 Slim SAS connector (CPU2 SLIM1)	48	Memory slot (corresponding to CPU2)
49	CPU2	50	Mini SAS HD connector (SATA Port0)
51	Mini SAS HD connector (SATA Port0)	52	Rear HDD backplane signal connector 2 (LED CONN2)
53	Rear HDD Backplane I2C Connector 1 (BP I2C1)	54	Rear HDD backplane signal connector 0 (LED CONN0)
55	Front VGA port (FP VGA)	56	PSU2 interdace
57	GPU power connector (GPU PWR3)	58	Rear HDD backplane I2C connector 2 (BP I2C2)
59	Front backplane power interface (BP PWR1)	60	Front backplane power interface (BP PWR2)
61	Front backplane power interface (BP PWR3)	62	Rear HDD power connector (HDD PWR3)
63	PSU1 interface	64	GPU power connector (GPU PWR2)
65	GPU power connector (GPU PWR1)	66	Front USB3.0 interface(FP USB3.0 CONN)
67	SAS Card interface (SAS MEZZ)	68	MICRO SD Card interface (SD MODULE)
69	Riser card slot 3 (corresponding to CPU2)	70	M.2 slot(M.2 SLOT0)
71	M.2 slot(M.2 SLOT1)		

2.3.5 DIMM, the slot location

The server provides 32 DIMM slots, and each CPU supports 8 channels of DDR 4 memory. The corresponding slots order is shown in the figure below:



2.3.6 Memory installation requirements

- The same server must use the same model of DDR 4 memory;
- LRDIMM and R DIMM, cannot be mixed
- When installing the memory, you need to install the memory of the main memory channel of each channel first;
- Install the memory. The memory installation principles must be followed

2.3.7 Memory installation principle

When not configuring Intel proud persistent memory, refer to the following installation principles

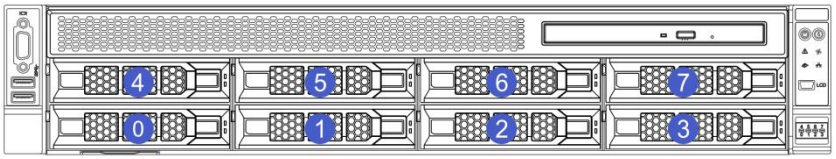
	IMC#	MC2				MC3					MC1				MC0								
	Channel	Channel1(F)		Channel0(E)		Channel1(H)		Channel0(G)			Channel0(C)		Channel1(D)		Channel0(A)		Channel1(B)						
DDR4+BPS	Mode	Slot0	Slot1	Slot0	Slot1	Slot0	Slot1	Slot0	Slot1		Slot1	Slot0	Slot1	Slot0	Slot1	Slot0	Slot1	Slot0	SNC2	SNC4	Hemi	Mirror	SGX	POR/Validated
1+0	1LM									CPU		DDR4												POR&Validated
														DDR4										POR&Validated
																DDR4								POR&Validated
																		DDR4						POR&Validated
								DDR4																POR&Validated
						DDR4																		POR&Validated
				DDR4																				POR&Validated
		DDR4																						POR&Validated
2+0				DDR4												DDR4			Y		Y			POR&Validated
								DDR4				DDR4							Y		Y			POR&Validated
												DDR4				DDR4			Y		Y			POR&Validated
				DDR4				DDR4											Y		Y			POR&Validated
														DDR4		DDR4			Y		Y			POR&Validated
		DDR4																DDR4	Y		Y			POR
						DDR4								DDR4					Y		Y			POR
														DDR4				DDR4	Y		Y			POR
		DDR4				DDR4													Y		Y			POR
4+0				DDR4				DDR4				DDR4				DDR4			Y	Y	Y			POR&Validated
				DDR4		DDR4								DDR4		DDR4			Y	Y	Y			POR&Validated
		DDR4				DDR4								DDR4				DDR4	Y	Y	Y			POR
		DDR4						DDR4				DDR4						DDR4	Y	Y	Y			POR
6+0		DDR4		DDR4				DDR4				DDR4				DDR4		DDR4	Y					POR&Validated
				DDR4		DDR4		DDR4				DDR4		DDR4		DDR4			Y					POR&Validated
		DDR4		DDR4		DDR4								DDR4		DDR4		DDR4	Y					POR
		DDR4				DDR4		DDR4				DDR4		DDR4				DDR4	Y					POR
8+0		DDR4		DDR4		DDR4		DDR4				DDR4		DDR4		DDR4		DDR4	Y	Y	Y	Y	Y	POR&Validated
12+0		DDR4	DDR4	DDR4	DDR4			DDR4	DDR4		DDR4	DDR4			DDR4	DDR4	DDR4	DDR4	Y					POR&Validated
				DDR4	DDR4	DDR4	DDR4	DDR4	DDR4		DDR4	DDR4	DDR4	DDR4	DDR4	DDR4			Y					POR&Validated
		DDR4	DDR4	DDR4	DDR4	DDR4	DDR4						DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	Y					POR
		DDR4	DDR4			DDR4	DDR4	DDR4	DDR4		DDR4	DDR4	DDR4	DDR4			DDR4	DDR4	Y					POR
		DDR4		DDR4	DDR4	DDR4		DDR4	DDR4		DDR4	DDR4		DDR4	DDR4	DDR4	DDR4	DDR4	Y	Y	Y		Y	POR&Validated
		DDR4		DDR4	DDR4	DDR4	DDR4	DDR4				DDR4	DDR4	DDR4	DDR4	DDR4	DDR4		Y	Y	Y		Y	POR
		DDR4	DDR4	DDR4		DDR4	DDR4	DDR4				DDR4	DDR4	DDR4		DDR4	DDR4	DDR4	Y	Y	Y		Y	POR
		DDR4	DDR4	DDR4		DDR4		DDR4	DDR4		DDR4	DDR4		DDR4		DDR4	DDR4	DDR4	Y	Y	Y		Y	POR
16+0		DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	DDR4		DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	Y	Y	Y	Y	Y	POR&Validated

When configuring Intel proud persistent memory, refer to the following installation principles

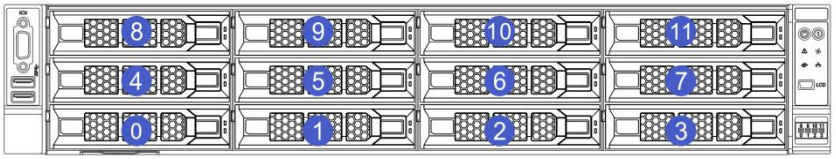
	IMC#	MC2				MC3					MC1				MC0									
	Channel	Channel1(F)		Channel0(E)		Channel1(H)		Channel0(G)			Channel0(C)		Channel1(D)		Channel0(A)		Channel1(B)							
DDR4+BPS	Mode	Slot0	Slot1	Slot0	Slot1	Slot0	Slot1	Slot0	Slot1		Slot1	Slot0	Slot1	Slot0	Slot1	Slot0	Slot1	Slot0	SNC2	SNC4	Hemi	Mirror	SGX	BPS AD Interleave	POR/Validated
4+4	1LM+AD MM 1/2 Perf	BPS		DDR4		BPS		DDR4		CPU		DDR4		BPS		DDR4		BPS	Y	Y	Y			One x4	POR&Validated
		DDR4		BPS		DDR4		BPS				BPS		DDR4		BPS		DDR4	Y	Y	Y			One x4	POR&Validated
6+1	1LM+AD	DDR4		DDR4				DDR4				DDR4		BPS		DDR4		DDR4	Y						POR&Validated
				DDR4		DDR4		DDR4				DDR4		DDR4		DDR4		BPS	Y						POR&Validated
		DDR4		DDR4		BPS		DDR4				DDR4		DDR4		DDR4		DDR4	Y						POR&Validated
		BPS		DDR4		DDR4		DDR4				DDR4		DDR4					Y						POR&Validated
		DDR4		DDR4		DDR4						BPS		DDR4		DDR4		DDR4	Y					One x1	POR
		DDR4				DDR4		DDR4				DDR4		DDR4		BPS		DDR4	Y						POR
		DDR4		DDR4		DDR4		BPS						DDR4		DDR4		DDR4							POR
		DDR4		BPS		DDR4		DDR4				DDR4		DDR4				DDR4	Y						POR
8+1	1LM+AD	DDR4		DDR4		DDR4		DDR4				DDR4		DDR4	BPS	DDR4		DDR4	Y						POR&Validated
		DDR4		DDR4		DDR4		DDR4			BPS	DDR4		DDR4		DDR4		DDR4	Y						POR&Validated
		DDR4		DDR4	BPS	DDR4		DDR4				DDR4		DDR4		DDR4		DDR4	Y						POR&Validated
		DDR4		DDR4		DDR4		DDR4	BPS			DDR4		DDR4		DDR4		DDR4	Y					One x1	POR&Validated
		DDR4		DDR4		DDR4		DDR4				DDR4	BPS	DDR4		DDR4		DDR4	Y						POR
		DDR4		DDR4		DDR4		DDR4				DDR4		DDR4		DDR4	BPS	DDR4	Y						POR
		DDR4	BPS	DDR4		DDR4		DDR4				DDR4		DDR4		DDR4		DDR4	Y						POR
		DDR4		DDR4		DDR4	BPS	DDR4				DDR4		DDR4		DDR4		DDR4	Y						POR
8+4	1LM+AD MM	DDR4		DDR4	BPS	DDR4		DDR4	BPS		BPS	DDR4		DDR4	BPS	DDR4		DDR4	Y					One x4	POR&Validated
		DDR4		DDR4	BPS	DDR4	BPS	DDR4				DDR4	BPS	DDR4	BPS	DDR4		DDR4	Y					Two x2	POR
		DDR4	BPS	DDR4		DDR4		DDR4	BPS		BPS	DDR4		DDR4		DDR4	BPS	DDR4	Y					Two x2	POR
		DDR4	BPS	DDR4		DDR4	BPS	DDR4				DDR4	BPS	DDR4		DDR4	BPS	DDR4	Y					One x4	POR
8+8		DDR4	BPS	DDR4	BPS	DDR4	BPS	DDR4	BPS		BPS	DDR4	BPS	DDR4	BPS	DDR4	BPS	DDR4	Y					One x8	POR&Validated
12+2	1LM+AD	BPS		DDR4	DDR4	DDR4	DDR4	DDR4	DDR4		DDR4	DDR4	DDR4	DDR4	DDR4	DDR4		BPS	Y						POR&Validated
		DDR4	DDR4	DDR4	DDR4	BPS		DDR4	DDR4		DDR4	DDR4		BPS	DDR4	DDR4	DDR4	DDR4	Y					One x2	POR&Validated
		DDR4	DDR4	BPS		DDR4	DDR4	DDR4	DDR4		DDR4	DDR4	DDR4	DDR4		BPS	DDR4	DDR4	Y						POR
		DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	BPS				BPS	DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	Y	Y	Y	Y	Y		POR

2.3.8 Hard disk label

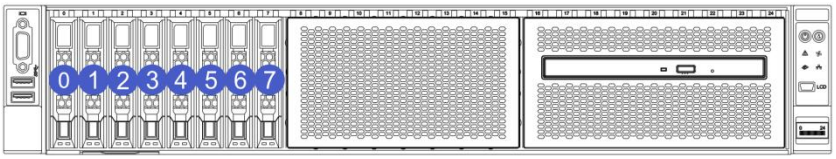
- 2U8 disk position 3.5-inch disk model



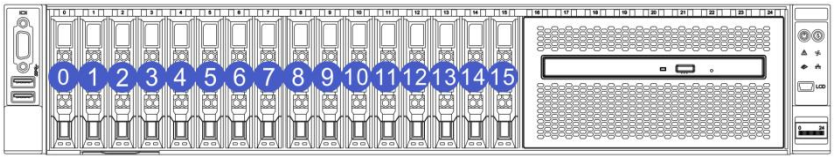
- 2U12 disk position 3.5-inch disk model



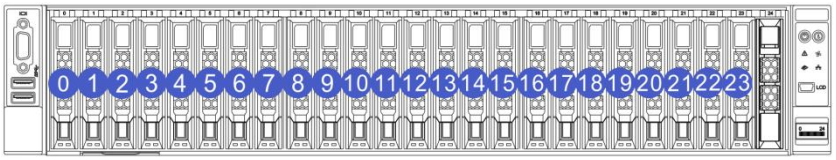
- 2U 8 disk position 2.5-inch disk model



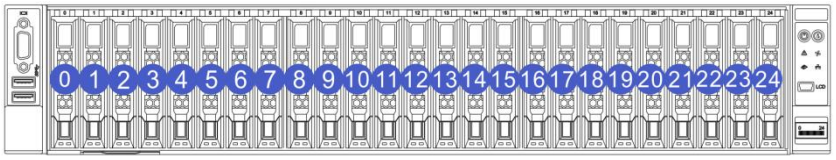
- 2U 16 disk position 2.5 inch disk model



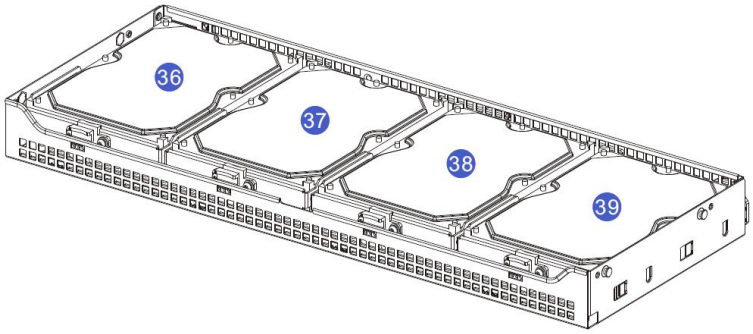
- 2U24 disk position 2.5 inch disk model



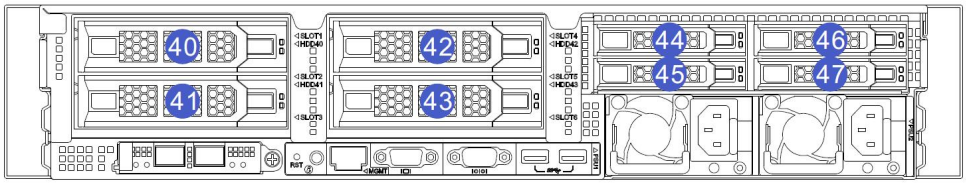
- 2U25 disk 2.5 inch disk model



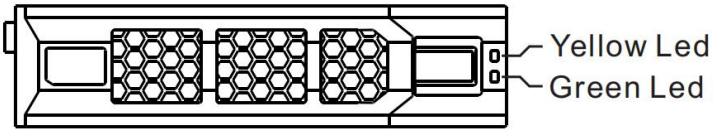
- Built-in 4 * 3.5 hard disk label



- Rear hard disk label

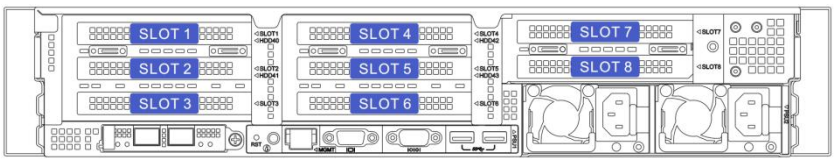


2.3.9 Hard disk indicator light



Hard disk status	Hard disk Active indicator light (green)	Hard disk Fault indicator light (yellow)
The hard disk is not in place	extinct	extinct
The hard disk is in place, but has no data activity	Often bright	extinct
The hard disk is in place and normally active	twinkle	extinct
Hard disk failure	Often bright	Often bright
The hard disk is positioned	Often bright	Flashing (4Hz)
The hard disk is in the Rebuild state	Often bright	Flashing (1Hz)

2.3.10 PCIe slot distribution after the view



The slot position provided by IO module 1 is Slot 1 ~ Slot 3;

The slot position provided by IO module 2 is Slot 4 ~ Slot 6;

The slot position provided by IO module 3 is Slot 7 to Slot 8.

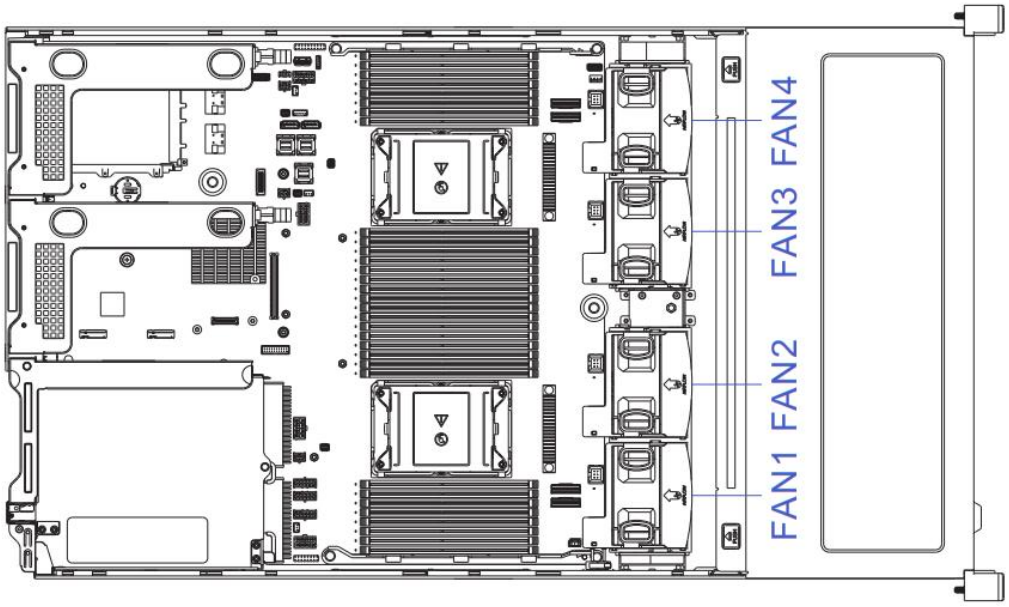
IO module 1 has the same configuration specifications as IO module 2, Can be configured as a hard disk module or a P CI e expansion module, When configured with a 3.5 " hard disk module, Slot 1~Slot 3 (Slot 4~Slot 6) cannot connect to any other P CI e extension card; When configured with a 2.5 " hard disk module, Slot 1~Slot 2 (Slot 4~Slot 5) is occupied, Extend 1 * PCIe X16 only in Slot 3 or Slot 6; When configured as an P CI e extended module, Option 2 * PCIe X16 or 1 * PCIe X16 + 2 * PCIe X8.

IO module 3 can be configured as hard disk module or PCIe expansion module, when configured as 2 "

hard disk module, Slot 7 ~ Slot 8 cannot connect any other PCIe expansion card; when configured as PCI e expansion module optional 2 * PCIe X16 or 2 * PCIe X8;

2.3.11 System fan

The server supports variable fan speeds. The fan usually rotates at the lowest speed, and if the server temperature rises, the fan will increase the speed to cool down.



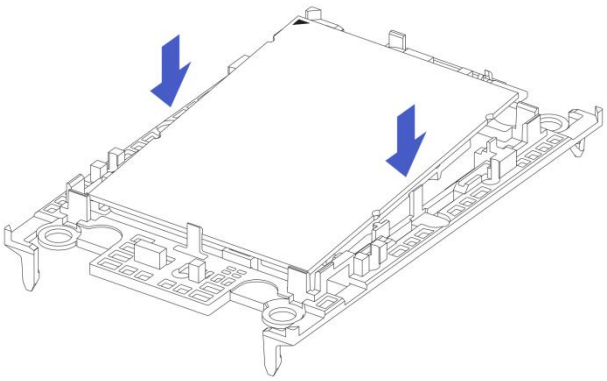
Chapter 3 Installation of system components

3.1 Installation of CPU

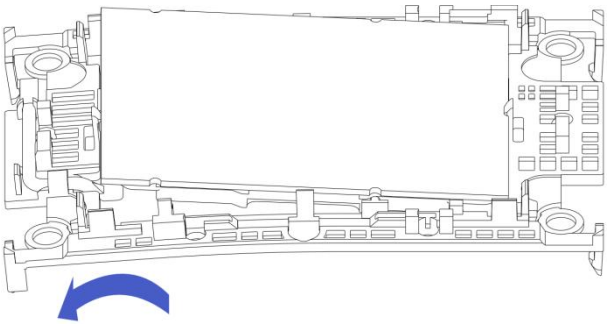
Installation processor:

Step 1: The CPU installation

1-1. Tilt the CPU Angle as shown in the picture and stick on the end of the clip. The A1 corner (triangle sign) of the CPU should be aligned with the corner of the triangular hole on the clip to ensure that the groove on the processor is aligned with the protrusion on the clip.



1-2. In the direction of the arrow, bend the other end of the clamp, and hold the CPU to the clamp.

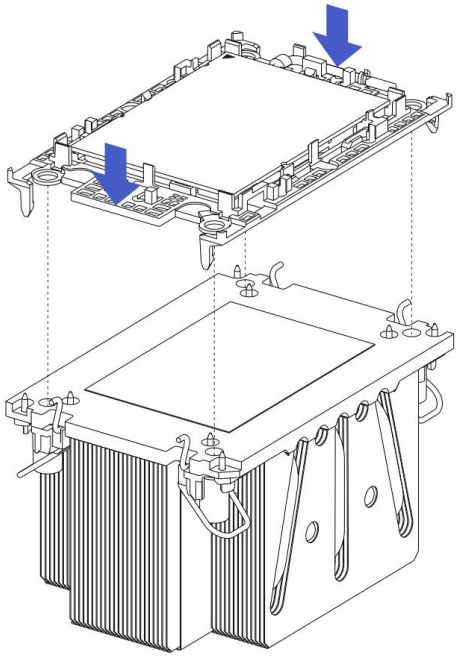


1-3. Release the clip to make the other end of the clip in the CPU groove;

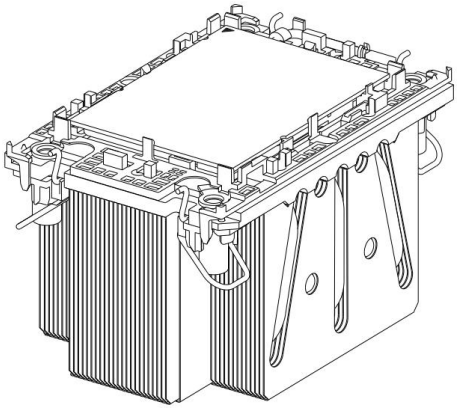
Step 2: Install the CPU on the radiator to ensure that the CPU and radiator surface are clean, oil-free and foreign matter.

2-1.CPU Apply about 0.4ml volume of thermal silicone grease evenly.

2-2. Align A1 (triangle) and buckle the CPU on the radiator.



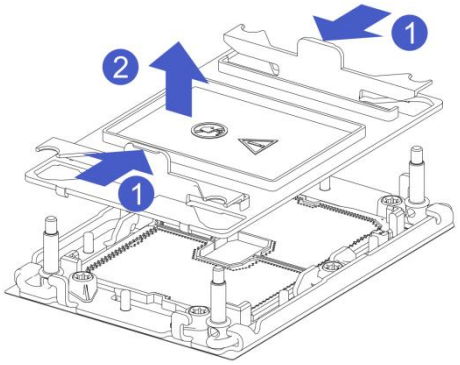
2-3. Carefully check the installation of the clamp and radiator to ensure that the clamp is completely tight and flat.



3.2 Installation of radiator

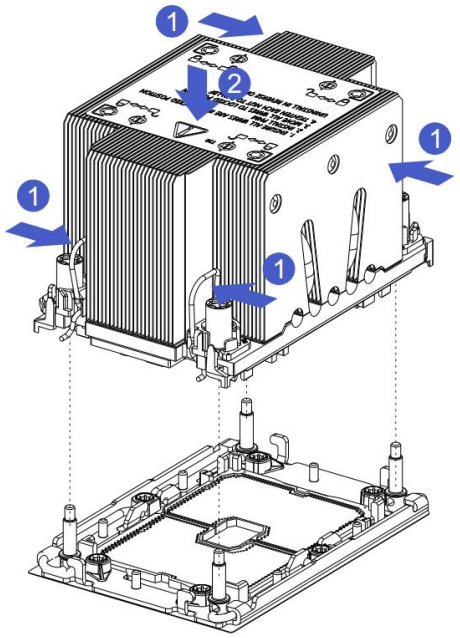
- Installation steps:

1. Press the protective cover along the direction of the arrow and remove the protective cover upward.

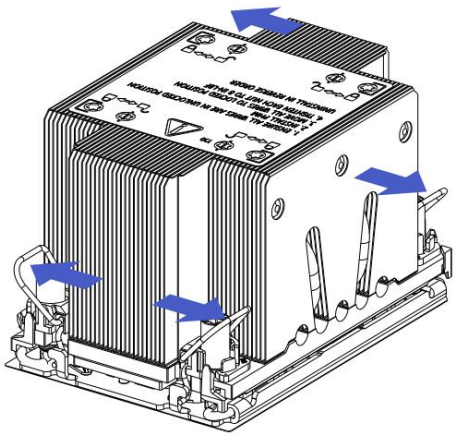


2. Push the fastening lock on the radiator in the direction of the arrow, the fastening lock is in a vertical state, align the radiator with the radiator fixed stud on the CPU base, and place it vertically down on the base.

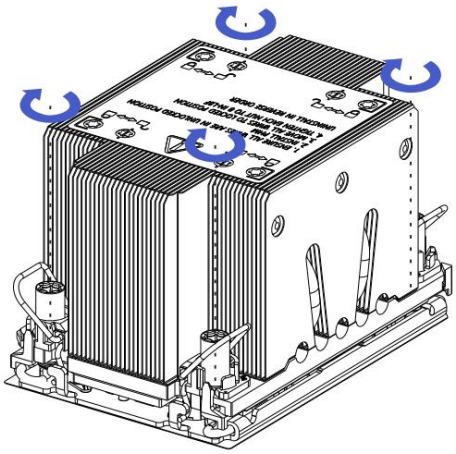
Note: The pins on the motherboard are extremely fragile and easy to damage. To avoid damage to the main board, do not touch the processor or processor slot contacts.



3. Press the fastening lock on the radiator in the direction of the arrow to jam the hook with the processor base.

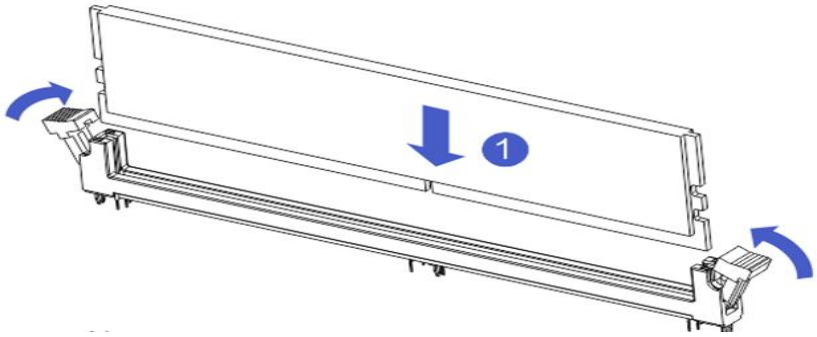


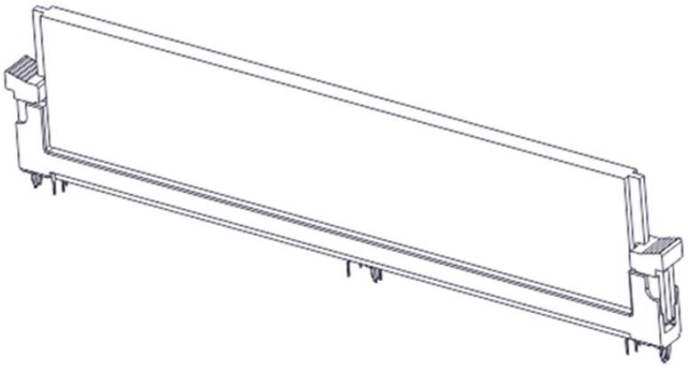
4. Tighten the screws that fix the radiator by using the T30 plum screwdriver.



3.3 Installation of memory

Step 1 Open the wrench on both sides of the memory slot, align the memory at the memory slot, and pay attention to the correspondence between the gap on the memory bar and the memory slot;
Step 2 Card the memory vertically into the memory slot until the memory wrench is locked.



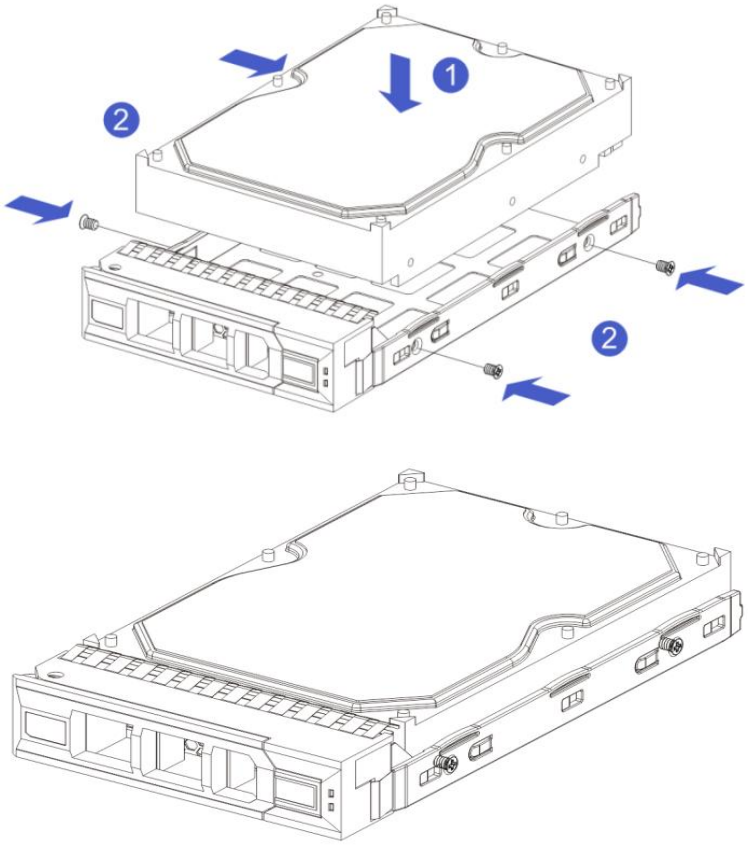


3.4 Installation of hard disk

Install the 3.5-inch hard drive

1-1. Place the hard disk in the tray

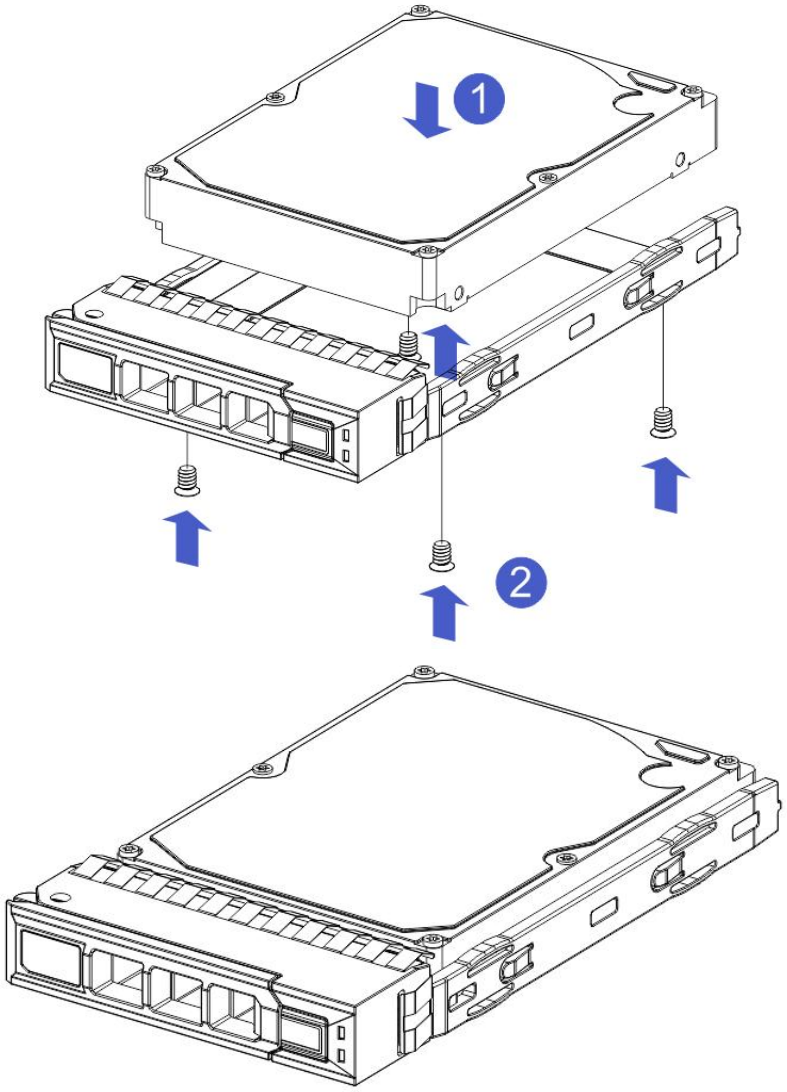
1-2. 4 sunk head screws (screw head not protruding from the slide surface on both sides of the tray)



Install a 2.5-inch hard drive

1-1. Place the hard disk in the tray

2-2. Bottom 4 head screw lock hard disk (screw head protruding tray bottom)

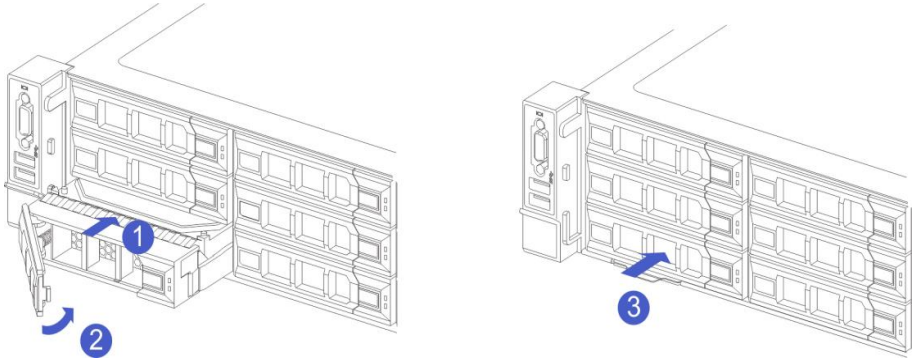


The hard disk tray assembly is installed into the chassis

1. Push into the chassis when the hard disk wrench is open

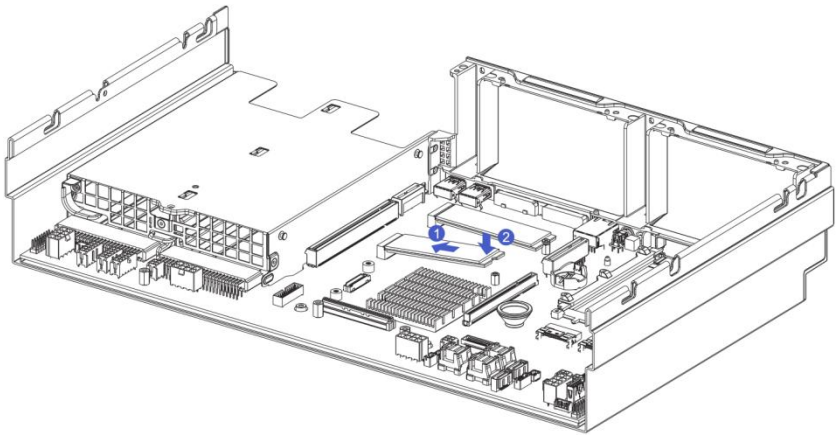
2. When the hard disk gold finger touches the backplane device, turn the wrench in the direction of the arrow

3. Schematic diagram of the hard disk installation in place

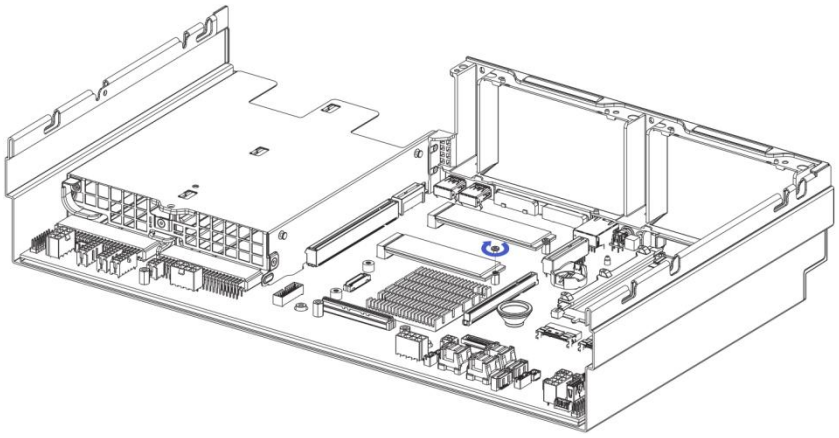


3.5 Installation of the M.2 SSD

1-1. As shown, take the M.2 tilt the connector end into the motherboard connector and press M. The other end of the 2 card to the positioning stud plane.



1-2. Install M.2-card fixing screws.

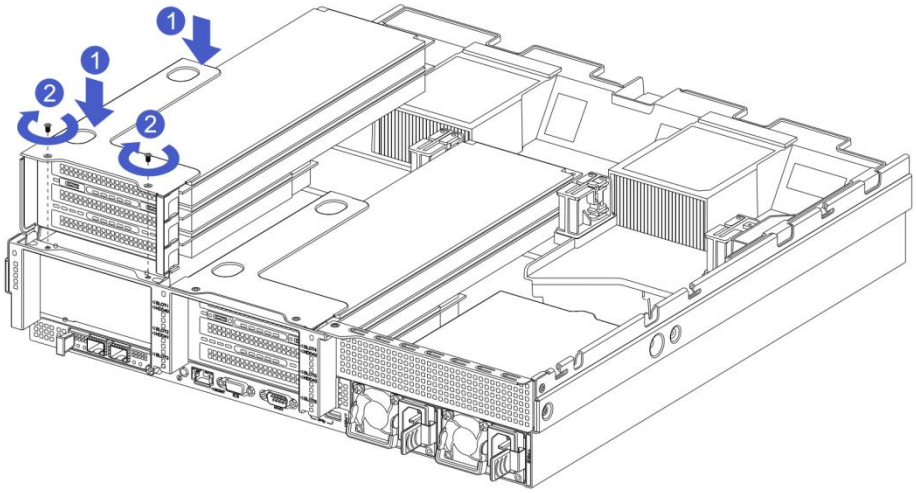


3.6 IO 1 and IO 2 module installation

- Installation method of IO 1 and IO 2 module 1 (3 xPCIe & 2 PCIe module):

Step 1. Place the rear window PCIe assembly vertically downward, aligned with the PCIe slot, aligned with the positioning hole, and placed flush with the rear window.

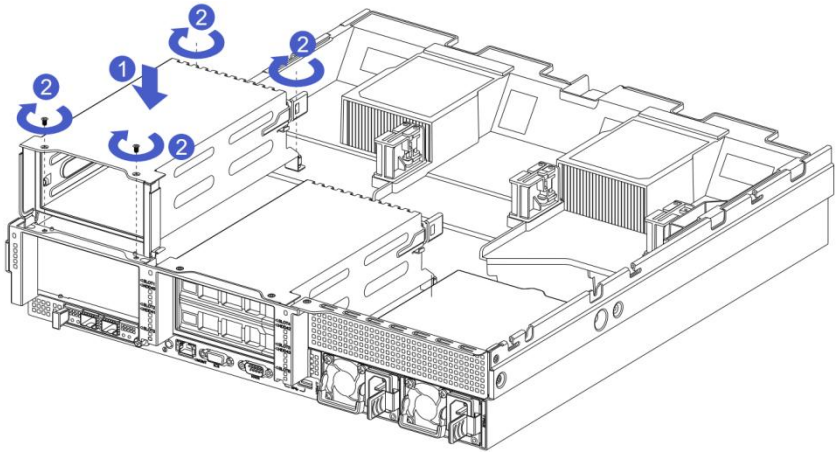
Step 2. Use the cross screw driver to tighten the fixing module screws.



- Installation method for IO 1 and IO 2 module 2 (2x3.5 hard disk module):

Step 1. Place the hard drive box vertically down to the rear window.

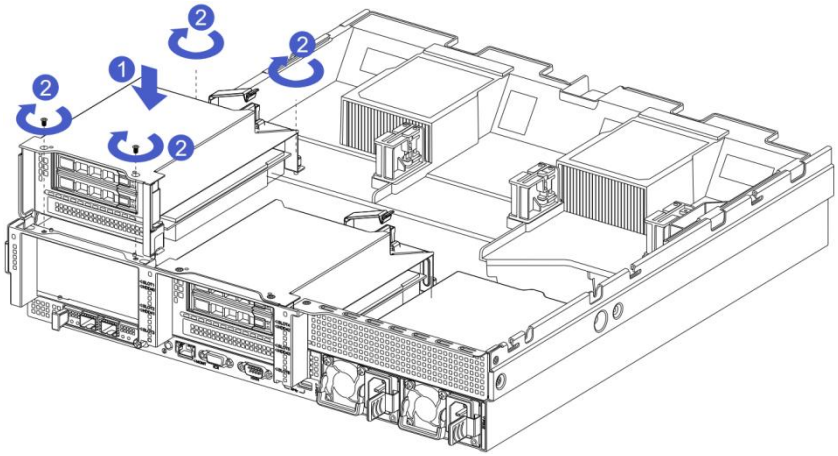
Step 2. Tighten the screws of the fixing module using a cross screwdriver.



- Installation method of IO 1 and IO 2 module 3 (2x2.5 hard disk + PCIe module):

Step 1. Place the hard drive box vertically down to the rear window.

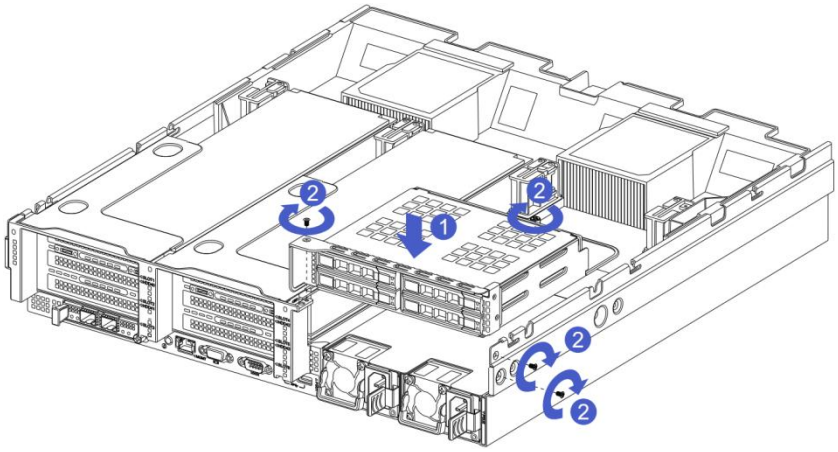
Step 2. Tighten the screws of the fixing module using a cross screwdriver.



3.7 IO3 Model installation

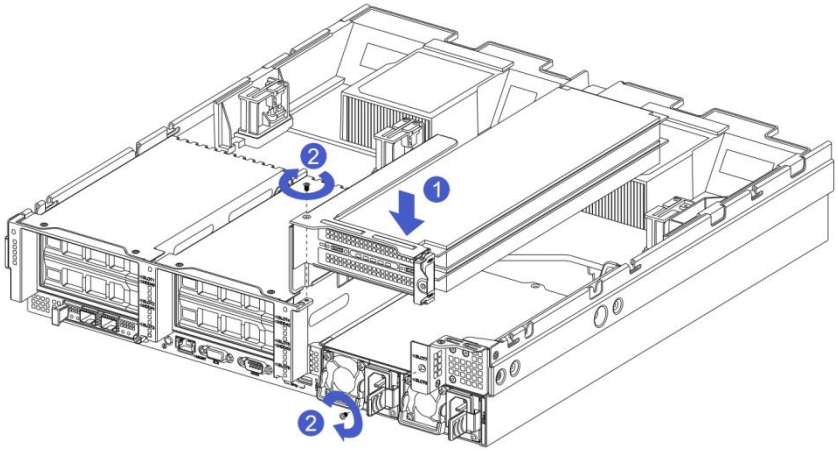
- IO3 Installation method of module 1 (4x2.5-inch hard drive box):

1-1. Place vertically downward and align with the guide nail at the lower end.
1-2. After leveling, tighten the fixing screw using a cross screwdriver.



- IO3 Installation method of module 2 (2xPCIe full height module):

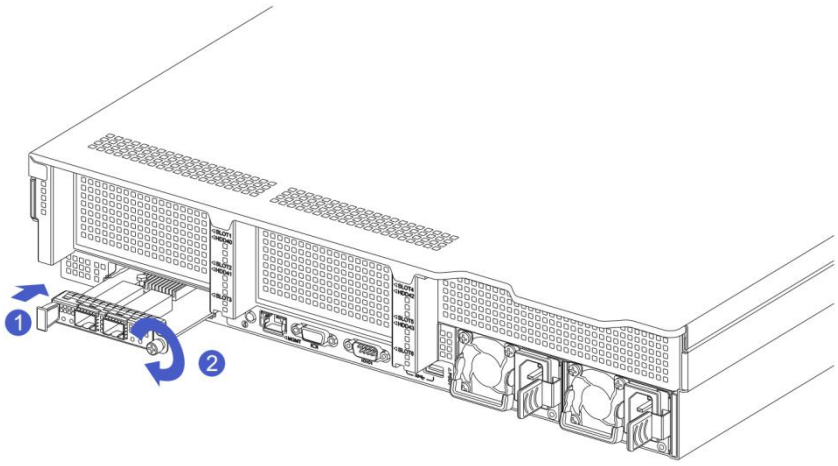
1-1. Place vertically downward and align with the guide nail at the lower end.
1-2. After leveling, tighten the fixing screw using a cross screwdriver.



3.8 Installation of the network module

Step: Install the OCP extension network card

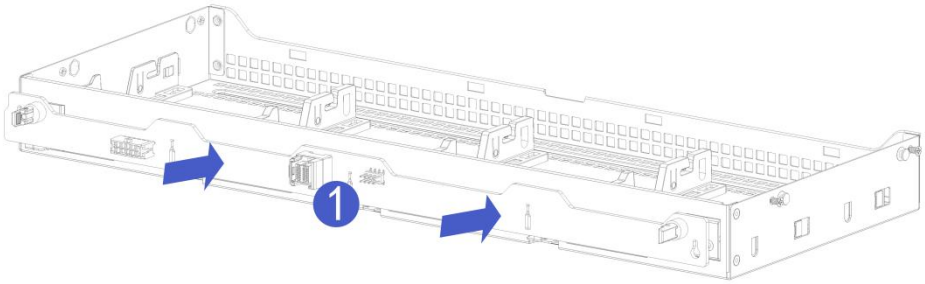
1-1. Push the OCP expansion network card into the rear window slide of the chassis until it cannot be pushed. Check whether the loose screw mounting surface is close to the rear window surface.
1-2. Tighten the fixing screw of the flexible IO card with a cross screwdriver.



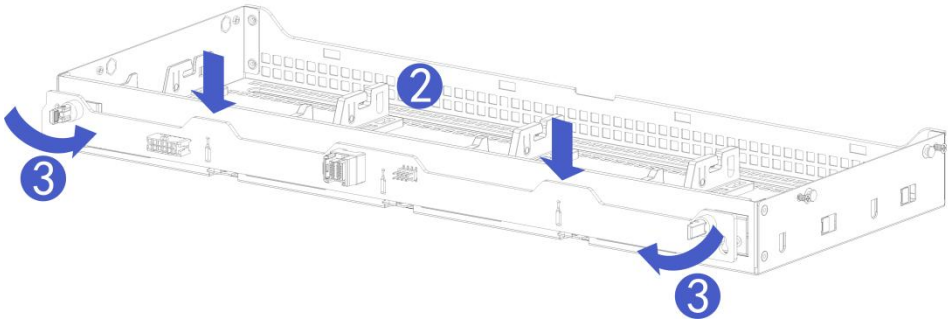
3.9 Installation of the built-in hard disk module

- Built-in hard disk backplane is mounted

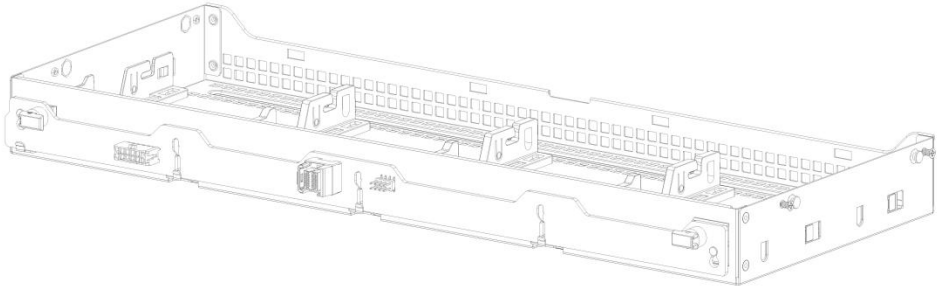
1-1. The gourd holes and hanging holes on the left and right sides of the hard drive backplane align with the hanging nails of the hard drive frame, and push in the direction of the arrow



1-2. After the hard disk back plate is pushed in place, press the back plate down until the gourd nails and hanging holes on both sides are all in place

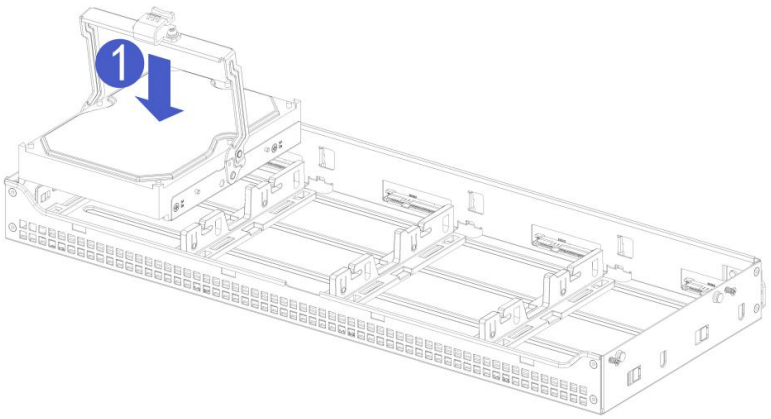


1-3. Turn the fixings on the left and right sides of the backplate to make the pins in the fixings fall into the hole and complete the installation.



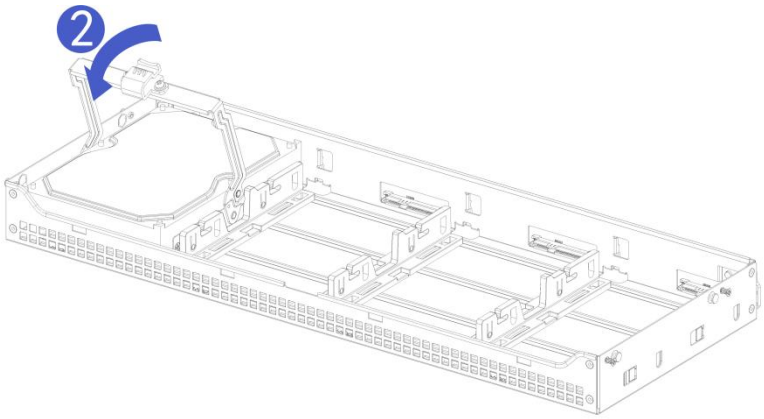
- Built-in hard tray tray installation

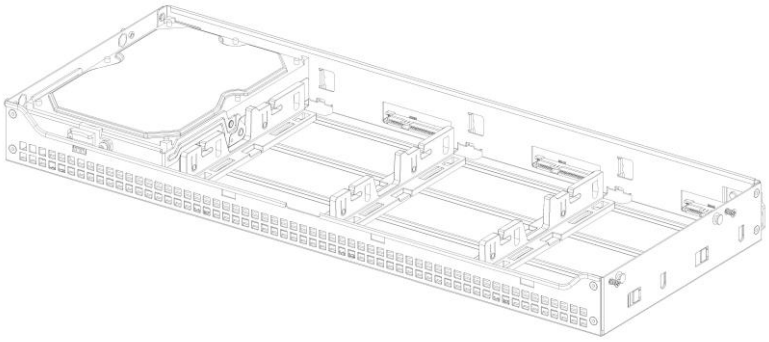
1-1. Place the built-in hard drive tray in the internal hard drive



bracket

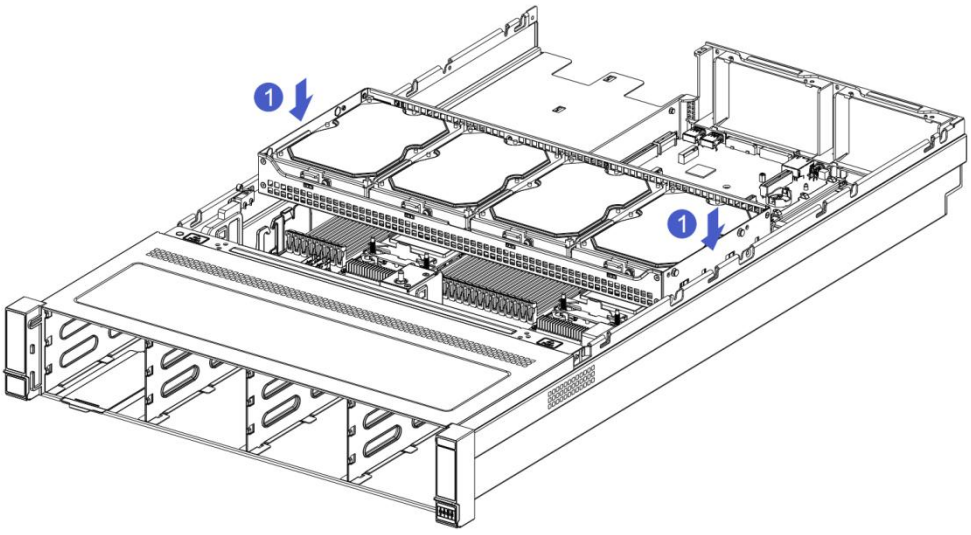
1-2. Turn the wrench in the direction of the arrow until the card hook is stuck in the built-in hard drive bracket



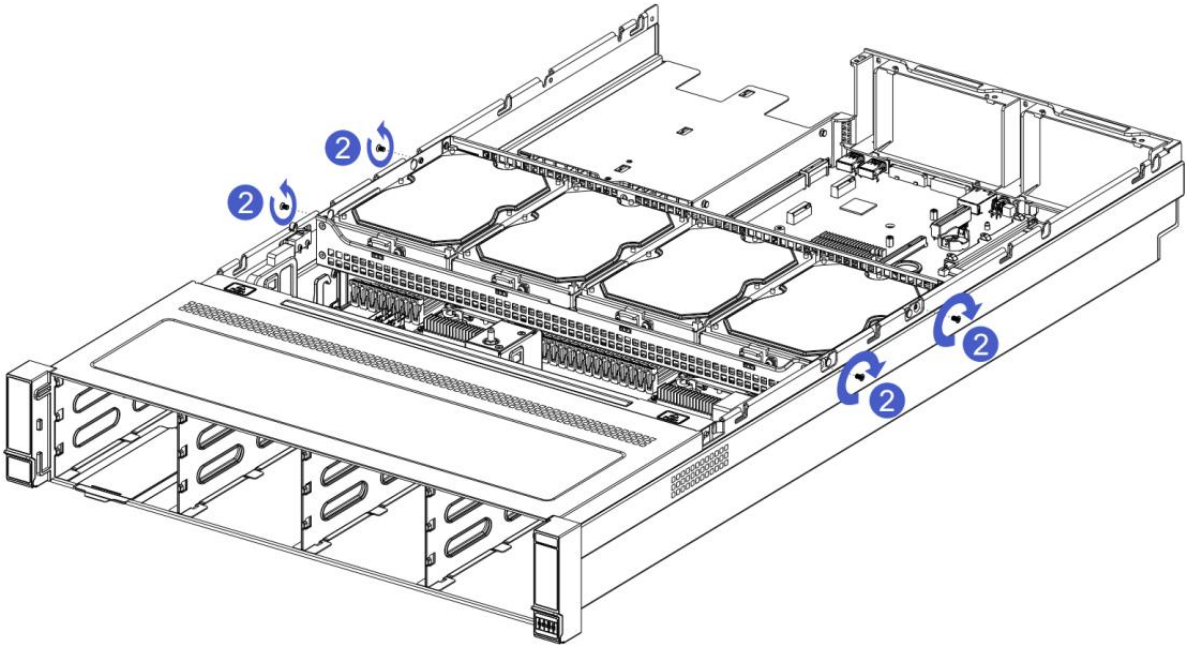


- Built-in hard disk module installation

1-1. The built-in hard disk module is aligned with the left and right sides and placed vertically downward.

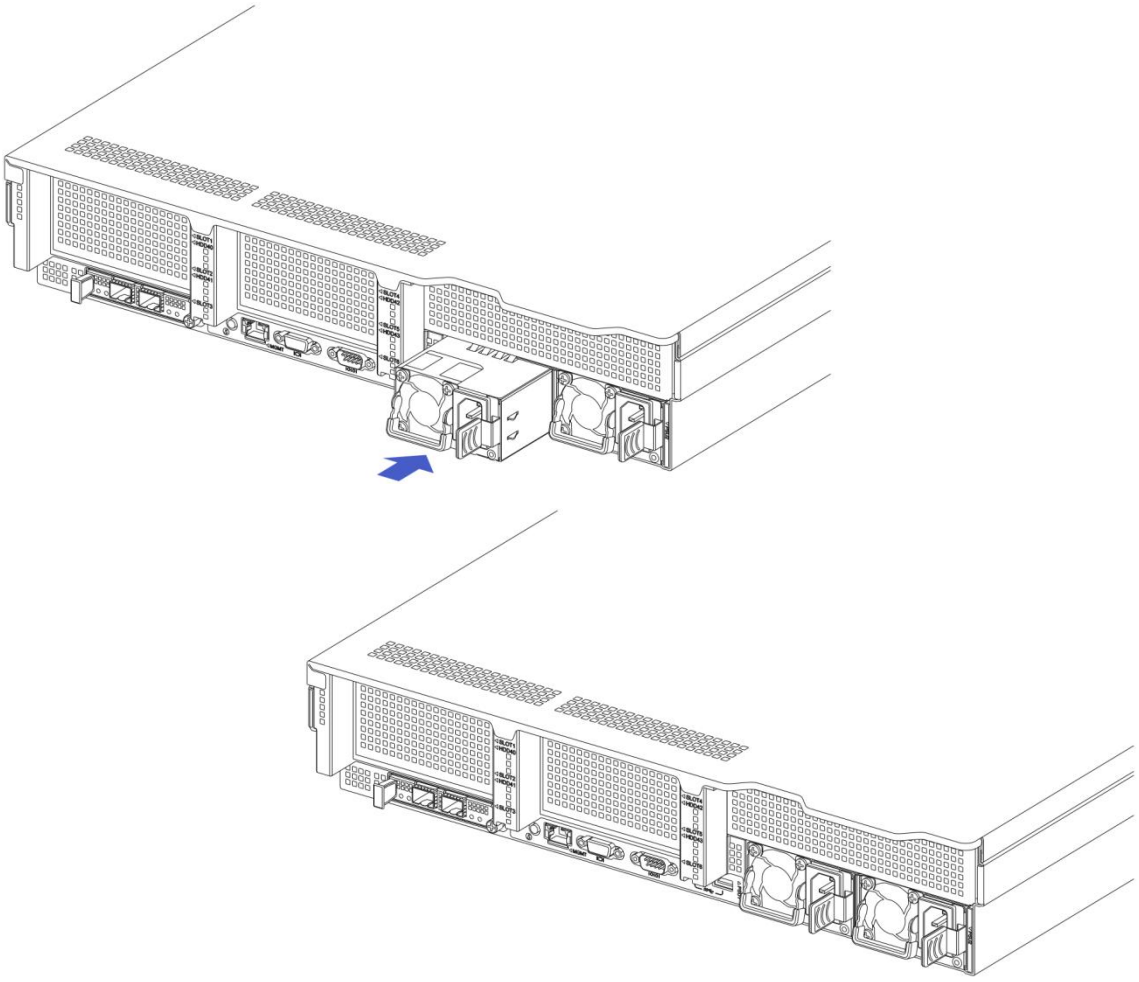


1-2. Lock the screws on both sides to complete the assembly.



3.10 Installation of the power supply module

Step: the power supply is pushed to the end in the direction of the arrow, and the right side of the flick wrench makes a click sound, indicating that the installation is in place;



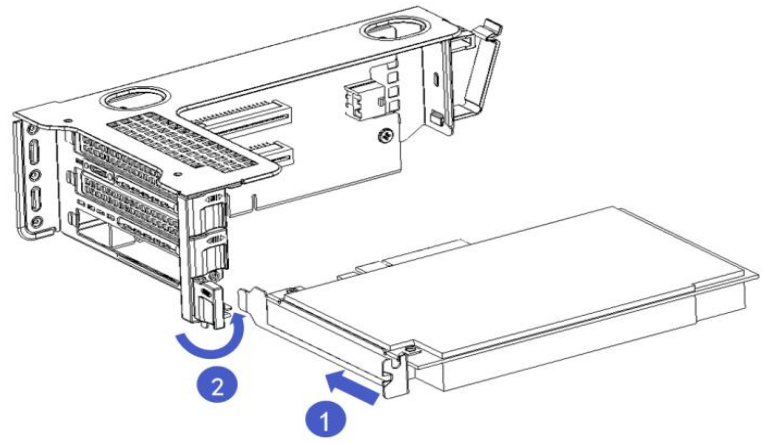
3.11 Installation of the PCIe expansion card

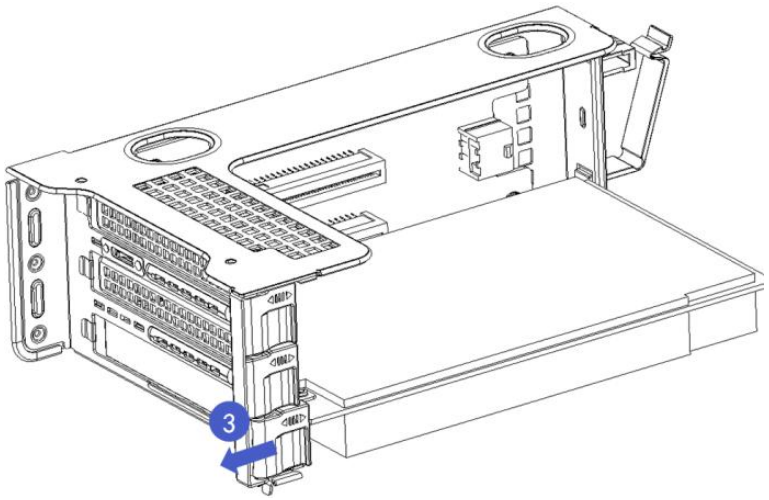
Step: Install the PCI e card

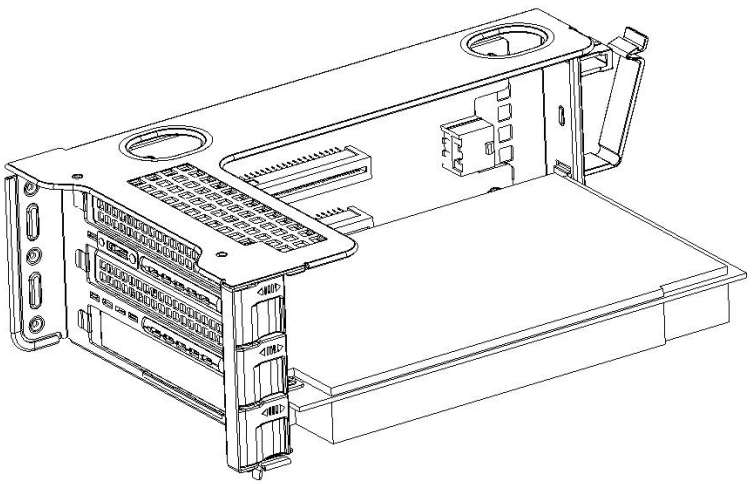
1-1. Install the PCI e card in the schematic direction

1-2. Rotate the PCI e card lock

1-3. Lock the PCI e card according to the arrow scheme

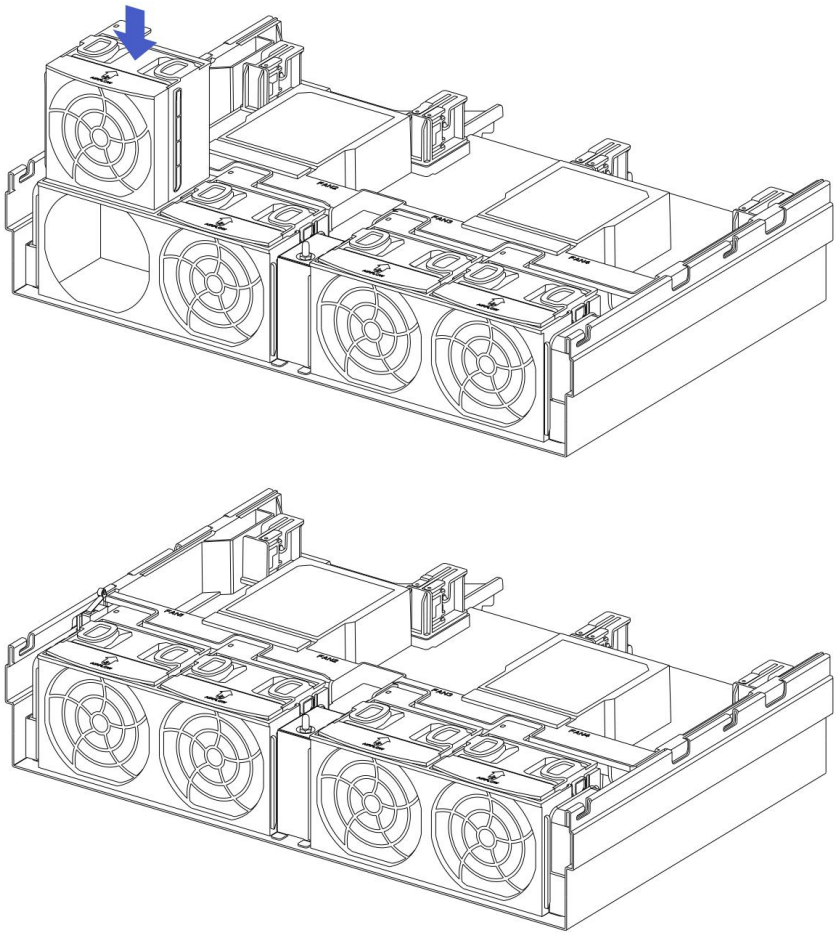






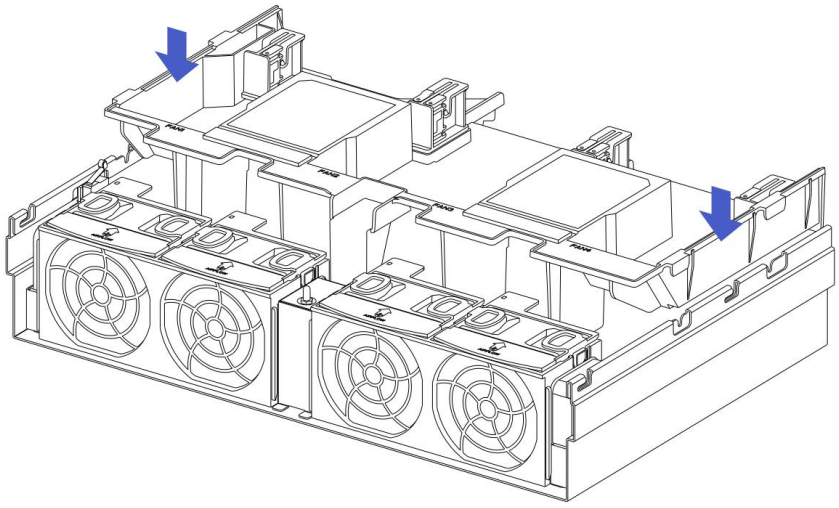
3.12 Installation of the fan module

Step: Place the fan module in the arrow (note the fan module orientation)



3.13 Installation of guide hood

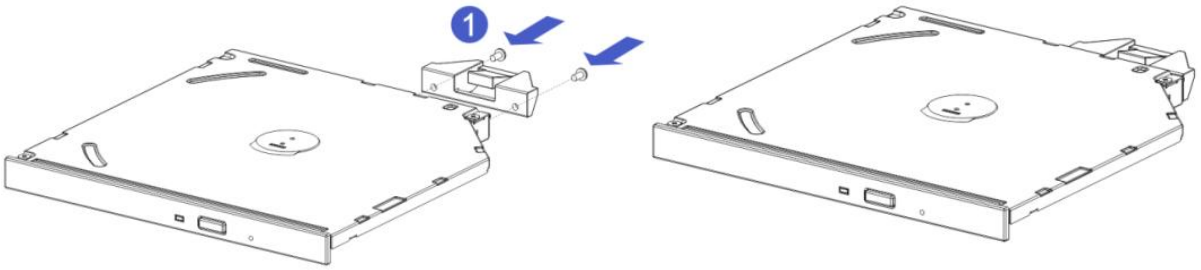
Step: The guide hood module is aligned at the left and right hanging points and placed vertically downward-the height is below the height of the box



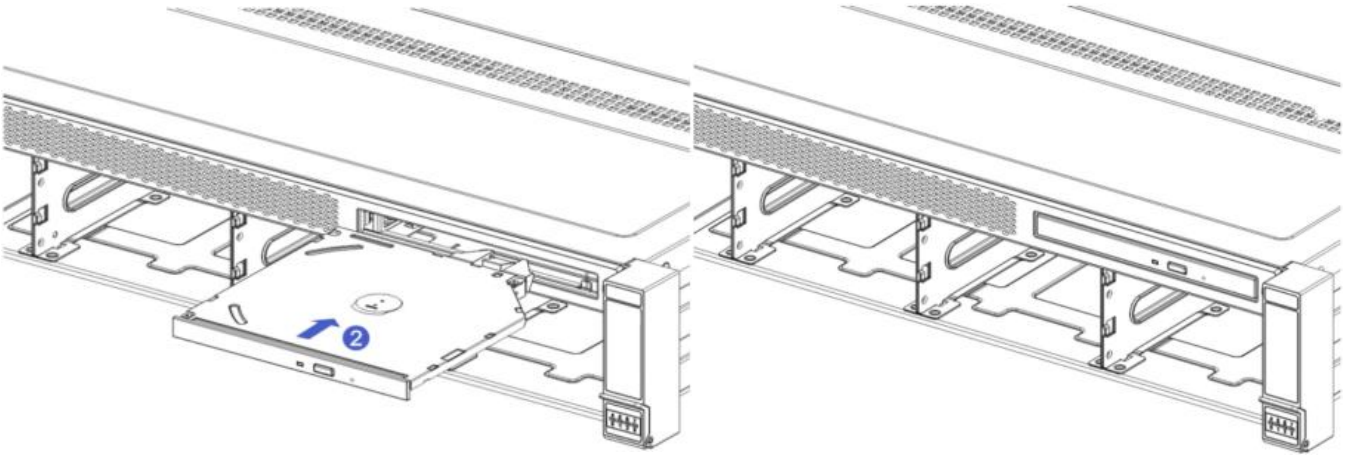
3.14 Optical drive installation

Step: Install the optical drive

1-1. Install the attachment of the optical drive in the direction of the arrow and lock the disc head screw

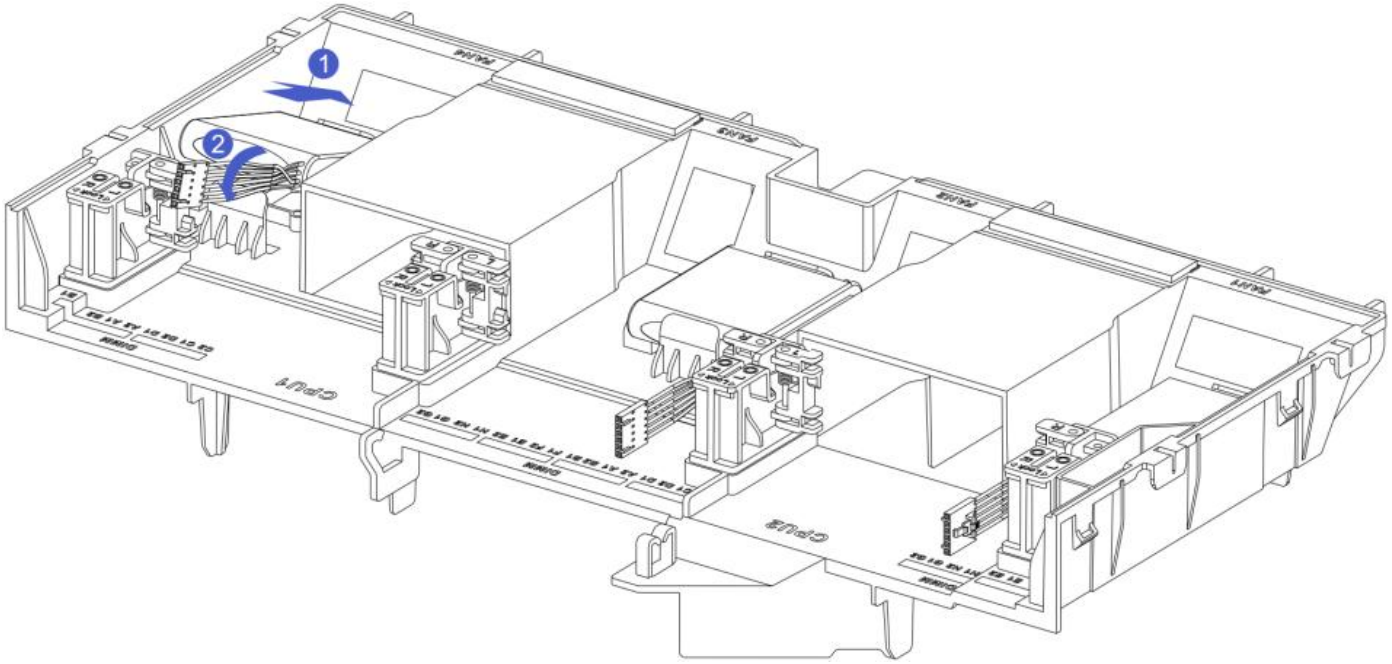


1-2. Align the opening of the drive on the chassis, and push the drive in the direction of the arrow until the fixture is automatically locked.



3.15 LSI 9361 battery pack is installed

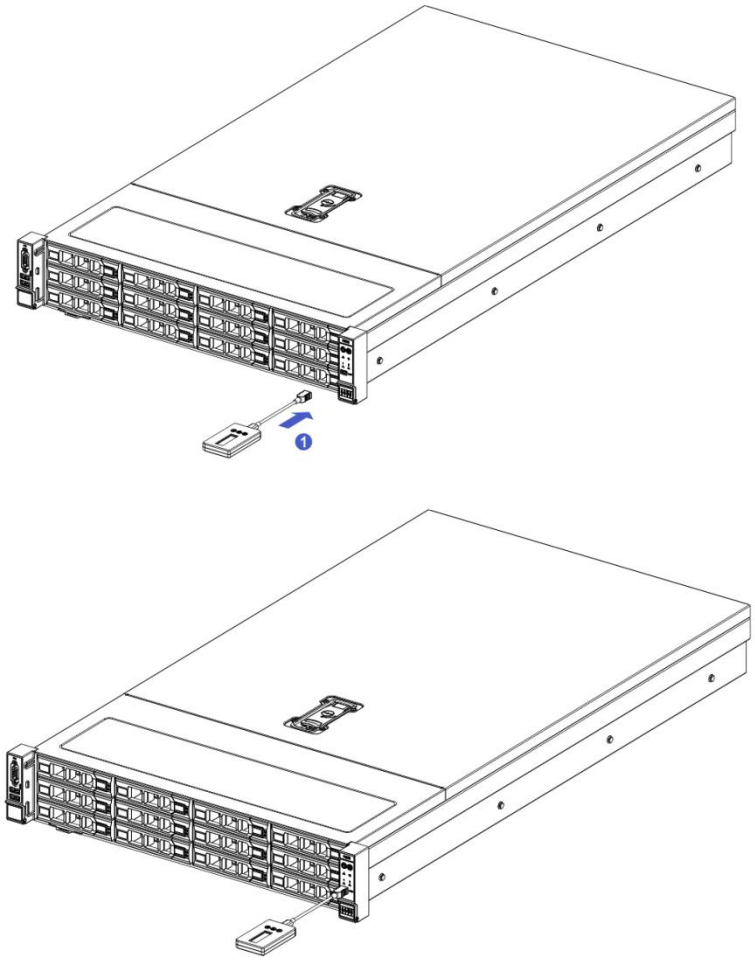
Step: There are three battery pack placement places on the air guide hood. Place the LSI 9361 battery pack on the air guide hood in the direction of the arrow.



3.16 Installation of the LCD module

Step: LCD module installation

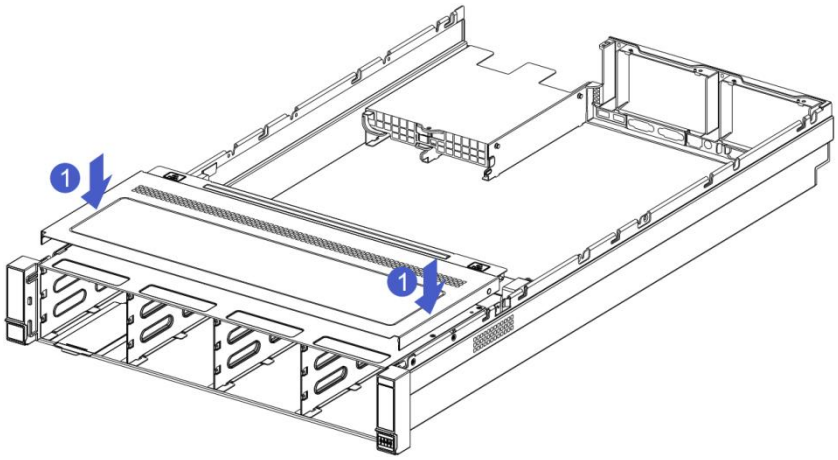
1-1. Connect the cable-connected LCD module to the LCD interface of the chassis hanging ear



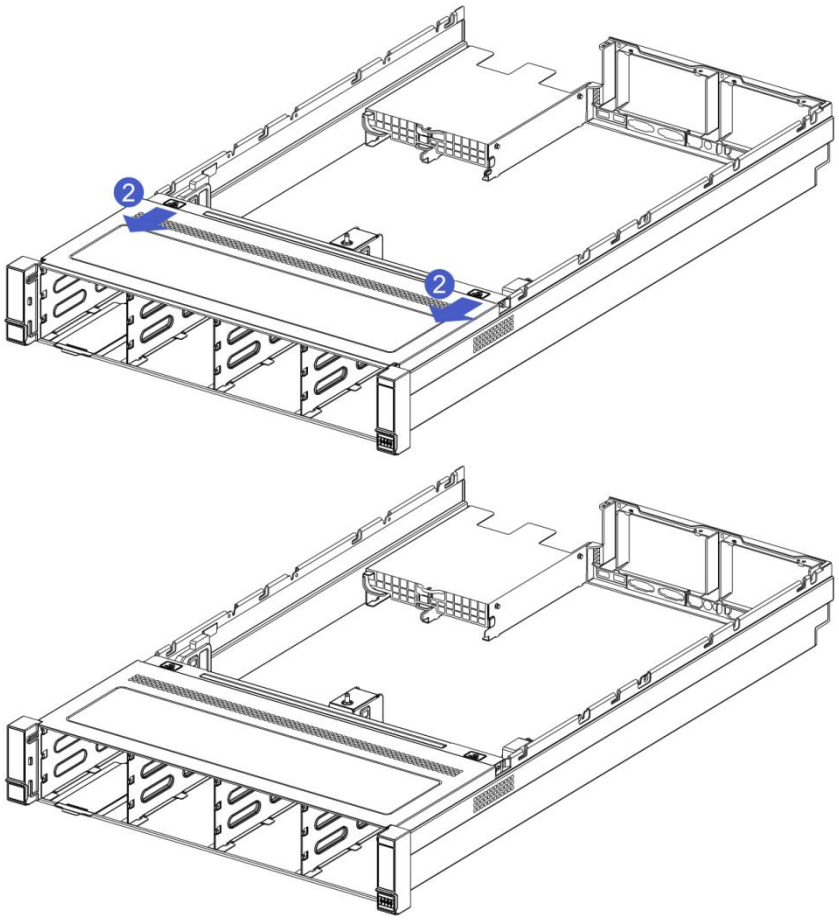
3.17 Installation of the upper cover of the chassis

Step 1: Install the front and upper cover of the chassis

1-1. The top lid hanging nail aligned the opening position of the box and places it down.

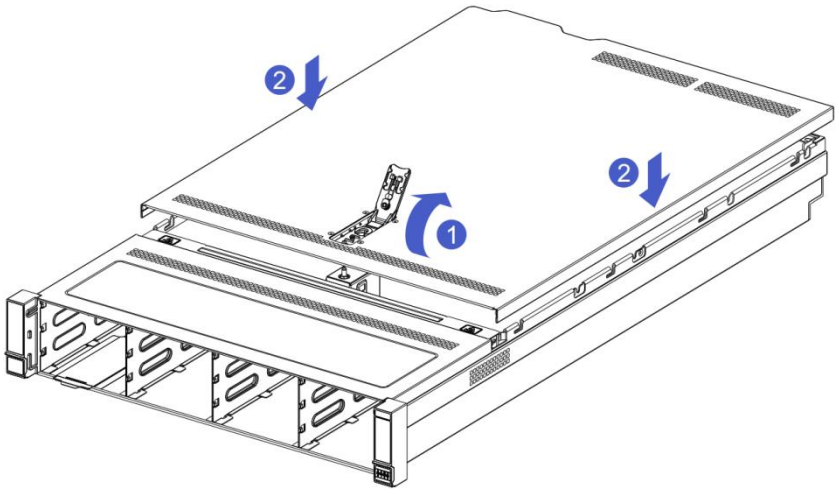


1-2. Push in the direction of the arrow to the front cover and the front end of the case and the two side lock lock click in place.

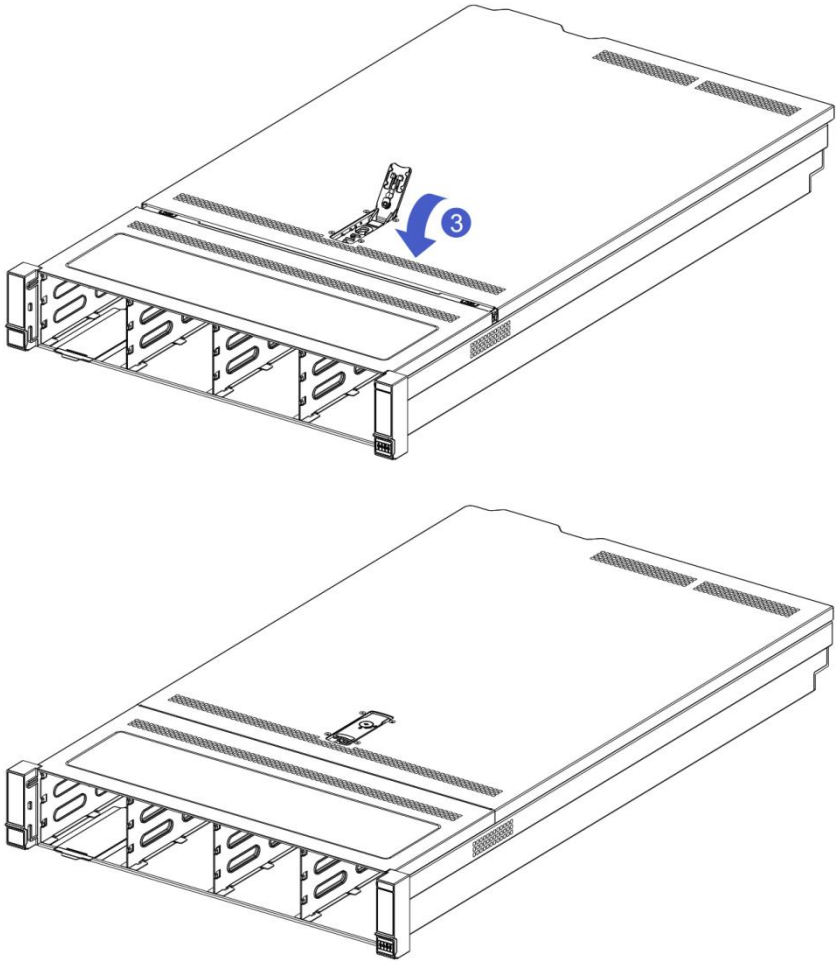


Step 2: Install the upper cover of the chassis

2-1. Open the box lock in the direction of the arrow, align the top cover hanging nail with the opening position of the box, and place it down.



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



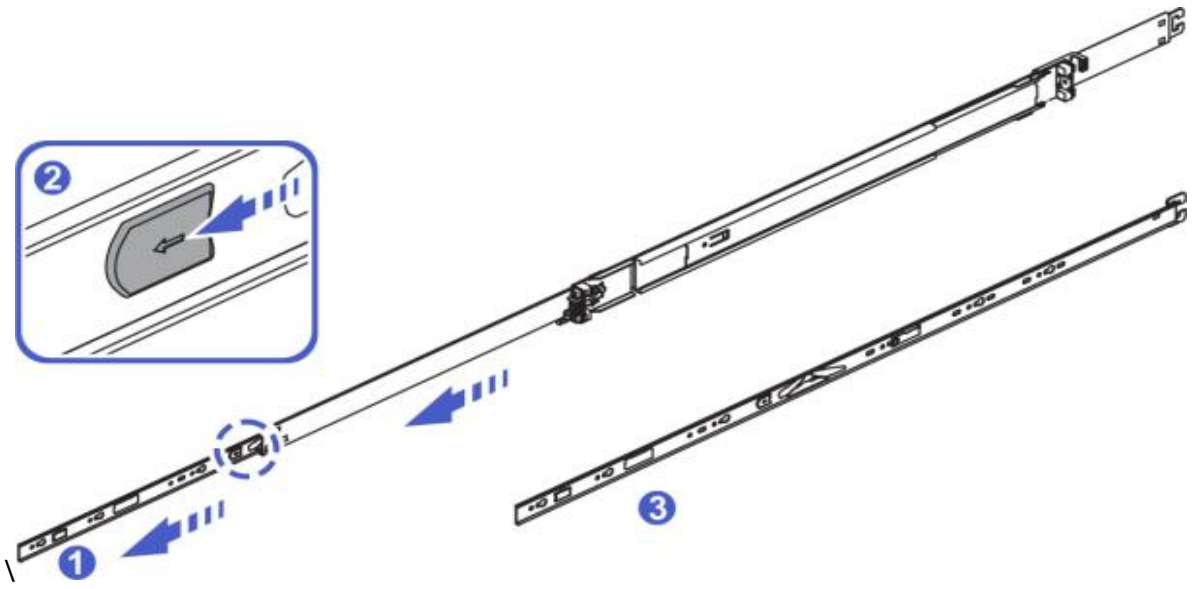
3.18 Installation of guide rail assembly

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 of the guide rail and hear a click and stop

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

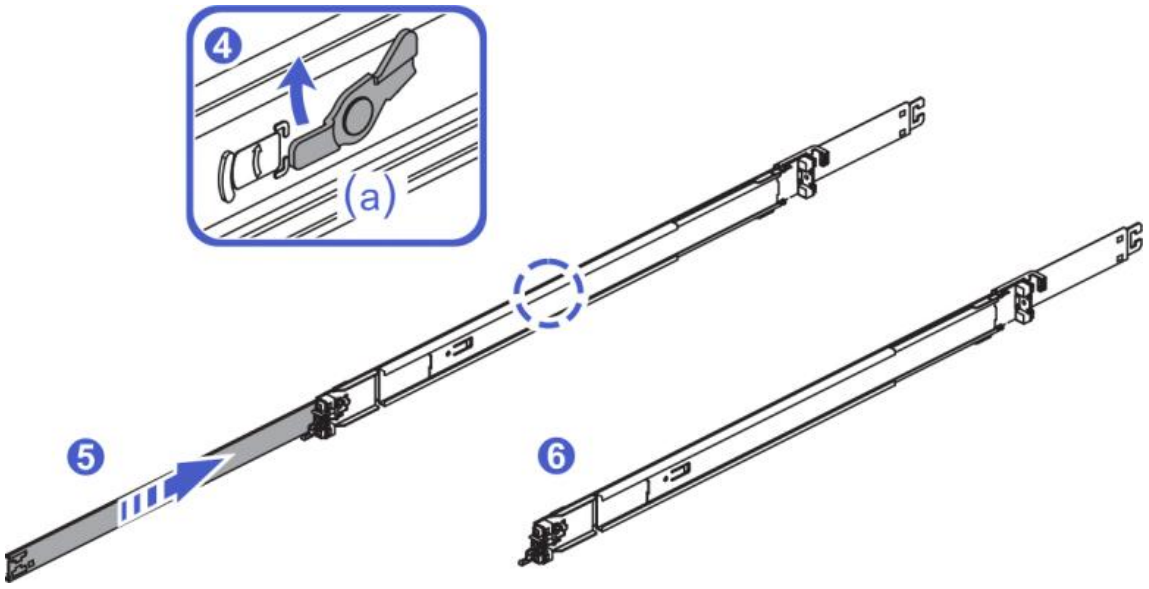
1-3. Remove the inner rail completely



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

1-5. Push the middle rail into the slide rail at the same time

1-6. Complete Step 1

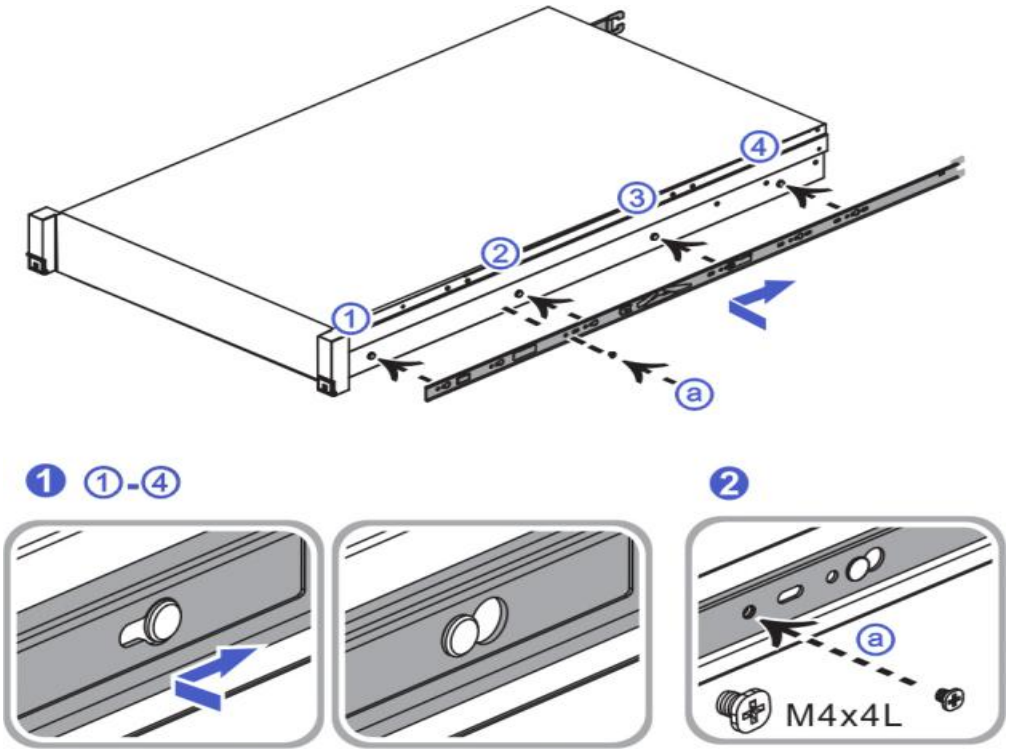


Step 2. Install the internal rail to the chassis (like the left and right internal rail, please again)

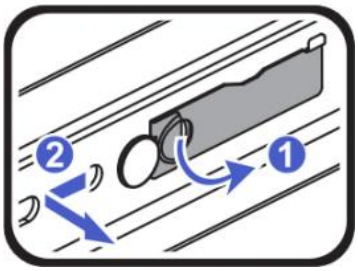
2-1. align th ①-④ itioning hole of the inner rail with the 4 hanging nails on the side of the chassis, install the inner rail to the chassis according to the drawings,

When the installation is completed, you can hear a click sound, and ensure that the installation is in place.

2-2. At chassis A, lock the M4x4 screw in the attachment into chassis A. Complete step 2



Note: When removing the inner rail from the chassis, unlock the buckle in the inner rail as shown in the figure



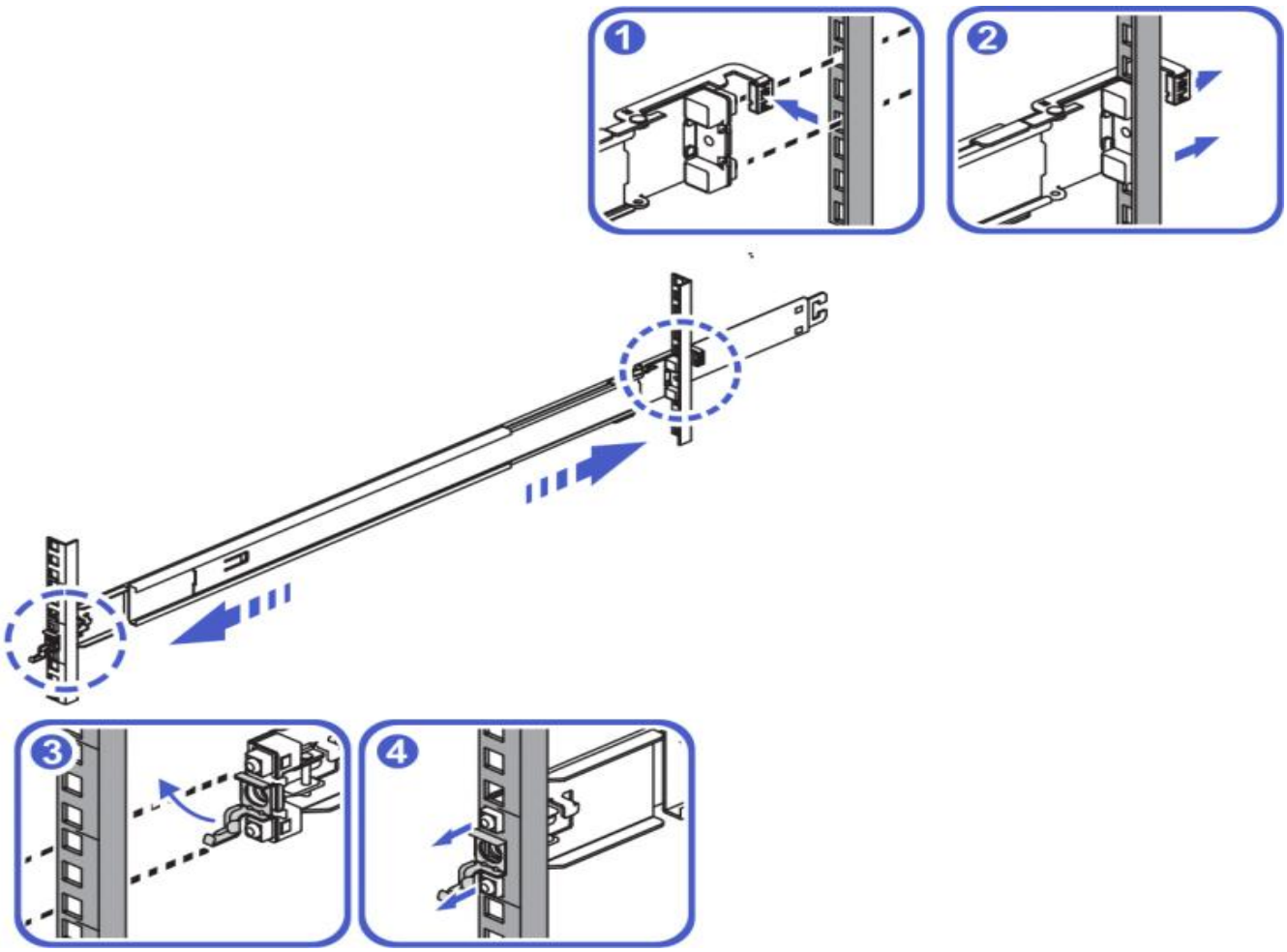
Step 3. Install the rails to the rack (the left and right rails are symmetrical, please repeat the installation)

3-1. Push the rear end hook of the rail according to the arrow, aim at the rack hole and put the rail into the rack.

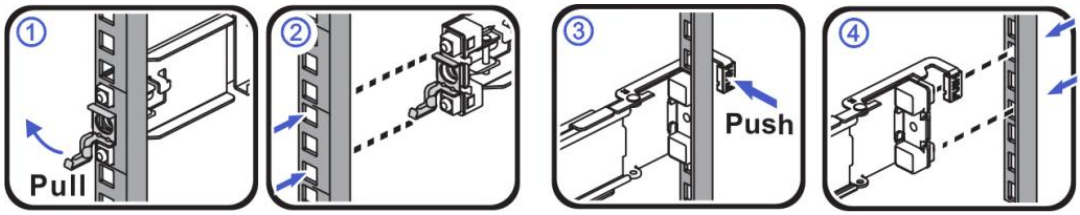
3-2. Fit the guide rail into the back end of the frame and install the back end of the guide rail.

3-3. Push the front end card hook of the guide rail according to the arrow instructions, align with the rack hole and put the guide rail into the rack.

3-4. After loading the guide rail into the front end of the rack, complete step 3.



Note: When removing the guide rail from the rack, unlock the buckle in the guide rail as shown in the figure



Step 4. Install the server into the rack.

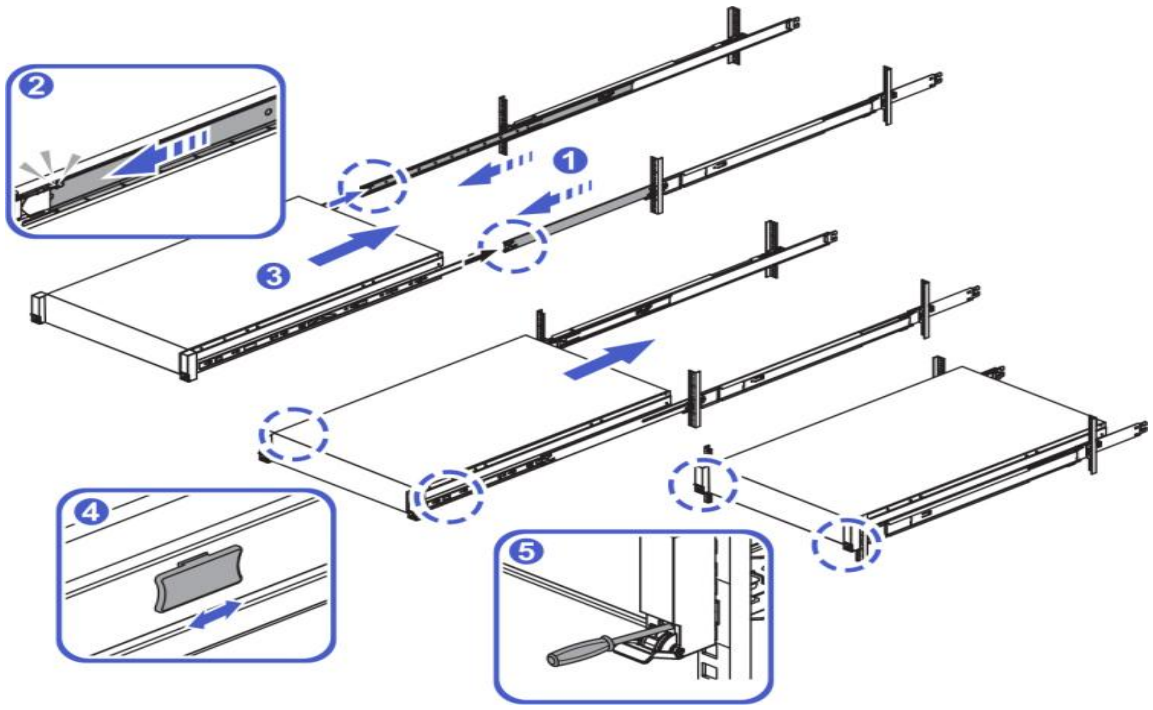
4-1. Pull out the middle rail on both sides of the rack and stop a click.

4-2. Lift the server to align the guide rail inner rail with the middle rail, and push the server into the rack according to the direction of the arrow to ensure that the inner rail is smoothly loaded into the middle rail.

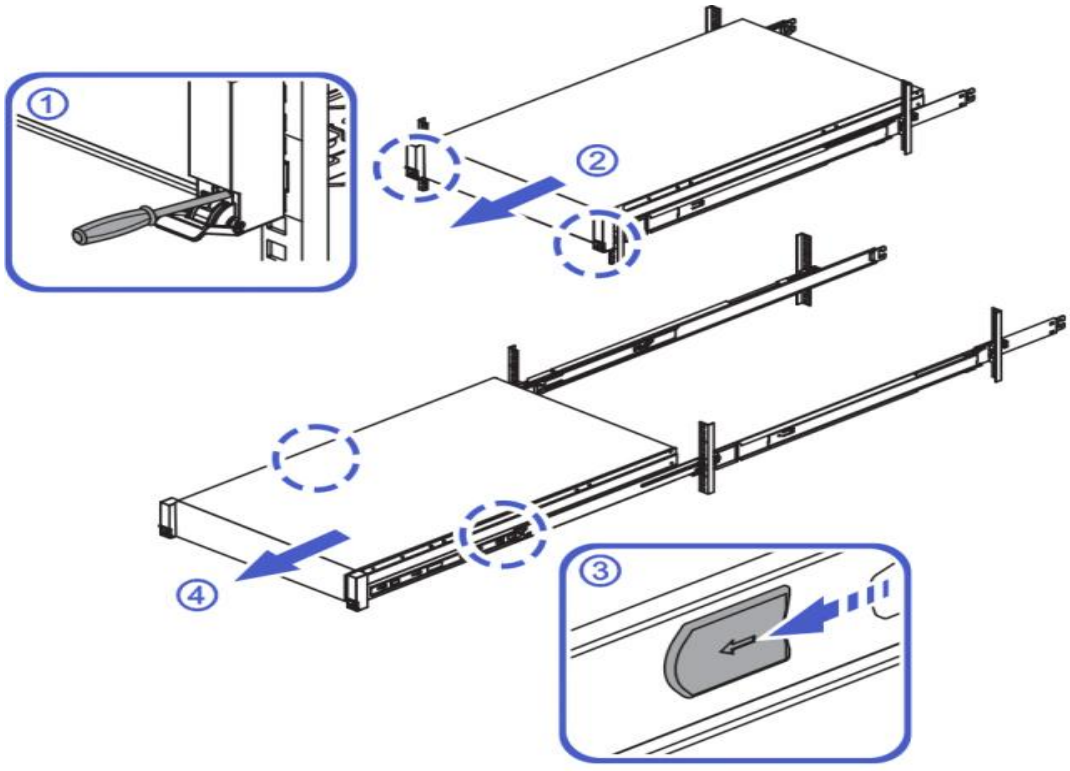
4-3. After pushing the server into the middle track, you can hear a click and stop it.

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

4-5. Break off the front hanging ears on both sides, use a screwdriver to lock the screw, and complete step 4.



Note: To remove the server from the rack, unlock the side screws and white buttons, as shown in the figure



Chapter 4: BMC operation instructions

See the BMC function description of Tongyi-Whitley platform for details

Chapter 5: Operating System Installation Guide

See the SNR-SR-LS Gen3 Operating System Installation Guide for more details

Chapter 6: The Raid Card Operation Guide

6.1 9361 Raid Card Operation Guide

Refer to the LSI 9361-8i RAID Card operator manual for details

6.2 The 3008 SAS card operation guide

Refer to the T3008HM SAS card operation manual for more details