SNR-SR2412LE-S

User manual

SNR
Smart Networking Reliable

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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).

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

1.6 System Introduction

Tongtaiyi SNR-SR2412LE-S is a 2U single-socket general-purpose server with wide applications. It is built based on the fourth and fifth generation AMD EPYC™ 9004/9005 processors. The motherboard adopts the ATX standard board design. This product has excellent computing performance and ultra-high cost performance, and is suitable for cloud computing, virtualization, distributed storage, hyper-convergence and other applications.

1.7 Features

Balanced configuration with high cost performance

- Supports 1 AMD EPYC™ 9004/9005 series processor, supports up to 400W TDP, and has strong computing performance;
- Supports 12 DDR5 memory modules with a maximum frequency of 6400MT/s;
- Based on the ATX standard board design, it meets the mainstream load requirements and has a very high cost performance;

Flexible configuration and strong scalability

- The storage module is flexible and optional, compatible with 3.5" and 2.5", and supports NVMe/SAS/SATA options;
- Supports up to 4 U.2 NVMe to meet mainstream application needs;
- Excellent expandability, supporting up to 5 standard PCIe 5.0 expansion slots;

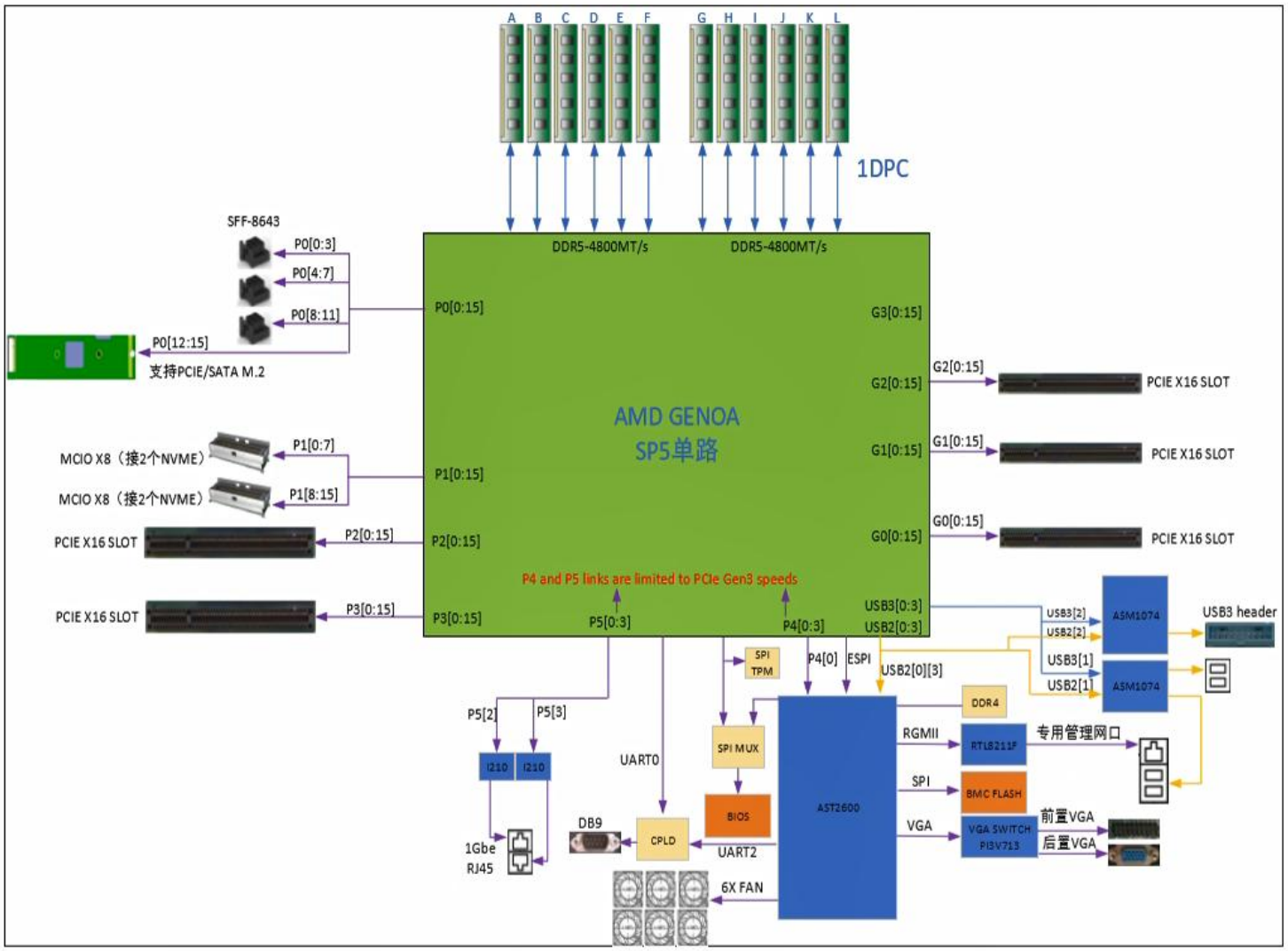
Stable, reliable and intelligent management

- 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., realizing comprehensive remote system-level intelligent management.

1.8 Product Specifications

For detailed technical specifications of SNR-SR2412LE-S, please refer to the SNR SNR-SR2412LE-S product brochure.

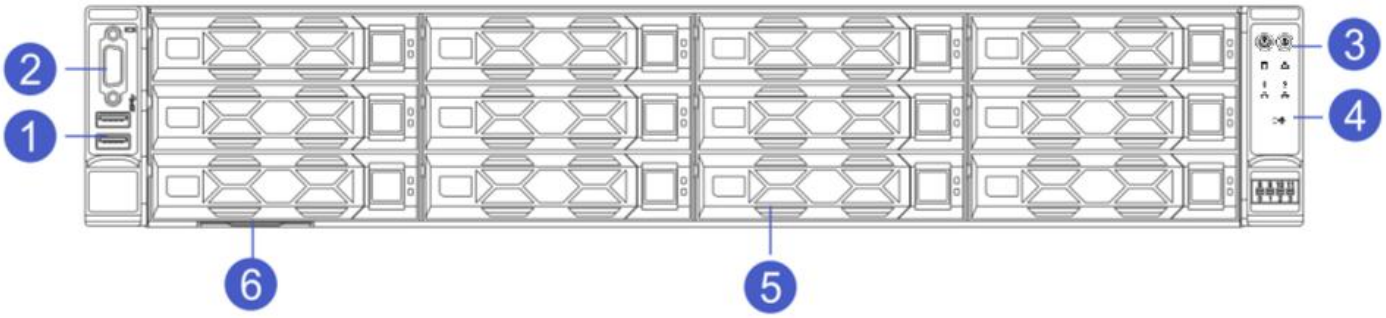
1.9 System topology diagram



System components

2.1 Front Panel Components

- 2U 12-slot 3.5-inch disk model

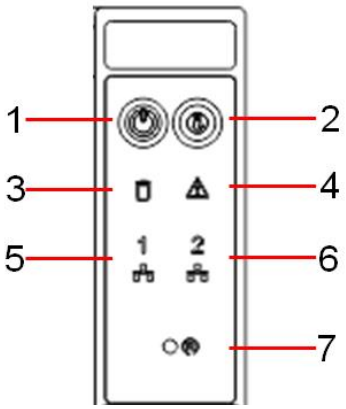


serial number	Module Name	serial number	Module Name
1	Front USB3.0	2	Front VGA port
3	UID	4	Reset button
5	3.5-inch hard disk slot	6	Asset Tags

- 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.

- Front panel indicators and buttons

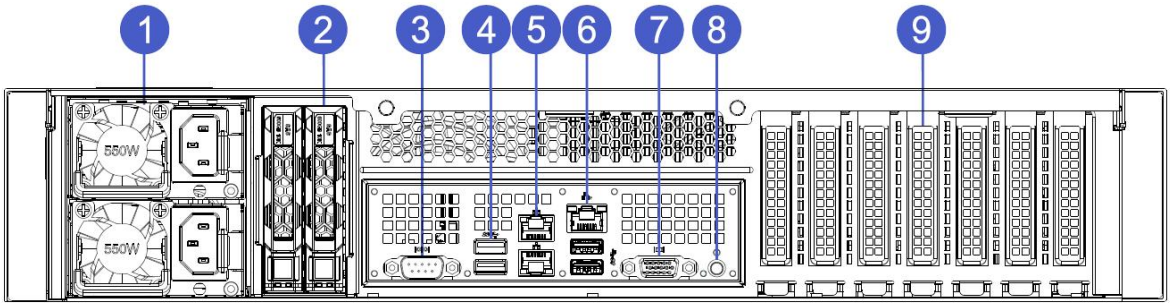


serial number	Module Name	serial number	Module Name
1	Power switch button/indicator light	2	UID button/indicator
3	HDD indicator	4	System fault indicator
5	Network port connection status indicator	6	Network port connection status indicator
7	Reset button		

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 off: The device is not powered on.
	UID button / indicator	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. ✓ Yellow steady/flashing: Warnings recorded in the BMC log such as system power, fan, high temperature, memory error, overvoltage error, etc. The yellow LED needs to be steady or flashing
	Hard drive activity indicator	✓ Off: There is no reading or writing activity on the hard disk. ✓ Flashing green: The hard disk is reading or writing.

	Network port connection status indicator	The Ethernet port indicator light corresponding to the network card. ✓ Green (steady on): indicates the network port connection is normal. ✓ Green (flashing): data exchange. ✓ Off: The network port is not in use or is faulty.
	System reset button	Can be used to reset the system. ✓ Short press: reset the system.

2.2 Rear Panel Components



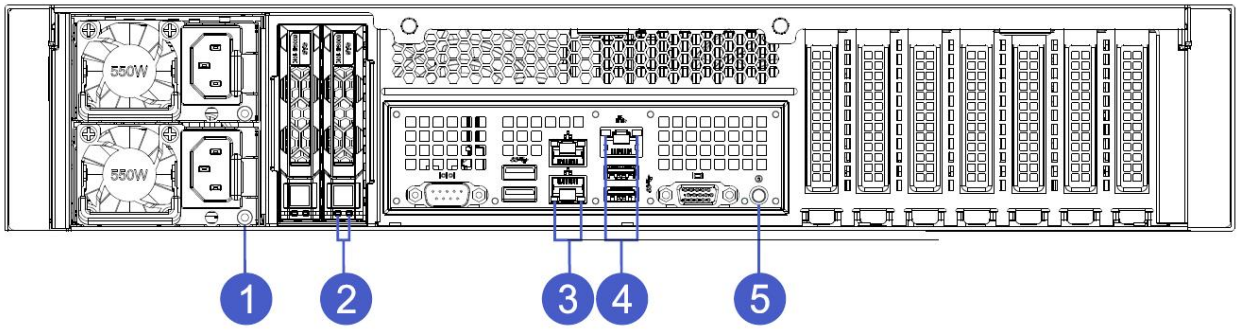
serial number	Module Name	serial number	Module Name
1	PSU	2	2.5-inch HDD (optional)
3	COM Interface	4	2xUSB3.0 interface
5	2X Gigabit Ethernet ports	6	IPMI management network port + 2XUSB3.0 interface
7	VGA interface	8	UID button and indicator light
9	PCIe expansion slot	10	

- Rear panel interface description:

name	type	quantity	illustrate
VGA interface	DB15	1	Used to connect a display terminal, such as a monitor or KVM.
Management network port	GE BASE-T	1	Provides an outbound 1000Mbit/s Ethernet port. This port can be used to manage the server.
USB	USB 3.0	4	Provides an external USB interface through

interface			which USB devices can be connected.
Power module AC interface	CRPS	1 or 2	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 indicators and buttons description:



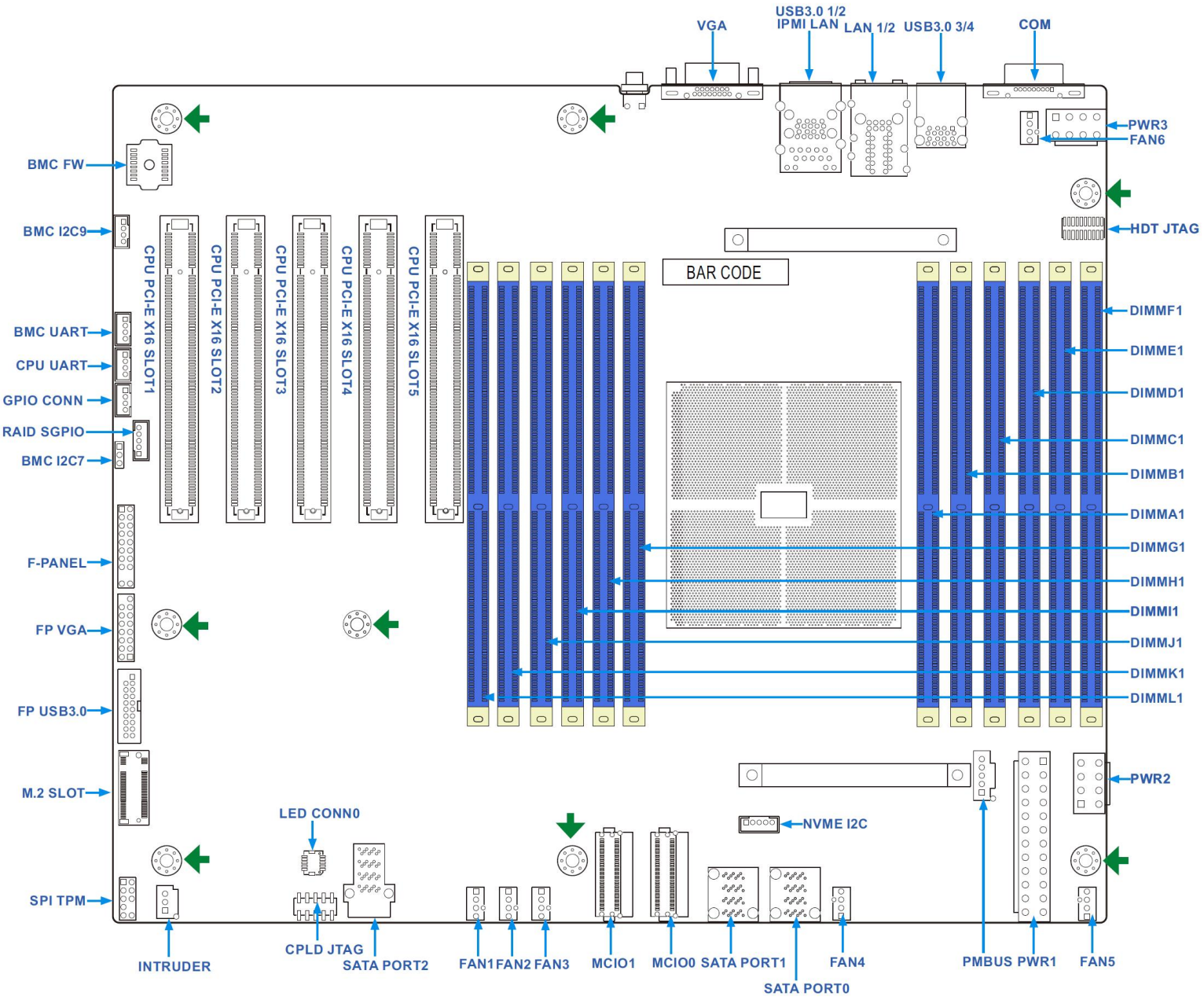
serial number	Module Name	serial number	Module Name
1	Power module indicator	2	2.5-inch hard drive status indicator
3	Gigabit Ethernet port indicator	4	IPMI management port indicator
5	UID button and indicator light		

Indicator light/button	Status Description
Power module indicator	Take Great Wall Power as an example. ✓ Green (steady on): indicates that the input and output are normal. ✓ Off: Indicates that there is no AC power input. ✓ Green (1 Hz/flashing): Indicates that the power module is in standby state. ✓ 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): Indicates that a power alarm signal is generated. The power module may be abnormal due to high temperature, high load, high current, or low fan speed .
UID indicator	✓ The UID 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. ✓ Blue (steady on/flashing): Indicates that the server has been located. ✓ Off: The server has not been located.
Connection status indicator	✓ Steady green: Indicates a Gigabit Link. ✓ Solid orange: Indicates a 100M Link. ✓ Off: 10M Link.
Data transfer status indicator	✓ Yellow (flashing): Indicates data is being transmitted. ✓ Off: No data is being transmitted.

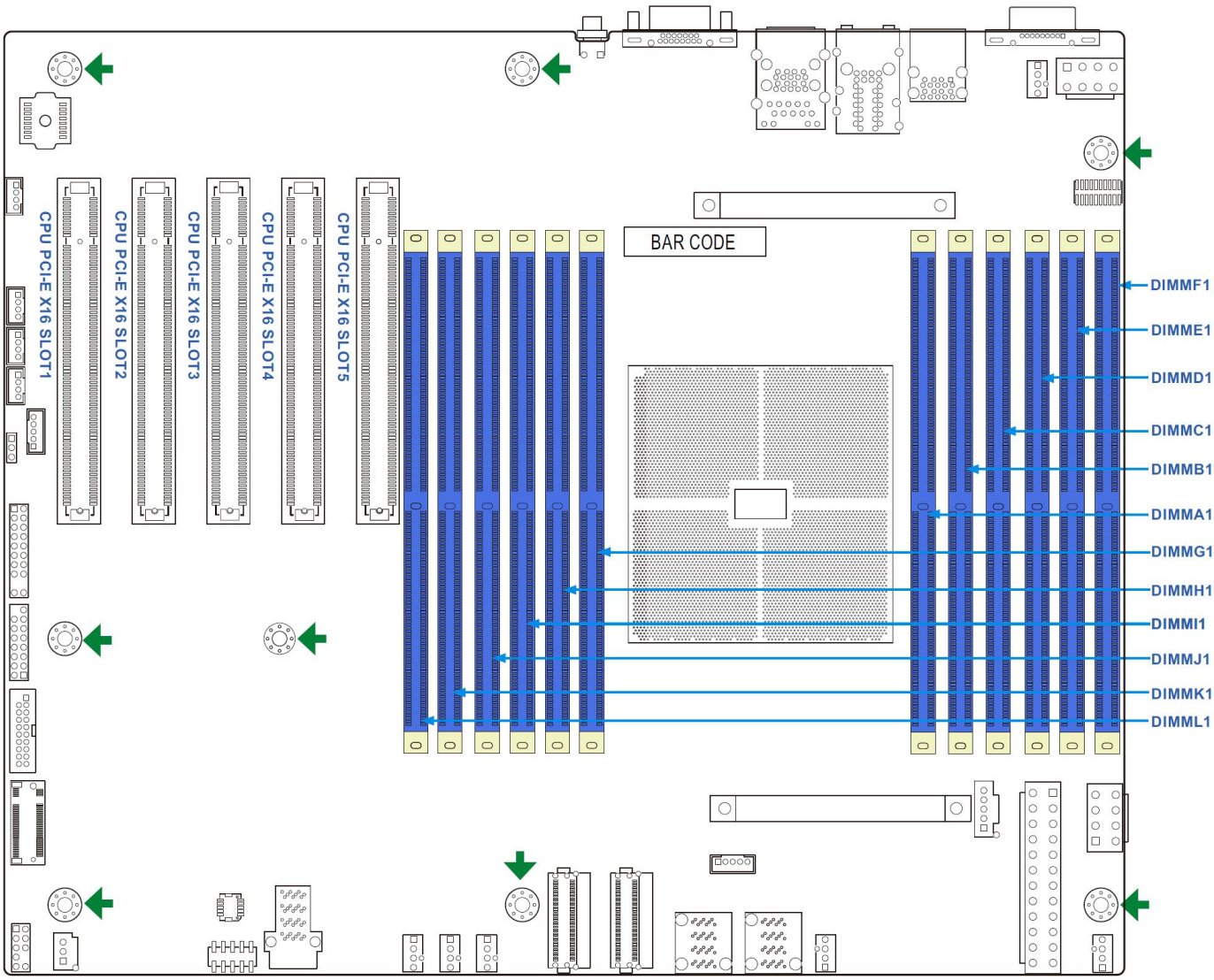
2.3 Motherboard components

SNR-SR2412LE-S motherboard components, interface description is as follows:



2.4 Memory D IMM slot

The server provides 12 DIMM slots , and the corresponding slot order is shown in the following figure:



2.4.1 Memory installation requirements

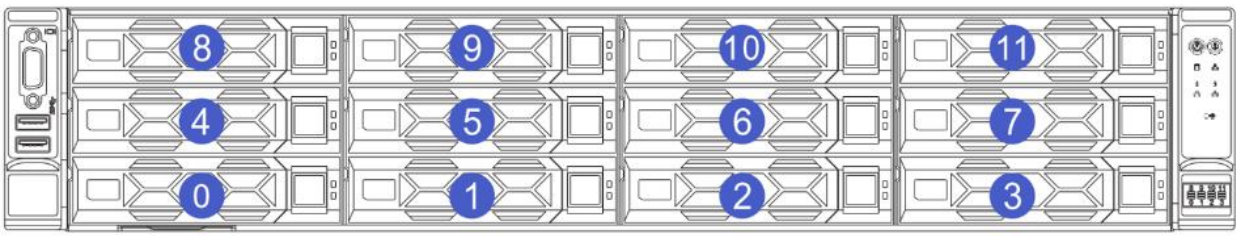
- The same server must use the same model of DDR5 memory.
- RDIMMs and 3DS RDIMMs cannot be mixed.
- When installing memory, you need to install the memory of each channel's main memory channel first.
- You must follow the memory installation guidelines when installing memory.

2.4.2 Memory Installation Guidelines

DIMM Population Guide												
	Channel											
	F1	E1	D1	C1	B1	A1	G1	H1	I1	J1	K1	L1
CPU&1DIMM						■						
CPU&2DIMM						■	■					
CPU&4DIMM				■		■	■		■			
CPU&6DIMM				■	■	■	■	■	■			
CPU&8DIMM		■		■	■	■	■	■	■		■	
CPU&10DIMM		■	■	■	■	■	■	■	■	■	■	
CPU&12DIMM	■	■	■	■	■	■	■	■	■	■	■	■

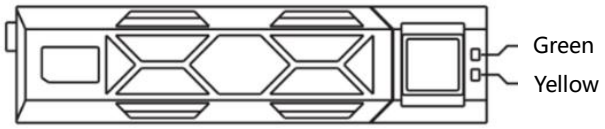
Populating RDIMM/3DS RDIMM DDR5 Memory Modules with Genoa Processor					
	DIMM Population	DDR5 Frequency MT/s			Capacity (16 Gb x4 devices)
DIMM Type	DIMM 0				1 channel / 12 channels
RDIMM	1R (1 rank)	4800	4800	4800	32GB / 384GB
	2R (2 ranks)	4800	4800	4800	64GB / 768GB
3DS RDIMM	2S2R (4 ranks)	4800	4800	4800	128GB / 1.5TB
	2S4R (8 ranks)	4800	4800	4800	256GB / 3TB
	2S8Rx4 (16 ranks)	4800	4800	4800	512GB / 6TB

2.4.3 Hard disk label



- 2U 12-slot 3.5-inch disk model

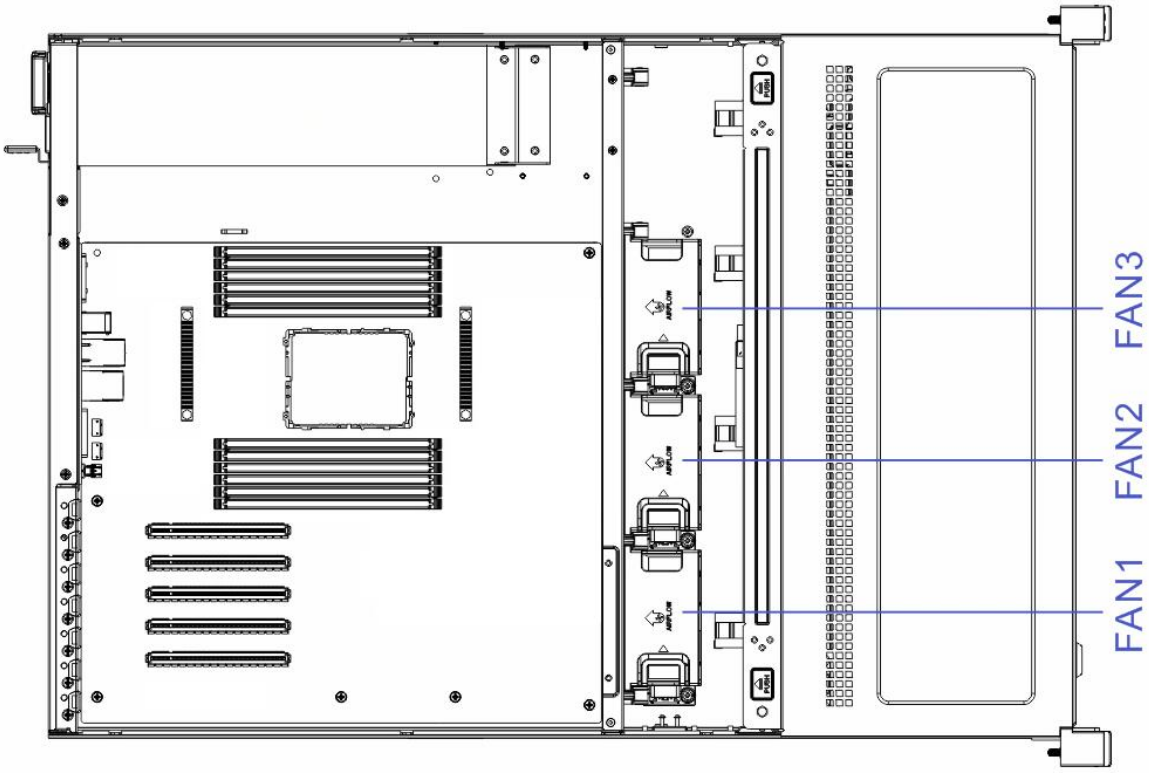
2.5 Hard disk indicator



Hard disk status	Hard disk 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)

2.6 System Fan

The server supports variable fan speeds. Normally, the fans run at the lowest speed. If the server temperature rises, the fans will increase their speed to cool it down.



Install system

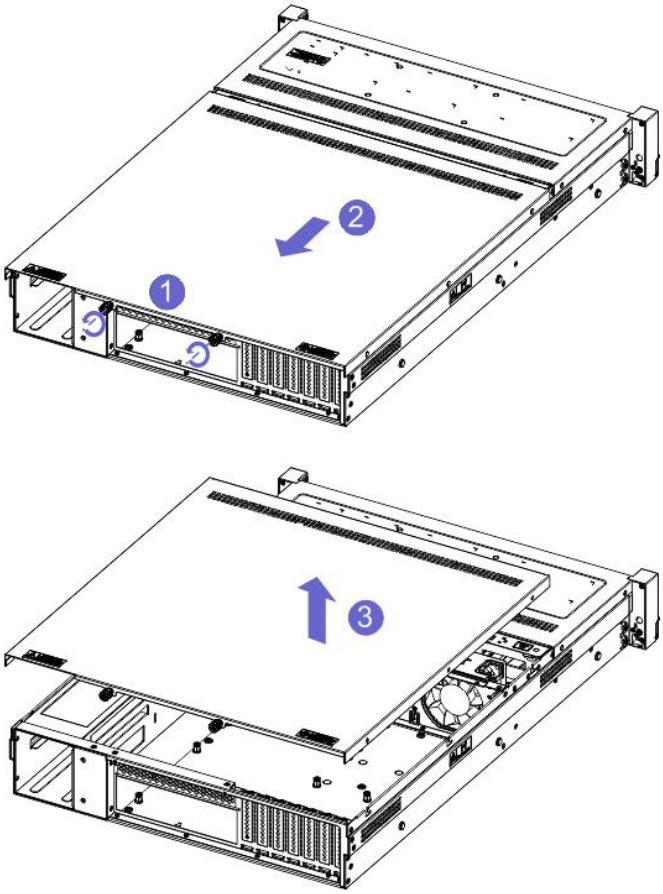
3.1 Removal of the rear cover

Disassembly steps:

1- 1. Loosen the rear hand screws as shown in the figure;

1- 2. Slide the rear cover backwards in the direction of the arrow;

1- 3. Lift up the rear cover in the direction of the arrow.



3.2 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 to the clamping piece.

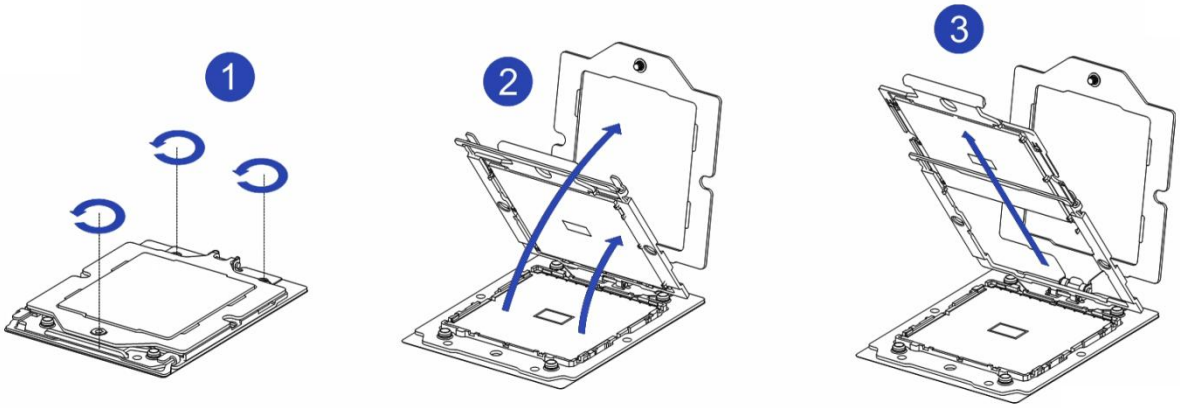
1-3. Release the clamping piece and make the other end of the clamping piece hook into the CPU groove;

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 0.4 ml of thermal grease on the CPU and spread it evenly.

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

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.



3.3 Radiator Installation

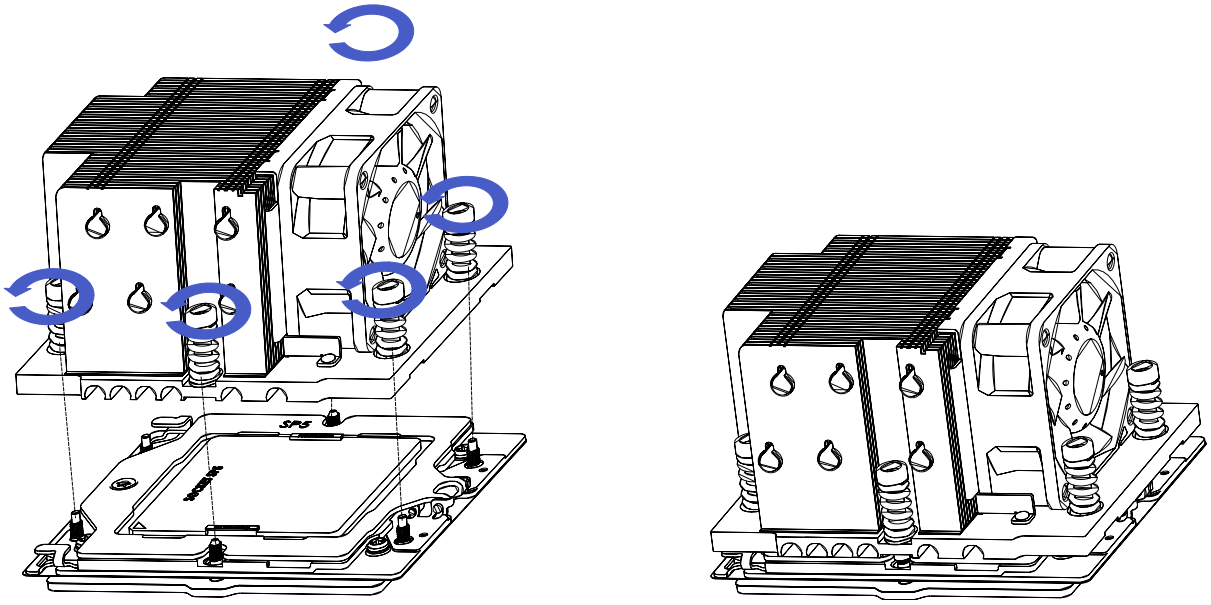
Step 1: Install the radiator

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

1-2. Move the fastening lock on the radiator in the direction of the arrow. The fastening lock 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.

1-3. Press the fastening lock on the heat sink in the direction of the arrow so that it locks with the hook on the processor base.

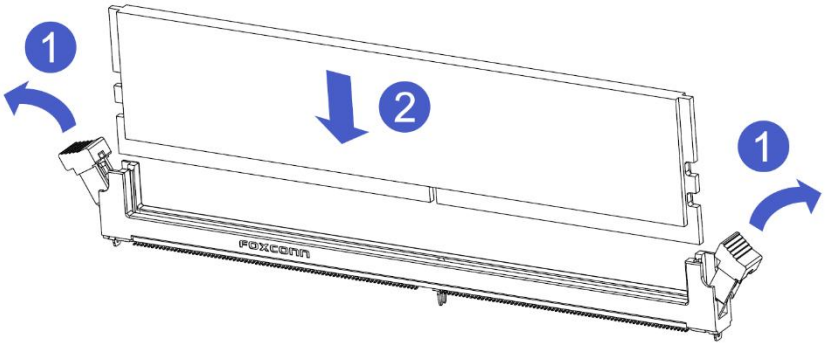
1-4. Use a T30 Torx screwdriver to tighten the screws that secure the heat sink.

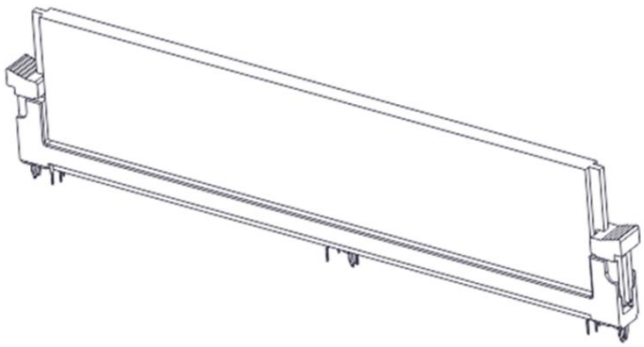


3.4 Memory Installation

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.





3.5 Power supply installation

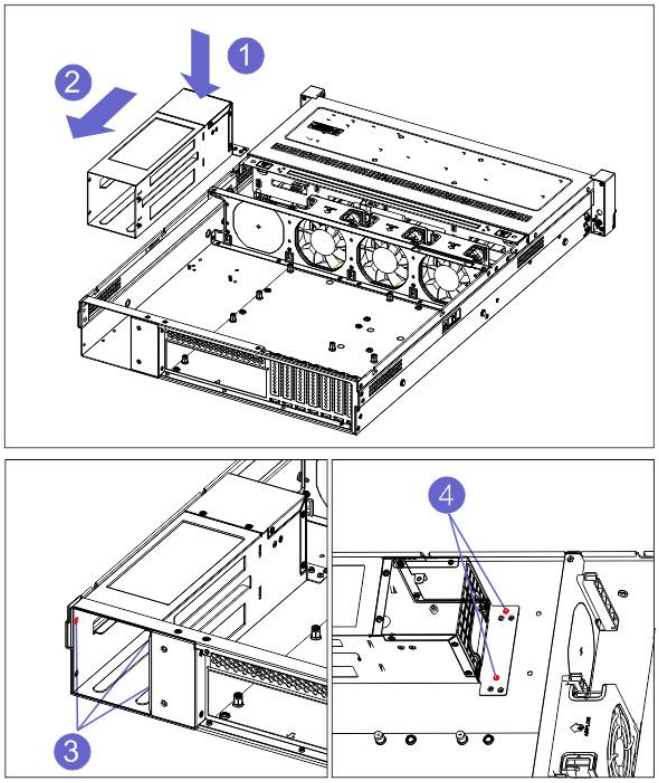
Installation steps:

1-1. Lower the power supply box downwards;

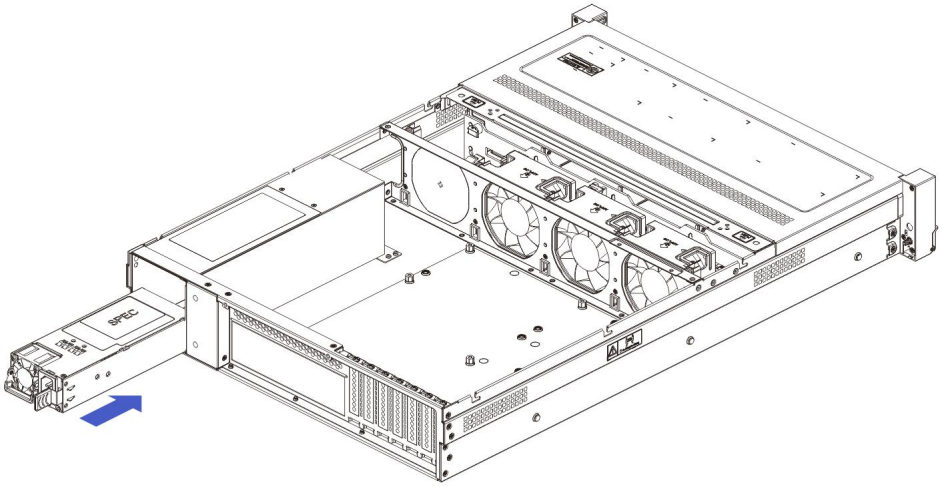
1-2. Stick it to the bottom of the chassis and push it towards the back;

1-3. Tighten 3 screws at the back;

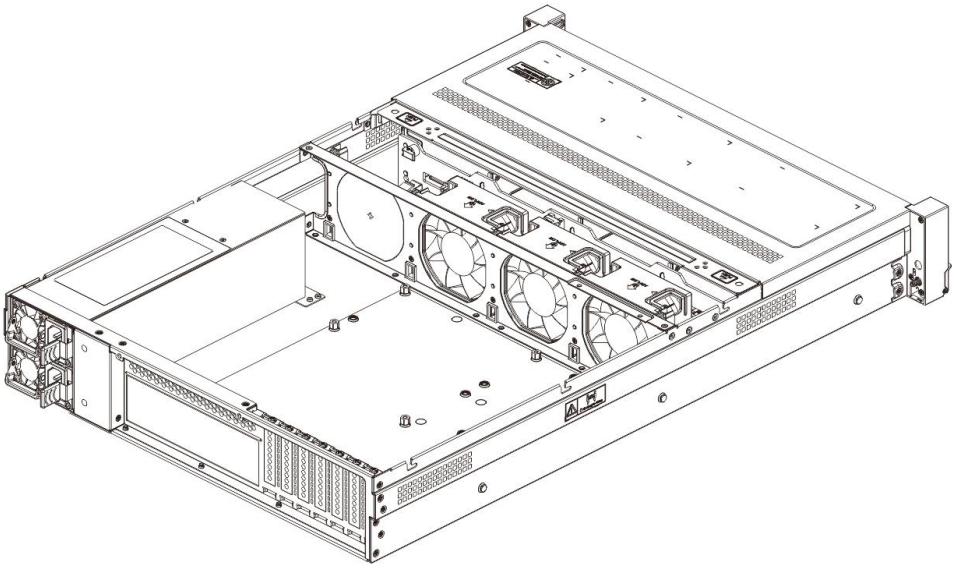
1-4. Fasten two screws from the bottom;



1-5 . Insert the power modules PSU1 and PSU2 into the power frame respectively ;



1-6 . Picture of the power supply after installation .

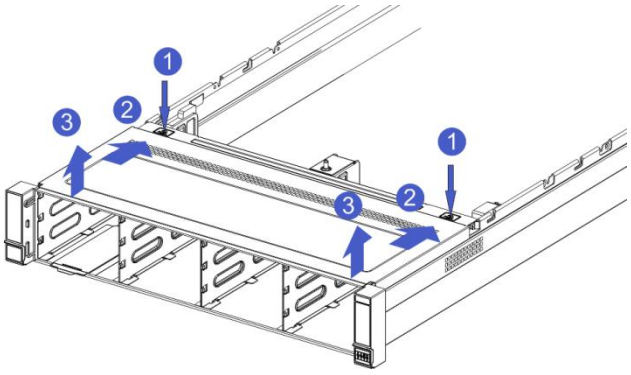


3.6 Installation of 3.5-inch front hard disk backplane

Before installing the front hard disk backplane, you need to remove its rear cover and front cover. The removal of the rear cover has been described.

1. The process of removing the front cover is as follows:

1-1 Press the lock button to unlock;



1-2 Pull the front upper cover back;

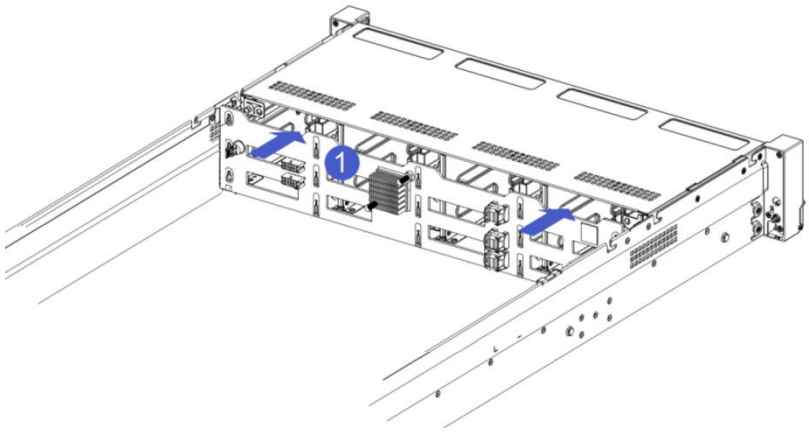
1-3 Pull it all the way to the bottom and then remove the front cover.

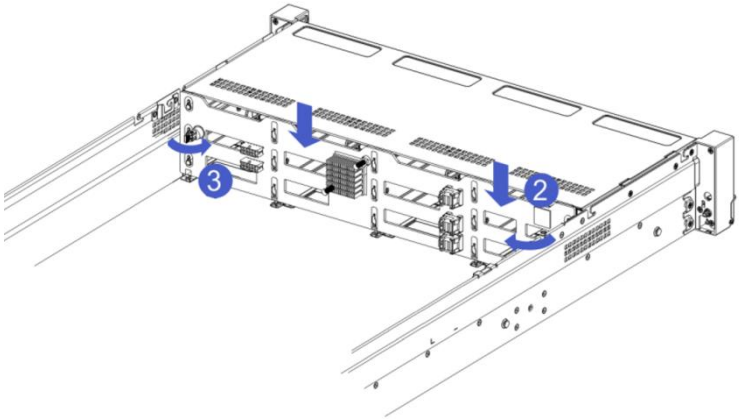
2. The steps for installing the 3.5-inch front hard disk backplane are as follows:

2-1. 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;

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

2-3. Turn over the fixings on the left and right sides of the hard disk backplane and lay them flat.



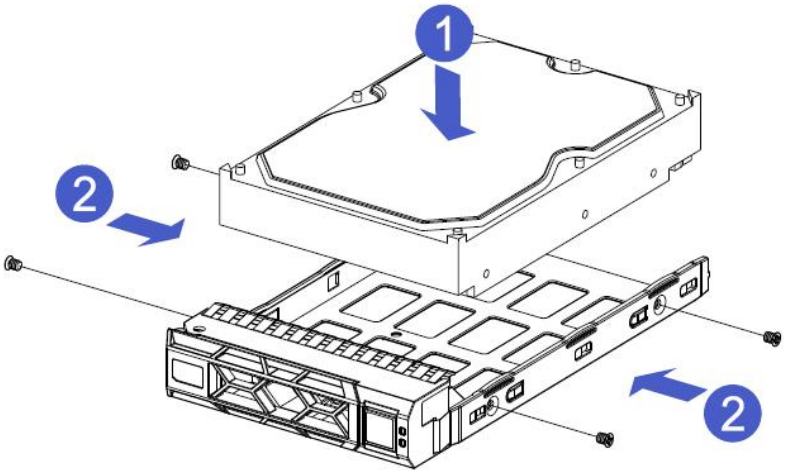


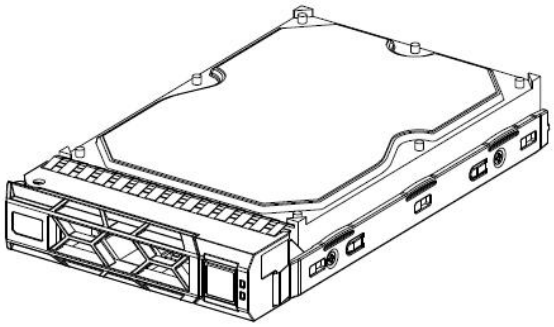
3.7 Front hard disk installation

Installing a 3.5-inch hard drive

1-1. Place the hard disk 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).



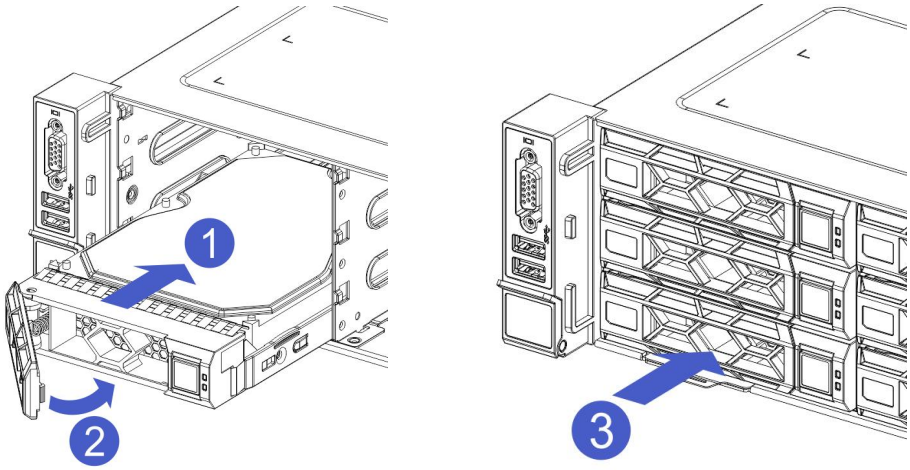


Install the hard drive tray assembly into the chassis

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

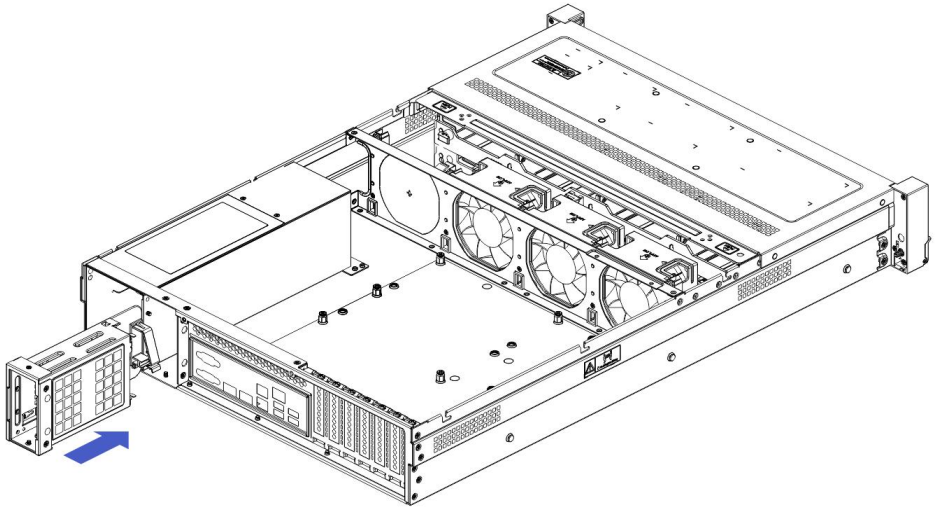
1-2.3.5-inch hard disk installation method: When the hard disk gold finger touches the backplane component, turn the wrench in the direction of the arrow;

1-3. Schematic diagram of hard disk installed in place:

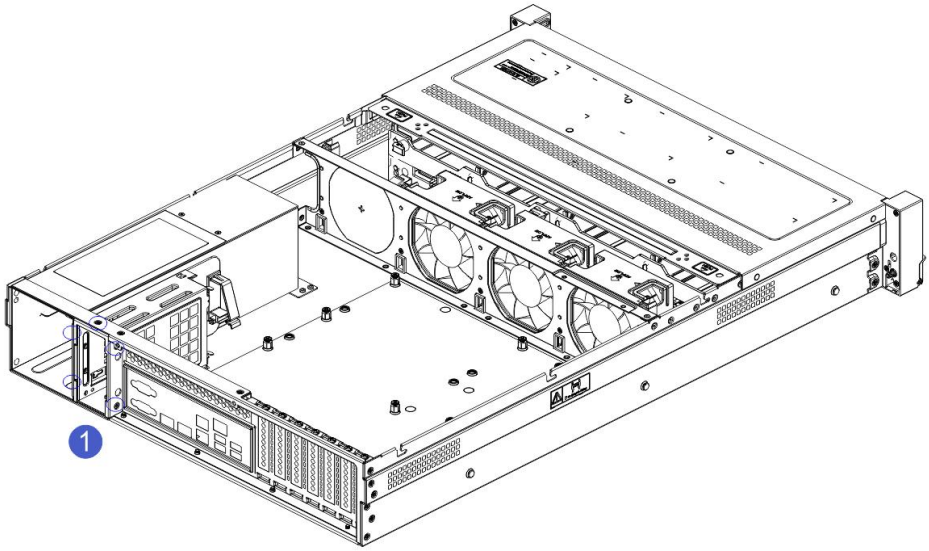


3.8 Rear Hard Drive Installation

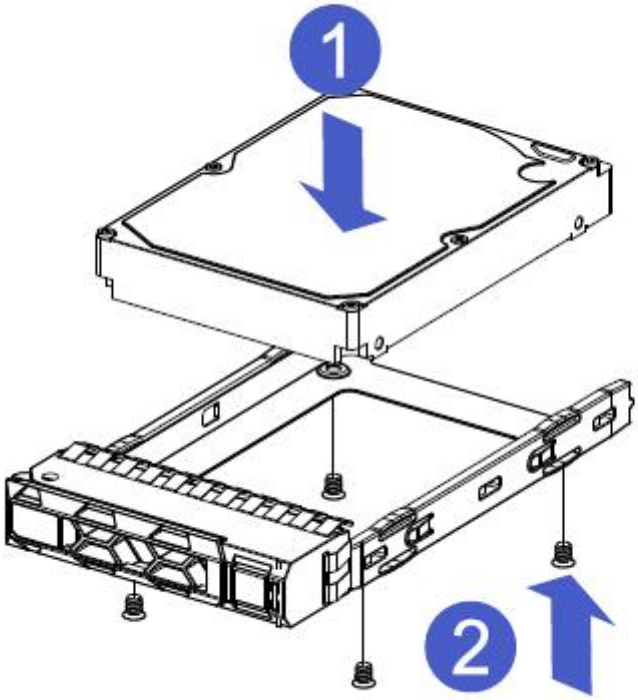
1-1. rear built-in 2.5 HDD assembly from the back to the inside , and then match the screw holes on the left, right and top ;



1-2. After installing the built-in 2.5 HDD assembly, tighten the screws on the 5 screw holes on the left, right and top to fix the built-in 2.5 HDD assembly with the rear window and power assembly ;

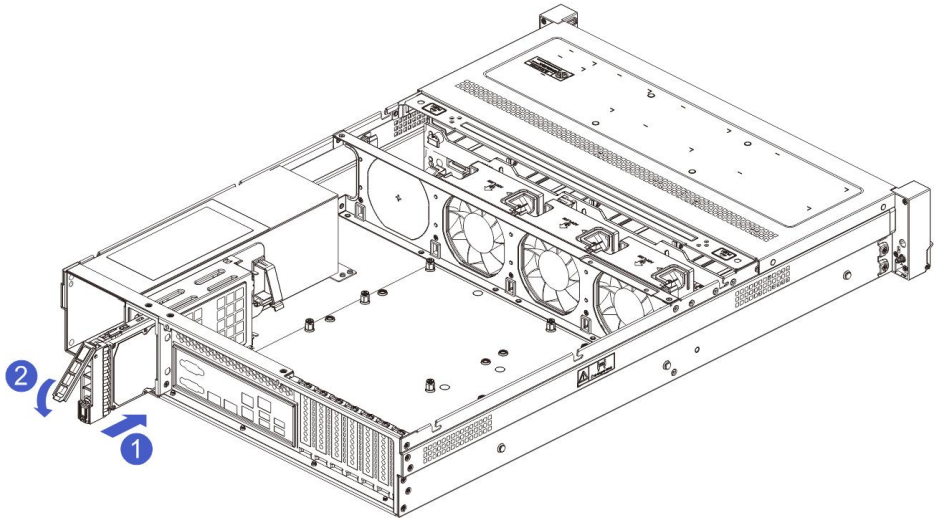


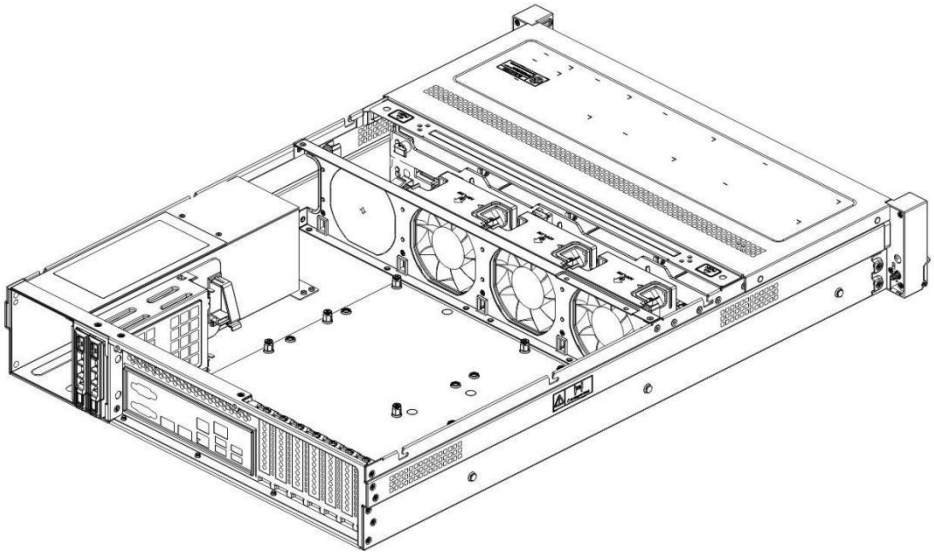
1 -3. Component 2.5 HDD module installation steps ;



1-4. Insert the 2.5 HDD module into the built- in 2.5 HDD assembly until it is inserted into the built-in 2.5 HDD backplane connector , and then buckle the 2.5 HDD module button to close it ;

1-5. Installation of PCI e expansion card The effect of installing the rear 2.5 HDD module ;

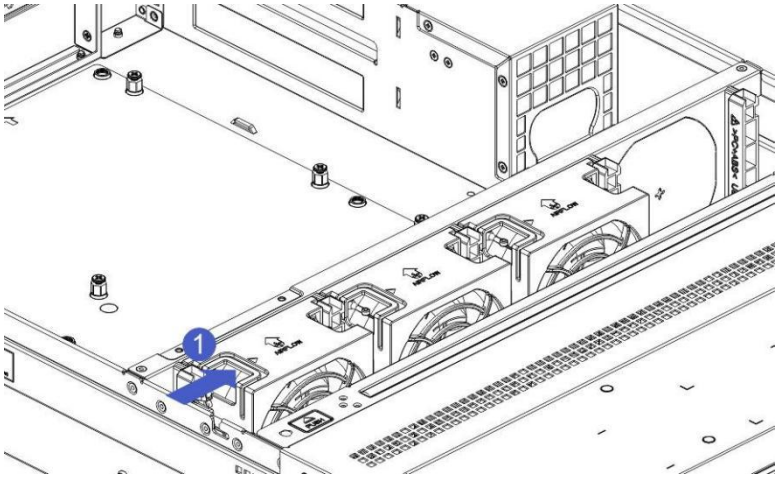




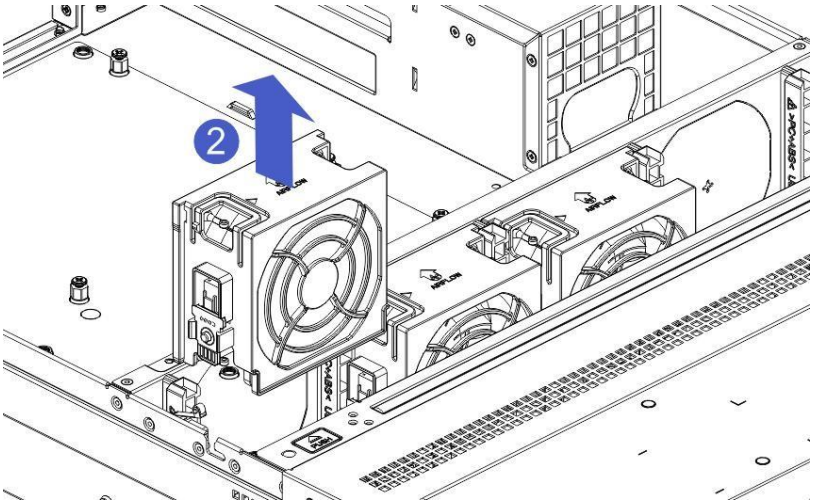
3.9 Fan Module Maintenance

1-1. Press the left side of the fan with your thumb and pinch the other side with your index finger, so that the hook on the fan will disengage from the fan guide;

1-2. Lift up and lift the fan.

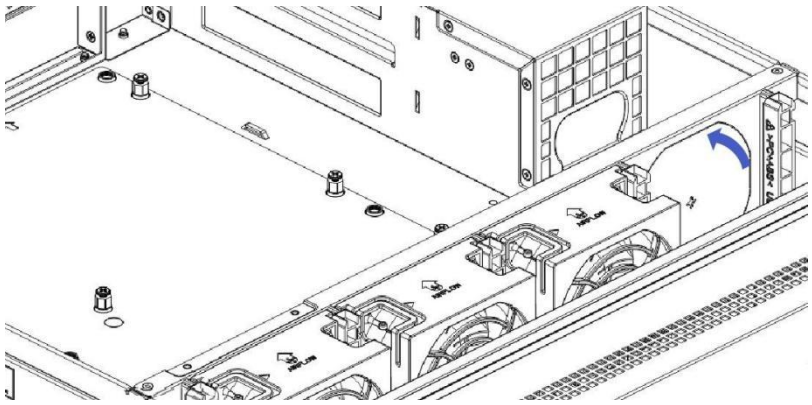


1-3. Support for the fourth fan. The chassis supports three fans by default. If you need to install a



fourth fan, you need to repeatedly remove the sheet metal baffle at the fourth fan position. Only after this

baffle falls off can you install the fan adapter board and fan module.



3.9.1 Guide rail assembly installation

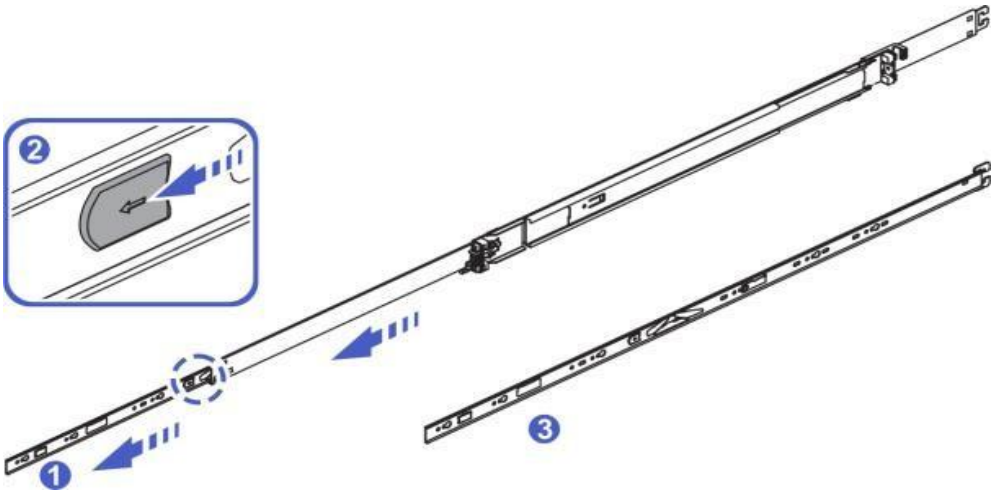
Step 1. After removing the inner rail from the guide rail, push the middle rail into the guide rail

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

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

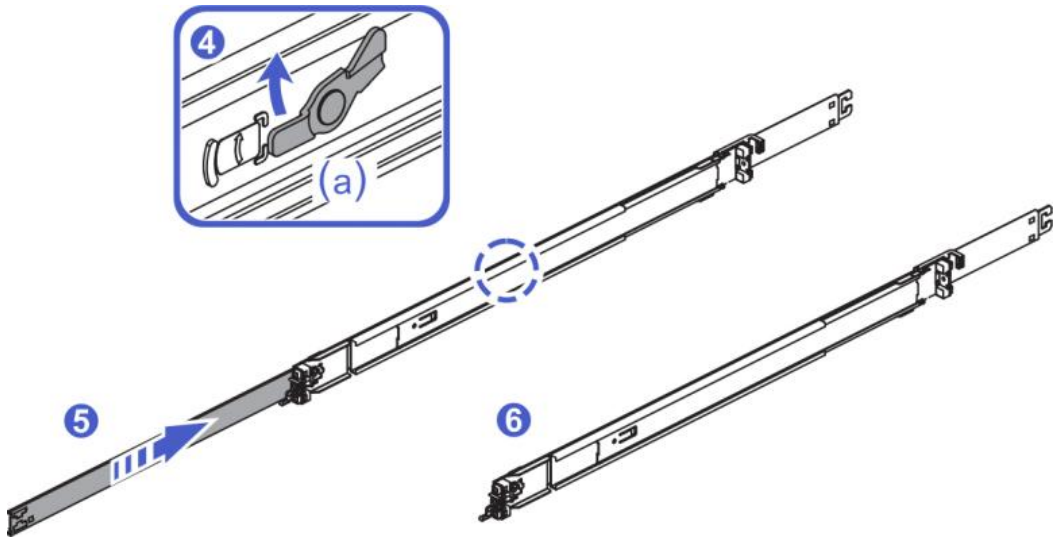
1-3. Complete the removal of the inner rail;

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



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

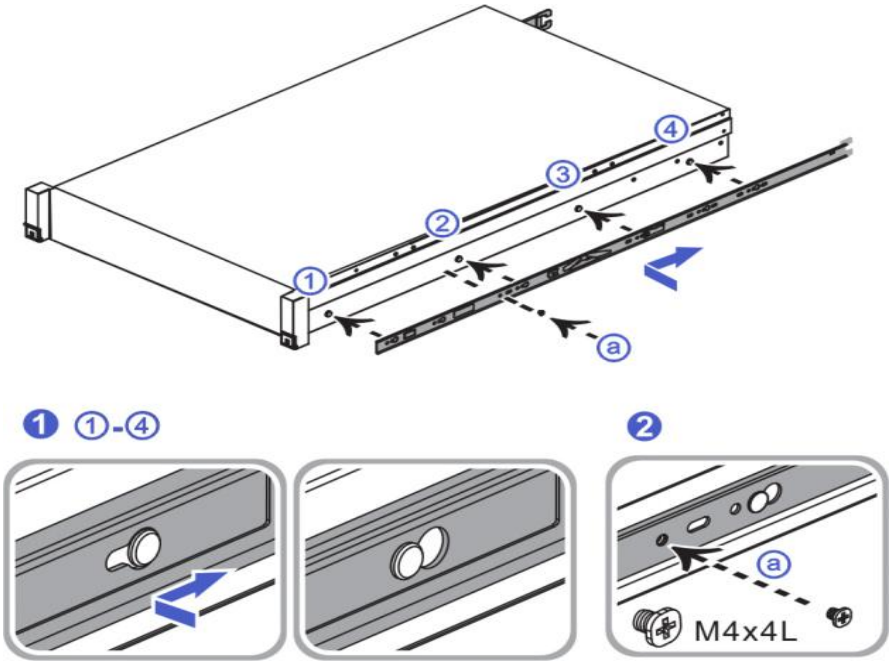
1-6. Complete step 1.



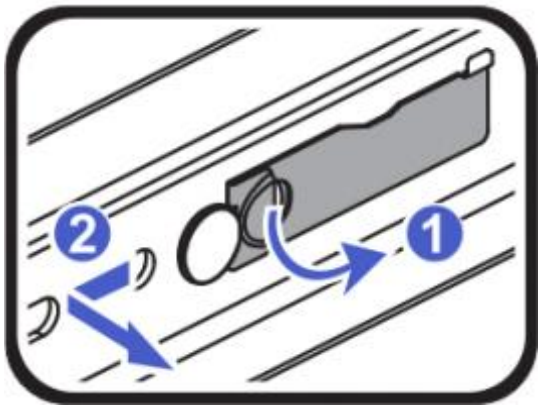
Step 2. Install the inner rails onto the chassis (the installation method for the left and right inner rails is the same)

2-1. Align ①-④positioning holes of the inner rail with the four nails on one side of the chassis, and install the inner rail to the chassis as shown in the figure. You can hear a click when the installation is completed, and make sure it is installed in place;

2-2. At chassis a, screw the M4x4 screws provided in the accessories into chassis a. Complete step 2.



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



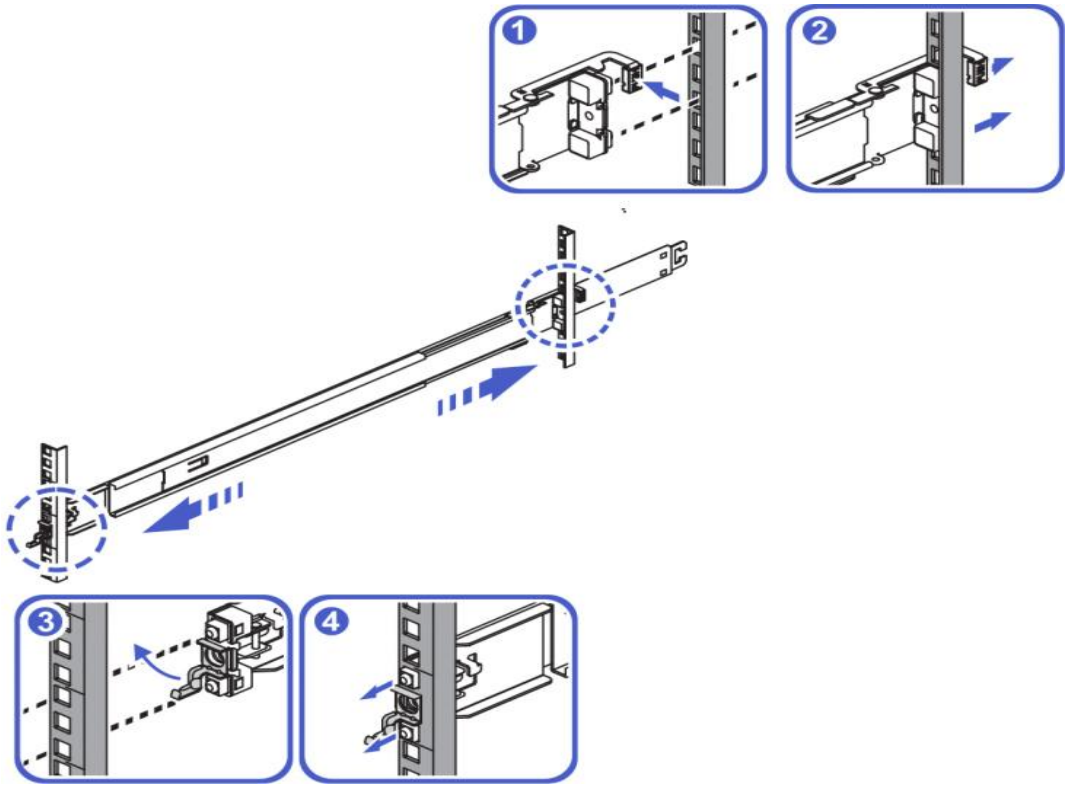
Step 3. Install the guide rails into the rack (the left and right guide rails are symmetrical, please repeat the installation)

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

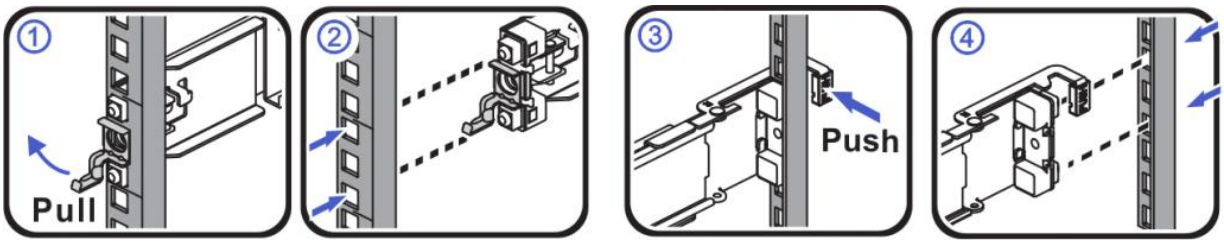
3-2. Install the guide rail into the rear end of the rack until you hear a click.

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

3-4. Install the guide rail into the front of the rack until you hear a click, completing step 3.



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



Step 4. Install the server into the rack

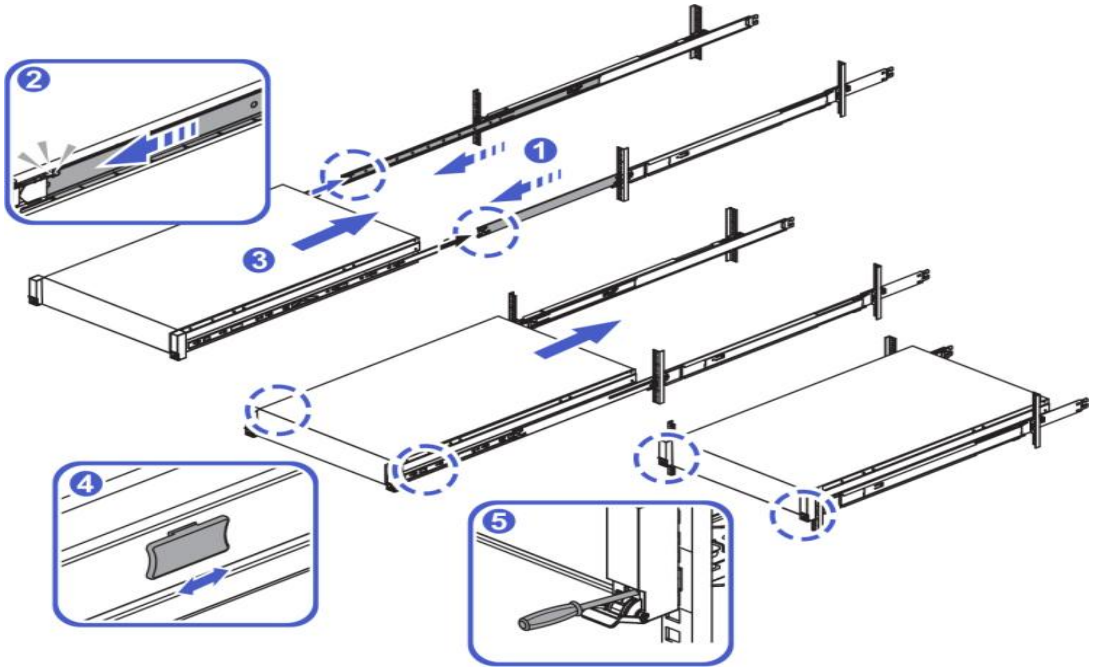
4-1. Pull out the middle rails on both sides of the rack until they stop in place with a click.

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

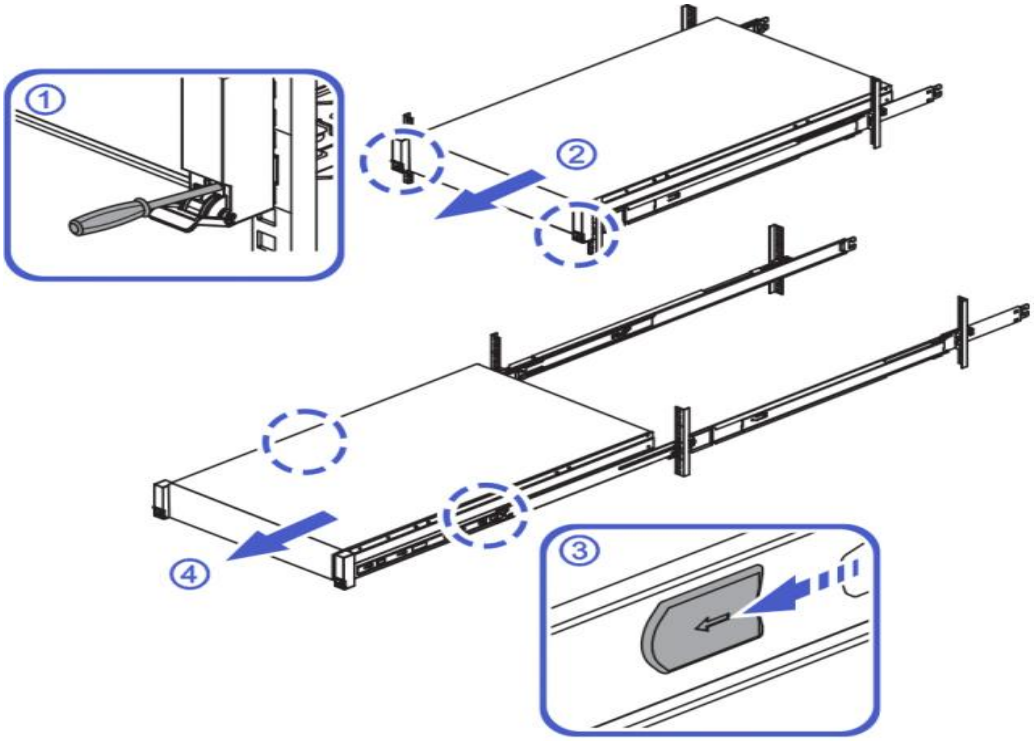
4-3. After pushing the server into the middle rail, you can hear a click and it stops;

4-4. Push the blue button in the direction of the arrow, and 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.



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


①
②
③
④

Operation precautions and common troubleshooting

4.1 Operation Notes

- The duty cycle of the system fan is uniformly controlled and uniformly adjusted; when the CPU fan and system fan are set to manual speed adjustment, they need to be controlled separately;
- In the BMC web page, you can manually drag and control the duty cycle when setting manual speed control;
- The memory must be installed according to the POR rules and have the best performance memory connection method;
- The LSI 9560 RAID card does not support Legacy mode management of the RAID card;
- FCH SATA does not support creating RAID;
- 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.
- The BMC WEB NTP function can only work properly when the dedicated network port is in DHCP mode;
- After performing NTP-related configuration on BMC WEB, the corresponding service will restart. You need to wait for a certain period of time (recommended 1 minute) before performing the next operation, otherwise an error may occur;
- The SNMP permission of the admin user needs to change its password first, because the password length of SNMP is required to 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 (a tool for querying hard disk usage), the device usage read by the BMC WEB has a certain error;
- Although the SSL certificate uploaded on the SSL page and the SSL file on the LDAP settings page are both in pem format, they cannot be shared;
- 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;

- When you use the IPMI tool to write FRU for the first time, there will be a "bad header CHECKSUM" prompt, but there will be no such prompt for subsequent updates;
- The Redhat 9.0 system has a pci BAR failed message, which has no impact and can be ignored.
- The BMC web interface will no longer log out when updating the BIOS and CPLD;
- The BMC NCSI function only supports one network port. LAN1 [lower port] supports NCSI, while LAN2 [upper port] does not support NCSI function.
- SNR-SR2412LE-S uses the I210 network port and does not support legacy PXE;
- After the DDR5 memory is disconnected from the AC, it is recommended to wait for 20 seconds before plugging in or unplugging the memory [DDR5 DIMM is powered by 12V, and the 12V power will not be discharged so quickly after shutting down];
- When you press F3 to restore the defaults in BIOS, the TCM/TPM options will not be restored to defaults;
- The language supported by BIOS is English, not Chinese;
- The names of the two I210 network cards in the BIOS setup interface Boot Override are exactly the same, and both display UEFI:00 PXE in front. This is because they are two independent network cards with different bus numbers but the same Fun number.
- The Redhat 9.0 system log contains some failed information, such as systemd information errors, which can be ignored;
- When a 4090 graphics card is connected, if 4090 is used for display, KVM will not display anything, and KVM will only map the image information of the motherboard VGA;
- The BIOS Post list does not display the PCIe device information function;
- For memory performance tests, such as stream tests, it is recommended to use 2Rx8 memory for testing, as 1R memory has lower performance;
- When a 9560 RAID card is connected, the disk order in the system may be inconsistent with that in the RAID card, but this does not affect the function;
- The Redhat 9.2 system does not support the use of T4 GPU cards, and a black screen will appear;
- SNR-SR2412LE-S Genoa does not support X710 network card, and PCIE error may occur;
- When the computer is powered on, the BMC IP address may not be displayed in the BIOS setup hotkey interface.

- To install Windows 2019 on a disk in RAID1 or JBOD mode connected to a 9560/9500 card, you need to install the driver;
- After installing ubuntu20.04, Rocky Linux 8.7, UOS 20 1050u2a, Kylin V10 SP3 2212, and EulerOS V2.0 SP5, lscpu shows that the CPU frequency is incorrect, but the installation is successful;
- 9560/9500 cannot install EulerOs V2.0SP5 due to lack of driver and cannot recognize the disk;
- When installing Windows 2019, the image requires the latest version of the OS image;
- You need to disconnect from the network to install Ubuntu 21.10; (If you do not disconnect from the network, the installation will fail; this OS is not a TLS version);
- When installing the 9560 JBOD Legacy mode, it is recommended to connect only one disk for installation. If there are multiple disks, make sure that the system is installed on the first disk. If the system is not installed on the first disk, the system will not be able to enter the system desktop after the installation is completed and restarted.
- When installing Windows system, it is recommended to connect only one disk for installation. If there are multiple disks, you can install it in the first boot disk. Otherwise, there may be other hidden partitions in other disks. If you unplug them, the system will fail to boot.
- When installing the system, it is recommended to format the disk before installing;
- In legacy mode, the MAC address of the Mellanox card is not displayed on the BMC web page. This is due to the card limitation.
- SNR-SR2412LE-S has a single BMC flash and does not support SD cards;
- The hard disk indicator on the right mounting ear is only used to indicate the onboard hard disk, not the M.2.
- The Post Code function on the BMC web page will display the 4-byte post code information of all boot processes to facilitate troubleshooting.
- In BIOS, Configuration Address source shows Unspecified regardless of whether it is DHCP or Static;
- When Ac Loss Control is set to Always On, if you press the button to force shutdown during POST and then unplug the power cord and then power it on again, it is very likely that the computer will not automatically boot up. This is because the BIOS has not yet written to the register during the POST stage. It is recommended to perform the

operation after the POST stage.

- When using a direct-connect backplane adapter, you must connect the backplane data cable, otherwise the hard drive indicator will be abnormal;
- When you replace CPU, memory and other devices, the device information before the replacement will still be displayed when you power on for the first time before entering the system. You need to wait until you enter the system to update the display;
- The BMC web login interface cannot be refreshed using the F5 key;
- When a GPU card is connected, it is normal that the document display on the BMC web is inconsistent with the GPU temperature displayed in the system. For example, the temperature read by nvidia-smi is the chip temperature.
- After installing the GPU card driver in the Linux system, when the GPU load is low, the GPU card will enter the energy-saving mode. In this mode, the link rate of the GPU card in the OS will drop to 2.5GT/s. After the GPU card is stressed, the link rate will reach 16GT/s [Driver behavior];
- There may be a certain error between the power consumption displayed on the BMC web page and the power consumption read by the actual power consumption meter;
- The first boot after upgrading the BIOS takes a long time (nearly 3 minutes);
- Adjust CPU_FAN speed manual control: ipmitool raw 0x0e 0x65 0x00 0X02 20;
- BMC web video log: only the latest two video logs are retained. After AC, the previously retained video events will be lost.
- BMC web does not support the SOL function, but supports ipmitool using the SOL function;
- The hard disk information is not displayed in the system list of the BMC web page;
- The BMC web page does not support RAID card information and SAS IT function acquisition;
- After clearing CMOS on the AMD platform, the first boot time will be very slow;
- When flashing BIOS in UEFI Shell, the file path must be kept without Chinese characters;
- If the BIOS setup help information is out of range, press M to scroll down, or press K to scroll up;
- BIOS load default will not clear the password and UEFI Drive BBS Priorities boot item order;
- When using a USB flash drive to update the BIOS in UEFI Shell, please note that

the USB flash drive can only be in FAT32 format;

● When Above 4G Decoding is disabled, it is not limited to the graphics card. If there are too many PCIE devices, the system will not be able to boot.

● BIOS clear log function setting, 3639 logs are full, and a Powercycle operation is required to take effect to delete all logs;

● When updating the BMC version, the machine is prohibited from restarting or disconnecting from the network. Please keep the machine powered on or off.

● After updating the BMC version, you need to restart the machine once so that the PCIE device information can be displayed normally on the BMC WEB.

4.2 Thermal Limitations

Front hard disk configuration	Fan Configuration	Maximum operating temperature 30℃	Maximum operating temperature 35°C
12x3.5-inch hard disk	8038	● Maximum support 360W CPU	● Maximum support 320W CPU

4.3 Common troubleshooting

4.3.1 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 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 address of BMC under Setup and use this IP address to log in to BMC Web again .

- 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;

- 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 on 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;

-

4.4 Common software failures

- 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