

SL201-G4 Rackmount Server User Manual

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Shenzhen Gooxi Digital Intelligence Technology Co., Ltd.



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Foreword

This manual is the product technical manual for the Gooxi Eagle Stream platform 2U model servers. It primarily provides an introduction and explanation of the product's appearance, structure, hardware installation, and basic configuration.

Please note that this manual is intended for reference and research purposes for professional technical personnel. The installation and maintenance of this product should only be performed by experienced technical personnel.

Modification Record

Manual version	Release date	Modification instructions
V1.0	2023-12-20	/
V1.1	2024-01-22	Optimization
V1.2	2024-07-01	Optimization
V1.3	2024-11-12	Optimization

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1. Product Introduction

1.1 Product Overview

SL201-G4 Series 2U Dual-socket Rack-Mount Server is a new generation of versatile 2U dual-socket rack-mount servers launched by Gooxi to meet the needs of the Internet, IDC (Internet Data Center), cloud computing, enterprise markets, and telecom business applications. It is suitable for core IT operations, cloud computing virtualization, high-performance computing, distributed storage, large-scale data processing, enterprise or telecom business applications, and other complex workloads. This server features low power consumption, strong expandability, high reliability, easy management, and deployment. Its main configurations include:

- Supports 2 4th/5th generation Intel® Xeon® Scalable processors.
- Supports 32 DIMM DDR5 memory slots.
- Supports 2 types of panel frames: 12x3.5-inch and 24x2.5-inch drive frames.
- The rear window supports expanding with 4*2.5-inch hard drive slots.
- Supports up to 10 PCIe expansion slots and 2 OCP network card slots.

The physical illustration of the server with a 12-drive configuration is shown below:



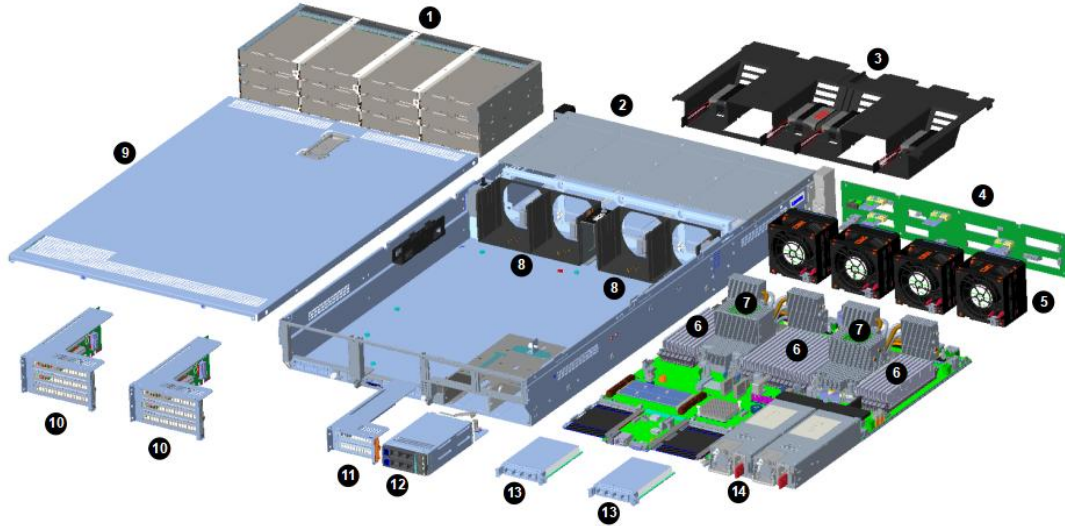
Front view 1-1



Rear view 1-2

1.2 Product Structure

Eagle Stream 2U Dual-Socket Rack-Mount Server Exploded View (Illustration based on the 12-bay model).



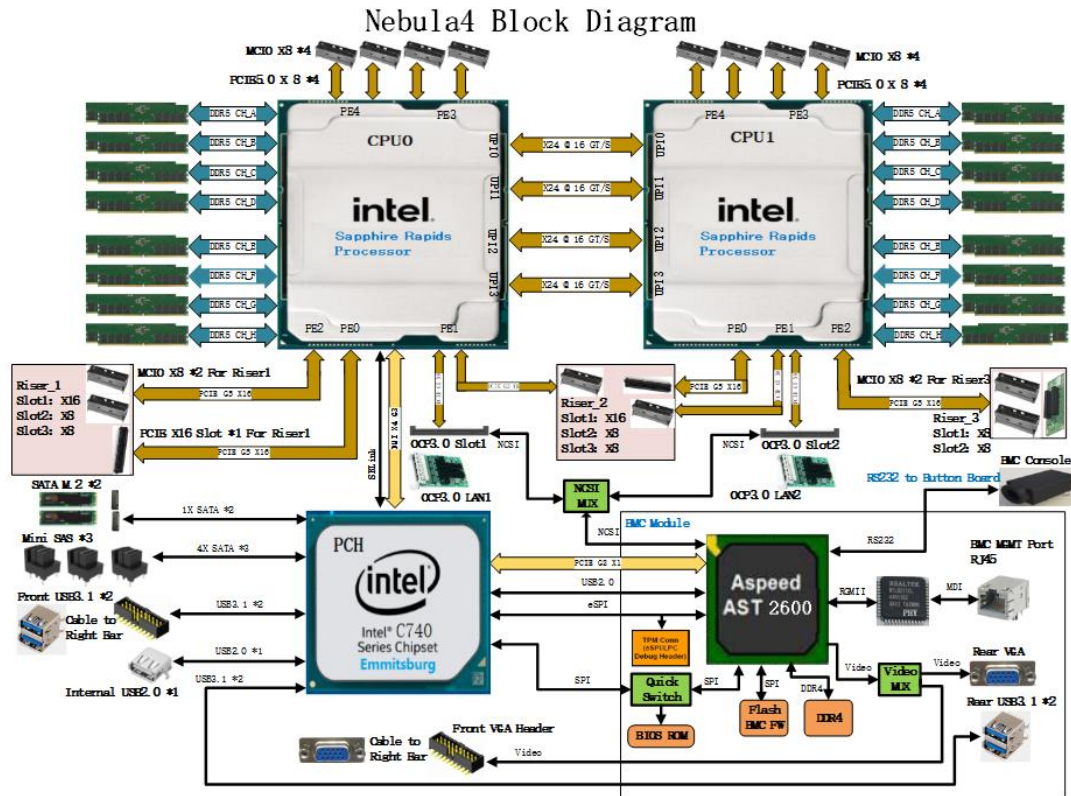
Structure diagram 1-3

No.	Name	No.	Name
1	Hard Drive	8	Fan Bracket
2	Hard Drive Bracket Module	9	Top Cover
3	Air Guide Module	10	Full-Height PCIe Module
4	Hard Drive Backplane	11	Half-Height PCIe Module
5	Fan Module	12	2.5-inch Hard Drive Module
6	Memory Stick	13	OCP3.0
7	CPU Heatsink	14	Power Supply Module

Table 1-1

1.3 Logical Structure

The logic of the SL201-G4 Series Dual-Socket Rack-Mount Server is as shown in the following diagram:



Motherboard logic block diagram 1-4

- The CPU adopts the 4th/5th generation Intel Xeon Scalable processor, LGA4677 socket.
- Each CPU supports 8 channels, and each channel supports 2 DDR5 RDIMM/LRDIMM memories.
- Onboard 2 M.2 slots (supports 22110/2280 specifications), only supports SATA signals.
- PCH uses INTEL C740 series chipset.
- The BMC chip uses ASPEED's AST2600 control chip for IPMI remote management. VGA output port, dedicated Gigabit RJ45 management network port, and connection to PCH through RMII/NCSI.

1.4 Product Specifications

Product Series	SL201-D12R-G4 SL201-D12RE-G4	SL201-D12R-NV-G4	SL201-D24R-NV-G4
Form Factor	2U 12-bay		2U 24-bay
System Size	799*433.4*87.6mm (D*W*H)		
Processor	Supports 1 or 2 4th/5th generation Intel® Xeon® Scalable processors, TDP 350W		
Memory	32 DDR5 memory slots, supporting DDR5 RDIMM 4400/4800 MHz		
Internal Storage Interface	3 MiniSAS HD interfaces, 2 SATA M.2 interfaces (22110/2280 specifications)		
External Hard Drive	Front: 12 hot-swappable 3.5-inch SAS/SATA hard drives; Rear: 4 hot-swappable 2.5-inch SATA/U.2 hard drives.	Front: 12 hot-swappable 3.5-inch SAS/SATA/U.2 hard drives; Rear: 4 hot-swappable 2.5-inch SATA/U.2 hard drives.	Supports 24 front hot-swappable 2.5-inch SAS/SATA/U.2 hard drives, and 4 rear 2.5-inch SATA/U.2 hard drives.
External Ports	Front: 1 VGA, 2 USB 3.1		
	Rear: 1 VGA, 1 COM port, 2 USB 3.1, 1 RJ45 Gigabit Management port		
PCIe Expansion Form	6 Full-Height PCIe slots, 4 Half-Height PCIe slots, 2 OCP 3.0 slots.		
PCIe Expansion Specifications	Riser 1/2: 1 Full-Height PCIe 5.0 x16, 2 Full-Height PCIe 5.0 x8, 2 Full-Height PCIe 5.0 x16 Riser 3/4: 2 Half-Height PCIe 5.0 x8, 1 Half-Height PCIe 5.0 x16 OCP: 2*OCP 3.0(PCIe 5.0 x8)		
Power Supply	Supports AC 220V 800W, 1300W, 1600W, 2000W, and 2200W Redundant Power Supply (Adaptable to Actual Power Requirements).		
Fan	Standard 4*8056 hot-swappable N+1 redundant fans		
Security	Supports TPM module		
IPMI	IPMI 2.0		
Management Port	1 dedicated RJ45 management port		
RoHS	Compliant with RoHS2.0		
Working Temperature& Humidity	Temperature 5°C~35°C/humidity 20%~80% RH non-condensing		
Storage Temperature&	Short-term storage (≤72 hours): Temperature -40°C ~ 70°C / Humidity 20% ~ 90% RH (non-condensing, including packaging) Long-term storage (>72 hours): Temperature 20°C ~ 28°C / Humidity 30%		

Humidity	~ 70% RH (non-condensing, including packaging)
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Table 1-2

2. Hardware Description

2.1 Front Panel

2.1.1 Appearance

- 12x3.5-inch hard drive configuration

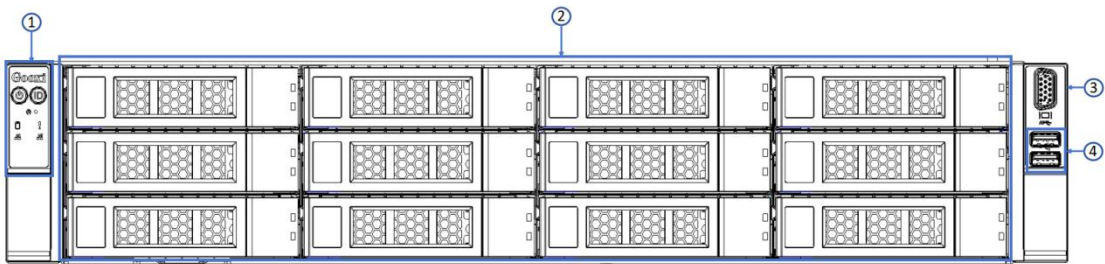


Figure 2-1

No.	Name	No.	Name
1	Switch Panel	3	VGA interface
2	3.5-inch hard drive	4	USB3.1 interface

Table 2-1

- 24x2.5-inch hard drive configuration

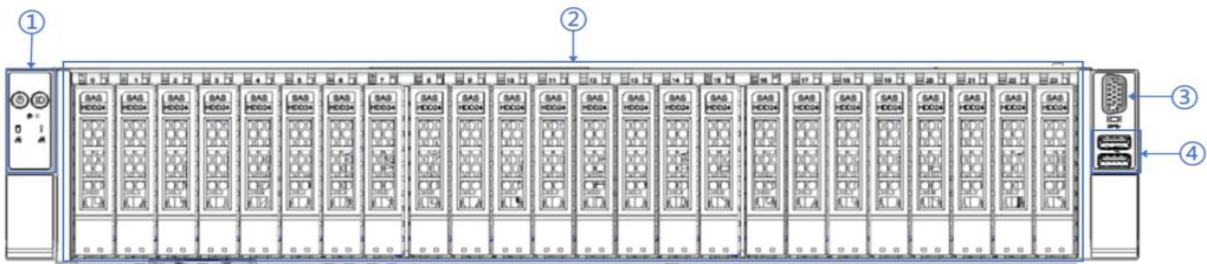


Figure 2-2

No.	Name	No.	Name
1	Switch Panel	3	VGA interface
2	3.5-inch hard drive	4	USB3.1 interface

Table 2-2

2.1.2 Indicator lights and buttons

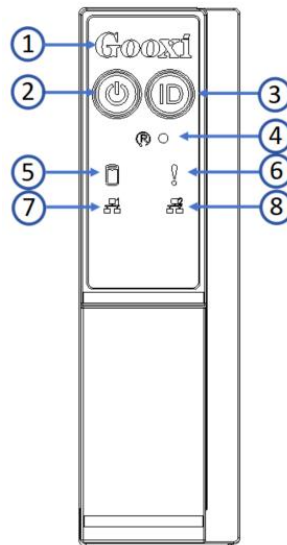










Figure 2-3

No.	Indicator/Button	No.	Indicator/Button
1	GOOXI Logo	5	Hard Drive Activity Indicator
2	Power Switch Button/Indicator	6	System Alarm Indicator
3	UID Button/Indicator	7	OCP1 Network Card Presence Indicator
4	Reset Server Button	8	OCP2 Network Card Presence Indicator

Table 2-3

LED status description		
Logo	Indicator light/button	Status description
		Gooxi logo
	Power Indicator	<p>Description of the power indicator light:</p> <p>Green (steady on): Indicates that the device has been powered on normally.</p> <p>Green (blinking): Indicates that the device is in standby.</p> <p>Green off: Indicates that the device is not powered on.</p> <p>Power button description:</p> <p>Press the button shortly in the power-on state, and the OS will shut down normally.</p> <p>Press and hold the button for 6 seconds in the power-on state to force the server to power off.</p> <p>Press the button shortly in the power-on state to start the machine.</p>
	UID button/indicator	<p>The UID button/indicator is used to conveniently locate the server to be operated, and the indicator can be turned off or on by manually pressing the UID button or remotely controlling the BMC command.</p> <p>Description of UID indicator light:</p> <p>Blue (steady on/blinking): Indicates that the server is</p>

		located. Off: Indicates that the server is not located. UID button description: Short press this button to turn on/off the positioning light.
	Reset button	server Press to restart the server
	Hard drive indicator	drive If there is data read or write activity on the PCH, the hard drive indicator will blink.
	System Alarm Indicator	Alarm System warning indicator. Including system alarms, fan alarms, power supply alarms, etc., which can be viewed through the IPMI management software
	OCP1 network card status indicator light	network presence indicator Corresponding to the OCP1 network card connection status indicator light. Green (steady on): Indicates that the OCP1 network card is in place. Off: Indicates that the OCP network card is not installed or is malfunctioning. Note: This corresponds to the two OCP network cards on the motherboard.
	OCP2 network card status indicator light	network presence indicator Corresponding to the OCP2 network card connection status indicator light. Green (steady on): Indicates that the OCP2 network card is in place. Off: Indicates that the OCP network card is not installed or is malfunctioning. Note: This corresponds to the two OCP network cards on the motherboard.

2.1.3 Interface

- Interface location

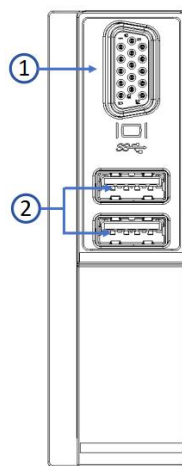


Figure 2-4

No.	Name	No.	Name
1	VGA interface	2	USB 3.1 interface

Table 2-4

- Interface description

Name	Type	Quantity	Description
VGA interface	DB15	1	Used for connecting display terminals, such as monitors or KVM
USB interface	USB 3.1	2	For accessing USB devices

Table 2-5

2.2 Rear Panel

2.2.1 Appearance

- Appearance of the rear panel

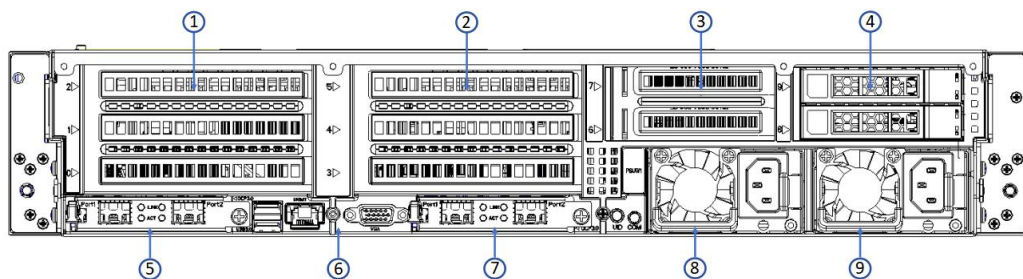


Figure 2-5

No.	Name	No.	Name
1	Riser1 module	2	Riser2 module
3	Riser3 module	4	Riser4 module
5	OCP1 network card slot	6	BMC Module
7	OCP2 network card slot	8	Power module 1
9	Power module 2		

Table 2-6

Note:

- 1. Riser1/Riser2/Riser3/Riser4 can be selected for either the rear hard drive module or the PCIe Riser module.

2.2.2 Indicator lights and buttons

- Rear Panel Indicators

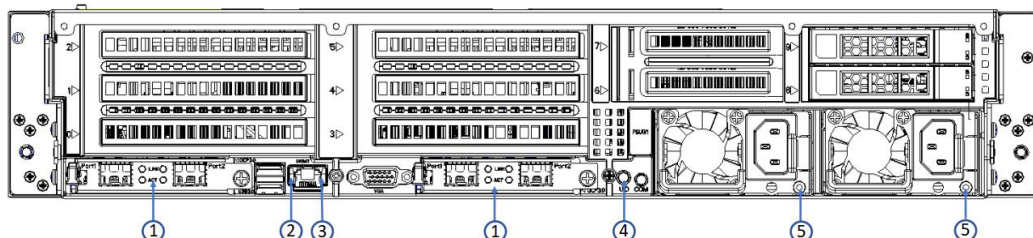


Figure 2-6

No.	Name	No.	Name
1	OCP Network Card Indicator Light	2	Management network port connection status indicator light
3	Management network port data transmission status indicator light	4	UID button

5	Power module indicator ligh	-	-
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Table 2-7

● Description of Power Module Indicators

Indicator light/button	Status description
Power module indicator	<p>Green (steady on): Indicates that the input and output are normal.</p> <p>Orange (steady on): Indicates that the AC power cord is unplugged or the power module is missing, and only one parallel-connected power module has AC input; the power module failure causes the output to be turned off, such as OVP, OCP, fan failure, etc.</p> <p>Green (1Hz/blinking): Indicates that the input is normal, the voltage is too low (less than 12V) or the power supply is in the intelligent standby mode.</p> <p>Green (2Hz/blinking): Indicates the firmware is undergoing online upgrade.</p> <p>Orange (1Hz/blinking): Indicates continuous power warning events during power operation, such as high temperature, high power, or large current.</p> <p>Off: Indicates no AC power input.</p>

Table 2-8

2.2.3 Interface

● rear panel interface

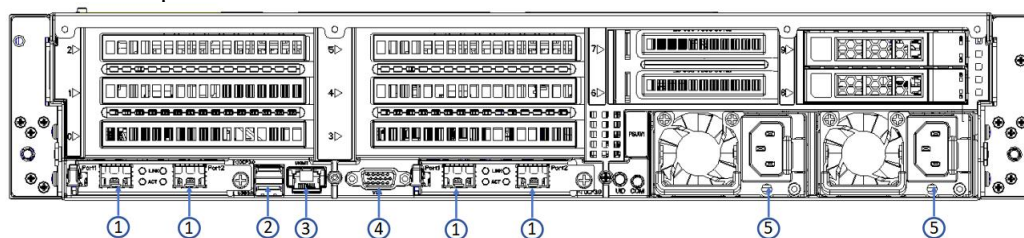


Figure 2-7

No.	Name	No.	Name
1	OCP Network Card Port	2	USB3.1 interface
3	Management network port	4	VGA
5	Power module power supply interface	-	-

Table 2-9

2.3 Processor

- Supports 1 or 2 Intel 4th/5th generation Xeon Scalable processors.
- When configuring with 1 processor, it should be installed in CPU 0 position.
- Processors installed in the same server must have the same model.
- For specific optional system configurations, please consult Goxxi sales.
- Processor positions are as shown in the following diagram:

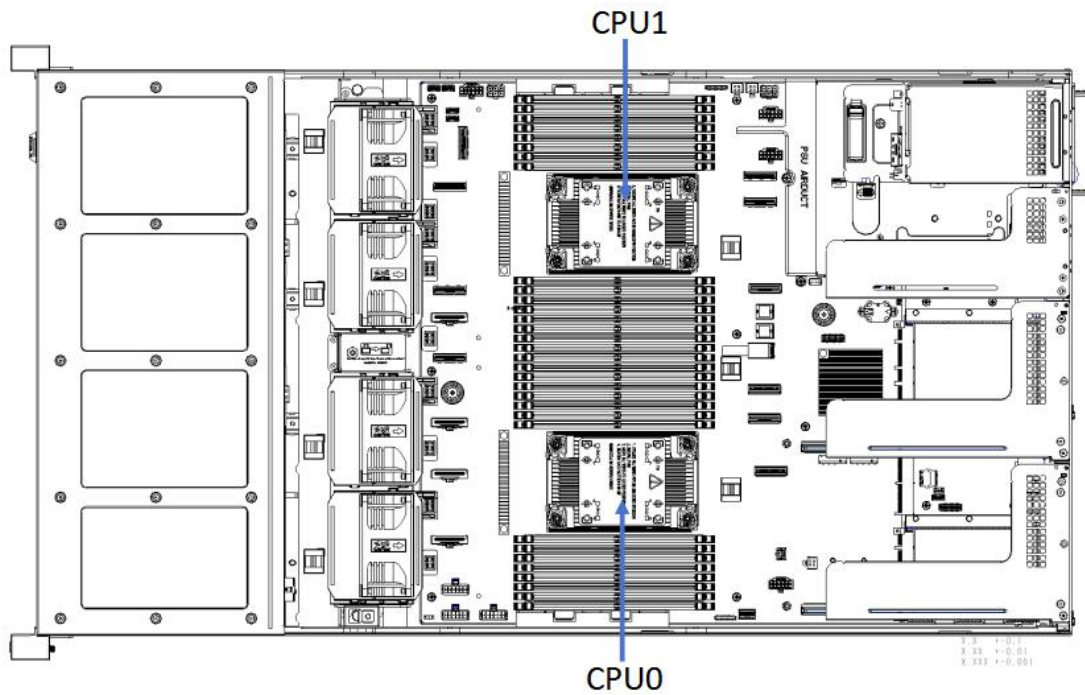


Figure 2-8

2.4 Memory

2.4.1 Memory slot location

This motherboard adopts the Intel Eagle Stream platform. Each CPU supports 8 channels, and each channel supports 2 DDR5 memories. The motherboard can support 32 DIMM DDR5 memories. When inserting only one memory, prioritize A0, B0, C0, D0, E0, F0, G0, H0 (memory slots with blue plastic color). It supports DDR5 ECC RDIMM/RDIMM-3DS server memory. The positions are as shown in the following diagram:

- memory slot location

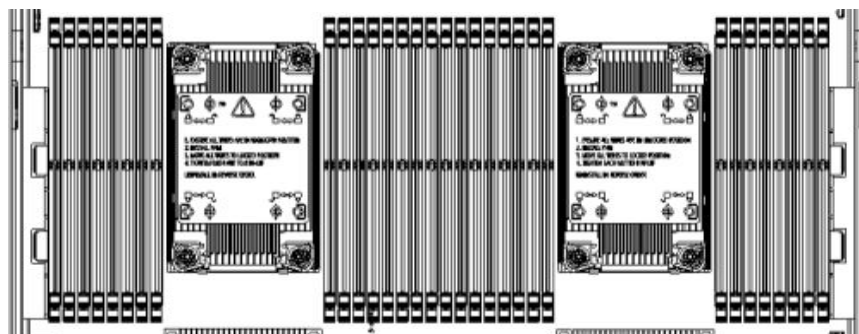


Figure 2-9

2.4.2 Memory installation guidelines

The server can install up to 32 DDR5 memories and supports DDR5 RDIMM server memory. The memory frequency supports 4400/4800MHz. The memory installation principles must be followed when configuring the memory (CPU1 is the same as CPU0).

	Chan 1 (7/H)		Chan 0 (6/G)		Chan 1 (5/F)		Chan 0 (4/E)			Chan 0 (0/A)		Chan 1 (1/B)		Chan 0 (2/C)		Chan 1 (3/D)	
DDR5	Slot0	Slot1	Slot0	Slot1	Slot0	Slot1	Slot0	Slot1	C P U	Slot1	Slot0	Slot1	Slot0	Slot1	Slot0	Slot1	Slot0
1+0								DDR5		DDR5							
													DDR5				
								DDR5									
2+0			DDR5							DDR5							
								DDR5							DDR5		
4+0			DDR5					DDR5		DDR5					DDR5		
			DDR5					DDR5		DDR5					DDR5		
6+0			DDR5		DDR5			DDR5		DDR5					DDR5		DDR5
	DDR5		DDR5					DDR5		DDR5					DDR5		DDR5
	DDR5				DDR5			DDR5				DDR5		DDR5			DDR5
	DDR5		DDR5		DDR5			DDR5		DDR5		DDR5					DDR5
8+0	DDR5		DDR5		DDR5			DDR5		DDR5		DDR5		DDR5			DDR5
	DDR5		DDR5		DDR5			DDR5		DDR5		DDR5		DDR5			DDR5
12+0	DDR5		DDR5	DDR5	DDR5			DDR5		DDR5	DDR5		DDR5	DDR5	DDR5		DDR5
	DDR5	DDR5	DDR5		DDR5	DDR5		DDR5			DDR5	DDR5		DDR5	DDR5	DDR5	
16+0	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5		DDR5		DDR5	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5

Figure 2-10

Note:

1. All configured memory must be of DDR5 RDIMM type.
2. For SPR CPUs, at least one DDR5 memory module must be configured.
3. Different types (RDIMM, RDIMM-3DS) and specifications (capacity, frequency, bit width, rank, height, etc.) of DDR5 memory are not compatible for mixed usage.
4. Different models of Intel Xeon Scalable processors support varying maximum memory capacities.

2.5 Storage

2.5.1 Hard drive configuration

Configuration	Front Hard Drive	Rear Hard Drive
12-Bay Direct Connect Configuration	Front Hard Drives (12x3.5/2.5)–Slots 0 to 11 support NVMe/SAS/SATA hard drives	Riser3/4 Module (2x2.5) * 2 -Supports NVMe/SATA hard drives
Note: *The maximum number of rear hard drives is influenced by the type of NVMe/SAS/SATA hard drives used.		

Table 2-10

2.5.2 Hard drive serial number

- 12x3.5-inch hard drive configuration

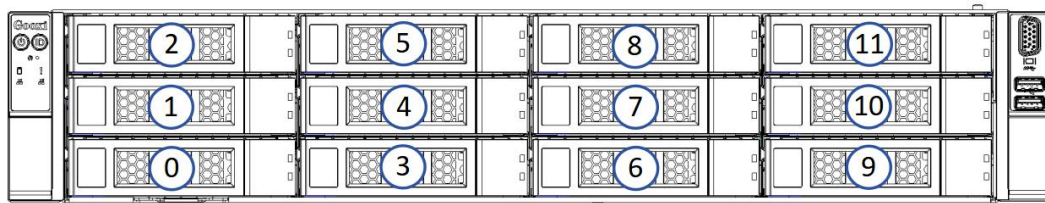


Figure 2-11

- 24x2.5-inch hard drive configuration

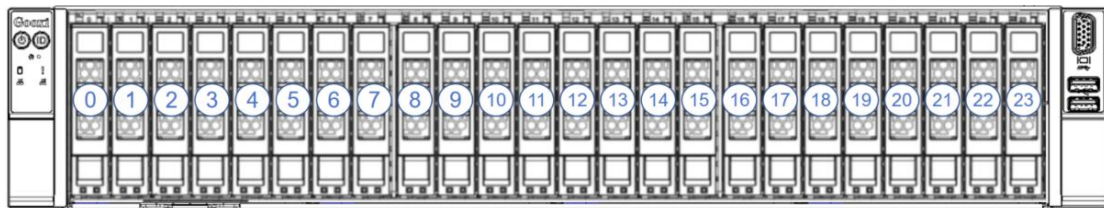


Figure 2-12

2.5.3 Hard drive status indicator

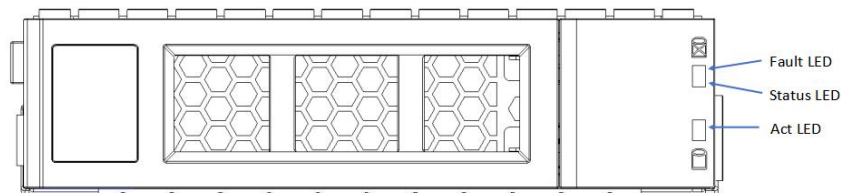


Figure 2-13

- Hard drive status indicator description

Function	Act LED	Status LED	Fault LED
Hard drive in place	Steady on	OFF	OFF
Hard drive activity	Blinking at 4Hz/second	OFF	OFF
Hard drive positioning	Steady on	Blinking 4Hz/second	OFF
Hard drive error	Steady on	OFF	Steady on
RAID rebuild	Steady on	OFF	Blinking 1Hz/second

Table 2-14

2.6 Power Supply

- Supports 1 or 2 power modules;
- Supports hot-swapping;

- When configured with 2 power modules, supports 1+1 redundancy;
- For power modules configured in the same server, the power module models must be identical;
- For specific optional system accessories, please consult Goxxi sales.
- The power supply positions are as shown in the following diagram:

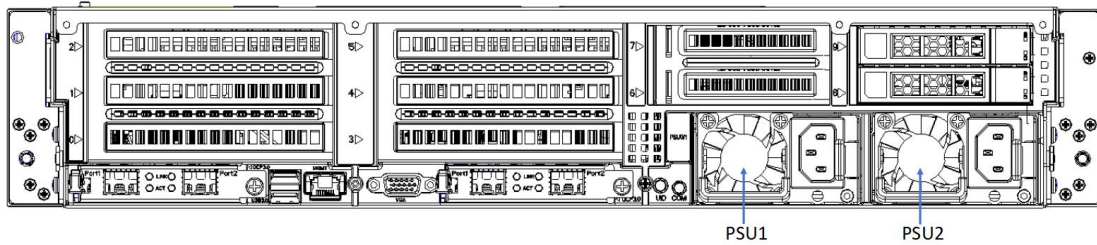


Figure 2-14

2.7 Fans

- Supports 4 fan modules;
- Supports hot-swapping;
- Supports single fan failure;
- Supports variable fan speed;
- For fan modules configured in the same server, the fan module models must be identical.
- The fan positions are as shown in the following diagram:

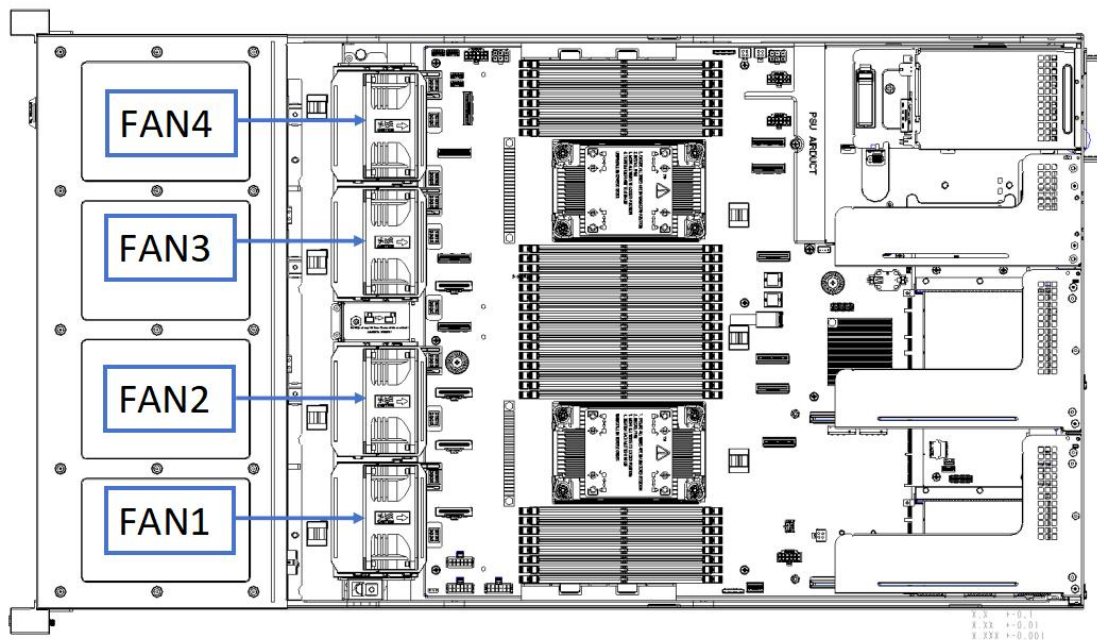


Figure 2-15

2.8 I/O Expansion

2.8.1 PCIe slot location

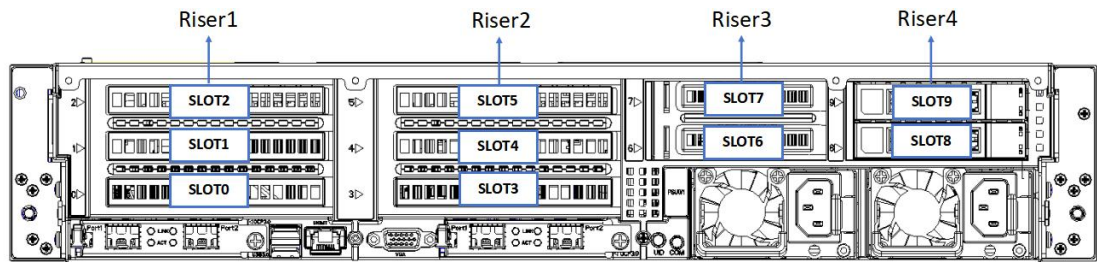


Figure 2-16

- The slots provided by Riser1 module are Slot0, Slot1, Slot2. When using a PCIe expansion module with 2 slots, Slot1 is not available.
- The slots provided by Riser2 module are Slot3, Slot4, Slot5. When using a PCIe expansion module with 2 slots, Slot4 is not available.
- The slots provided by Riser3 module are Slot6, Slot7. When using a PCIe expansion module with 1 slot, Slot6 is not available.
- The slots provided by Riser4 module are Slot8, Slot9. When using a PCIe expansion module with 1 slot, Slot8 is not available.

2.8.2 PCIe slot description

When CPU1 is not in place, its corresponding PCIe slot is unavailable.

PCIe slot	Subordinate CPU	PCIe standard	Bus bandwidth	Slot size
OCP1	CPU0	PCIe 5.0	X8	
OCP2	CPU1	PCIe 5.0	X8	
Slot 0	CPU0	PCIe 5.0	X8 or X16	Full-Height Full-Length
Slot 1	CPU0	PCIe 5.0	X8	Full-Height Half-Length
Slot 2	CPU0	PCIe 5.0	X16	Full-Height Half-Length
Slot 3	CPU0/CPU1	PCIe 5.0	X8(CPU0) or X16(CPU1)	Full-Height Full-Length
Slot 4	CPU1	PCIe 5.0	X8	Full-Height Half-Length
Slot 5	CPU1	PCIe 5.0	X16	Full-Height Half-Length
Slot 6	CPU1	PCIe 5.0	X8	Half-Height Full-Length
Slot 7	CPU1	PCIe 5.0	X8 or X16	Half Height Half Length
Slot 8	CPU1	PCIe 5.0	X8	Half Height Half Length
Slot 9	CPU1	PCIe 5.0	X8 or X16	Half Height Half Length

Note:

◆PCIe slots with a bus bandwidth of PCIe x16 are backward compatible with PCIe x8, PCIe x4, and PCIe x1 cards. However, they are not upward compatible, meaning that the bandwidth of the PCIe slot cannot be smaller than the bandwidth of the inserted PCIe card.

◆The slot size of a full-height full-length PCIe slot is backward compatible with full-height half-length and half-height half-length PCIe cards. The slot size of a full-height half-length PCIe slot is backward compatible with half-height half-length PCIe cards.

◆The power capacity of all slots can support PCIe cards with a maximum power of 75W. The power consumption of the PCIe card depends on the model of the card.

Table 2-12

2.8.3 PCIe Expansion Module

- PCIe Expansion Module 1

x32 to x16+x16 adapter card

- Installed in Riser1 position, providing PCIe slots for Slot0 and Slot2.
- Installed in Riser2 position, providing PCIe slots for Slot3 and Slot5.

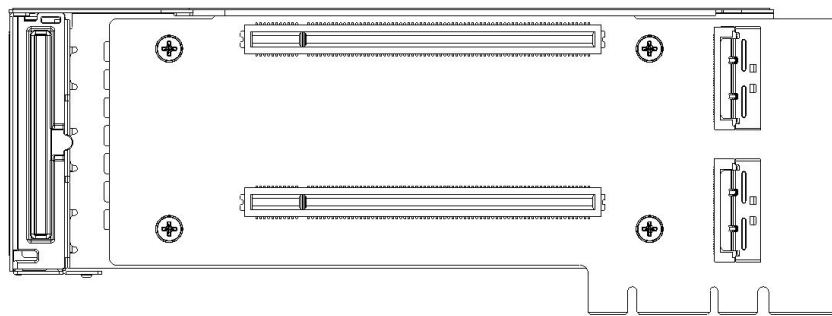


Figure 2-17

- PCIe Expansion Module 2

x32 to x16+x8+x8 adapter card

- Installed in Riser1 position, providing PCIe slots for Slot0, Slot1, and Slot2
- Installed in Riser2 position, providing PCIe slots for Slot3, Slot4, and Slot5

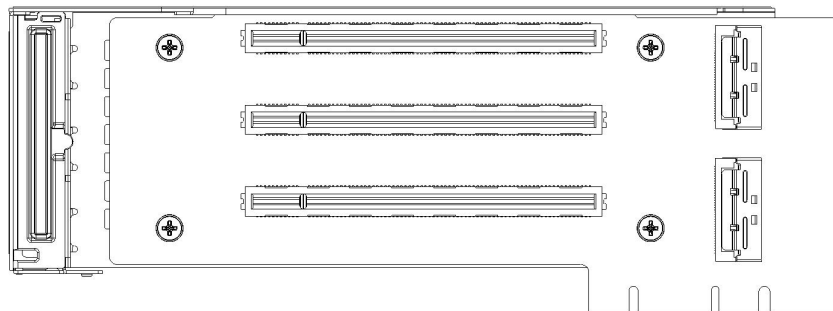


Figure 2-18

- PCIe Expansion Module 3
 - x16 adapter card
 - Installed in Riser3 position, providing PCIe slots for Slot7
 - Installed in Riser4 position, providing PCIe slots for Slot9

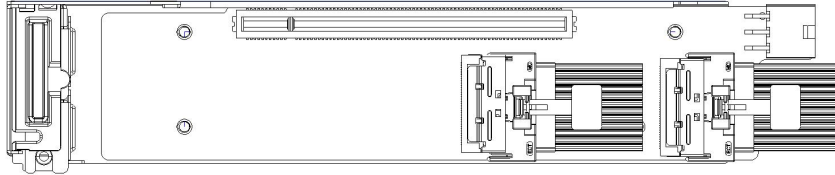


Figure 2-19

- PCIe Expansion Module 4
 - x16 to x8 (x16 slot) + x8 adapter card
 - Installed in Riser3 position, providing PCIe slots for Slot6 and Slot7
 - Installed in Riser4 position, providing PCIe slots for Slot8 and Slot9

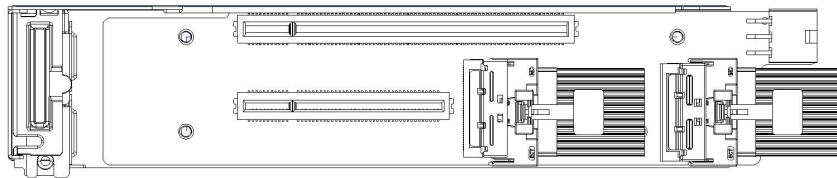


Figure 2-20

- 2.5-inch hard drive module

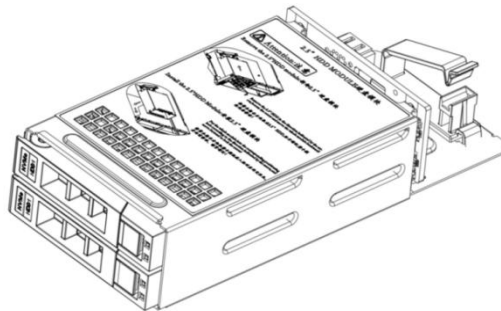
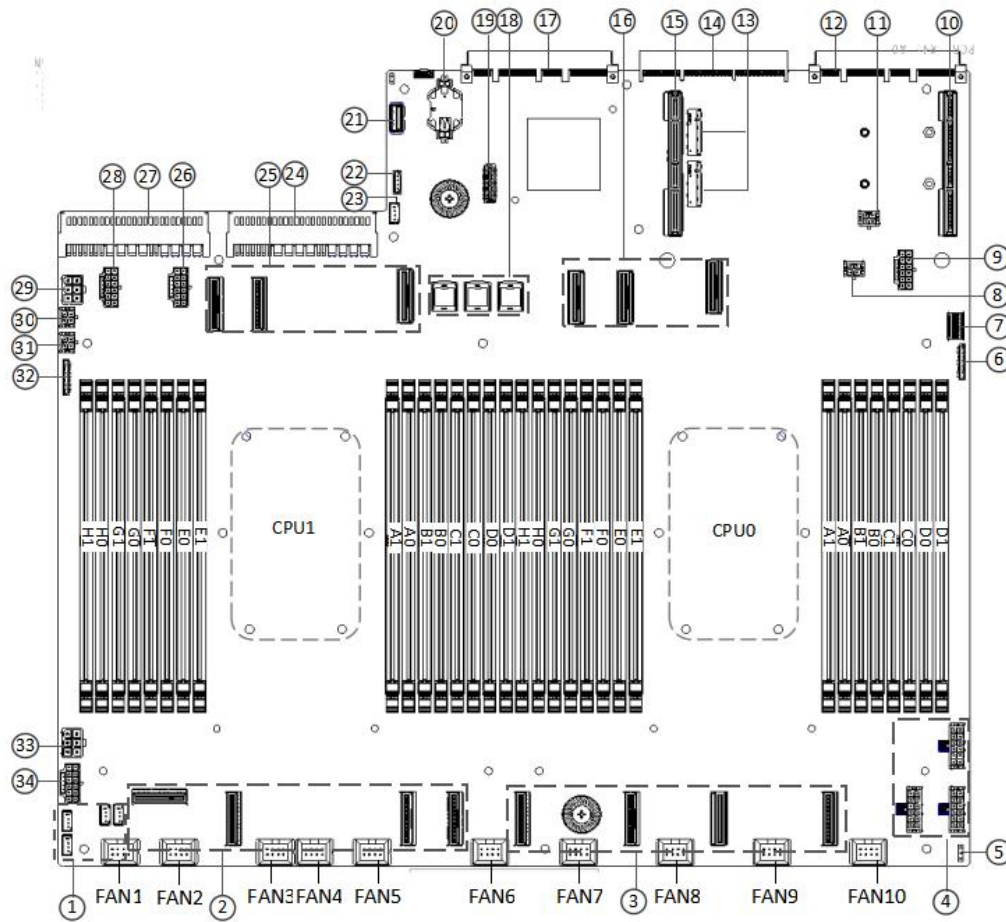


Figure 2-21

2.9 PCBA

2.9.1 Motherboard



Motherboard Figure 2-22

No.	Name	No.	Name
CPU0 DIMMA1/A0/B1/B0/C1/C0/D1/D0		CPU0 DDR5 Memory Channels 1,2,3,4 connectors	
CPU0 DIMMH0/H1/G0/G1/F0/F1/E0/E1		CPU0 DDR5 Memory Channels 8,7,6,5 connectors	
CPU1 DIMMA1/A0/B1/B0/C1/C0/D1/D0		CPU1 DDR5 Memory Channels 1,2,3,4 connectors	
CPU1 DIMMH0/H1/G0/G1/F0/F1/E0/E1		CPU1 DDR5 Memory Channels 8,7,6,5 connectors	
1	2 hard drive backplane I2C connectors, 2 MCIO I2C connectors	2	MCIO x8 connectors(CPU1) × 4
3	MCIO x8 connectors(CPU0) × 4	4	Three 2*6Pin hard drive backplane power connectors
5	Chassis intrusion connector	6	Right Front Panel VGA connectors
7	Right Front Panel USB3.0 connectors	8	NIC AUX power connector

9	2*6+4Pin high power GPU connector	10	CPU0 PCIE5.0 Port0 X16 GENZ168 connectors
11	Rear window hard drive (2 disks) backplane power connector	12	CPU0 OCP3.0connectors
13	SATA M.2 connectors	14	BMC Module Board-to-Board Connector
15	CPU1 PCIE5.0 Port0 X16 GENZ168 connectors	16	MCIO x8 connectors(CPU0) × 3
17	CPU1 OCP3.0 connectors	18	SATA connectors
19	BMC Module Cable Connector	20	Button Cell Battery
21	USB Interface	22	RAID KEY connectors
23	Hard Drive Backplane I2C Connector	24	3000W Power Supply High-power Connector
25	MCIO x8 Connector (CPU1) × 3	26	2*6+4Pin High-power GPU Connector
27	3000W Power Supply High-power Connector	28	2*6+4Pin High-power GPU Connector
29	Rear Window RISER-PCIE5.0 Backplane Power Connector	30	Rear Window Hard Drive (2 drives) Backplane Power Connector
31	Rear Window Hard Drive (2 drives) Backplane Power Connector	32	Left Front panel connectors
33	Rear Window Hard Drive (2 drives) Backplane Power Connector	34	2*6+4Pin High-power GPU Connector

Table 2-13

2.9.2 Hard drive backplane

- 12×3.5-inch Backplane

TOP surface

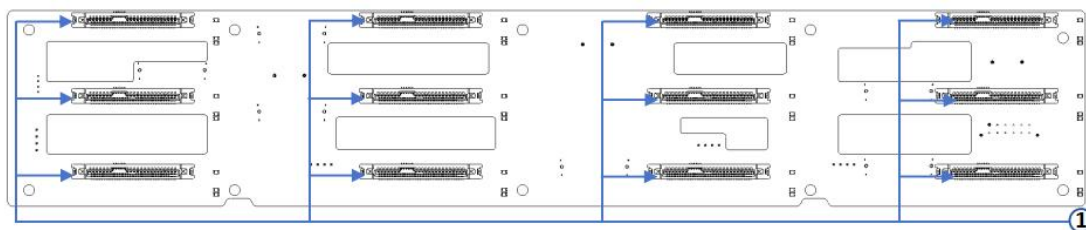


Figure 2-23

No.	Description	Function
1	SFF-8639 U.2 hard drive connector	Supports PCIe×4 and SAS/SATA U.2 interface, used to connect HDD/SSD/NVME

Table 2-14

Bottom surface

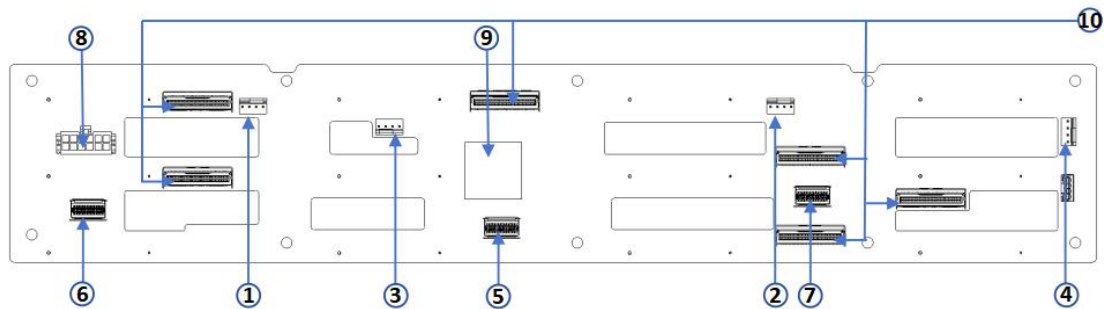


Figure 2-24

No.	Description	Function
1、2、3、4	Temperature-controlled fan socket	used for 4-pin fan interface
5、6、7	SFF-8654 Slimline connector	providing SAS/SATA×4 interfaces for connecting to PCH or HBA/RAID Card
8	Power connector	backplane power transmission connector used for transferring 12V power
9	CPLD chip	mainly used for indicator control of NVME SSD and SAS/SATA HDD
10	MCIO connector	providing PCIe×8 interface for connecting to CPU and NVME SSD

Table 2-15

- 24×2.5-inch Backplane

TOP surface

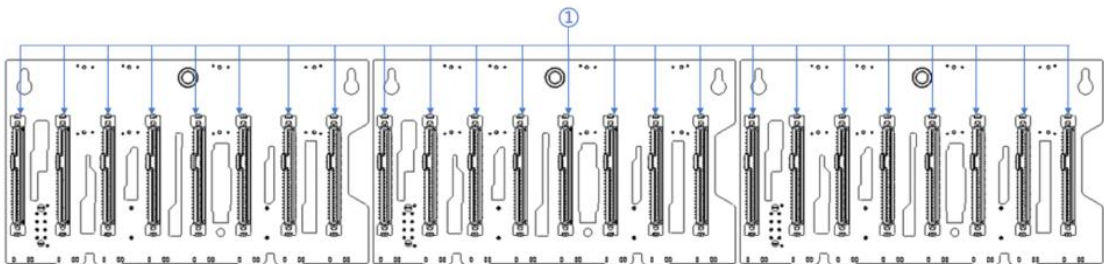


Figure 2-25

No.	Description	Function
1	SFF-8639 U.2 hard drive connector	Supports PCIe×4 and SAS/SATA U.2 interface, used to connect HDD/SSD/NVME

Table 2-16

Bottom surface

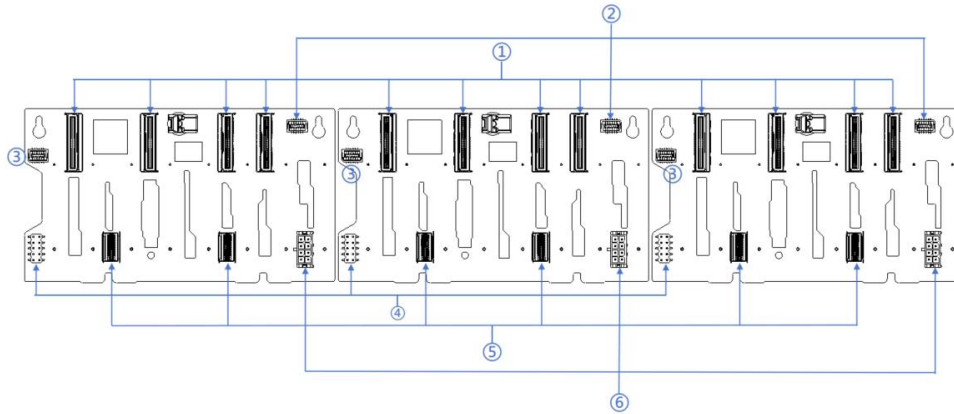


Figure 2-26

No.	Description	Function
1	MCIO Connector	Provides PCIe ×8 interface for connecting to CPU and NVMe SSD
2	IIC Input Connector	Used to connect to the motherboard or an upstream backplane as IIC input for BMC communication
3	IIC Output Connector	Outputs IIC signal to a downstream backplane
4	JTAG Connector	Used for CPLD firmware programming
5	SFF-8654 Slimline Connector	Provides SAS/SATA ×4 interface for connecting to PCH or HBA/RAID card
6	Power Connector	Backplane power transmission connector for 12V and 5V power supply

Table 2-17

- 2×2.5 Rear Hard Drive Backplane - 1
TOP surface

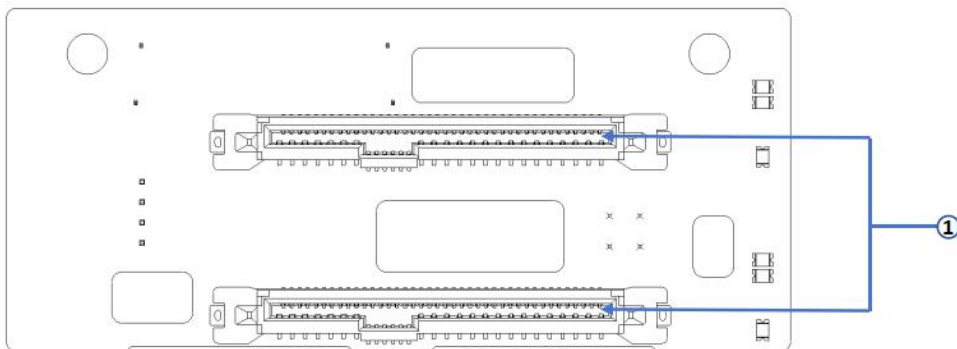


Figure 2-27

No.	Description	Function
1	SFF-8639 U.2 hard drive connector	Supports PCIe×4 U.2 interface for connecting NVME SSD

Table 2-18

Bottom surface

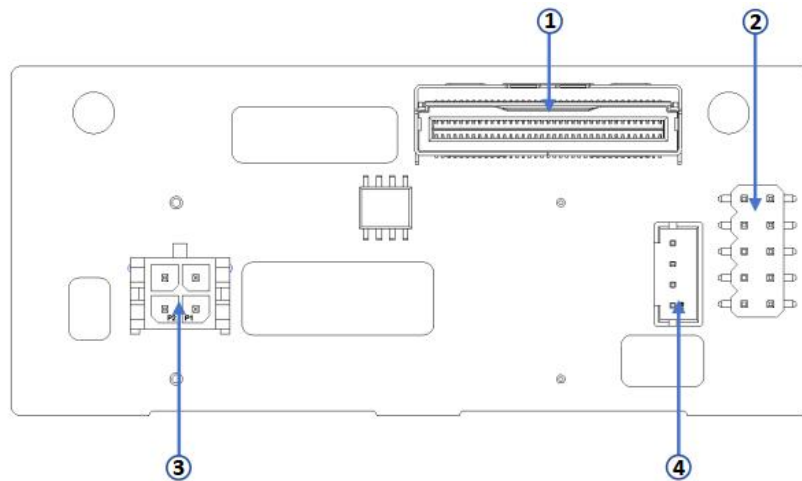


Figure 2-28

No.	Description	Function
1	MCIO connector	providing PCIe×8 interface for connecting to CPU and NVME SSD
2	JTAG debugging interface	used for CPLD programming and version upgrades
3	4pin power socket	used for connecting PSU with a 4-pin plug to power the board
4	I2C interface	used for I2C signal connections

Table 2-19

3. Installation Instructions

3.1 Chassis Top Cover Installation

- Step 1: Lift the slot at the opening position, push and lift it in the direction indicated by the diagram.

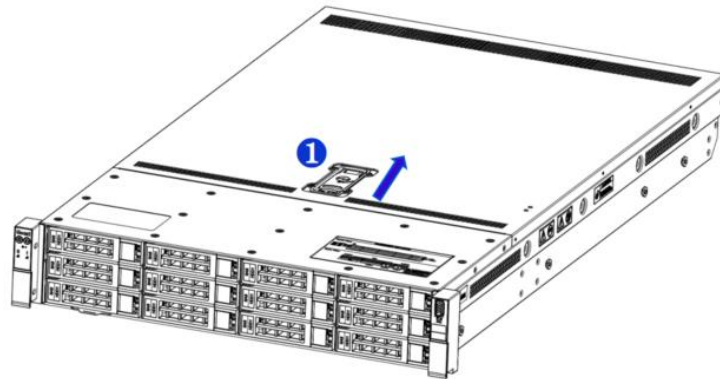


Figure 3-1

3.2 Installation of Accessories

3.2.1 CPU installation

- Step 1: Align the triangular mark on the CPU with the handle on the bracket as shown in the diagram, and mount the CPU onto the heatsink.

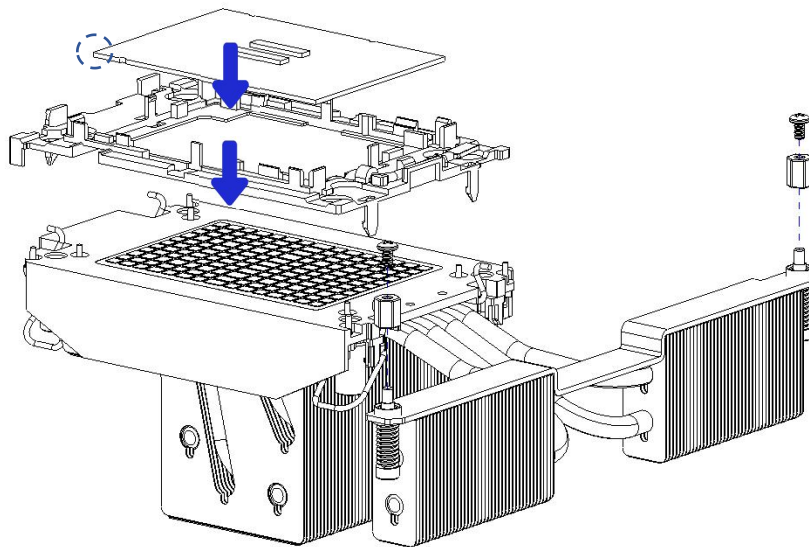


Figure 3-2

3.2.2 Heatsink installation

- Step 1: Remove the protective cover on the motherboard CPU socket.
- Step 2: Install the CPU and heatsink onto the CPU socket. (As shown in the diagram below)

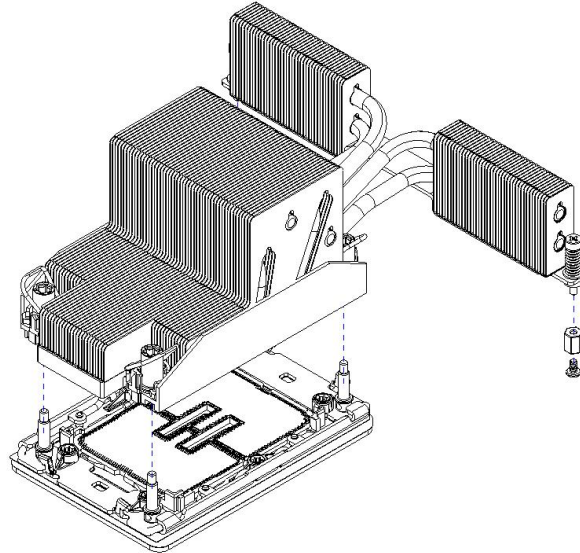


Figure 3-3

- Step 3: Press down on the four corners of the heatsink's fixing lock towards the outside, and, following the diagram below, rotate the screws fixing the heatsink in a clockwise direction twice to secure the heatsink to the motherboard.

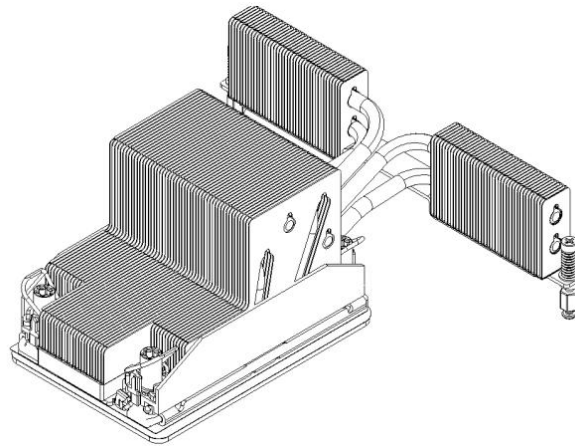


Figure 3-4



Caution: The pins on the motherboard are extremely fragile and can be easily damaged. To prevent damage to the motherboard, do not touch the processor or the contact points on the processor socket.

3.2.3 Memory installation

The 16 memory slots controlled by CPU0 on the motherboard are as follows:

CPU0 DIMMB0/B1, DIMMA0/A1, DIMMD0/D1, DIMMC0/C1, DIMMG1/G0, DIMMH1/H0, DIMME1/E0, DIMMF1/F0. The 16 memory slots controlled by CPU1 are as follows: CPU1 DIMMB0/B1, DIMMA0/A1, DIMMD0/D1, DIMMC0/C1, DIMMG1/G0, DIMMH1/H0, DIMME1/E0, DIMMF1/F0. Please note that the memory notches should match the DIMM slots' notches. Insert each DIMM module vertically to prevent incorrect installation.

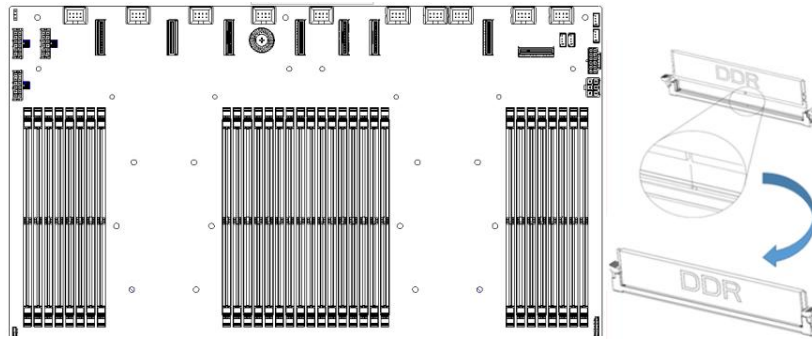


Figure 3-5

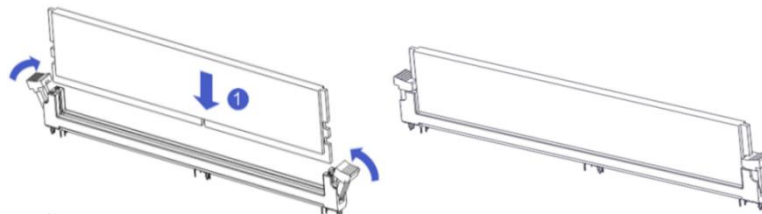


Figure 3-6



Note: On this motherboard, please use memory modules with the same CAS latency value. It is recommended to use memory of the same capacity and frequency produced by the same manufacturer.

3.2.4 BBU installation

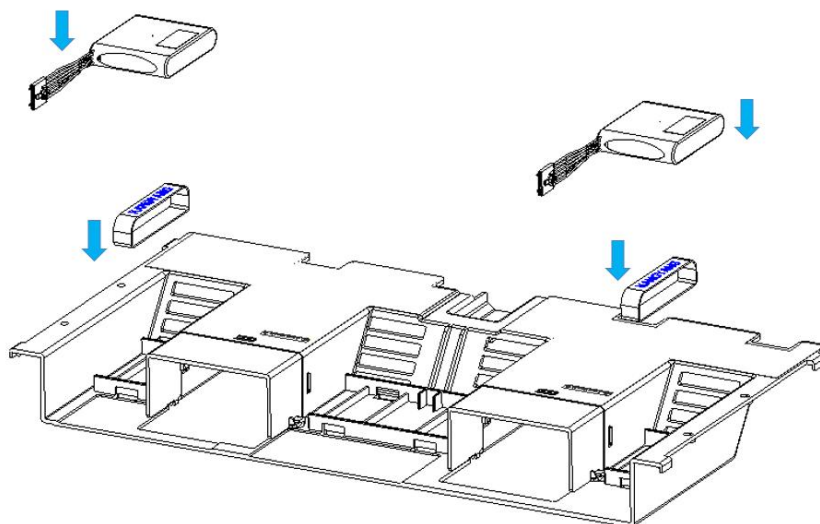


Figure 3-7

- Step 1: Attach the Velcro to the air duct.
- Step 2: Secure the BBU to the air duct using the Velcro.

3.2.5 Server slide rail installation

- Step 1: Prepare two slide rails and pull out the inner rail.

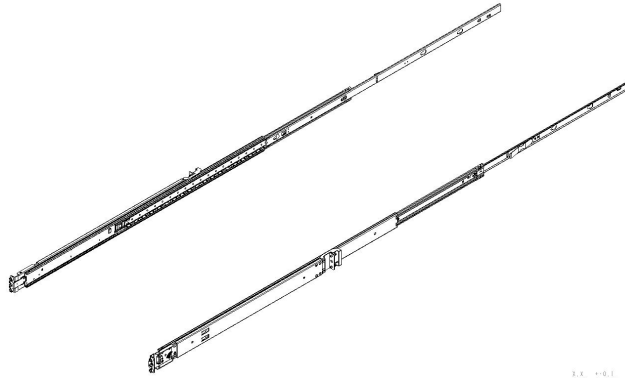


Figure 3-8

- Step 2: Fasten the inner rails to the sides of the chassis.

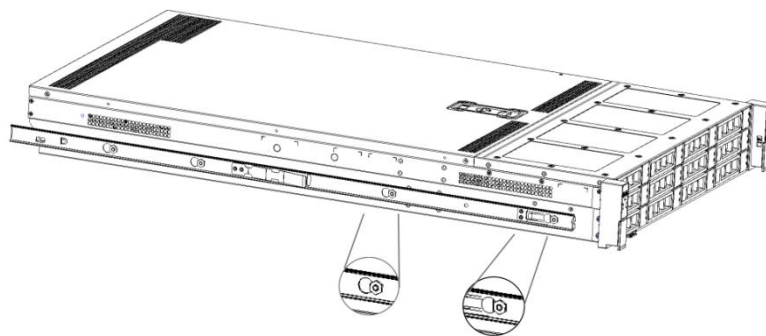


Figure 3-9

- Step 3: Install the outer rails on the cabinet brackets and secure the screws.

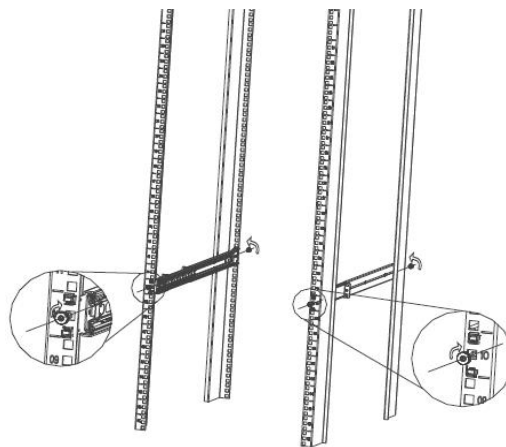


Figure 3-10



Note: When installing the guide rail, align it with the U-mark, and push it into place until you hear a click sound. Secure it firmly using M5 screws.

- Step 4: Align the chassis with the inner rails installed with the outer rails for installation.

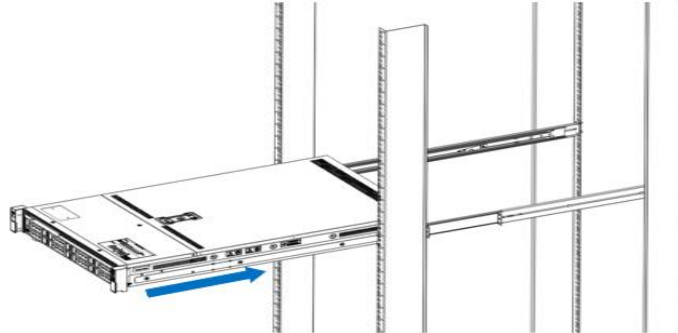


Figure 3-11



Note: When you push the chassis forward, you will hear a snapping sound. If you can't push it, you need to pull down the buckle of the inner rail to continue to push the chassis gently.

- Step 5: Push the chassis forward until it cannot slide and make sure that the screws are securely installed to complete the installation.

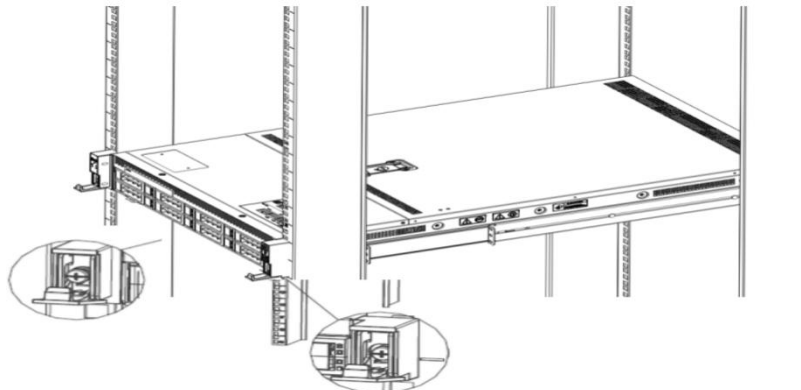


Figure 3-12



Note: During equipment maintenance, it is necessary to loosen the panel screws and pull the chassis lightly. Do not push or pull the chassis at random speed to avoid damage to the equipment.

4. Configuration Instructions

4.1 Initial Configuration

4.1.1 Power on and start

- Before powering on, it is necessary to ensure that all configurations of the server are installed in accordance with the corresponding specifications and standards, and keep the server turned off but not unplugged from the power supply. And all cables are connected properly, and the power supply voltage is consistent with that of the device.
- During the power-on process, please do not plug in hard drives, power modules, network cables or other external devices and cables.
- If the server has just been unplugged from the power supply, please wait for 1 minute before turning on the power.
- Server power-on power status:
The power supply is powered on, but the server is not turned on, and the power indicator is flashing green.
Power on, the server starts up, and the power indicator light is green.
- How to power on the server:
The server's default power-on policy is "Power-On Boot," which means the server will automatically power on when it receives power. Users can modify this setting in the BIOS Setup interface.
- Press the or <ESC> key on the keyboard during the boot process to enter the BIOS Setup interface, and find the following interface:

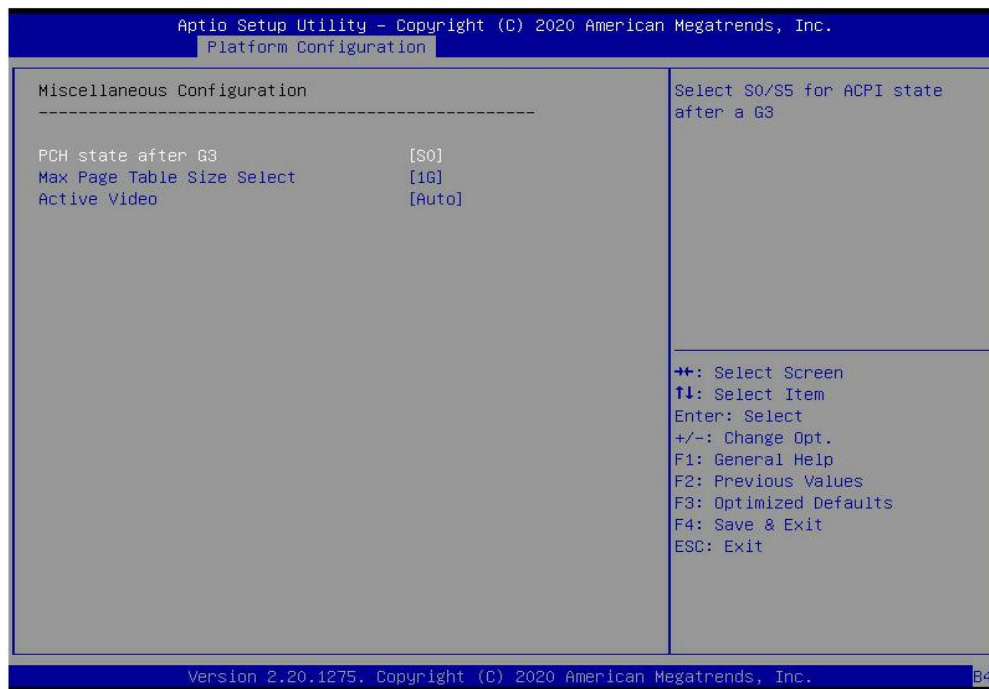


Figure 4-1

- PCH state after G3
PCH state setting after G3, the menu options are:
S0: Power on and start up directly
S5: You need to press the Power button to turn on the power
leave power state unchanged: Leave the power state unchanged .
Default: S0
- Log in to the iBMC management interface to perform remote power-on and power-off control.
- Enter the BMC IP address -> enter the BMC account&password -> find the remote control interface -> power controller -> It can be executed according to requirements.



Figure 4-2



For detailed usage of BMC and BIOS, please refer to the corresponding user manual.

4.1.2 Initial data

- BMC default account: admin
- BMC default password: Gooxi@123.
- BMC default address: 192.168.100.1
- BIOS Default Password: N/A

4.1.3 Configure BIOS

Press the or <ESC> key on the keyboard during power-on and start-up to enter the BIOS Setup interface, as shown below:

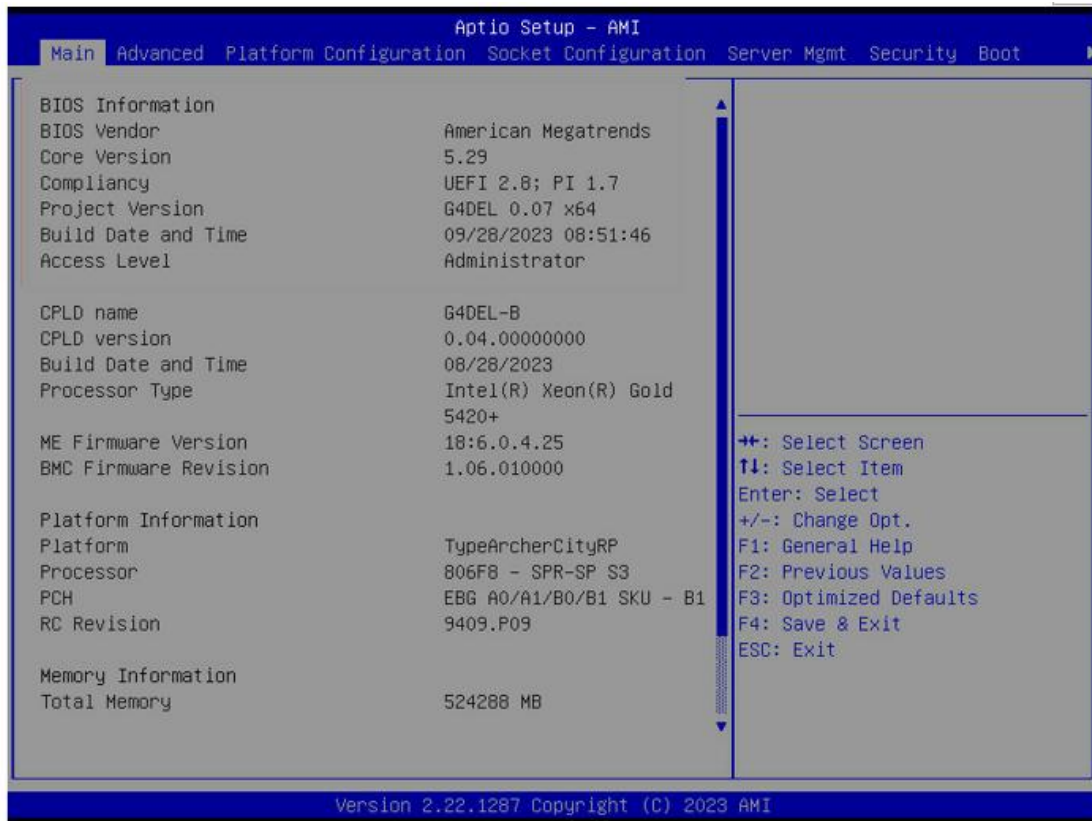


Figure 4-3

The Main interface contains the basic information of the BIOS system, such as the BIOS version number, CPU model, memory capacity, and the system time can be set. For detailed instructions, please refer to the "BIOS User Manual".

- Navigation key description:

- ←: Select Screen
- ↑↓: Select Item
- Enter: Select
- +/-: Change Opt.
- F1: General Help
- F2: Previous Values
- F3: Optimized Defaults
- F4: Save & Reset
- ESC: Exit

4.1.4 Configure BMC

When the server is powered on, make sure that the BMC dedicated management network port cable is properly connected.

Use another device, make sure it is in the same LAN as the BMC management network, and enter the BMC IP address on the web page.

Check the BMC IP address as follows:

- After the server is powered on, turn it on. Pay attention to the POST process when starting the server. In the lower left corner of the logo screen, the IP address is displayed.
- After the server powers on, pay attention to the POST process. Press the or <ESC> key on the keyboard to enter the BIOS Setup interface. Switch to the following screen:

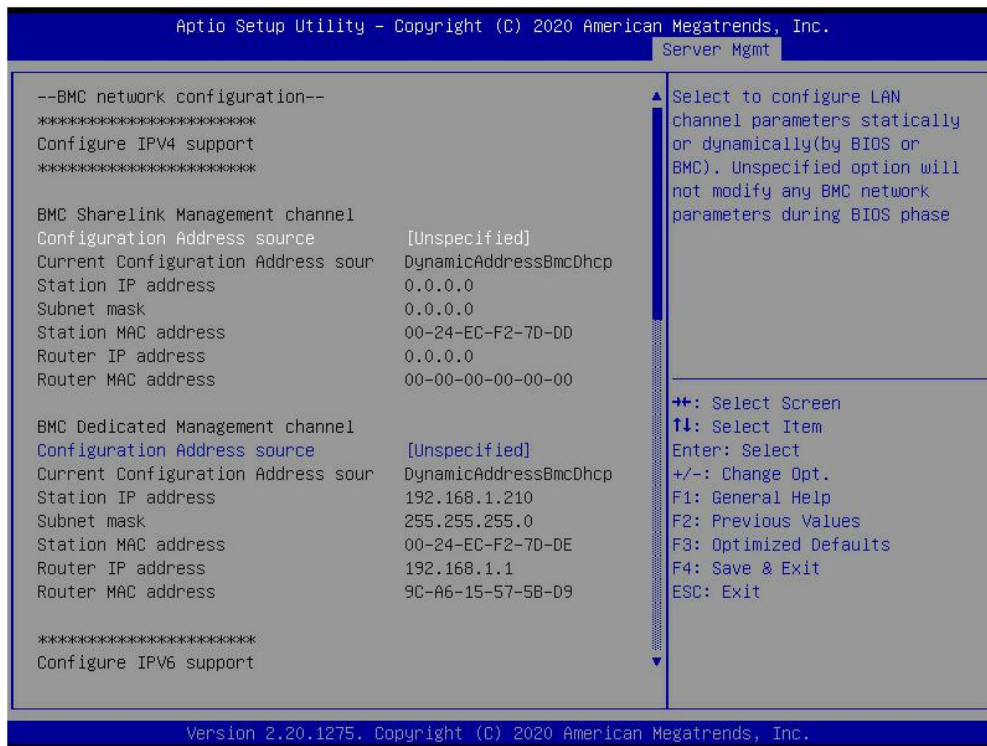


Figure 4-4

Configure IPV4 support :

- BMC sharelink Management Channel
- Configuration Address source
- Configure the BMC IP address allocation mode, the menu options are:
 - Unspecified: Do not change BMC parameters
 - Static: BIOS static IP setting
 - DynamicBmcDhcp: BMC runs DHCP to dynamically assign IP
 - DynamicBmcNonDhcp: BMC runs the Non-DHCP protocol to dynamically assign IP
 - Default: Unspecified

When changing from "Unspecified" to other parameters, saving and rebooting will result in the options reverting to the "Unspecified" value. There is no need to configure the BMC IP during every startup process.

- When the "Configuration Address Source" option is set to "Unspecified," it will display the network parameters (IPv4) for the system's shared Ethernet port. The displayed information includes the current IP configuration method, BMC IP, subnet mask, MAC address, router IP, and router MAC.
- BMC Dedicated Management Channel
- Configuration Address source
- Configure the BMC IP address allocation mode, the menu options are:
 Unspecified: No change to BMC parameters
 Static: BIOS static IP setting
 DynamicBmcDhcp: BMC runs DHCP to dynamically assign IP
 DynamicBmcNonDhcp: BMC runs the Non-DHCP protocol to dynamically assign IP
 Default: Unspecified
- When changing from "Unspecified" to other parameters, saving and rebooting will result in the options reverting to the "Unspecified" value. There is no need to configure the BMC IP during every startup process.
- When the "Configuration Address Source" option is set to "Unspecified," it will display the network parameters (IPv4) for the system's dedicated Ethernet port. The displayed information includes the current IP configuration method, BMC IP, subnet mask, MAC address, router IP, and router MAC.
- Configure IPV6 support
- BMC Sharelink Management Channel
- IPV6 Support
- Choose whether to support IPV6, the menu options are:
 Enabeld: support IPV6
 Disabled: does not support IPV6
 Default: Enabeld
- When changing from "Unspecified" to other parameters, saving and rebooting will result in the options reverting to the "Unspecified" value. There is no need to configure the BMC IP during every startup process.
- When the "Configuration Address Source" option is set to "Unspecified," it

will display the network parameters (IPv6) for the system's shared Ethernet port.

- BMC Dedicated Management Channel
- IPV6 Support
- Choose whether to support IPV6, the menu options are:
Enabled: support IPV6
Disabled: does not support IPV6
Default: Enabled
- When changing from "Unspecified" to other parameters, saving and rebooting will result in the options reverting to the "Unspecified" value. There is no need to configure the BMC IP during every startup process.
- When the "Configuration Address Source" option is set to "Unspecified," it will display the network parameters (IPv6) for the system's dedicated Ethernet port.

Log in to the BMC management interface

Enter the IP address on the web page, as shown in the figure:

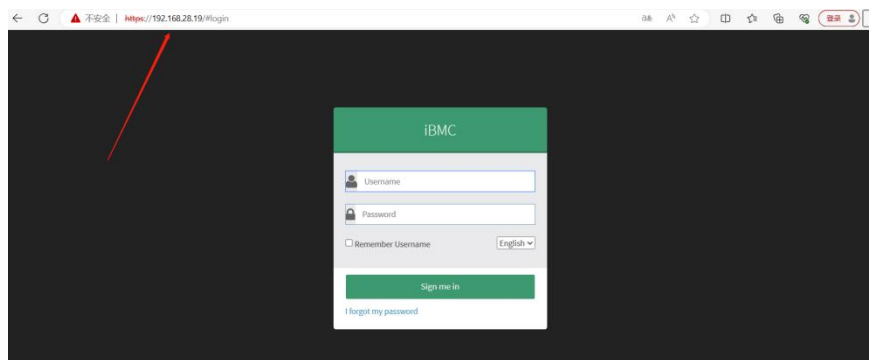


Figure 4-5

Enter the account password to enter the home page, and you can set the BMC IP address on the management interface.

On the left side of the interface, switch to "Settings Page" -> "Network Settings" -> "Network IP Settings". As shown below:

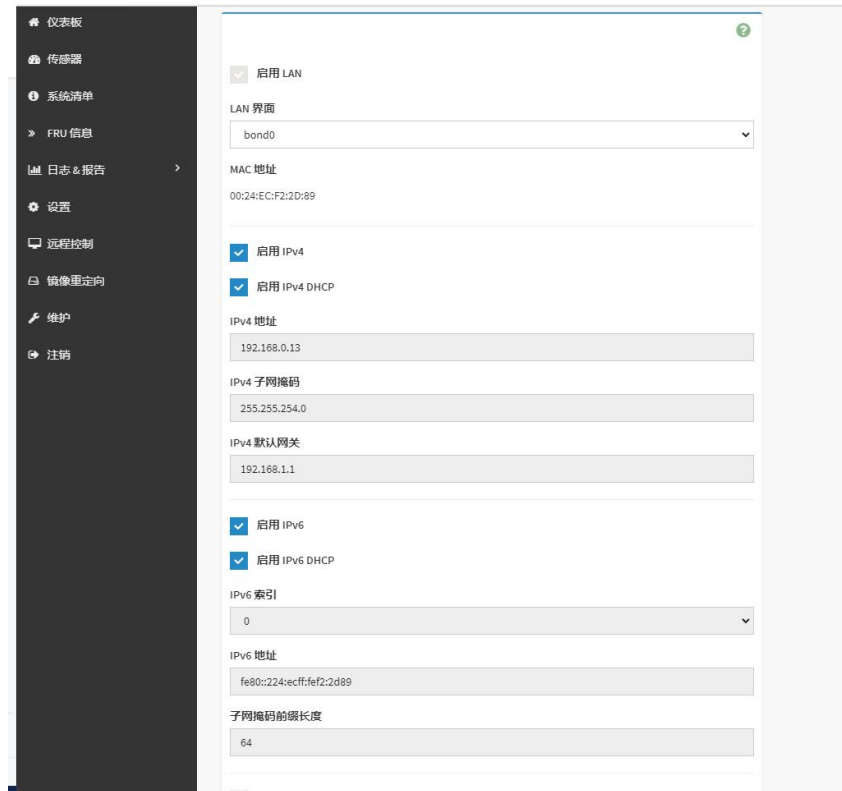


Figure 4-6

This page sets the IP address of the BMC management network port.

4.2 Model Configuration Description

4.2.1 SL201-D24R-NV-G4 model

When fully configured with 24 front NVMe drives, the rear riser 1/2 uses x16 + x8*2 adapter card. Due to limited MCIO signal availability, full population is not possible, resulting in Slot 1 and Slot 4 being unavailable.

5. Appendix

(Common fault diagnosis)

No display after power on

- Make sure the monitor cable is properly connected and the power indicator on the monitor lights up when the monitor is powered on.
- Ensure the monitor is connected to the server.
- If the above steps do not resolve the issue, try replacing the monitor with a known working one to confirm if the original monitor is faulty.
- If the issue persists, please contact Gooxi's customer service department for resolution.

Front Panel Indicator Lights Alarm

- Refer to the instructions in the manual to determine the specific alarm information indicated by the front panel lights and buttons.
- For power failure indicator lights alarm, check if the power module indicator lights on the rear window of the server are abnormal.

If the power module indicator lights are normal, please log in to the BMC web interface to check the BMC logs for any alarms. If there are alarms, please record the specific alarm information and contact Gooxi's customer service department for resolution.

If the power module indicator lights are not normal, please ensure that the server, power module, and power cords are functioning correctly.

- For system alarm indicator lights, first check the external environment.
- For other indicator light alarms, please contact Gooxi's customer service department for resolution.

Abnormal Hard Drive Indicator Lights

- Ensure the hard drives are properly installed.
- Refer to the instructions in the manual to determine the specific alarm information indicated by the rear panel lights and buttons.
- Confirm if the RAID card is configured correctly.
- Check for any drive dropouts during OS installation. If this occurs, please contact Gooxi's customer service department for resolution.

Unable to Use RAID Card

- Ensure the RAID card is properly installed.

- Try reseating the RAID card and PCIe adapter to confirm if they are functioning correctly.
- If replacing the known working RAID card doesn't resolve the issue, please restore to factory settings and update the BIOS version. If the problem persists contact Gooxi's customer service department for further assistance and resolution.

IPMI Connection Failure

- Confirm if the BMC function is correctly enabled in the BIOS.
- Check if the switch and network cables are functioning properly. If the regular IPMI connection is not effective, check the network environment.
- Set static or dynamic IP and ensure ping connectivity. If the web interface does not open, try using a newer version of Internet Explorer.
- If the problem is not resolved, please contact Gooxi's customer service department for further assistance and resolution.
- Operating this device in a residential environment may cause radio interference.

6. Scrap Recycling

- For environmental protection and resource reuse, we earnestly ask you to properly handle discarded server products.
- Before discarding the server, we recommend that you completely demagnetize the storage media, clear data, and physically destroy them to ensure that your personal data is not leaked.
- In order to recycle and reuse, please hand over the discarded server to local recycling companies for processing. This will ensure that electronic waste is properly handled and can be put back into use after environmental treatment.