SL201-G5 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 Birch 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	2025-05-15	First release

Contents

1. Product Introduction

1.1 Product Overview

SL201-G5 series Birch Stream 2U dual-socket rackmount server is Gooxi's next-generation 2U dual-socket server designed to meet the diverse demands of the internet sector, IDC (Internet Data Center), cloud computing, enterprise markets, and telecom applications. It is ideal for core IT services, cloud virtualization, high-performance computing, distributed storage, big data processing, enterprise or telecom services, and other complex workloads. This server features low power consumption, strong scalability, high reliability, easy management, and simplified deployment. Its main configurations include:

- Supports for 1 or 2 Intel® Xeon® (SP) 6 processors
- Supports for 32 DDR5 RDIMM-3DS/RDIMM 6400 MHz memory modules
- Supports for 1 type of front panel chassis: 12 × 3.5" drive bays
- Rear panel supports expansion of 4 × 2.5" drive bays
- Supports for up to 10 PCIe expansion slots and 2 OCP 3.0 network card slots; OCP1 supports x8 by default and can be upgraded to x16 via cable; OCP2 supports x16 by default

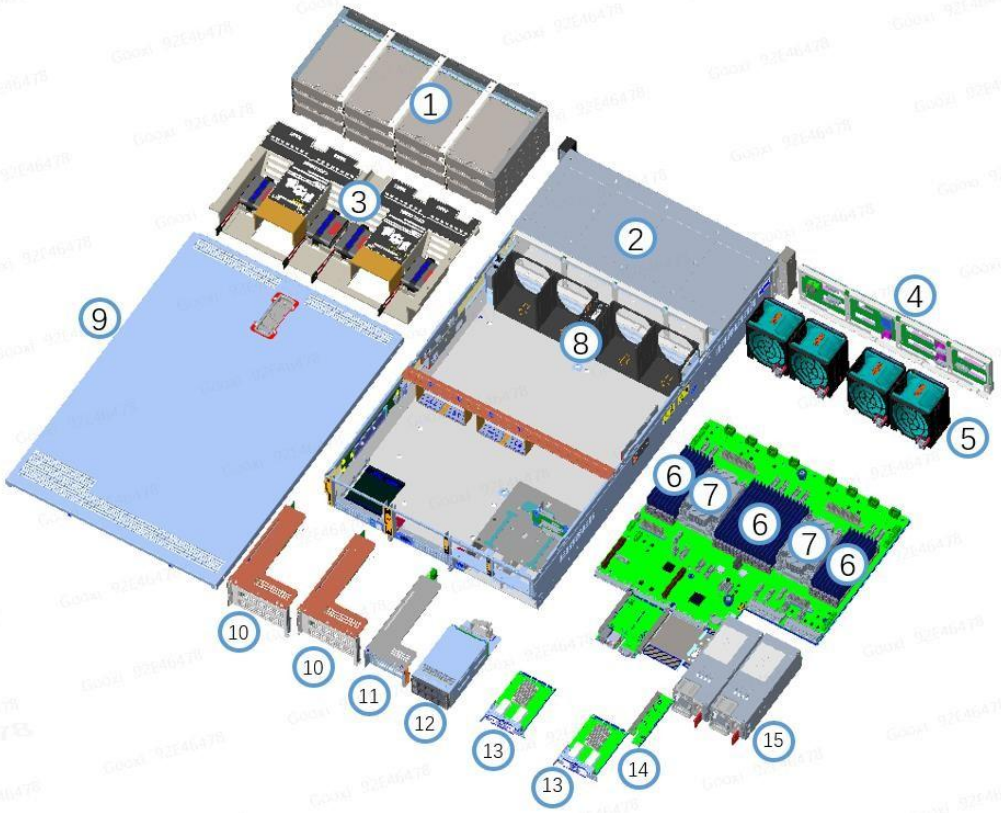
The physical appearance of the server is shown below:

Front view 1-1

Rear view 1-2

1.2 Product Structure

Birch Stream 2U Dual-Socket Rack-Mount Server Exploded View



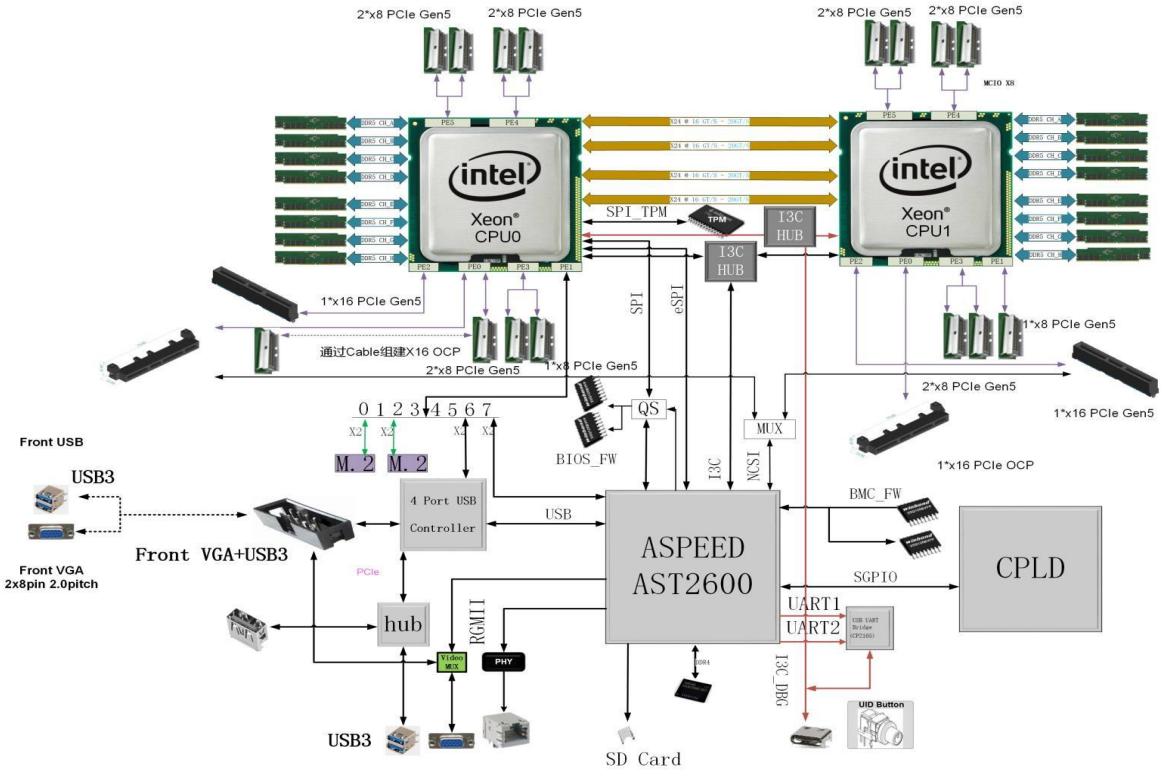
Structure diagram 1-3

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	UID Board
15	Power Supply Module		

Table 1-1

1.3 Logical Structure

The logic of the SL201-G5 Series Dual-Socket Rack-Mount Server is as shown in the following diagram:



Motherboard logic block diagram 1-4

- The CPU adopts the 6th 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 NVMe 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-NV-G5
Form Factor	2U 12-Bay Dual-Socket High-End Server
Processor	Supports 1 or 2 Intel® Xeon® (SP) 6 processors, with up to 86 cores / 172 threads per processor, a maximum TDP of 350W, and compatibility with the 6500P and 6700P series CPUs.
Memory	32 DDR5 memory slots, supporting DDR5 RDIMM-3DS / RDIMM 6400 MHz memory
Internal Storage Interface	Supports 2 NVMe M.2 SSD interfaces
External Hard Drive	Front supports 12 hot-swap 3.5"/2.5" SAS/SATA/U.2 drives; optional rear configuration supports two 2 × 2.5" drive modules
External Ports	Front: 1 VGA, 2 USB 3.0
	Rear: 1 VGA, 1 COM port, 2 USB 3.0, 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	Riser1/2: ◆ 1 × Full-height PCIe 5.0 x16, 2 × Full-height PCIe 5.0 x8 ◆ 2 × Full-height PCIe 5.0 x16 Riser3/4: ◆ 2 × Half-height PCIe 5.0 x8 ◆ 1 × Half-height PCIe 5.0 x16 ◆ OCP: 2*OCP 3.0(PCIe 5.0 x16, OCP1 supports x8 by default and can be extended to x16 via cable; OCP2 supports x16 by default)
OS	Microsoft Windows Server, RedHat Enterprise Linux, SUSE Linux Enterprise Server, CentOS, Ubuntu, VMware ESXi, etc.
Security	Supports TPM 2.0 module, chassis intrusion alarm, and BMC/BIOS redundancy
Power Supply	Supports two AC 220V 800W/1300W/1600W/2000W/2200W/2600W power modules, with Hot-Swap and 1+1 redundancy
Fan	Equipped with 4 Hot-Swap N+1 redundant fans by default, compatible with 8038/8056 specifications
IPMI	Supports standard interfaces such as Redfish, SNMP, and IPMI 2.0
Management Port	1 dedicated RJ45 management port
System Size	799*433.4*87.6mm (D*W*H)
Working	Temperature 5℃~35℃/humidity 20%~80% RH non-condensing

Temperature& Humidity	
Storage Temperature& Humidity	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% ～ 70% RH (non-condensing, including packaging)

Table 1-2

2. Hardware Description

2.1 Front Panel

2.1.1 Appearance

- 12x3.5-inch hard drive configuration

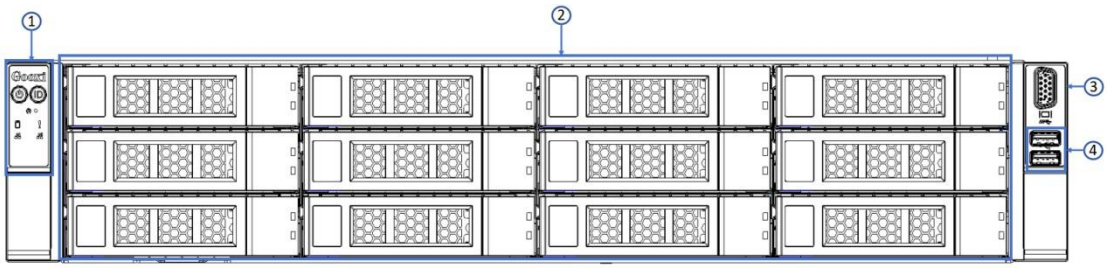


Figure 2-1

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

Table 2-1

2.1.2 Indicator lights and buttons

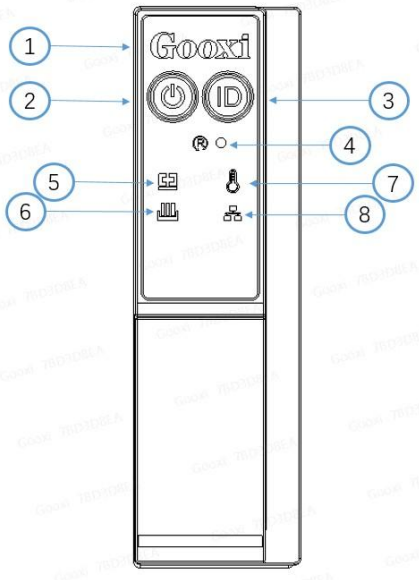


Figure 2-2

No.	Indicator/Button	No.	Indicator/Button
1	GOOXI Logo	5	System Alarm Indicator

2	Power Switch Button/Indicator	6	Memory Abnormality Indicator
3	UID Button/Indicator	7	Temperature Abnormality Indicator
4	Reset Server Button	8	Network Abnormality Indicator

Table 2-2

LED status description		
Logo	Indicator light/button	Status description
Gooxi		Gooxi logo
	Power Indicator	Description of the power indicator light: Green (steady on): Indicates that the device has been powered on normally. Green (blinking): Indicates that the device is in standby. Green off: Indicates that the device is not powered on. Power button description: Press the button shortly in the power-on state, and the OS will shut down normally. Press and hold the button for 6 seconds in the power-on state to force the server to power off. Press the button shortly in the power-on state to start the machine.
	UID button/indicator	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. Description of UID indicator light: Blue (steady on/blinking): Indicates that the server is located. Off: Indicates that the server is not located. UID button description: Short press this button to turn on/off the positioning light.
	Reset server button	Press to restart the server
	Hard drive indicator	If there is data read or write activity on the PCH, the hard drive indicator will blink.
	System Alarm Indicator	System warning indicator. Including system alarms, fan alarms, power supply alarms, etc., which can be viewed through the IPMI management software
	Temperature Abnormality	Temperature Abnormality Indicator. The indicator stays on when the temperature exceeds the threshold and turns off once the over-temperature alarm is cleared.
	OCP Network Card Presence Indicator	Indicates whether the OCP network card is properly installed.

Table 2-3

2.1.3 Interface

- Interface location

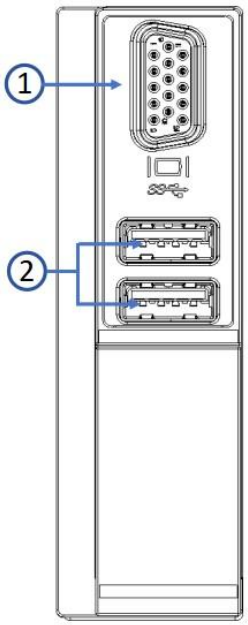


Figure 2-3

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

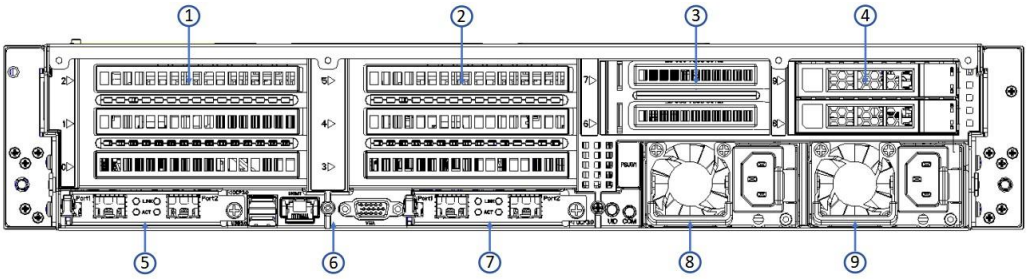


Figure 2-4

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. Riser3/Riser4 can be configured with either a rear hard drive module or a PCIe Riser module.

2.2.2 Indicator lights and buttons

- Rear Panel Indicators

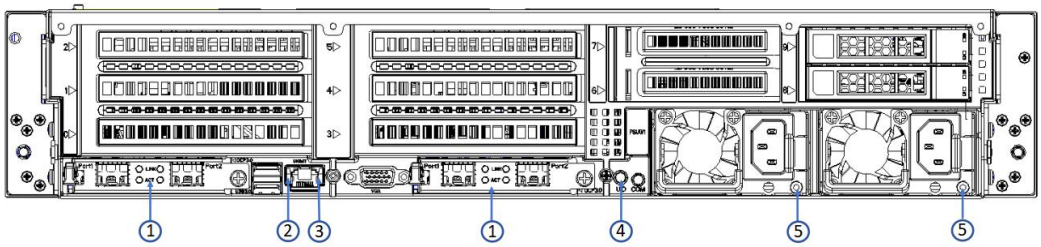


Figure 2-5

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		

Table 2-7

- Description of Power Module Indicators

Indicator light/button	Status description
Power module indicator	Green (steady on): Indicates that the input and output are normal. 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. 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. Green (2Hz/blinking): Indicates the firmware is undergoing online upgrade. Orange (1Hz/blinking): Indicates continuous power warning events during power operation, such as high temperature, high power, or large current. Off: Indicates no AC power input.

Table 2-8

2.2.3 Interface

- rear panel interface

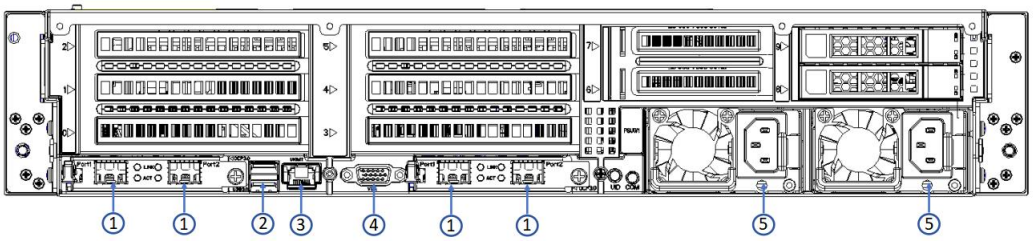


Figure 2-6

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® Xeon® (SP) 6 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 Gooxi sales.
- Processor positions are as shown in the following diagram:

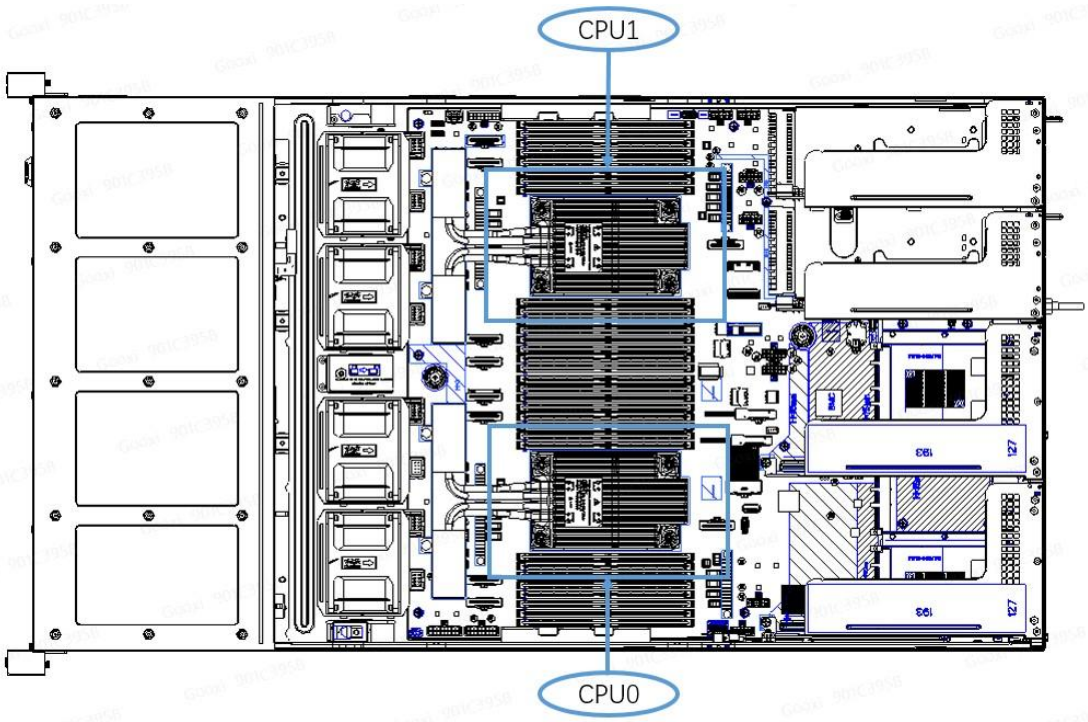


Figure 2-7

2.4 Memory

2.4.1 Memory slot location

This motherboard adopts the Intel Birch 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

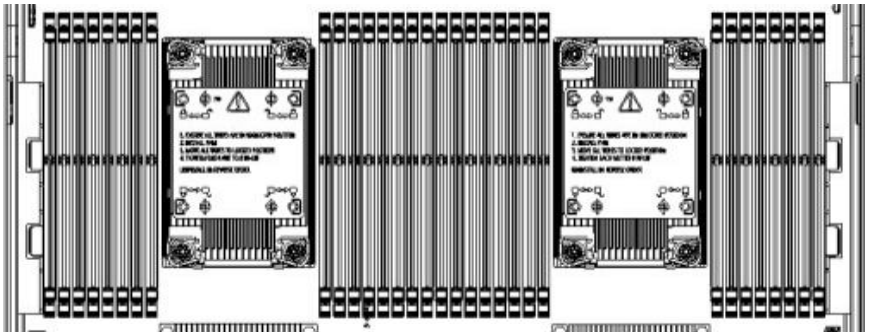


Figure 2-8

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 6400MHz. The memory installation principles must be followed when configuring the memory (CPU1 is the same as CPU0).

部署数量	推荐部署槽位																	
DDR5 QTY	DIMMH0	DIMMH1	DIMMG0	DIMMG1	DIMMF0	DIMMF1	DIMME0	DIMME1		DIMMA1	DIMMA0	DIMMB1	DIMMB0	DIMMC1	DIMMC0	DIMMD1	DIMMD0
1											DDR5						
4			DDR5				DDR5				DDR5				DDR5		
	DDR5				DDR5								DDR5				DDR5
8	DDR5		DDR5		DDR5		DDR5		CPU0/1		DDR5		DDR5		DDR5		DDR5
			DDR5	DDR5			DDR5	DDR5		DDR5	DDR5			DDR5	DDR5		
	DDR5	DDR5			DDR5	DDR5						DDR5	DDR5			DDR5	DDR5
12	DDR5		DDR5	DDR5	DDR5		DDR5	DDR5		DDR5	DDR5		DDR5	DDR5	DDR5		DDR5
16	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5		DDR5	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5

Figure 2-9

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 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

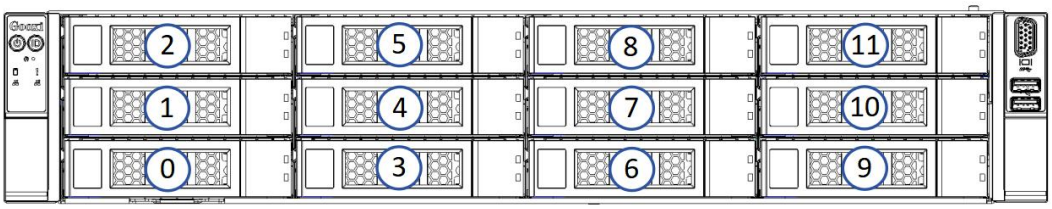


Figure 2-10

2.5.3 Hard drive status indicator

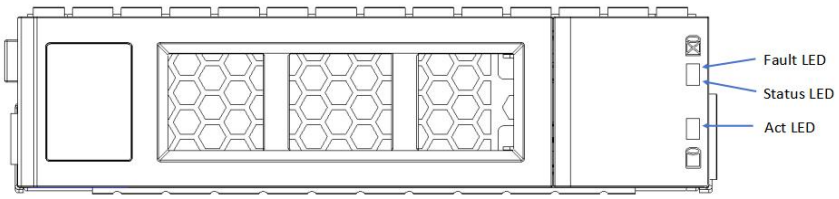


Figure 2-11

- 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 2-11

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 Gooxi sales.
- The power supply positions are as shown in the following diagram:

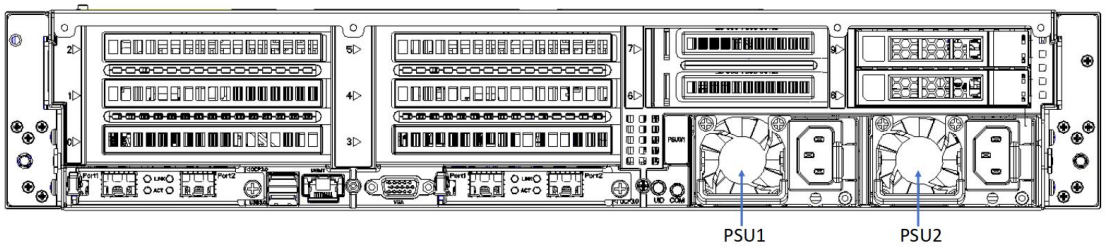


Figure 2-12

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:

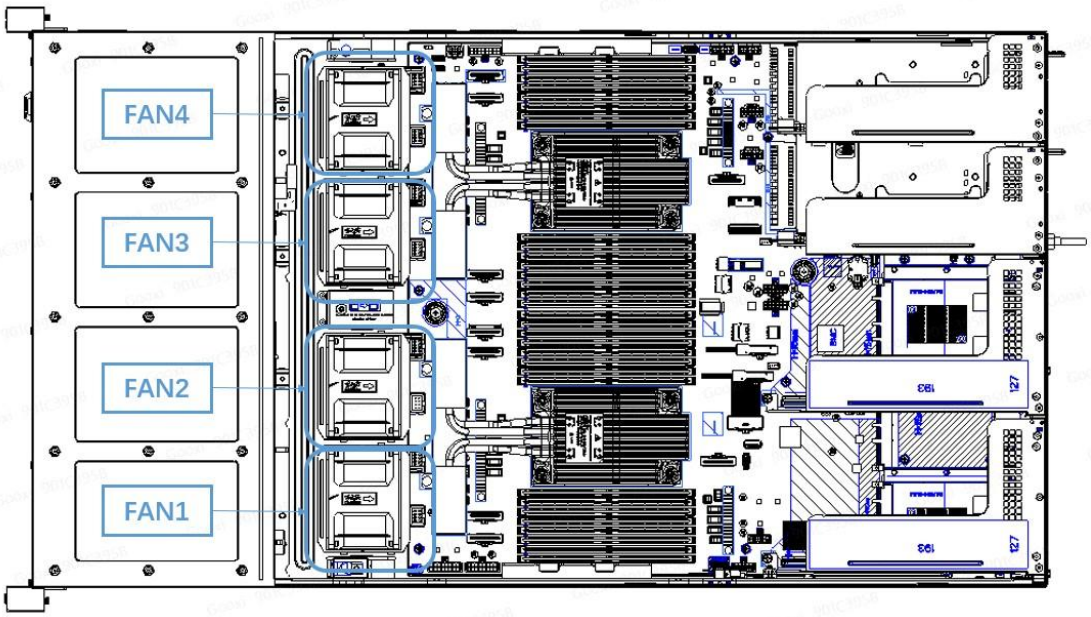


Figure 2-13

2.8 I/O Expansion

PCIe slot location

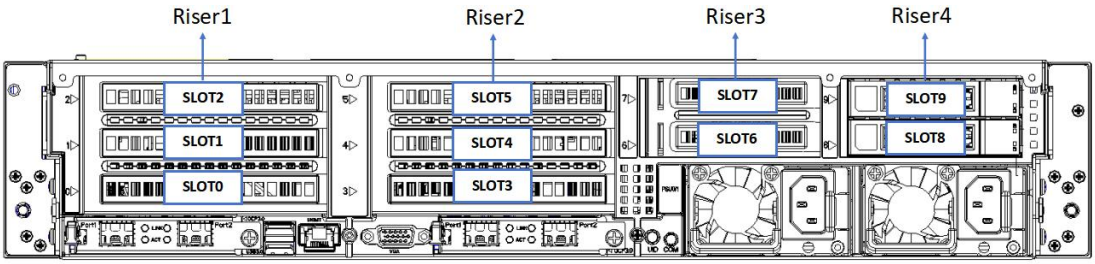


Figure 2-14

- 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.

2.8.1 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	X16	
Slot 0	CPU0	PCIe 5.0	X8 or X16	FHHL
Slot 1	CPU0	PCIe 5.0	X8	FHFL
Slot 2	CPU0	PCIe 5.0	X16	FHFL
Slot 3	CPU1	PCIe 5.0	X8 or X16	FHFL
Slot 4	CPU1	PCIe 5.0	X8	FHHL
Slot 5	CPU1	PCIe 5.0	X16	FHHL
Slot 6	CPU1	PCIe 5.0	X8	HHFL
Slot 7	CPU1	PCIe 5.0	X8 or X16	HHHL
Slot 8	CPU1	PCIe 5.0	X8	HHHL
Slot 9	CPU1	PCIe 5.0	X8 or X16	HHHL
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

2.8.2 PCIe Expansion Module

- PCIE Expansion Module 1: x32 to x16+x16 adapter card

  – When installed in the Riser1 position, it provides PCIe slots Slot0 and Slot2, with the motherboard PCIe signal corresponding to Slot0

  – When installed in the Riser2 position, it provides PCIe slots Slot3 and Slot5, with the motherboard PCIe signal corresponding to Slot3

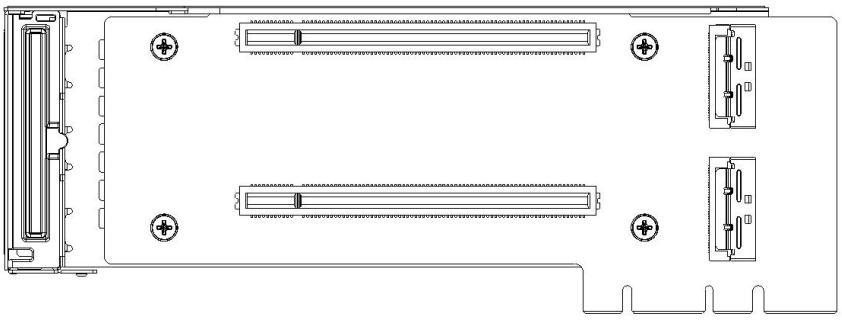


Figure 2-15

- PCIE Expansion Module 2: x32 to x16+x8+x8 adapter card
  - When installed in the Riser1 position, it provides PCIe slots Slot0, Slot1, and Slot2, with the motherboard PCIe signal corresponding to Slot2
  - When installed in the Riser2 position, it provides PCIe slots Slot3, Slot4, and Slot5, with the motherboard PCIe signal corresponding to Slot5

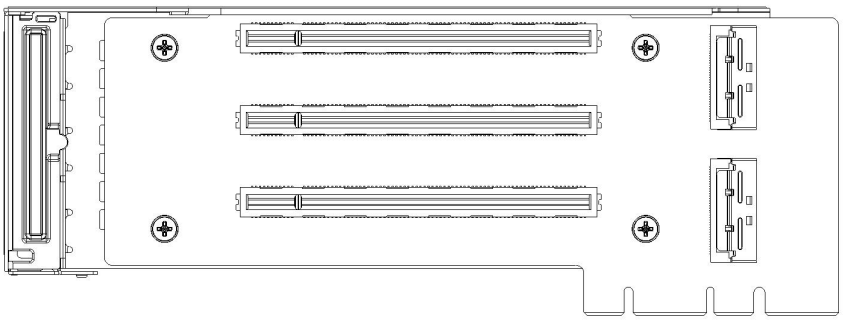


Figure 2-16

- 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

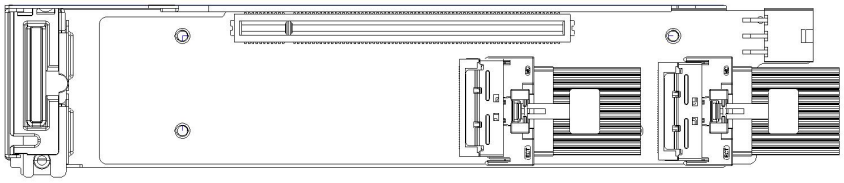


Figure 2-17

- 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

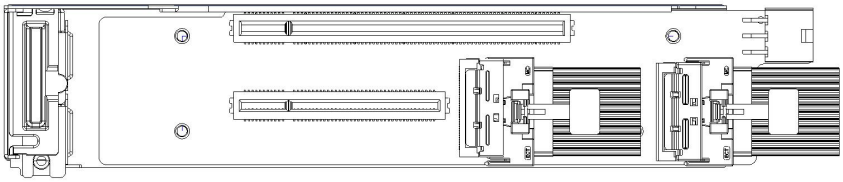


Figure 2-18

- 2.5-inch hard drive module

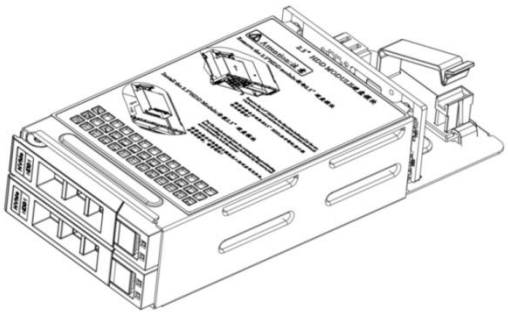
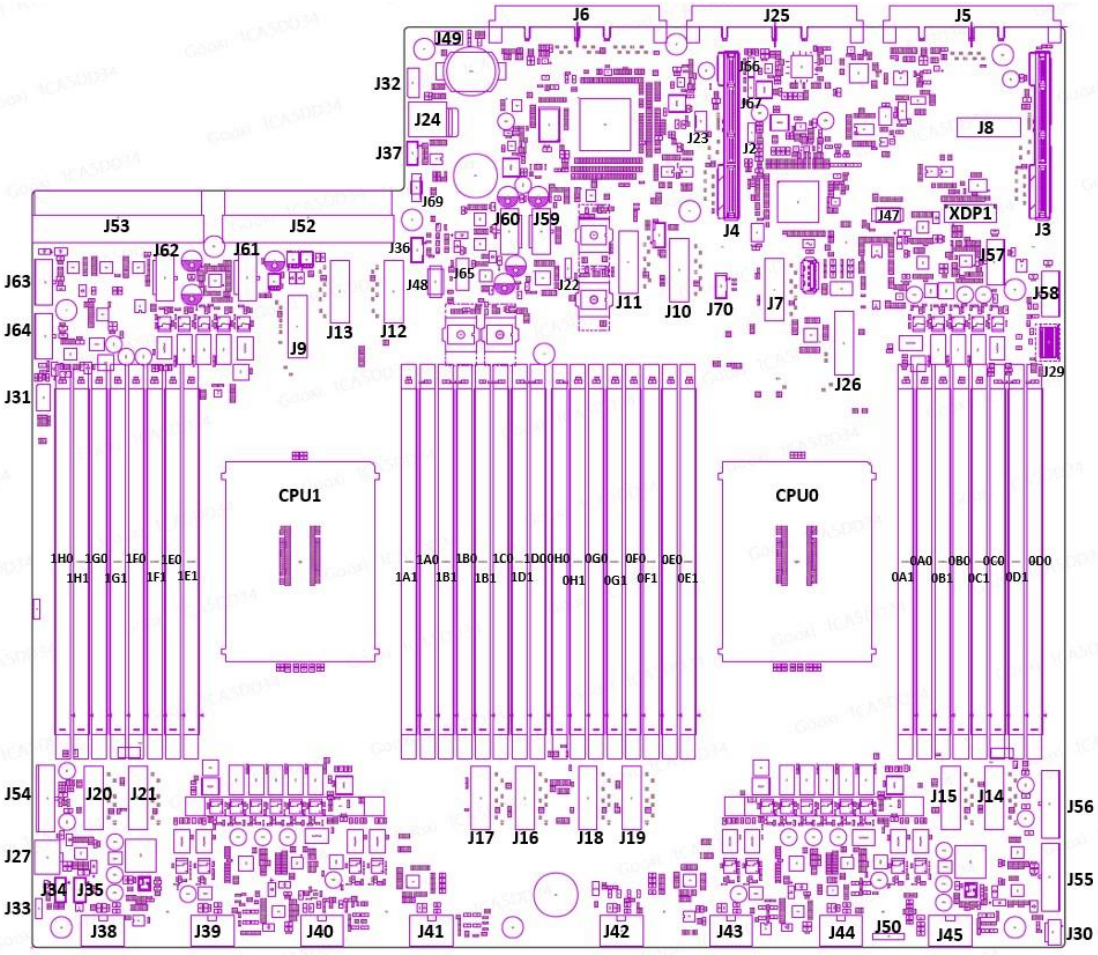


Figure 2-19

2.9 PCBA

2.9.1 Motherboard



Motherboard Figure 2-20

2.9.2 Connector I

Name	Description	Default
J38,J40,J42,J44	Connectors for 2U system fans 1, 2, 3, and 4, respectively	
J38,J40,J42,J44 , J39,J41,J43,J45	Connectors for 4U system fans 1, 2, 3, 4, 5, 6, 7, and 8, respectively	
J57,J58,J63,J64	Four 2×5Pin power connectors for hard drive backplane/Riser card	
J52,J53	Two 3000W high-power PSU connectors	
J59,J60,J61,J62	Four 2×6+4Pin high-power GPU connectors	
J27	2×3Pin power connector for M.2 board	
J54	2×8Pin power connector for rear hard drive backplane	
J55,J56	Two 2×8Pin power connectors for front hard drive	

	backplane	

Table 2-13

2.9.3 Connector II

Name	Description	Default
J2	PRE-S5 MODE	Jumper Cap
J66	PASSWORD_CLEAR	Jumper Cap
J67	BIOS IMAGE SWAP	Jumper Cap
J22	Clear CMOS jumper	Jumper Cap
J48	CPU Socket Presence Jumper	Jumper Cap
J30	Chassis Intrusion Connector	
J36,J37	Backplane IIC Connectors	
J25	GEN-Z 4C+ IO Board Connector	
J65	TPM Connector	
J32	IPMB I2C Connector	
J33	VR Firmware Upgrade I2C Connector	
J47	CPLD Programming Connector	
J70	GPU Leakage Detect Connector	
J49	UID Board Connector	
J24	SD Card Slot	
J23	BMC Serial Port Connector	
J69	VROC_RAID_KEY	
J15	Left Front Panel Connector	
J29	Right Front Panel VGA/USB3.0 Connector	
J31	UUID Board Cable Connector	
J34,J35	Two Hard Drive Backplane I2C Connectors	
CPU0 DIMMA1/A0/B1/B0/C1/C0/D1/D0	CPU0 DDR5 Memory Channels 1–4 Connectors	
CPU0 DIMME0/E1/F0/F1/G0/G1/H0/H1/	CPU0 DDR5 Memory Channels 5–8 Connectors	
CPU1 DIMMA1/A0/B1/B0/C1/C0/D1/D0	CPU1 DDR5 Memory Channels 1–4 Connectors	

CPU1 DIMME0/E1/F0/F1/G0/G1/H0/H1/	CPU1 DDR5 Memory Channels 5–8 Connectors	
J5	CPU0 PCIe 5.0 Port1 (lane0~7) x8, supports OCP 3.0 Connector	
J6	CPU1 PCIe 5.0 Port0 (lane0~15) x16, supports OCP 3.0 Connector	
J3	CPU0 PCIe 5.0 Port2 x16 GEN-Z 4C+ 168 Connector	
J4	CPU1 PCIe 5.0 Port2 x16 GEN-Z 4C+ 168 Connector	

Table 2-14

2.9.4 Connector III

Name	Description	Default
J18	CPU0_MCIO1 PCIE5.0 Port5 (lane0~7) X8 MCIO Connector	
J19	CPU0_MCIO2 PCIE5.0 Port5 (lane8~15) X8 MCIO Connector	
J14	CPU0_MCIO3 PCIE5.0 Port4 (lane0~7) X8 MCIO Connector	
J15	CPU0_MCIO4 PCIE5.0 Port4 (lane8~15) X8 MCIO Connector	
J10	CPU0_MCIO5 PCIE5.0 Port3 (lane0~7) X8 MCIO Connector	
J11	CPU0_MCIO6 PCIE5.0 Port3 (lane8~15) X8 MCIO Connector	
J7	CPU0_MCIO7 PCIE5.0 Port0 (lane0~7) X8 MCIO Connector	
J20	CPU1_MCIO1 PCIE5.0 Port5 (lane0~7) X8 MCIO Connector	
J21	CPU1_MCIO2 PCIE5.0 Port5 (lane8~15) X8 MCIO Connector	
J16	CPU1_MCIO3 PCIE5.0 Port4 (lane0~7) X8 MCIO Connector	
J17	CPU1_MCIO4 PCIE5.0 Port4 (lane8~15) X8 MCIO Connector	
J12	CPU1_MCIO5 PCIE5.0 Port3 (lane0~7) X8 MCIO Connector	
J13	CPU1_MCIO6 PCIE5.0 Port3 (lane8~15) X8 MCIO Connector	
J9	CPU1_MCIO7 PCIE5.0 Port1 (lane0~7) X8 MCIO Connector	
J8	OCP1_PCIE5.0 Port1 (lane0~7) X8 MCIO Connector	
J26	CPU0_M.2 X4 MCIO Connector	

Table 2-15

2.9.5 Hard drive backplane

- 12×3.5-inch Backplane

  TOP surface

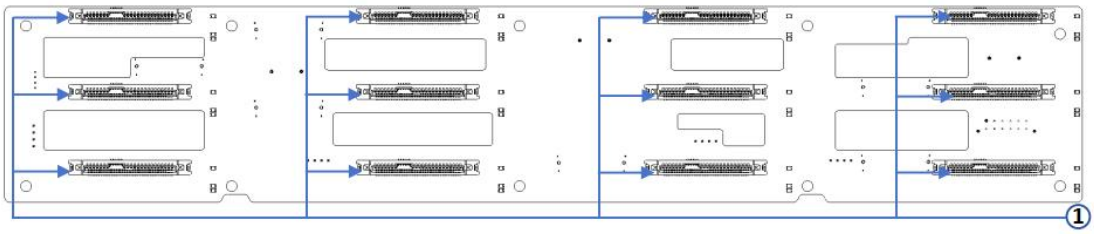


Figure 2-21

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

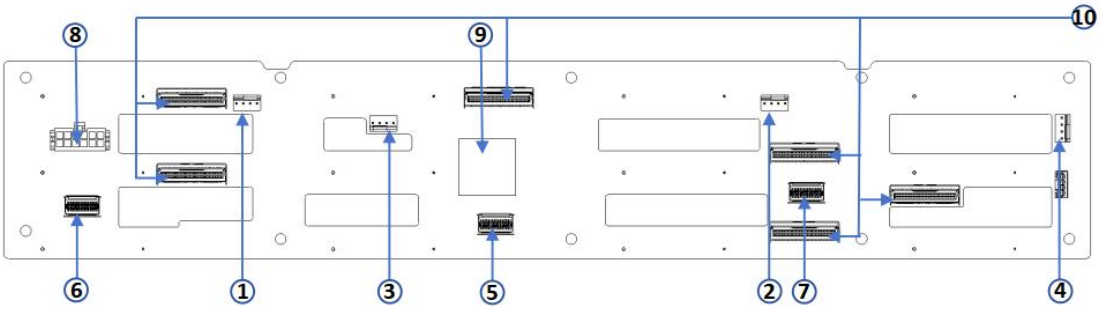


Figure 2-22

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 2-17

- 2×2.5 Rear Hard Drive Backplane-1

TOP surface

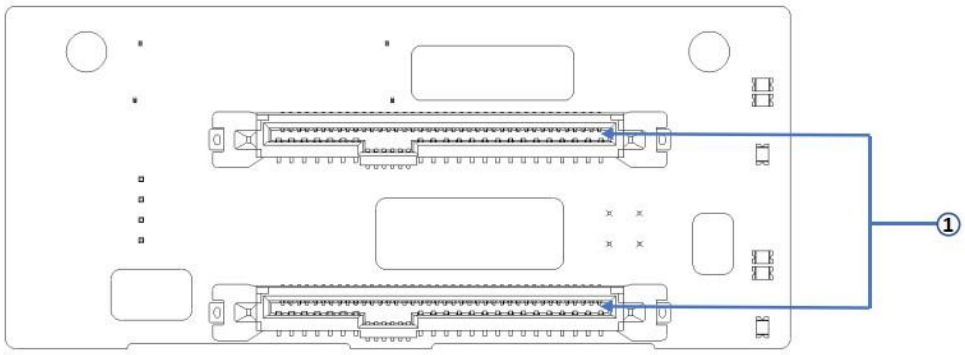


Figure 2-23

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

Table 2-18

Bottom surface

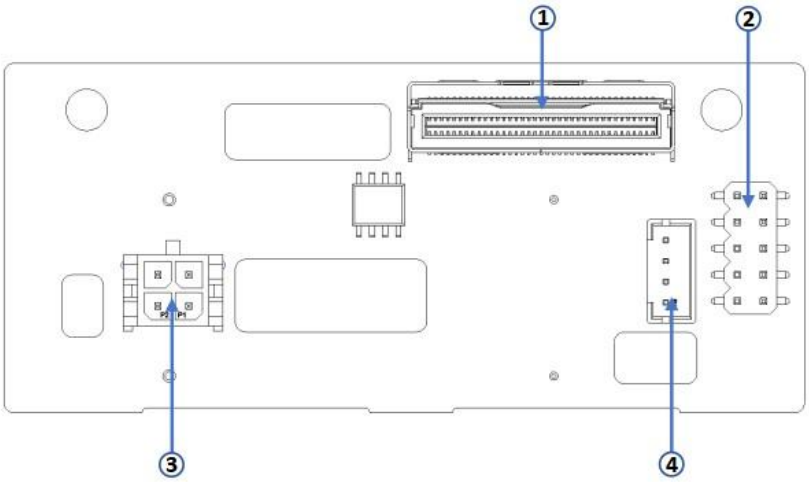


Figure 2-24

No.	Description	Function
1	MCIO Connector	Provides PCIe ×8 interface for connecting to CPU and NVMe SSD
2	JTAG Connector	Used for CPLD programming and firmware upgrade
3	4-pin Power Connector	Used to connect the PSU 4-pin plug to supply power to the board
4	I2C Interface	Used for I2C signal connection

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.

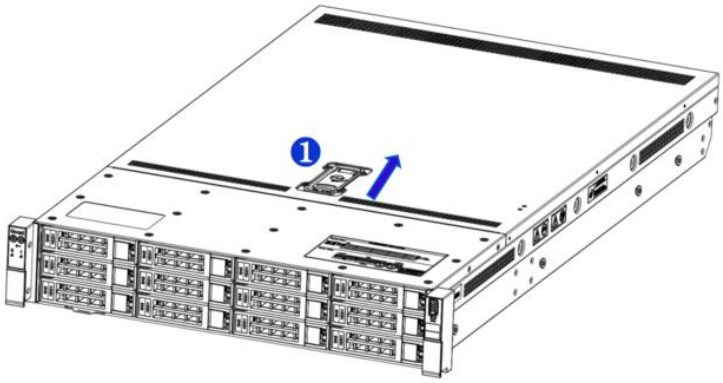


Figure 3-1

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.

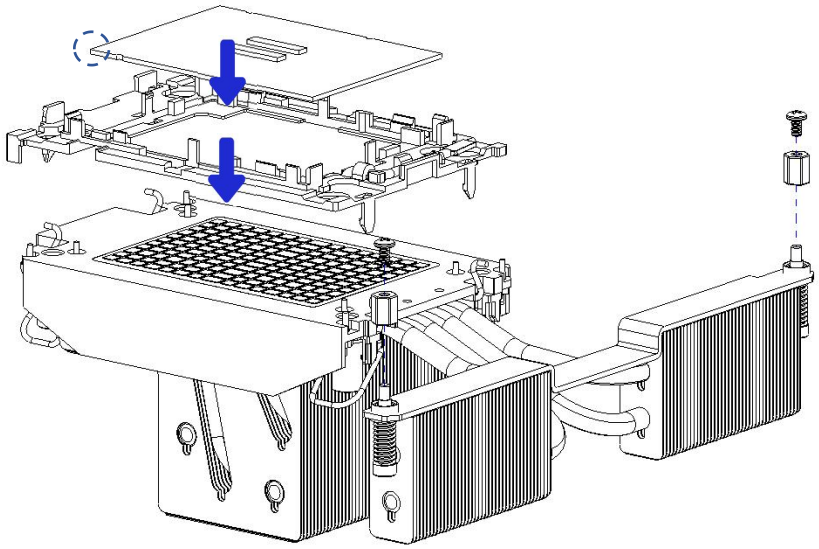


Figure 3-2

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)

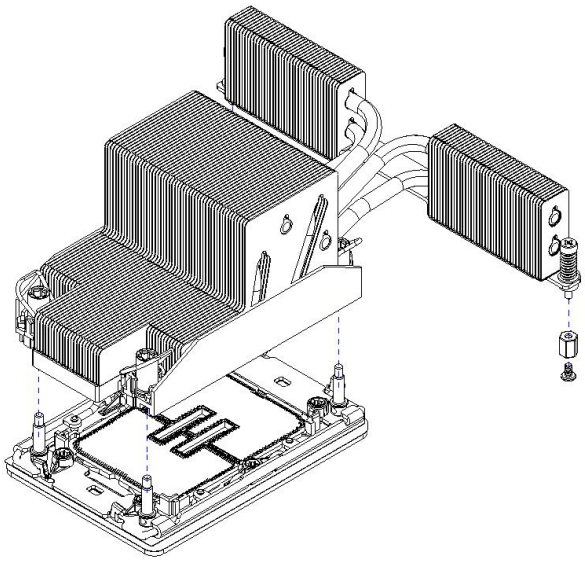


Figure 3-3

- 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.

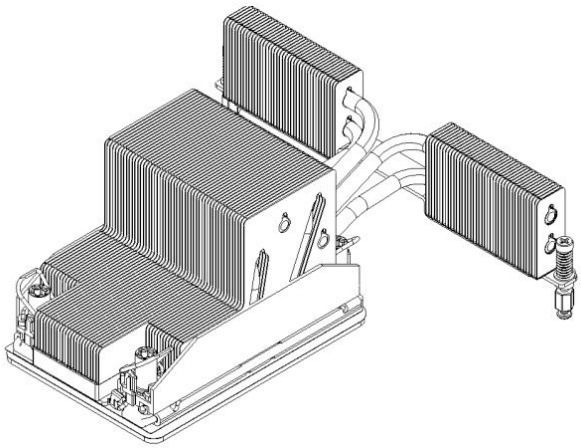


Figure 3-4

⚠ 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.

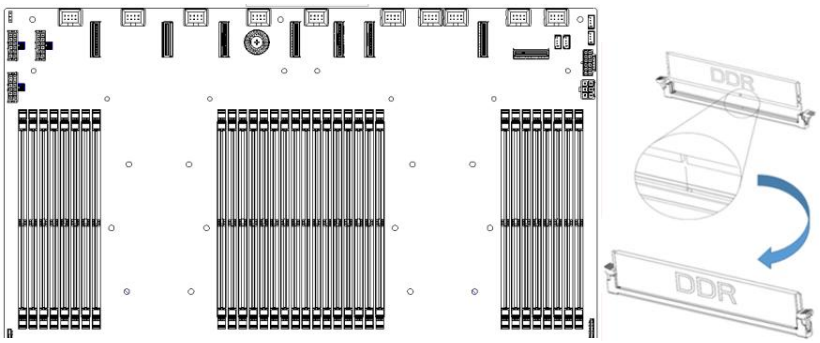


Figure 3-5

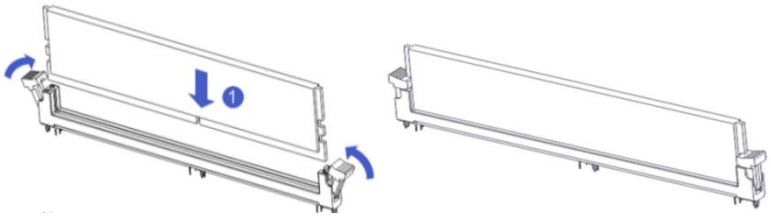


Figure 3-6

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 Server slide rail installation

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

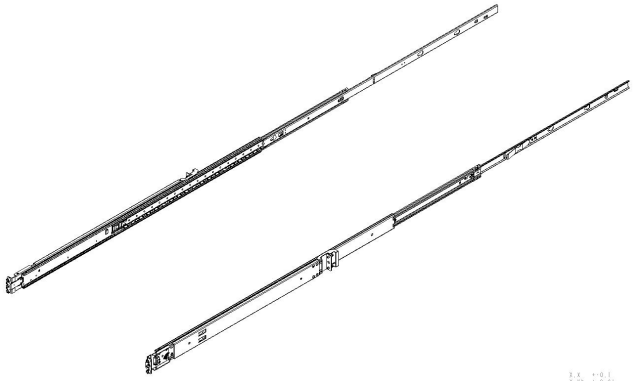


Figure 3-7

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

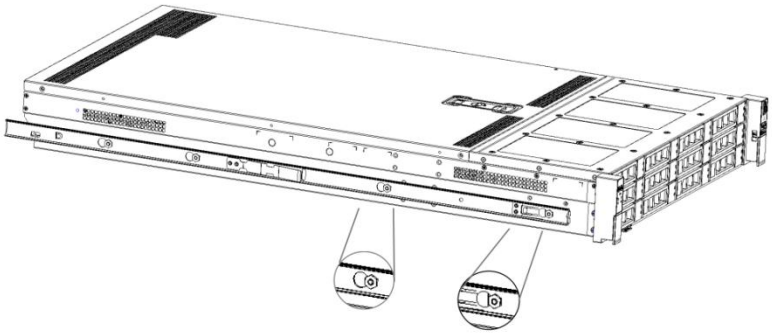


Figure 3-8

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

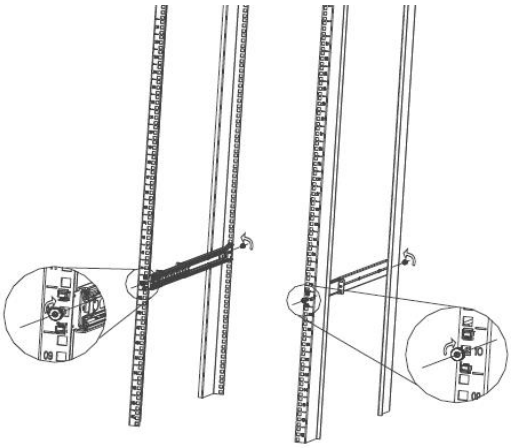


Figure 3-9

⚠ 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.

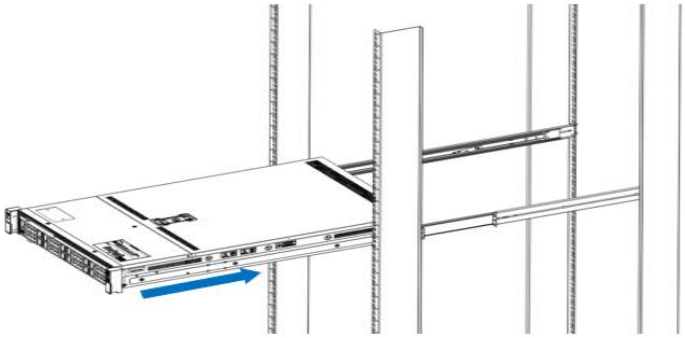


Figure 3-10

⚠ 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.

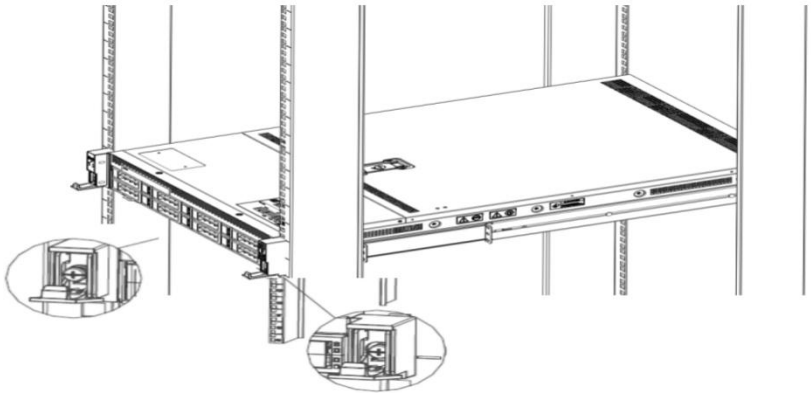


Figure 3-11

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

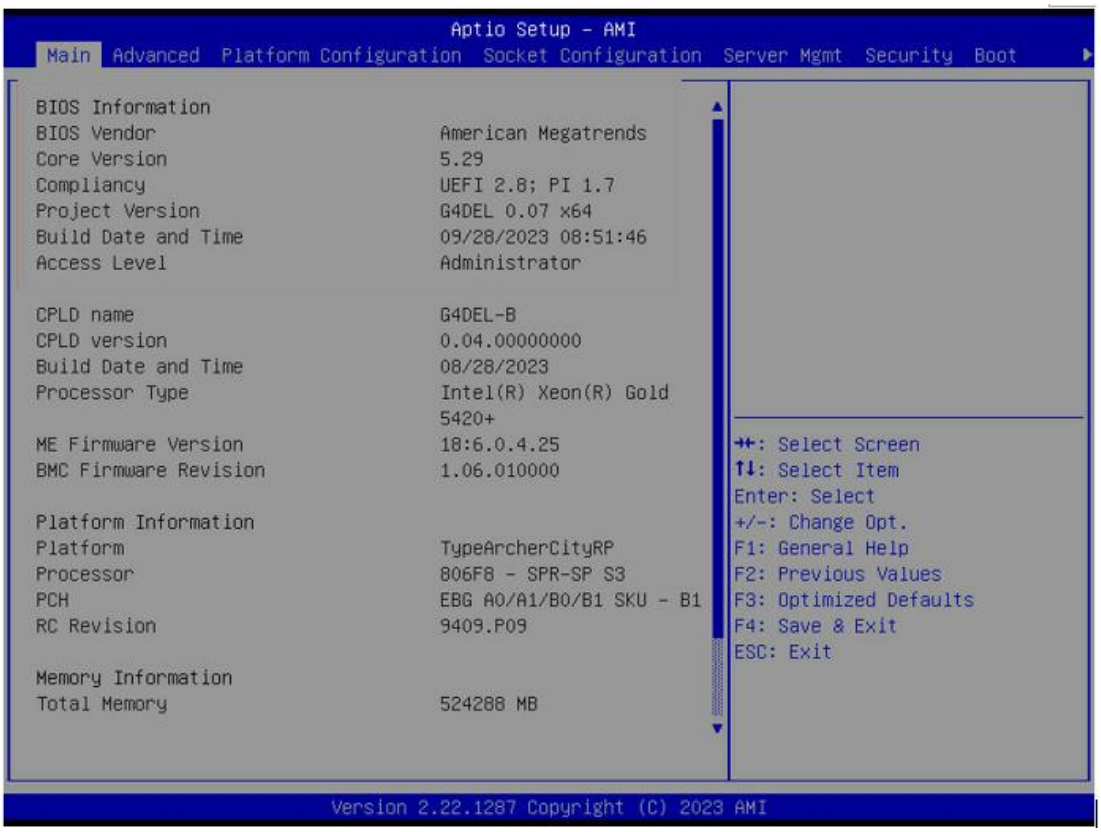


Figure 4-3

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 <DEL> or <ESC> key on the keyboard to enter the BIOS Setup interface. Switch to the following screen:

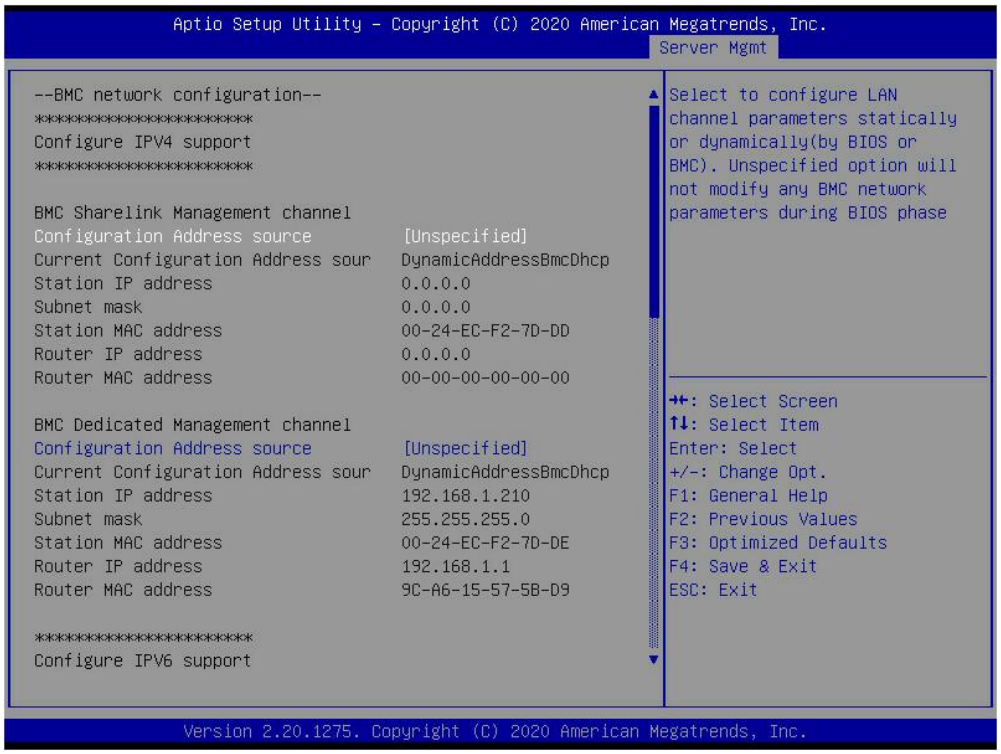


Figure 4-4

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:
  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 dedicated Ethernet port.

Log in to the BMC management interface

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

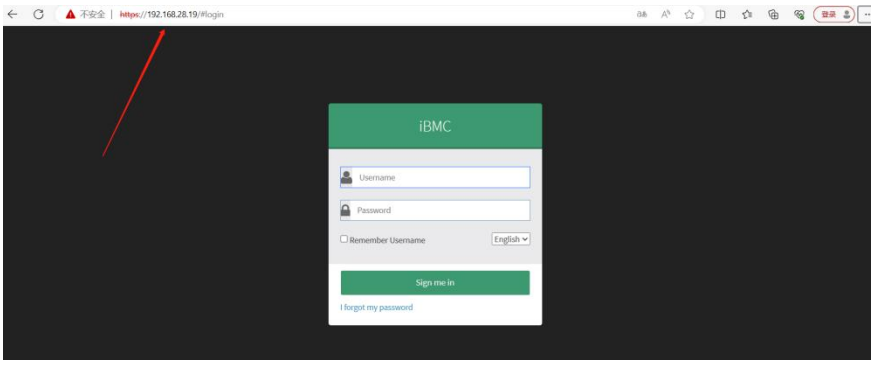


Figure 4-5

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:

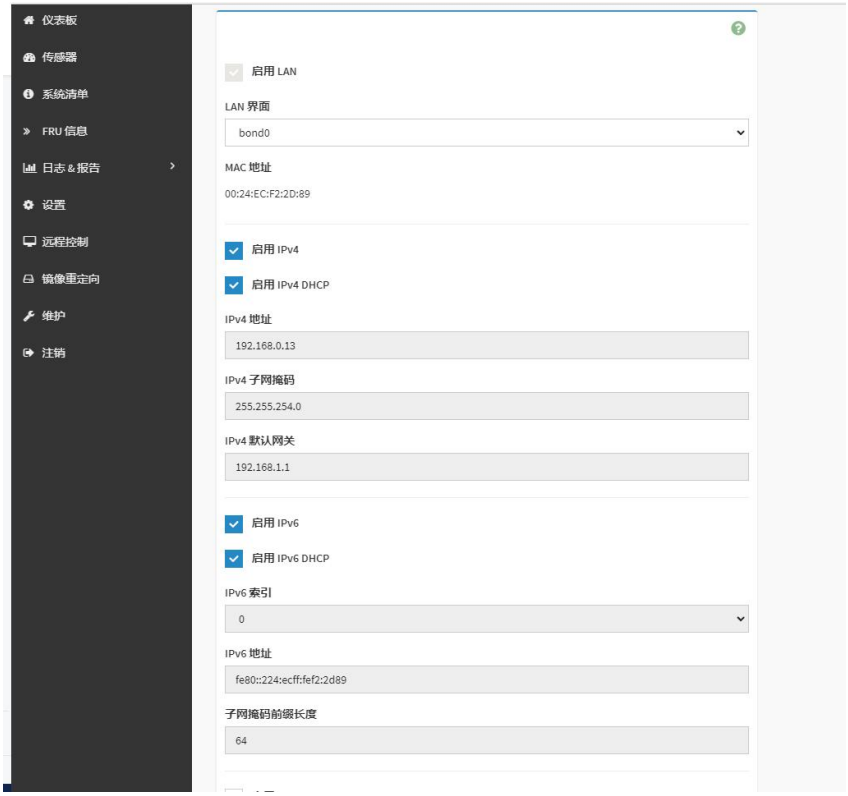


Figure 4-6

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

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.