SNR-RS-G4
User Manual

Foreword

This manual is the product technical manual for the SNR 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.

Contents

1. Product Introduction

1.1 Product Overview

SNR-RS-G4 Series 2U Dual-socket Rack-Mount Server is a new generation of versatile 2U dual-socket rack-mount servers launched by SNR 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 Intel Xeon Scalable processors of the 4th generation.
- Supports 32 DIMM DDR5 memory slots.
- Offers three panel chassis options: 8x3.5", 12x3.5", and 25x2.5" hard drive bays.
- The rear window supports expanding with 4x3.5" or 4x2.5" hard drive slots.
- Supports a maximum of 12 PCIe expansion slots, which can be used for expanding GPU cards, network cards, etc.

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

SNR-SR 2U Eagle Stream 2U Dual-Socket Server has variations in configuration based on different requirements. Taking the 8-drive model as an example, the description of various components of the server is as shown in the following diagram:
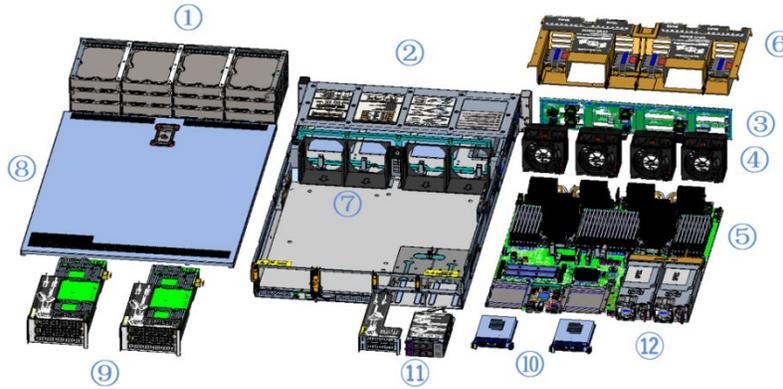
Structure diagram 1-3

No.	Name	No.	Name
1	Hard Drive	7	Fan Bracket
2	Hard Drive Bracket Module	8	Bottom Plate
3	Backplane Assembly	9	Full-Height PCIe Module
4	Fan Module	10	OCP3.0
5	Memory Module	11	Half-Height PCIe Module
6	Air Guide Module	12	Power Module

Table 1-1

1.3 Logical Structure

The logic of the SNR-RS-G4 Series Dual-Socket Rack-Mount Server is as shown in the following diagram:
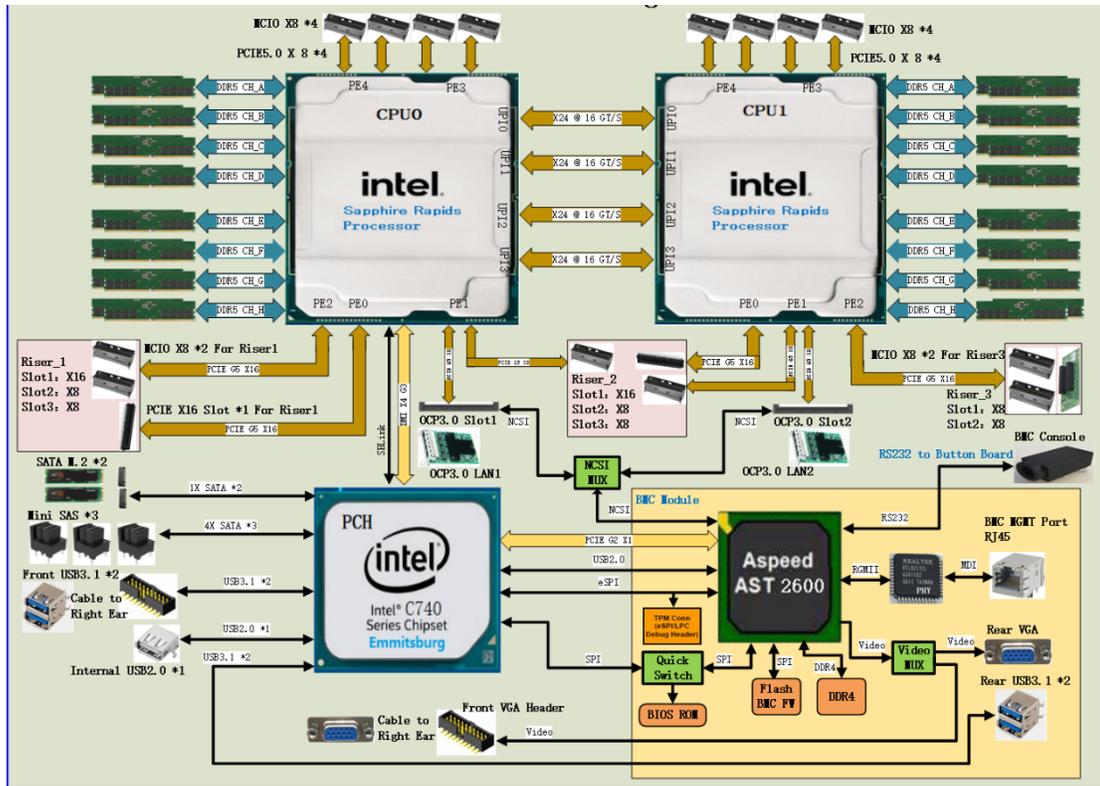
Motherboard logic block diagram 1-4

- The CPU adopts the 4th generation Intel Xeon Scalable processor, LGA4677 socket.
- Each CPU supports 8 channels, and each channel supports 2 DDR5 RDIMM/LRDIMM memory modules.
- Onboard 2 M.2 slots (only support 22110 size), supporting SATA signals only.
- The motherboard integrates 1 Gigabit Ethernet port using the I350 chip from the PCH.
- The PCH (Platform Controller Hub) uses the INTEL C740 series chipset.
- The BMC (Baseboard Management Controller) chip uses the AST2600 control chip from ASPEED for IPMI remote management. It includes a VGA output port, a dedicated Gigabit RJ45 management port, and a connection to the PCH through RMII/NCSI.

1.4 Product Specifications

Product Series	SNR-SR2408RS	SNR-SR2412RS SNR-SR2412RS-NV	SNR-SR2425RS
Product Type	2U 8-bay	2U 12-bay	2U 25-bay
System Size	799*433.4*87.6mm (depth*width*height)		
Processor	Supports 1 or 2 4th generation Intel® Xeon® Scalable processors		
Memory	32 DDR5 memory slots, supporting DDR5 RDIMM-3DS/RDIMM 4400/4800 MHz; the maximum capacity of a single slot is 256GB, and the maximum memory capacity is 8TB		
Internal Storage Interface	3 MiniSAS HD interfaces, 2 SATA M.2 interfaces (22110 size)		
External Hard Drive	Front: 8 hot-swappable 3.5/2.5-inch SAS/SATA hard drives. Rear: Optional support for up to 2 sets of 2×3.5-inch hard drive modules and 2 sets of 2×2.5-inch hard drive modules.	Front: 12 hot-swappable 3.5/2.5-inch SAS/SATA/U.2 hard drives. Rear: Optional support for up to 2 sets of 2×3.5-inch hard drive modules or 2 sets of 2×2.5-inch hard drive modules.	Front: 25 hot-swappable 2.5-inch SAS/SATA hard drives. Rear: Optional support for up to 2 sets of 2×3.5-inch hard drive modules or 2 sets of 2×2.5-inch hard 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 x8)		
Safety	Supports TPM module		
Power Supply	Supports AC 220V Redundant Power Supply with options for 550W, 800W, 1300W, 1600W, and 2200W (Adapted based on actual power needs). Supports High-Voltage DC 240V to 336V with options for 550W, 800W, and 1300W. Supports Low-Voltage DC -48V with options for 550W, 800W, and 1300W.		
Fan	Standard 4 hot-swappable N+1 redundant fans, supporting 8038/8056 specifications		
IPMI	IPMI 2.0		

Management Port	1 dedicated RJ45 management port
RoHS	Compliant with RoHS2.0
Working Temperature& Humidity	Temperature 5℃~35℃/humidity 20%~80% RH non-condensing
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)

2. Hardware Description

2.1 Front Panel

2.1.1 Appearance

- 8x3.5-inch hard drive configuration
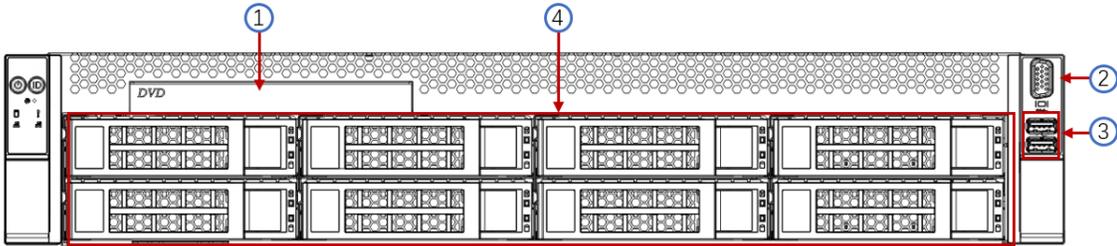
Figure 2-1

No.	Name	No.	Name
1	DVD optical drive	3	USB3.0 interface
2	VGA interface	4	3.5-inch hard drive

Table 2-1

- 12x3.5-inch hard drive configuration
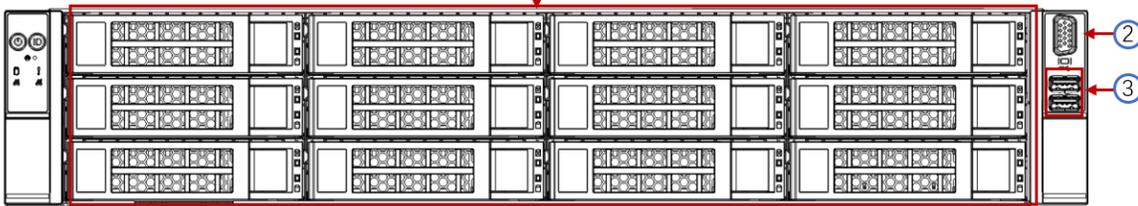
Figure 2-2

No.	Name	No.	Name
1	3.5-inch hard drive	3	USB3.0 interface
2	VGA interface		

Table 2-2

- 25x2.5-inch hard drive configuration
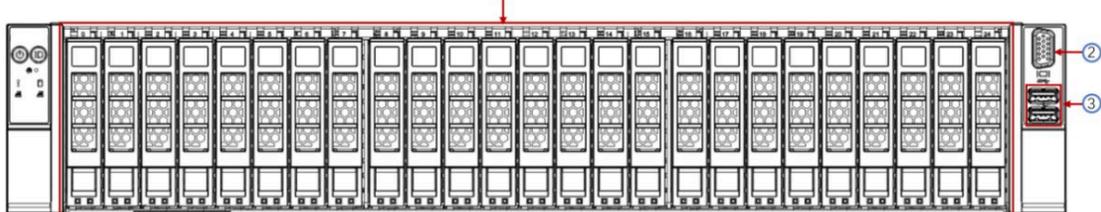
Figure 2-3

No.	Name	No.	Name
1	2.5-inch hard drive	3	USB3.0 interface
2	VGA interface		

Table 2-3

2.1.2 Indicator lights and buttons
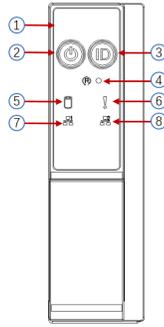
Figure 2-4

No.	Indicator light/button	No.	Indicator light/button
1	Power switch button/indicator	5	System Alarm Indicator
2	UID button/indicator	6	Network port 1 connection status indicator
3	Reset server button	7	Network port 2 connection status indicator
4	Hard drive indicator	-	-
LED status description			
Logo	Indicator light/button	Status description	
	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	Blinking green light: The hard drive is operating normally
⚠	System Alarm Indicator	System warning indicator. Including system alarms, fan alarms, power supply alarms, etc., which can be viewed through the IPMI management software
⬚1	Network port connection status indicator	Corresponds to the Ethernet port indicator of the network card. Green (steady on): Indicates that the network port is connected normally. Off: Indicates that the network port is not in use or faulty. Note: Corresponds to two 1GE network ports on the motherboard.
⬚2	Network port connection status indicator	Corresponds to the Ethernet port indicator of the network card. Green (steady on): Indicates that the network port is connected normally. Off: Indicates that the network port is not in use or faulty. Note: Corresponds to two 1GE network ports on the motherboard.

Table 2-4

2.1.3 Interface

● Interface location
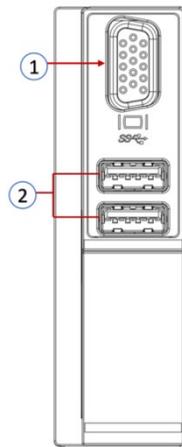
Figure 2-5

No.	Name	No.	Name
1	VGA interface	2	USB 3.0 interface

Table 2-5

● Interface description

Name	Type	Quantity	Description
VGA interface	DB15	1	Used for connecting display terminals, such as monitors or KVM
USB interface	USB 3.0	2	For accessing USB devices

Table 2-6
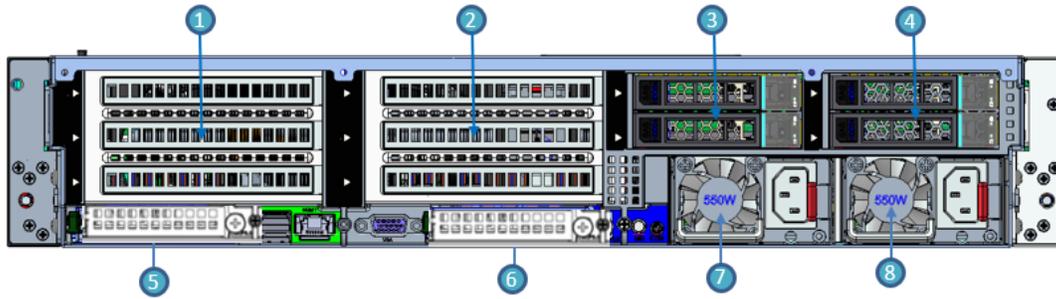
12

2.2 Rear Panel
2.2.1 Appearance
- Appearance of the rear panel

Figure 2-6

No.	Name	No.	Name
1	Riser1 module	2	Riser2 module
3	Riser3 module	4	Riser4 module
5	OCP network card slot	6	OCP network card slot
7	Power module 1	8	Power module 2

Table 2-7

Note：
- 1. Riser1/Riser2/Riser3/Riser4can be selected for either the rear hard drive module or the PCIe Riser module。

2.2.2 Indicator lights and buttons
- Rear Panel Indicators
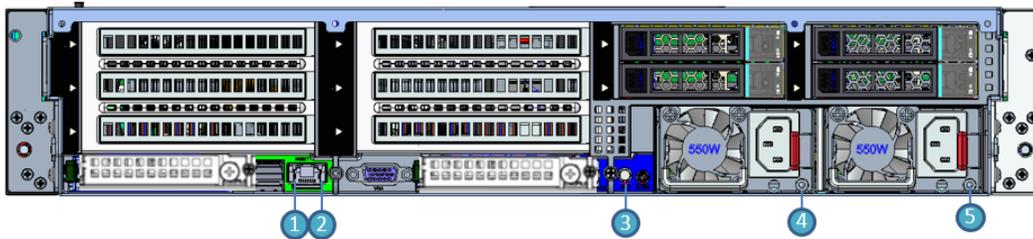

Figure 2-7

No.	Name	No.	Name
1	Management network port data transmission status indicator light	2	Management network port connection status indicator light
3	UID button	4	Power module indicator light
5	Power module indicator ligh	-	-

Table 2-8

- Description of Power Module Indicators

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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 2-9

2.2.3 Interface
- rear panel interface
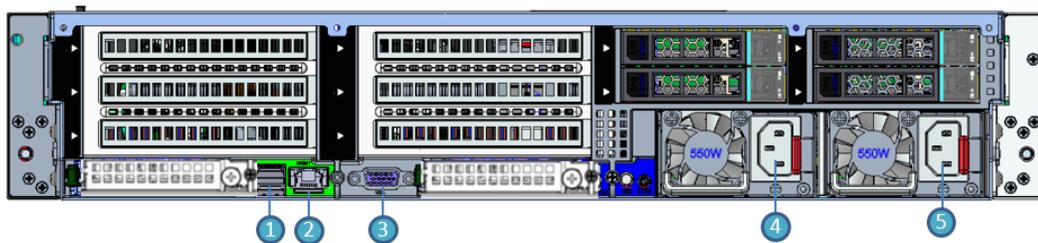
Figure 2-8

No.	Name	No.	Name
1	USB3.0 interface	2	Management network port
3	VGA	4	Power module power supply interface
5	Power module power supply interface	-	-

Table 2-10

2.3 Processor

- Supports 1 or 2 Intel 4th generation Xeon Scalable CPU.
- 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 SNR sales.
- Processor positions are as shown in the following diagram:
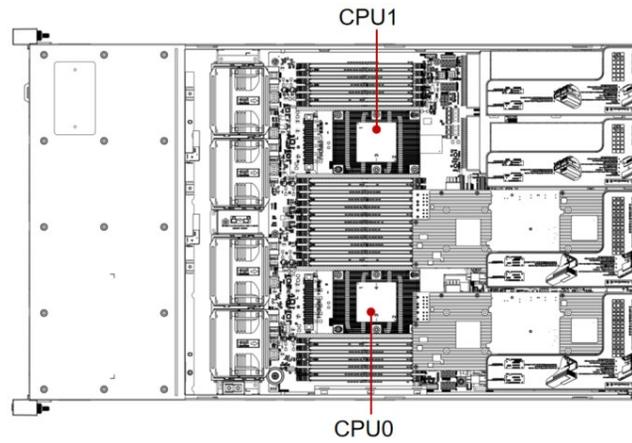
Figure 2-9

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 2-10

2.4.2 Memory Compatibility Information

The motherboard supports DDR5 RDIMM/RDIMM-3DS server memory, and the memory frequency is supported at 4400/4800MHz:

Note：
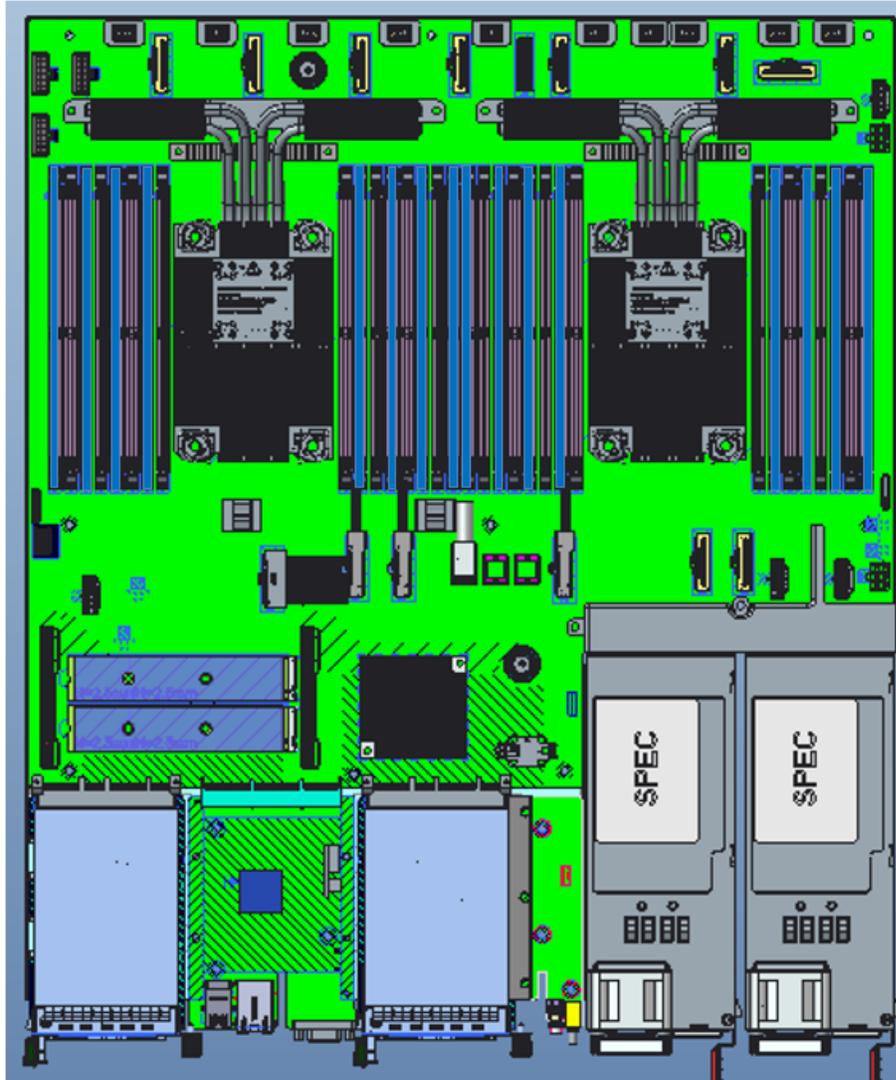- The same server must use the same model of DDR5 memory, and the operating speed of all memories must be the same, with the speed value being the minimum of the following:
- The memory speed supported by the specific CPU.
- The maximum operating speed of the specific memory configuration.
- Different types (RDIMM, RDIMM-3DS) and different specifications (capacity, bit width, rank, height, etc.) of DDR5 memory are not compatible for mixed use.
- Intel Xeon Scalable processors of different models support different maximum memory capacities.

2.5 Storage

2.5.1 Hard drive configuration

Configuration	Maximum Front Hard Drives (units)	Maximum Rear Hard Drives (units)	Note
8 x 3.5-inch Hard Drives Direct Pass-through Configuration 1	Front Hard Drives (8 x 3.5/2.5)–Slots 0 to 7 support only SAS/SATA Hard Drives	Riser1 module(2x3.5/2.5)*2 -Supports SAS/SATAhard drives Riser2 module(2x3.5/2.5)* 2 -Supports SAS/SATAhard drives Riser3 module(2x2.5)*2 -Supports NVMe/SAS/SATAhard drives Riser4 module(2x2.5)* 2 -Supports NVMe/SAS/SATAhard drives	SAS hard drives require the selection of a SAS pass-through card or RAID card for support.
12x3.5-inch Hard Drives Direct Pass-through Configuration 1	Front Hard Drives(12x3.5/2.5) –Slots 0 to 11 support only SAS/SATA hard drives	Riser2 module(2x3.5/2.5)*2 -Supports only SAS/SATA hard drives Riser3 module(2x2.5)*2 -Supports NVMe/SAS/SATA hard drives Riser4 module(2x2.5)* 2 -Supports NVMe/SAS/SATA hard drives	SAS hard drives require the optional SAS pass-through card or RAID card for support.
12x3.5-inch Hard Drives Direct Pass-through Configuration 2	Front Hard Drives(12x3.5/2.5) –Slots 0 to 11 support NVMe/SAS/SATA hard drives	Riser3 module(2x2.5)*2 -Supports NVMe/SAS/SATA hard drives Riser4 module(2x2.5)*2 -Supports NVMe/SAS/SATA hard drives	12-bay three-mode backplane, NVMe/SAS/SATA hard drives require different cable support; SAS hard drives require the option of SAS

			pass-through cards or RAID cards for support.
12x3.5-inch Hard Drive EXP Configuration	Front Hard Drive (12x3.5/2.5) – Slots 0 to 11 only support SAS/SATA hard drives	Riser2 module(2x3.5/2.5)*2 -Supports SAS/SATA hard drives Riser3 module(2x2.5)* 2 -Supports NVMe/SAS/SATA hard drives Riser4 module(2x2.5)* 2 -Supports NVMe/SAS/SATA hard drives	Requires optional SAS pass-through card or RAID card for support.
25x2.5-inch Hard Drive EXP Configuration	Front hard drives (25x2.5)–Slots 0 to 14 support only SAS/SATA hard drives	Riser2 module(2x3.5/2.5)*2 -Supports SAS/SATA hard drives Riser3 module(2x2.5)*2 -Supports NVMe/SAS/SATA hard drives Riser4 module(2x2.5)*2 -Supports NVMe/SAS/SATA hard drives	Requires optional SAS pass-through card or RAID card for support.
Note: *The maximum number of rear-mounted hard drives is influenced by the type of NVMe/SAS/SATA hard drives.			

Table 2-10

2.5.2 Hard drive serial number
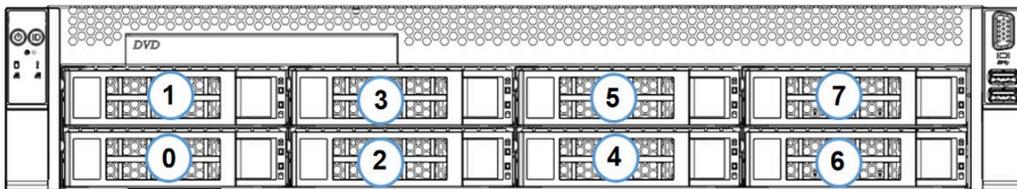- 8x3.5-inch hard drive configuration

Figure 2-11
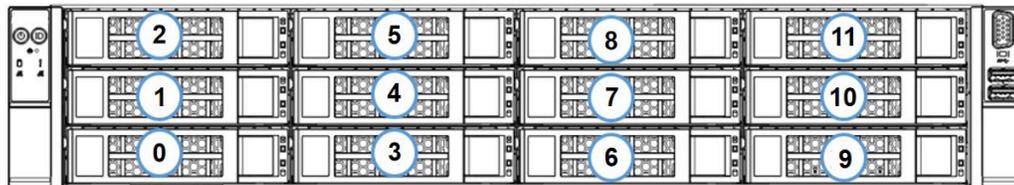
- 12x3.5-inch hard drive configuration

Figure 2-12

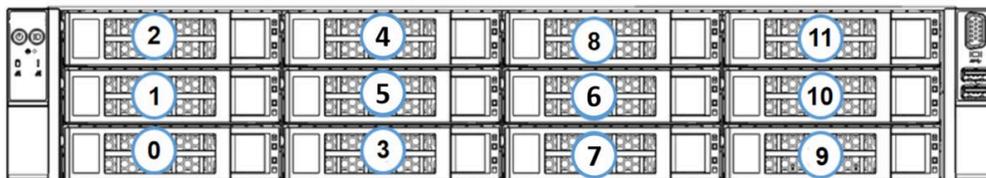- 12x3.5-inch NV hard drive configuration

Figure 2-13

- 25x2.5-inch hard drive configuration
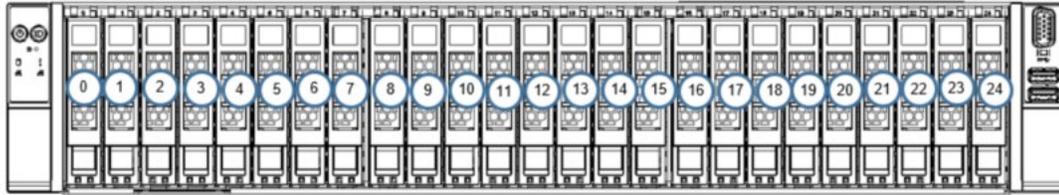
Figure 2-14

2.5.3 Hard drive status indicator
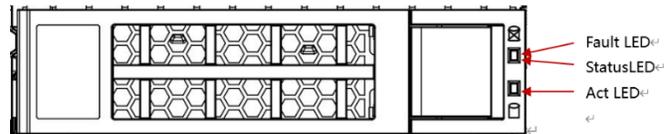
Figure 2-15

- Hard drive status indicator description

Function	Act LED	Fault LED	Status LED
Hard drive in place	Steady on	OFF	OFF
Hard drive activity	Steady on	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 AC or DC power modules;
- Supports hot-swapping;
- When configured with 2 power modules, supports 1+1 redundant backup;
- For power modules configured in the same server, the power module models must be identical;
- For specific optional system accessories, please consult SNR sales.
- The power supply positions are as shown in the following diagram:

Figure 2-16

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:
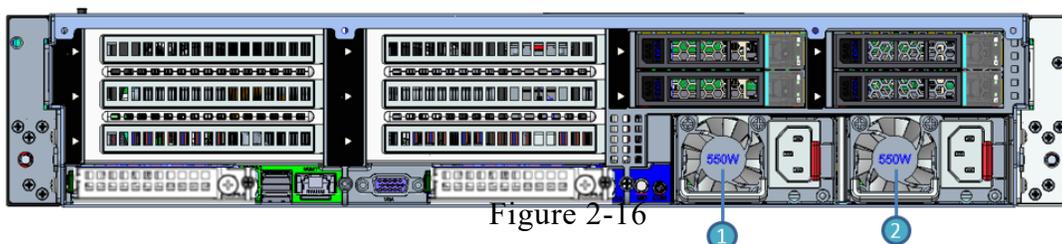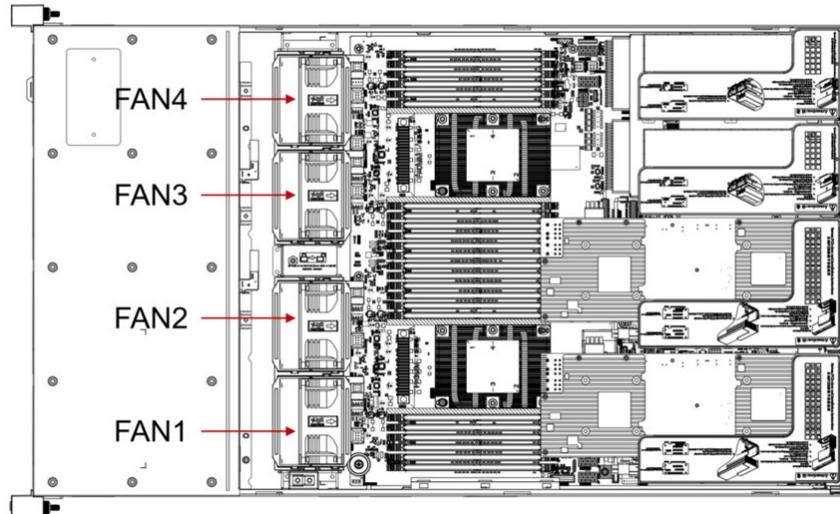

Figure 2-17

2.8 I/O Expansion
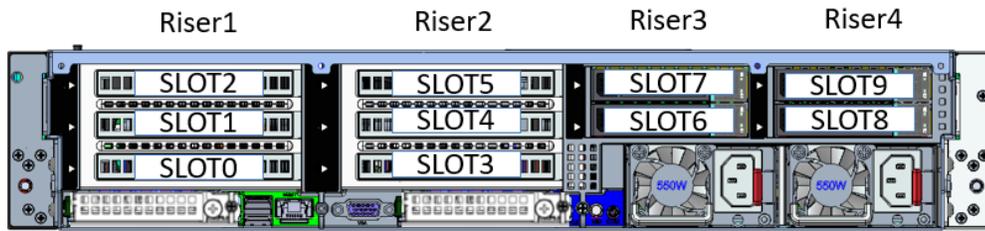### 2.8.1 PCIe slot location

Figure 2-18

- 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	X16	Full-height full-length
Slot 1	CPU0	PCIe 5.0	X8	Full-height half-length
Slot 2	CPU0	PCIe 5.0	X8 or 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	X8 or X16	Full-height half-length
Slot 6	CPU1	PCIe 5.0	X16	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.
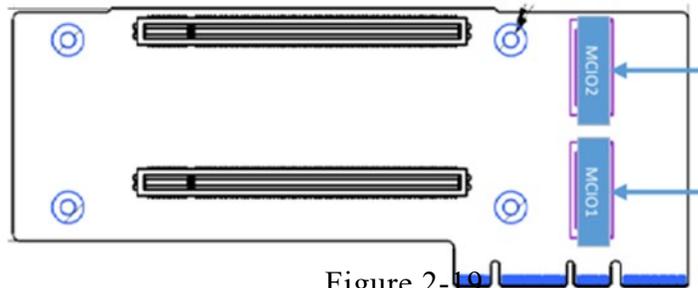
Figure 2-19

● 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 2-20

- PCIe Expansion Module 3
  x16 to x8 (x16 slot) + x8 adapter card
  −Installed in Riser3 position, providing PCIe slots for Slot6 and Slot7

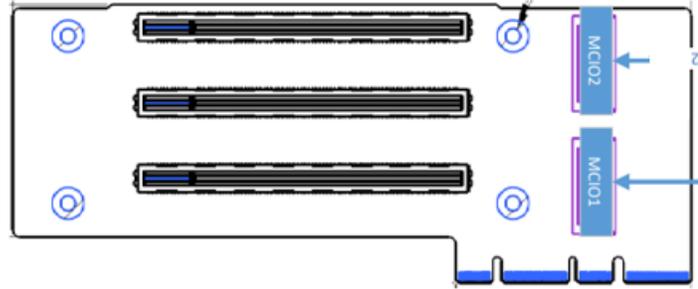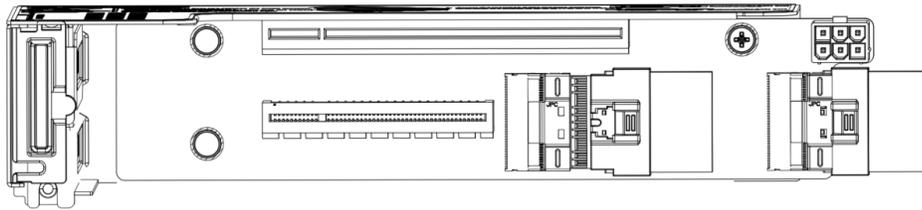Figure 2-21

- PCIe Expansion Module 4
  −Installed in Riser4 position, providing PCIe slots for Slot6 and Slot7
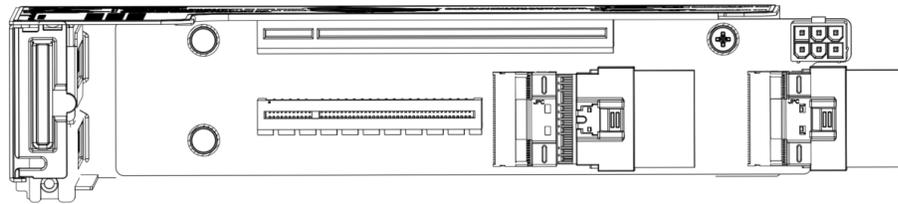

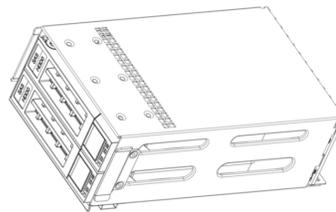Figure 2-22

- 3.5-inch hard drive module
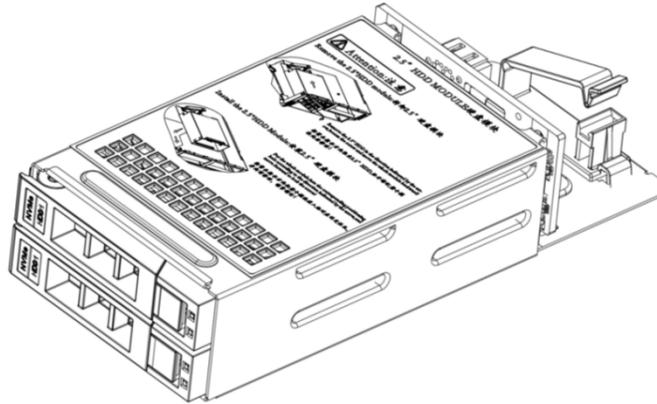

Figure 2-23

- 2.5-inch hard drive module

Figure 2-24

2.9 PCBA
2.9.1 Motherboard
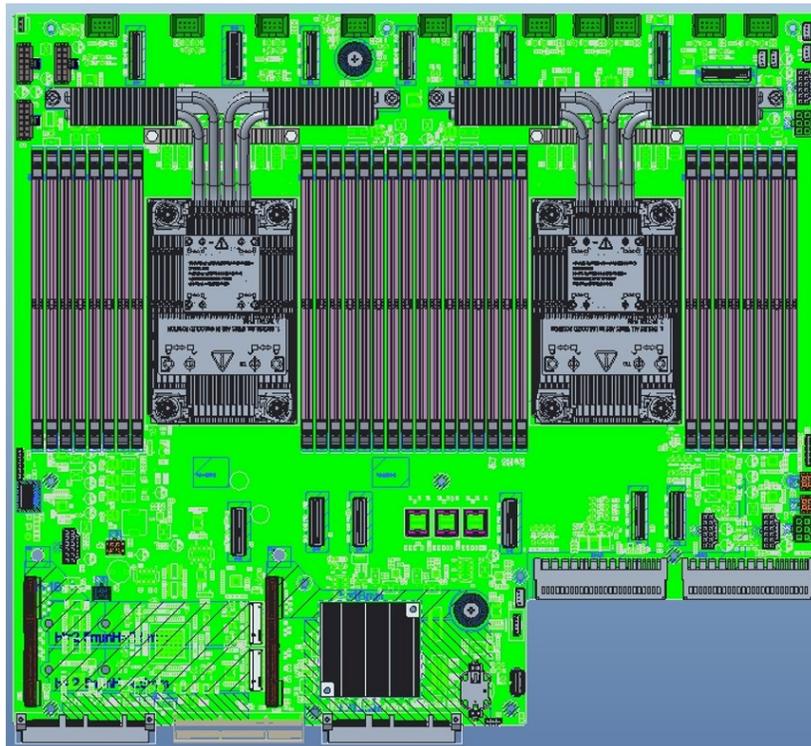
Motherboard Figure 2-24

No.	Name
J28,J30,J33,J34,J35,J37,J39,J42	Connectors 1, 2, 3, 4, 5, 6, 7, 8 for 4U system fans in sequence
J26,J31,J35,J37,J39,J41	Connectors 1, 2, 3, 4, 5, 6 for 2U system fans in sequence
J28,J30,J33,J35,J37,J39,J41	Connectors 1, 2, 3, 4, 5, 6, 7 for 1U system fans in sequence
J59,J61,J62	3 sets of 2x6Pin hard drive backplane power connectors
J55,J56	2 power supply connectors
J65,J70,J96,J97	4 sets of 2x8Pin high-power GPU connectors
J66,J67	2 rear window RISER backplane power connectors
J57,J63,J64	3 rear window hard drive (2 drives) backplane power connectors
J73	NIC AUX power connector
JIIC_1,JIIC_2,JIIC_3,JIIC_5	2 hard drive backplane I2C connectors, 2 MCIO I2C connectors
J3	PCH hardware strapping jumper
J52	CPU0 CPU1 socket present jumper
J45	CPLD debug jumper
J95	BIOS Recovery & ME Update jumper
J92	Chassis intrusion connector
J18	IPMB I2C connector
J19	VR upgrade programming I2C connector
J49	CPLD programming connector
J2	RAID KEY connector
J10	SATA port 0~3 connector
J8	SATA port 12~15 connector
J7	SATA port 16~19 connector
J15	Left Front panel connector
J13	Right Front Panel USB3.0 connector
J74	Right Front Panel VGA connector
J72	UUID board cable connector
J11	SATA Port8 M.2 connector
J12	SATA Port9 M.2 connector
CPU0 DIMMA1/A0/B1/B0/C1/C0/D1/D0	CPU0 DDR5 memory channel 1,2,3,4 connector
CPU0 DIMMH0/H1/G0/G1/F0/F1/E0/E1	CPU0 DDR5 memory channel 8,7,6,5 connector
CPU1 DIMMA1/A0/B1/B0/C1/C0/D1/D0	CPU1 DDR5 memory channel 1,2,3,4 connector
CPU1	CPU1 DDR5 memory channel 8,7,6,5

DIMMH0/H1/G0/G1/F0/F1/E0/E1	connector
OCP1	CPU0 PCIE5.0 X8, supports OCP3.0 connector
OCP2	CPU1 PCIE5.0 X8, supports OCP3.0 connector
BMC1	BMC module board-to-board connector
J94	BMC module cable connector
SLOT1	CPU0 PCIE5.0 X16 GENZ168 connector
SLOT2	CPU1 PCIE5.0 X16 GENZ168 connector
CPU0_MCIO7	CPU0 PCIE5.0 X8 MCIO connector
CPU0_MCIO6	CPU0 PCIE5.0 X8 MCIO connector
CPU0_MCIO5	CPU0 PCIE5.0 X8 MCIO connector
CPU0_MCIO4	CPU0 PCIE5.0 X8 MCIO connector
CPU0_MCIO3	CPU0 PCIE5.0 X8 MCIO connector
CPU0_MCIO2	CPU0 PCIE5.0 X8 MCIO connector
CPU0_MCIO1	CPU0 PCIE5.0 X8 MCIO connector
CPU1_MCIO7	CPU1 PCIE5.0 X8 MCIO connector
CPU1_MCIO6	CPU1 PCIE5.0 X8 MCIO connector
CPU1_MCIO5	CPU1 PCIE5.0 X8 MCIO connector
CPU1_MCIO4	CPU1 PCIE5.0 X8 MCIO connector
CPU1_MCIO3	CPU1 PCIE5.0 X8 MCIO connector
CPU1_MCIO2	CPU1 PCIE5.0 X8 MCIO connector
CPU1_MCIO1	CPU1 PCIE5.0 X8 MCIO connector

Table 2-13

2.9.2 Hard drive backplane

- 8×3.5-inch Expansion Backplane

TOP surface

Figure 2-25
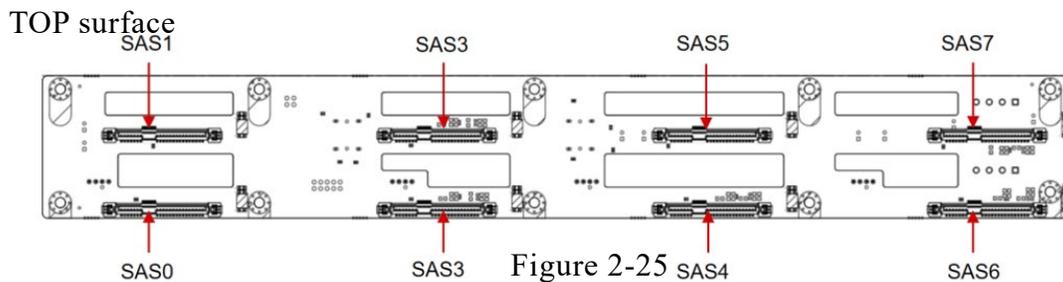
No.	Description	Function
SAS0～7	SAS/SATA hard drive connector	1. Supports up to 12G/b SAS hard drive; 2. Supports up to 6G/b SATA hard drive; 3. Support SAS/SATA hard disk hot swap.

Table 2-14

Bottom surface

Figure 2-26

No.	Description	Function
1、2	ATX power input	Backplane power transmission connector, used for 12V power transmission
3、4、5、6	Temperature controlled fan socket	For 4pin fan interface
7、8	SFF-8643 12Gb SAS interface	Backplane bay signal interface

Table 2-15

- 12×3.5-inch expansion backplane
  TOP surface
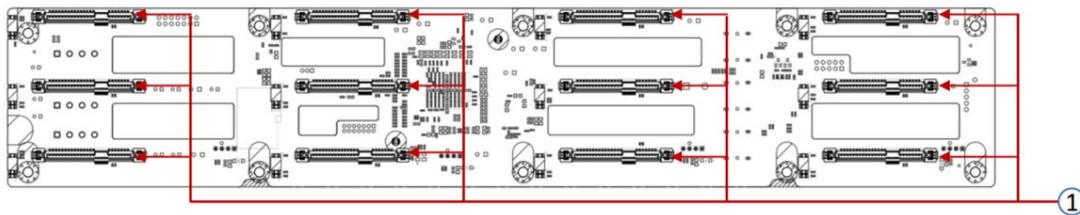
Figure 2-27

No.	Description	Function
1	SAS/SATA hard drive connector	1. Supports up to 12G/b SAS hard drive; 2. Supports up to 6G/b SATA hard drive; 3. Support SAS/SATA hard drive hot swap.

Table 2-16

Bottom surface
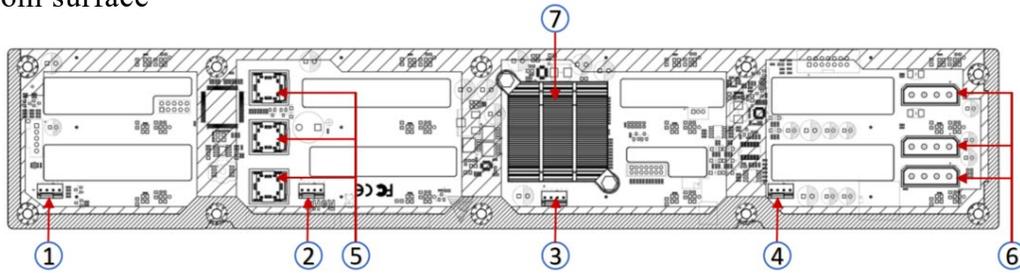
Figure 2-28

No.	Description	Function
1、2、3、4	Temperature controlled fan socket	For 4pin fan interface
5	MINI SAS HD high speed connector	For transmission of 12G/b SAS or 6G/b SATA signals
6	power connector	Backplane power transmission connector, used for 12V power transmission
7	EXPANDER chip	PM8043 SXP 24Sx12G 24-port 12G SAS Expander

Note: *Directly connected backplane does not have this expansion chip.
Table 2-17

- 25×2.5-inch Backplane
  TOP surface
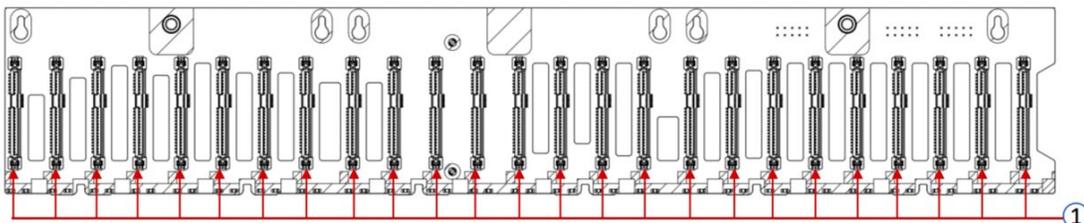
Figure 2-29

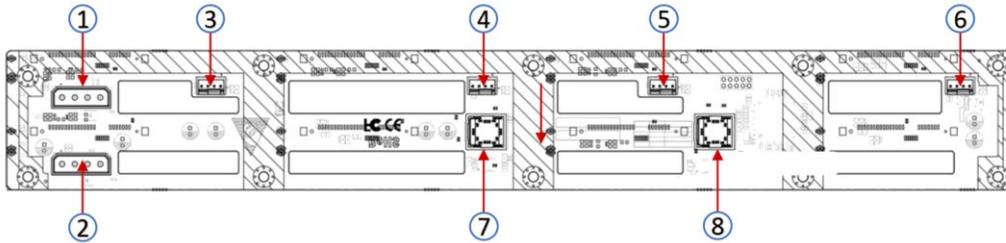| No.	Description	Function
1	SAS/SATA hard drive connector	1. Supports up to 12G/b SAS hard drive; 2. Supports up to 6G/b SATA hard drive; 3. Support SAS/SATA hard drive hot swap.

Table 2-17

28

Bottom surface
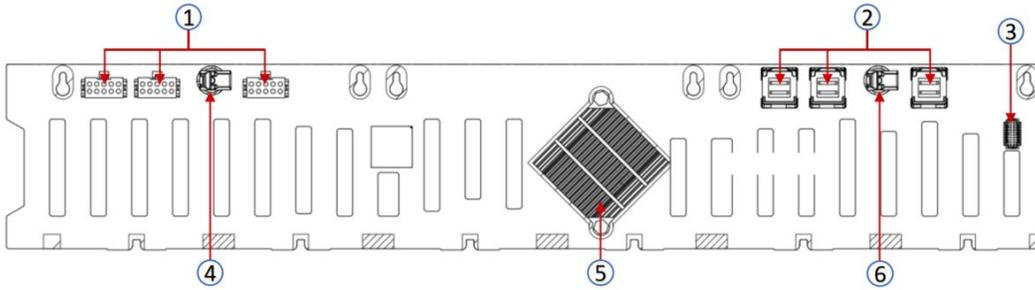
Figure 2-30

1	power connector	Backplane power transmission connector, used for 12V power transmission
2	MINI SAS HD high speed connector	For transmission of 12G/b SAS or 6G/b SATA signals
3	Temperature controlled fan socket	For 4pin fan interface
4、6	Backplane buckle	Fix the backplane onto the backplane bracket
5	EXPANDER chip	PM8043 SXP 24Sx12G

Table 2-31

- 2×2.5 rear hard drive backplane-1
  TOP surface
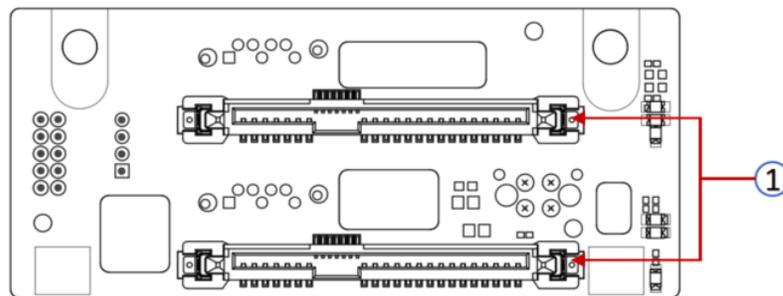
Figure 2-31

No.	Description	Function
1	SAS/SATA hard drive connector	1. Supports up to 12G/b SAS hard drive; 2. Supports up to 6G/b SATA hard drive;

Table 2-20

Bottom surface
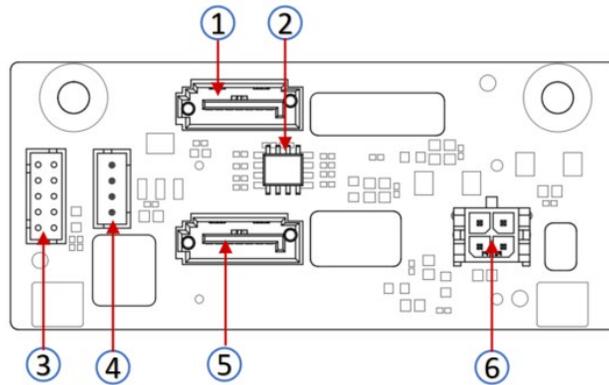
Figure 2-32

No.	Description	Function
1、5	7PIN SATA interface	SATA disk signal cable interface
2	Temperature sensor IC	Temperature sensor chip
3	SGPIO lighting signal	Used for hard drive LED positioning and fault LED indication functions
4	I2C interface	Used for I2C signal interface
6	Power interface	Backplane power transmission connector, used for the transmission of 12V power

Table 2-21

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.
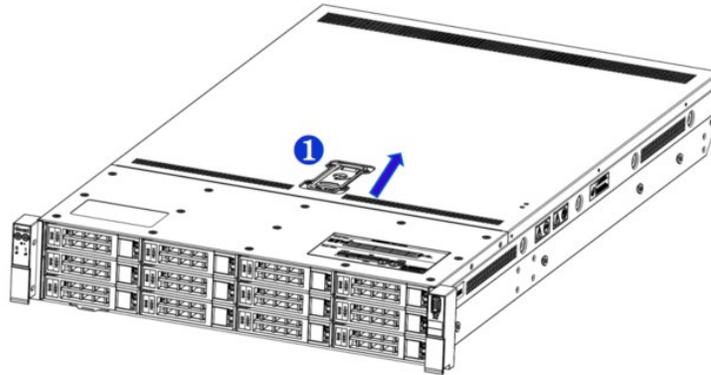
Figure 3-1

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.
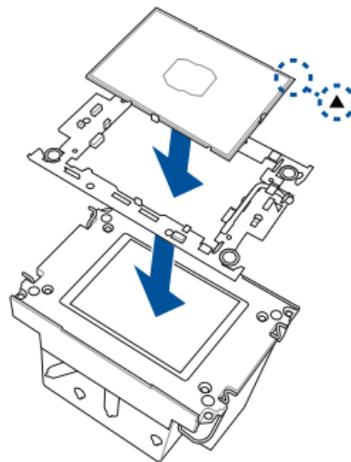
Figure 3-2

- Step 2: Remove the protective cover on the motherboard CPU socket.
- Step 3: Align the triangular mark and install the CPU and heatsink onto the

● CPU socket. (As shown in the diagram below)
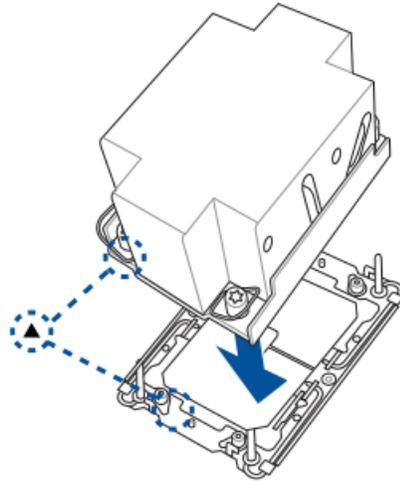
Figure 3-3

● Step 4: 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.
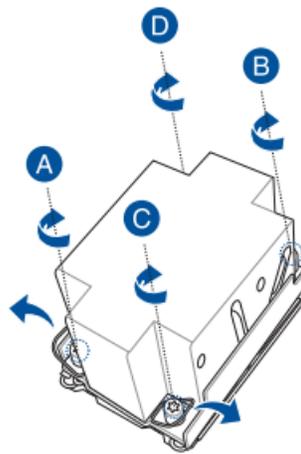
Figure 3-4

⚠ 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.

3.2.2 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.
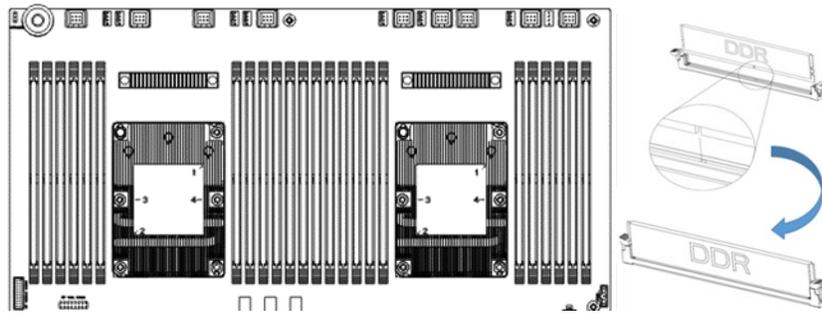
Figure 3-6
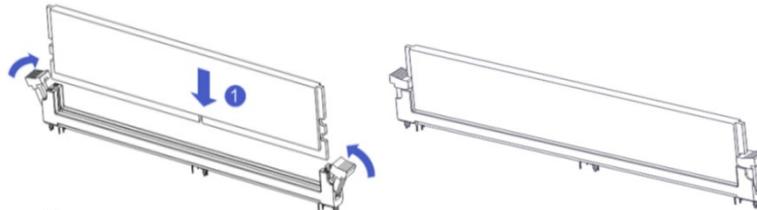
Figure 3-7

⚠ 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.

3.2.3 Server slide rail installation

- Step 1: Prepare two slide rails and pull out the inner rail.
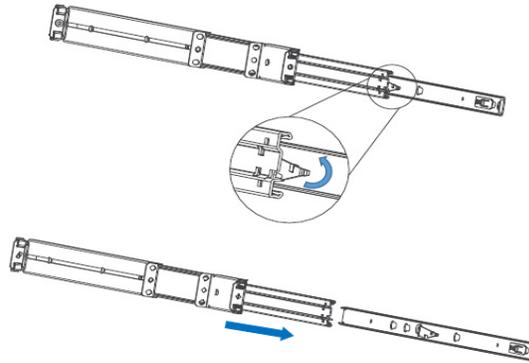
Figure 3-8

- Step 2: Fasten the inner rails to the sides of the chassis.
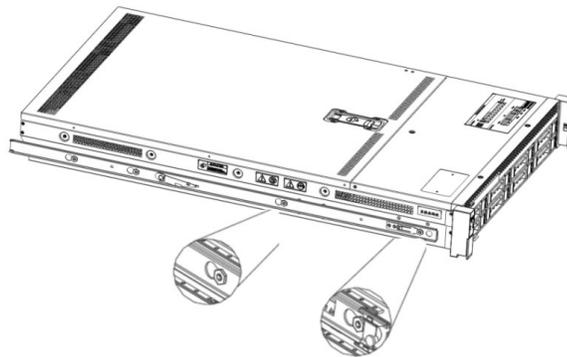
Figure 3-9

- Step 3: Install the outer rails on the cabinet brackets and secure the screws.
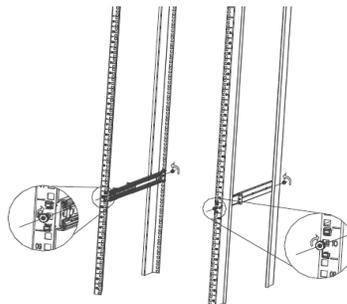
Figure 3-10

⚠️ 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.
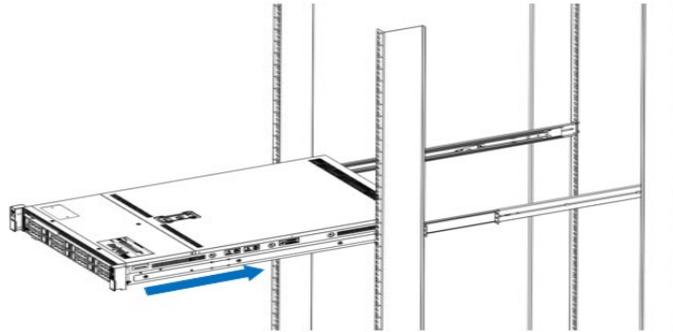
Figure 3-11

⚠ 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.
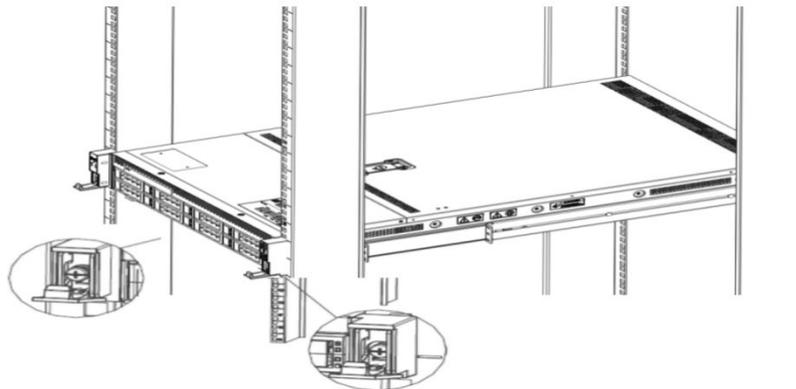
Figure 3-12

⚠ 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.

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 amber.
  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:

```
          Aptio Setup Utility - Copyright (C) 2020 American Megatrends, Inc.
              Platform Configuration

  Miscellaneous Configuration                          Select S0/S5 for ACPI state
  ------------------------------------------------     after a G3


  PCH state after G3                    [S0]
  Max Page Table Size Select            [1G]
  Active Video                          [Auto]




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



          Version 2.20.1275. Copyright (C) 2020 American Megatrends, Inc.   B4
```

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: Server@123.

- BMC default address: 192.168.100.1

- BIOS Default Password: None

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:
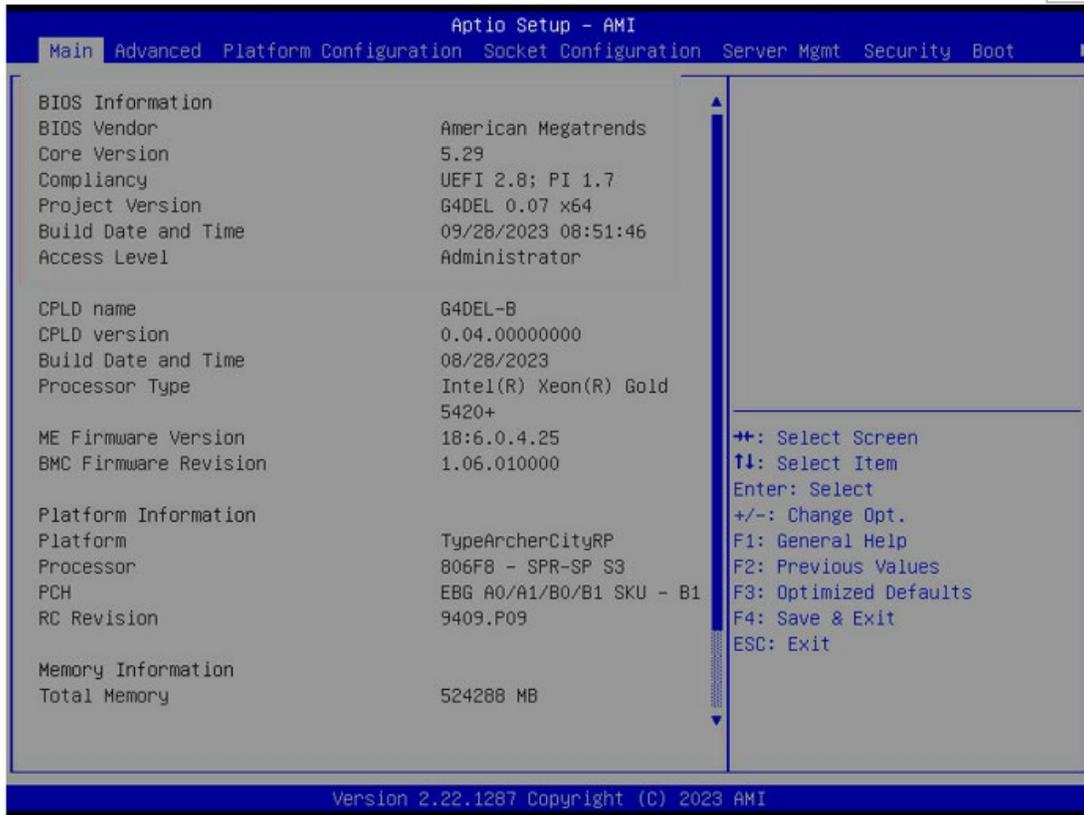
Figure 4-2

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:

```
             Aptio Setup Utility - Copyright (C) 2020 American Megatrends, Inc.
                                                      Server Mgmt

  --BMC network configuration--                    ▲ Select to configure LAN
  ***********************                            channel parameters statically
  Configure IPV4 support                             or dynamically(by BIOS or
  ***********************                            BMC). Unspecified option will
                                                     not modify any BMC network
  BMC Sharelink Management channel                   parameters during BIOS phase
  Configuration Address source      [Unspecified]
  Current Configuration Address sour DynamicAddressBmcDhcp
  Station IP address                0.0.0.0
  Subnet mask                       0.0.0.0
  Station MAC address               00-24-EC-F2-7D-DD
  Router IP address                 0.0.0.0
  Router MAC address                00-00-00-00-00-00

  BMC Dedicated Management channel                 →←: Select Screen
  Configuration Address source      [Unspecified]  ↑↓: Select Item
  Current Configuration Address sour DynamicAddressBmcDhcp  Enter: Select
  Station IP address                192.168.1.210  +/-: Change Opt.
  Subnet mask                       255.255.255.0  F1: General Help
  Station MAC address               00-24-EC-F2-7D-DE  F2: Previous Values
  Router IP address                 192.168.1.1    F3: Optimized Defaults
  Router MAC address                9C-A6-15-57-5B-D9  F4: Save & Exit
                                                     ESC: Exit
  ***********************
  Configure IPV6 support                           ▼

             Version 2.20.1275. Copyright (C) 2020 American Megatrends, Inc.
```
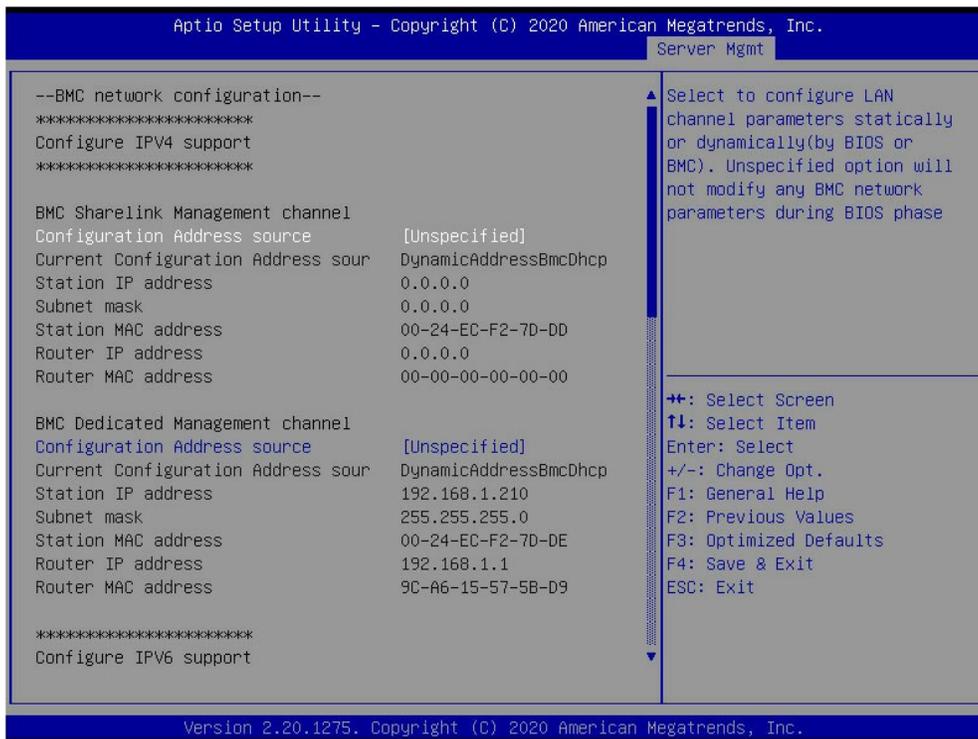
Figure 4-3

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.
    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

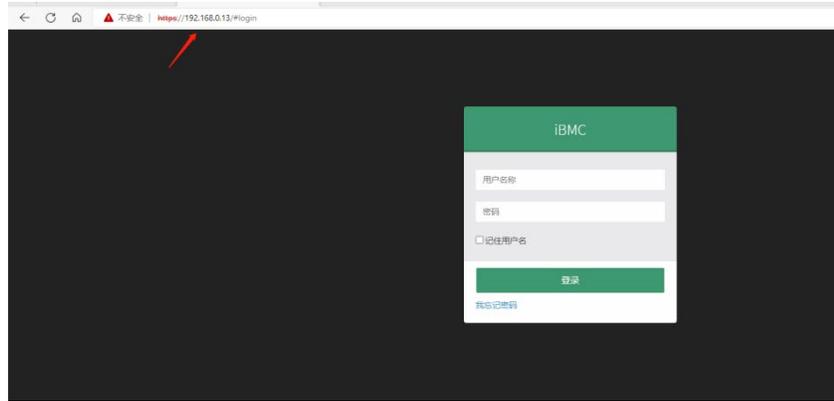Enter the IP address on the web page, as shown in the figure:

Figure 4-3

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:
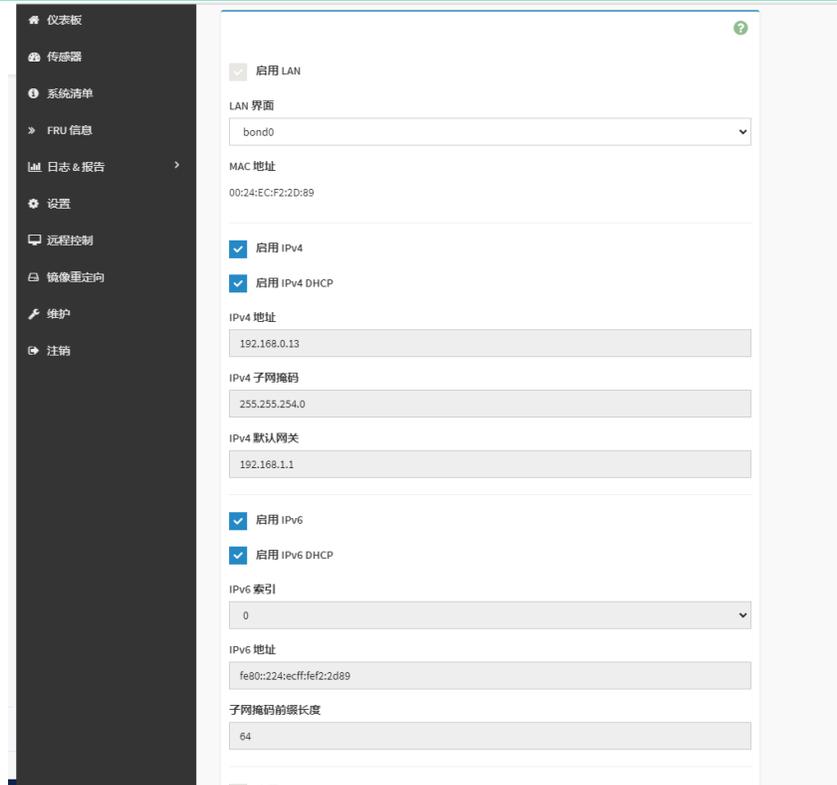
Figure 4-4

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

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 SNR technical support for further assistance.

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 contact SNR technical support for further assistance. 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 SNR technical support for further assistance.

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 SNR technical support for further assistance.

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 the issue persists even after replacing the RAID card with a known working one, restore to factory settings and update the BIOS version. Contact SNR technical support for further assistance.

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 SNR technical support for further assistance.