Gooxi

MSY201-D04R

2U Dual-Socket Edge Computing Server Barebones

User's Manual

Rev 0.1

Foreword

This is the **MSY201-D04R** user's manual for the 2U dual-socket edge computing server barebone system. It mainly introduces and describes the characteristic parameters, system configuration and installation method of this product. The biggest highlight of this edge computing server is that it supports two full-height, full-length and double-width GPU cards in a 2U chassis height, and a half-height, half-length, single-width RAID card or network card, paired with Gooxi's self-developed Purley motherboard "Koi 16DIMM" **G2DE**.

This manual is intended for reference and research by professional system integrators and personal computer technicians, and this product should only be installed and maintained by experienced technicians.

Manual Structure

Chapter 1 Product Introduction

This chapter provides the specifications of the main components of the system and describes the main features of the **G2DE** motherboard and 2U chassis.

Chapter 2 System Interface Introduction

This chapter provides a detailed description of the system interface, mainly including the IO interface of the motherboard and the functions and information of each connector, terminal and jumper.

Chapter 3 Detailed Node Disassembly and Assembly

This chapter describes the installation and instructions of the processor, memory, expansion card on the **G2DE** motherboard, and the precautions for installing or removing the processor, memory, expansion card and heat sink, please refer to this chapter.

Chapter 4 Barebone System Installation and Maintenance

This chapter provides installation and maintenance instructions for each module on the edge computing server .

Chapter 5 System Rack Installation

This chapter describes the necessary steps and precautions for racking the MSY201-D04R edge computing server barebone system.

Statement

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Glossary:

Words	Meaning
Intel® Xeon® Scalable Processors	
Platinum Efficiency Power Supplies	The platinum certified power supply is the "80 PLUS Platinum" standard, that is, the conversion rate of 20% load is above 90%, the conversion rate of 50% load is above 94%, and the conversion rate of 100% load is above 91%
M.2	The M.2 interface is a new-generation interface standard tailored for Ultrabooks. It is a new interface specification introduced by Intel® to replace mSATA.
C621/C622	Intel® Chipset
RJ45	Common name for standard 8-bit modular interface
AST2500	Aspeed® BMC Chip
Socket P	Intel® processor interface types
-F CPU	Refers to the CPU that supports the Intel® Omni-Path Host Fabric interface, Omni-Path high-speed optical cable interconnection technology, which can support up to 100Gbps end-to-end interconnection
8038 Fan	Fan with dimensions 80x80x38mm
LGA1151	The full name is Land Grid Array, LGA1151 represents 1151 contacts
CR2032	3V CR2032 lithium manganese battery, shaped like a button, referred to as a button battery or a lithium manganese button battery
RS-232	One of the communication interfaces on the computer is the asynchronous transmission standard interface, called COM port
Jtag	Joint Test Action Group, a joint test working group, mainly used for internal chip testing
NC Pin	Unconnected or no-connect pins
XDP	Extend Debug Port, Intel® CPU debugging interface

Abbreviation:

Full English names and Chinese explanation of each abbreviation, as shown in the following table:

Abb.	Original	Chinese Meaning
PCH	Platform Controller Hub	即之前统称的"南桥"
GbE	Gigabit Ethernet	千兆以太网
BMC	Baseboard Management Controller	基板管理控制器
IPMI	Intelligent Platform Management Interface	智能平台管理接口
CPU	Central Processing Unit	中央处理器
SATA	Serial Advanced Technology Attachment	串行 ATA 接口规范
SAS	Serial Attached SCSI	串行 SCSI
sSATA	secondary SATA	扩展 SATA 接口
LAN	Local Area Network	局域网
VGA	Video Graphics Array	视频传输标准
MB	Mother Board	主板
MIB	Motherboard Interface Board	主板转接板/侧板
BP	Backplane	背板
PDB	Power Distribution Board	电源分配板
FIB	Fan Interface Board	风扇转接板
PCIE	Peripheral Component Interconnect Express	高速串行计算机扩展总线标准
USB	Universal Serial Bus	通用串行总线
FW	Firmware	固件
TPM	Trusted Platform Module	可信赖平台模块
IO	Input/Output	输入输出
BIOS	Basic Input-Output System	基本输入输出系统
CMOS	Complementary Metal Oxide Semiconductor	互补金属氧化物半导体
ME	Management Engine	管理引擎
DDR4	Double Data Rate 4 SDRAM	第四代双倍数据速率同步动态随机存储器
DIMMs	Dual-Inline-Memory-Modules	双列直插式存储模块
RDIMMs	Registered DIMMs	带寄存器的双线内存模块
LRDIMM	Load-Reduced DIMMs	低负载 DIMM
AEP	Apache Pass	Intel® 傲腾 DDR4 内存代号
MEZZ CONN	Mezzanine Connector	夹层/扣卡
KVM	Keyboard Video Mouse	通过直接连接键盘、视频、鼠标端口，能够访问和控制计算机
CPLD	Complex Programmable Logic Device	复杂可编程逻辑器件
ECC	Error Correcting Code	错误检查和纠正
CFM	Cubic Feet Per Minute	立方英尺每分钟

RPM	Revolution Per Minute	转每分

Conventions:

⚠ Note: Used to convey equipment or environmental safety warning messages, which, if not avoided, may result in equipment replacement, data loss, reduced equipment performance, or other unpredictable results.

⚠ **WARNING**: Indicates a potentially hazardous situation which, if unavoidable, could result in death or serious personal injury.

↑ Red arrow: Represents pointing to a certain location.

↑ Blue arrow: Represents the action of pulling out or inserting downwards or inserting at an angle.

⇨ Hollow arrows: Represents the next action or result.

↻ Dark blue rotation arrow1: Represents the action of turning the screw clockwise or pulling outward.

↺ Dark blue rotation arrow2: Represents the action of turning the screw counterclockwise or snapping it inward.

CONTENTS

Chapter 1 Product Introduction

1.1 System features

MSY201-D04R barebone is an edge computing server barebone product. This product supports two full-height, full-length, double-width GPU cards, and a half-height, half-length, single-width RAID card or network card in a 2U chassis height. Built-in **G2DE** server motherboard, supports 1st and 2nd generation Intel® Xeon® Scalable processors, supports up to 205W, and includes related technologies provided by the latest chipset built into the motherboard. The overall parameters of the barebones are shown in Table 1.1:

System	
System model	**MSY201-D04R**
Chassis	Gooxi® 2U Rackmount Chassis
Motherboard	G2DE-B/ G2DE-TB
CPU	1st and 2nd Generation Intel® Xeon® Scalable Processors; Maximum supports 205W
Memory	Memory frequency supports 2133/2400/2666/2933MHz, supports DDR4 3DS RDIMM/LRDIMM/RDIMM ECC, supports Intel® Optane® series memory; supports 6* DDR4 Channels, a total of 16* DDR4 slots; single capacity is 8GB, 16GB, 32GB, 64GB, 128G, 256G (DDR4 3DS RDIMM only)
Hard disk	Front panel supports up to 4* hot-swap 2.5" SATA (HDD/SSD)
Network features	Supports 4x 1GbE
Management interface	Front: 2* USB3.0 Rear: 2* RJ45 ports, 2* USB3.0+ 1* IPMI LAN port, 1* VGA, 2* USB2.0, 1* COM port
Display function	Aspeed® AST2500, for HDMI form connector, outputs VGA image through custom HDMI to VGA Cable
M.2	Single node supports 1* M.2 SSD with PCIe 3.0 x 2 protocol (supported size: 2280)
Expansion slot	2* PCI-E 3.0 x8 slots by CPU1 1* PCI-E 3.0 x16 slots by CPU1 1* PCI-E 3.0 x4 slots by CPU1 2* PCI-E 3.0 x16 slots by CPU0
Power supply	Supports Platinum-level 550W, 800W, 1200W hot-swap redundant power supplies (adapt it based on the actual power)
System fan	N+1 hot-swap redundant fans
System size	450mm* 443mm* 87.5mm (L*W*H)
System weight	Net weight: 9.5kg, gross weight: 10.8kg
System motherboard	
Motherboard model	G2DE-B/ G2DE-TB
CPU	1st and 2nd Generation Intel® Xeon® Scalable processors
Chipset	Intel® PCH C621/ C622 (G2DE-B/G2DE-TB)
No. of memory slots	Supports 16* DDR4 DIMM slots
Memory supported type	Supports DDR4 3DS RDIMM/LRDIMM/RDIMM ECC, memory frequency supports 2133/2400/2666/2933MHz
Memory size	Single capacity is 8GB, 16GB, 32GB, 64GB, 128G, 256G (only DDR4 3DS RDIMM)
Hard disk interface	Supports 8* SATA 3.0 ports

IPMI	Supports IPMI V2.0; IPMI 2.0 supports network mapped virtual storage devices and KVM; Supports Aspeed® AST2500 BMC
Network card	4* Intel® I210AT 1GbE network interface
PCIE Riser card	Slot1 PCI-Express 3.0 x8 Slot from CPU1 Slot2 PCI-Express 3.0 x16 Slot from CPU1 Slot3 PCI-Express 3.0 x8 Slot from CPU1 Slot4 PCI-Express 3.0 x4 Slot from CPU1 Slot5 PCI-Express 3.0 x16 Slot from CPU0 Slot6 PCI-Express 3.0 x16 Slot from CPU0
VGA	Gooxi custom HDMI form interface to standard VGA interface
USB	2* USB3.0, 2* USB2.0 ports
System power	
No. of power supplies	Supports 2
Power features	Supports platinum-level 550W, 800W, 1200W hot-swap redundant power supplies (adapt it based on the actual power)
Input voltage	100-127Vac/200-240Vac 47Hz~63Hz / 240Vdc (mainland China only)
Output voltage	+12Vdc
System fan	
No. of fans	Supports 3* 8038 temperature-controlled fans
Fan voltage	12 (10.8-12.6) Vdc
Fan current	4.30A (5.16A Max)
Fan speed	Maximum 16300 +/- 10% RPM
Fan airflow	3.665m³/min (129.42CFM), minimum 3.299m³/min (116.48CFM)
Fan air pressure	Minimum 1002.97Pa, maximum 1238.22Pa
OS support	
Operating systems supported	Windows® Server 2012 R2 (64bit) Windows® Server 2016 (64bit) Redhat® Enterprise Linux Server 7.3(64bit) Suse® Enterprise Linux Server 12.2(64bit) Centos® Enterprise Linux Server 7.3(64bit) Ubuntu® Server 16.04(64bit) VMWare® ESXi Microsoft® Hyper-V® Citrix® Xen® Server Linux® Kernel Virtual Machine
System environment	
Operating temperature	Operating temperature: 5℃~ 35℃; Non-operating temperature: -40℃~70℃
Storage temperature & humidity	Operating humidity: 35%~80%; Non-operating humidity: 20%~90%
Safety certification	
Certification	UL, CE, CCC, RoHS

Table 1.1

1.2 Introduction of system component boards

The **MSY201-D04R** barebone component board mainly includes the motherboard (MB), the backplane (BP), and the PCIE interface board (PCIEIB). The layout of the whole machine is as shown in Figure 1.1:
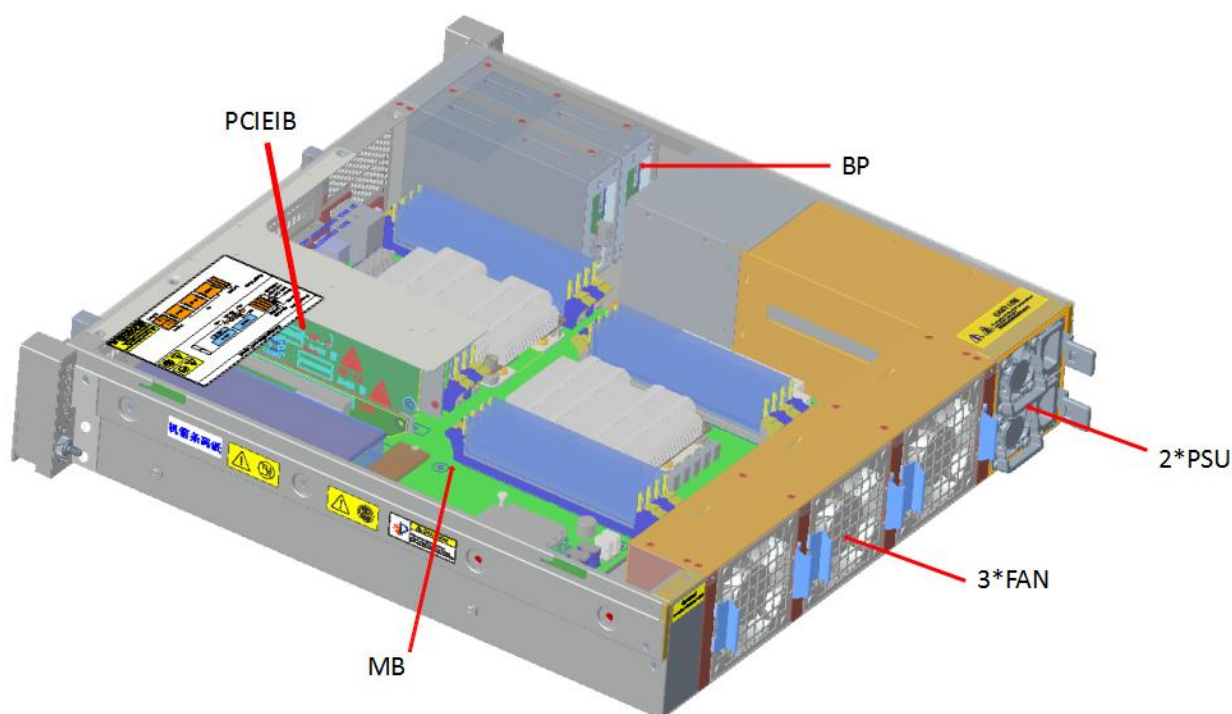

Figure 1.1

1.2.1 Motherboard introduction

MSY201-D04R is equipped with **G2DE** dual-socket server motherboard, and Gooxi **G2DE-B** is a standard E-ATX (12" * 13") dual-socket server motherboard, designed based on Intel x86 architecture, using Intel® Purley platform, based on Intel® PCH C621 (C622) chipset, with the Intel® latest generation Xeon® Scalable CPU, this motherboard supports 2* Xeon® Scalable CPUs. Supports 16* DDR4 2133/ 2400/ 2666/ 2933 ECC RDIMMs, and the single board supports up to 4TB of memory.

The main features of **G2DE-B/TB** are shown in Table 1.2 below:

Motherboard	G2DE
CPU	Supports 1st and 2nd Generation Intel® Xeon® Scalable processors
Chipset	Intel® PCH C621 (C622) chip
Memory	Supports DDR4-2133/2400/2666/2933 ECC-DIMM
SATA	3* 8643 ports, 2* SATA 7PIN ports Supports RAID0, 1, 5, and 10
Network	2* Gigabit RJ45 LAN ports (2* 10 Gigabit RJ45 LAN ports, only supported by C622 chip) 1* dedicated BMC management LAN port
VGA	Gooxi custom HDMI form interface to standard VGA interface
USB	2* USB3.0, 2* USB2.0 ports
Management interface	IPMI 2.0 + KVM

Table 1.2

The function diagram of the motherboard hardware chip is shown in Figure 1.2:
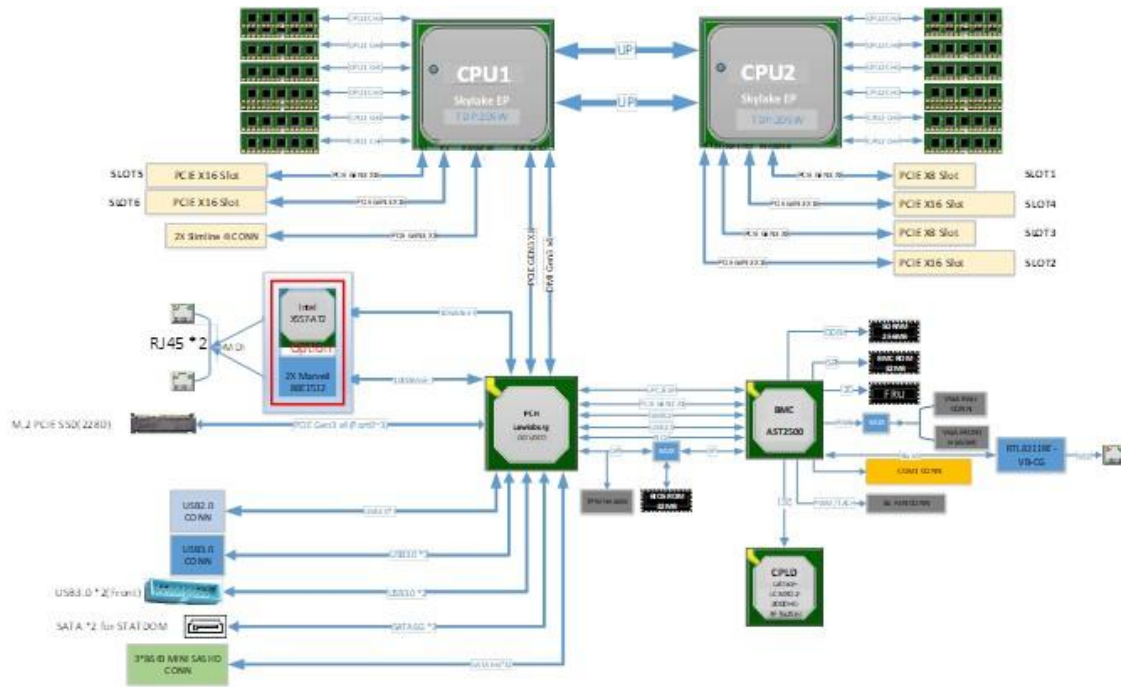
Figure 1.2

1.2.2 Backplane features

The **MSY201-D04R** barebones system uses the **RM2124-SHDB** 2.5-inch backplane, which supports 2 hot-swap hard disks. The hard disks supported by this backplane are SAS/SATA hard disks. The main features are summarized as follows:

The front of its structure diagram is as shown in Figure 1.3:
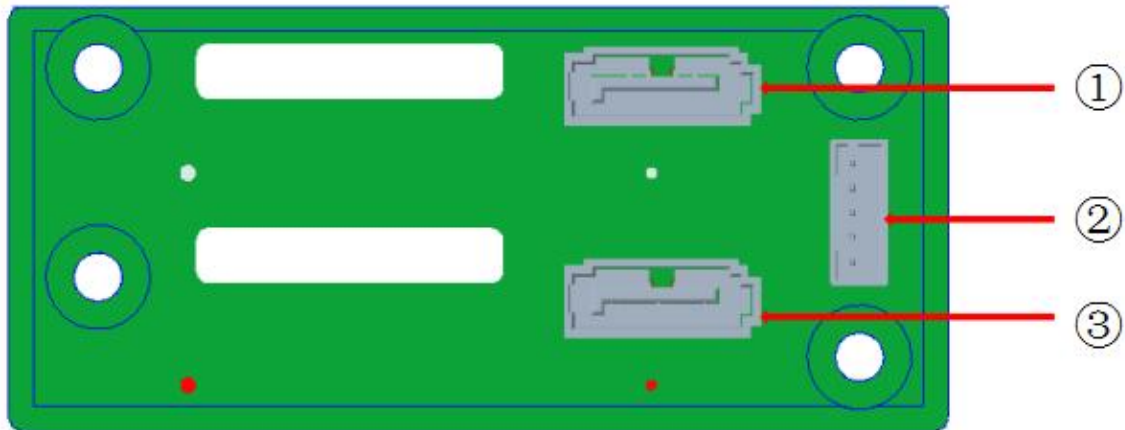
Figure 1.3

RM2124-SHDB-6G			
Corresponding position	Interface / jumper / slot	Corresponding position	
1, 3	SATA interface	2	5PIN power supply interface

Table 1.3

Figure 1.4

1.3 System view

1.3.1 Front view

As shown in Figure 1.5 below:
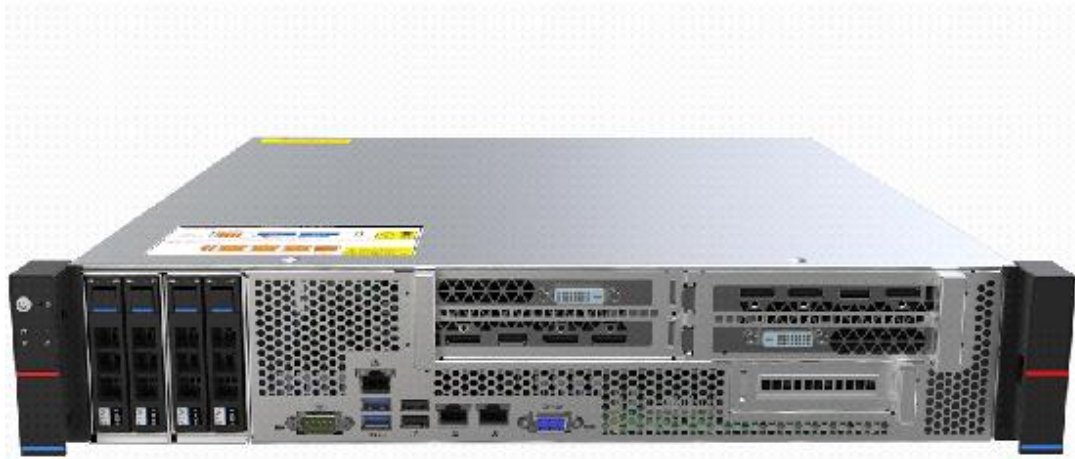
Figure 1.5

1.3.2 Rear view

As shown in Figure 1.6 below:

Figure 1.6

1.3.3 Schematic diagram of front window structure

As shown in Figure 1.7 below:
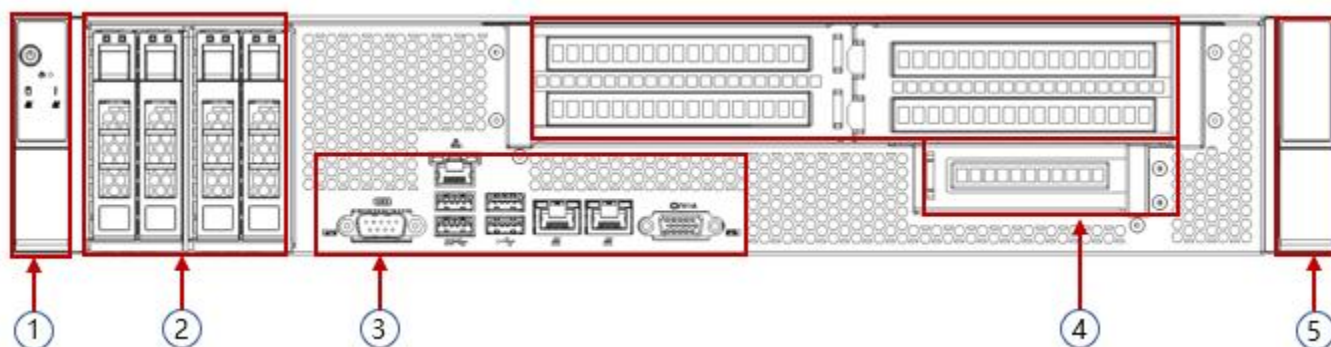
Figure 1.7

(1) Left ear
(2) 2.5-inch hard disk module
(3) IO module
(4) PCIE module
(5) Right ear

1.3.4 Schematic diagram of rear window structure
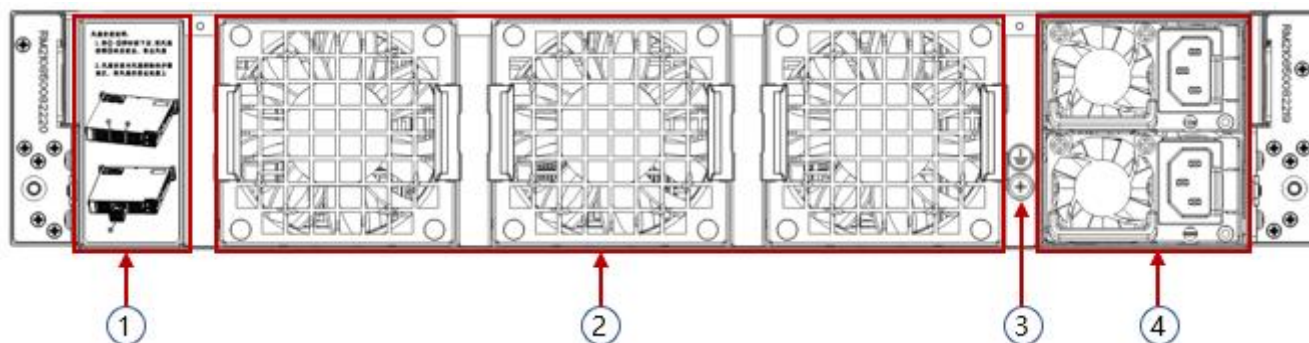
Figure 1.8

(1) 2.5-inch hard disk module
(2) Cooling fan module
(3) Ground wire interface
(4) Power module

Chapter 2 System Interface Introduction

2.1 Overview

The main interfaces of the system are distributed on the motherboard. The following content mainly introduces the interface layout of the motherboard.

2.1.1 G2DE motherboard physical picture

As shown in Figure 2.1 below:

Figure 2.1

2.1.2 Motherboard pin interface definition:

The schematic diagram of the motherboard peripheral interface, as shown in Figure 2.2 below:
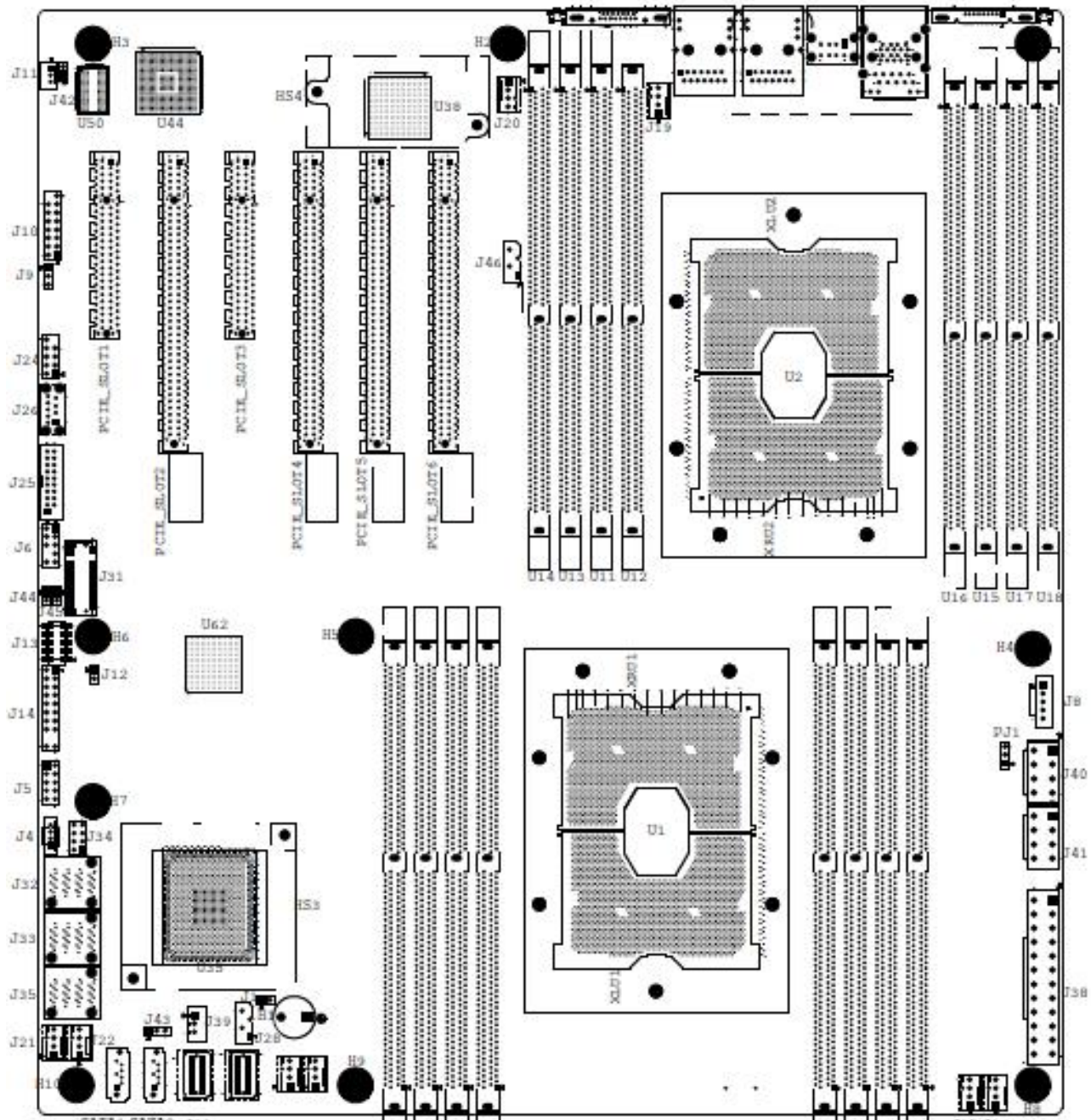
Figure 2.2

The definition of the motherboard connected to the peripheral interface is as follows in Table 2.1:

Connector name	Function description
J11 (BMC Debug Port)	BMC debug serial port for developers to diagnose and debug BMC
J10	On-board VGA Connector, cable can be used to Connect to the front panel
J9	Option of front VGA/ real VGA
J24	You can use the adapter cable to convert two USB2.0 to the front panel
J26	Vertically plug USB3.0 Connector in the board
J25	You can switch out two USB3.0 connected to the front panel through patch cord
J6	Can be used to connect to TPM module or 80Port Debug
J44	Watch-Dog Timer Enable
J45	FRONT UID BUTTON
J31	M.2 PCIE*4 CONN, supports 2280 specification
J13	CPLD JTAG, used to program CPLD
J14	Front boot panel Connector, connected to the front panel through the cable, such as start/reset button and some LEDs status, etc.
J12	CPU Detect, CPU test, the jumper cap is not connected by default
J4	RAID key for CPU NVME SSD
J34	S-SGPIO for SAS card hard drive indicator connection
J33	S-SATA0~3, SATA 3.0 connection header
J32	I-SATA0~3, SATA 3.0 connection header
J35	I-SATA4~7, SATA 3.0 connection header
J15/J16/J17/J18/J19/J20/J21/J22	System cooling fan header
SATA1/2	SATA DOM CONN
J43	Flash Security Override for ME upgrade pins
J39	JSTBY, Wake On LAN header
J28/J46	JNVI2C, NVMe SMBus header used for PCIE hot-swap SMBus clock data connections.
J1	In-board chassis intrusion pin: optional function, the default is not to jump up
J27/J29	Slimline X4 CONN
B1	Buzzer
U10/U9/U7/U8	CPU0 DIMMF1/E1/D1/D2
U4/U3/U5/U6	CPU0 DIMMA2/A1/B1/C1
J38	ATX PWR 24Pin Connector, used to connect the power supply ,
J40/J41	ATX PWR 8Pin Connector, used to connect the power supply,
J8	Power Supply IC connector

Table 2.1

2.2 Motherboard IO interface

2.2.1 System ID LED

The system UID LED is designed to allow users to more intuitively identify which one is currently operating on. Its specific location on the motherboard is shown below. On the front of the motherboard, it corresponds to the UID button on the front panel of the server. The location diagram is as follows Figure 2.3:
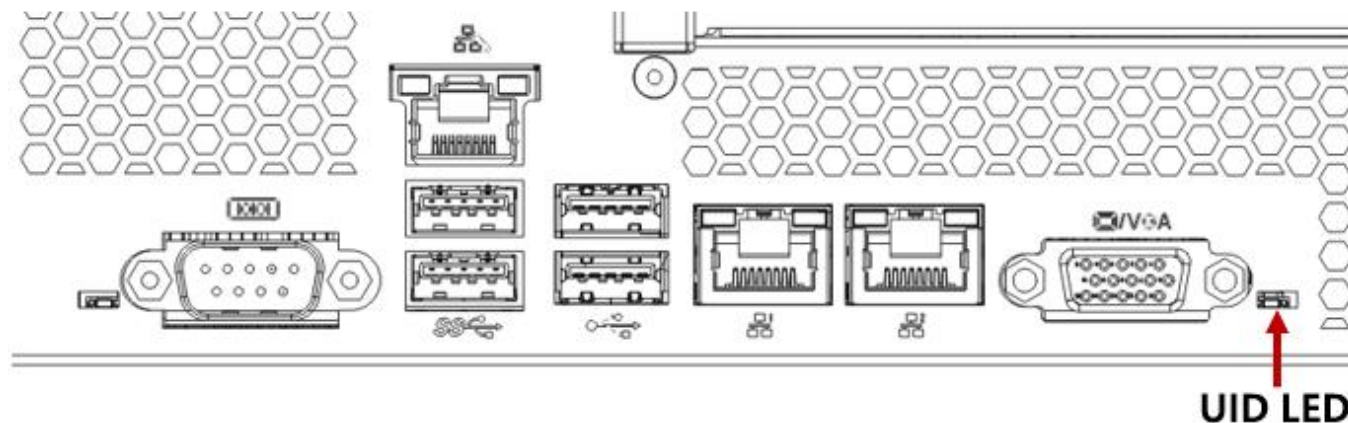

Figure 2.3

2.2.2 Introduction of BMC LED

BMC green LED is used to reflect the active status of the motherboard. When the motherboard is powered on, the LED is flashing; when there is no power, the LED is off. The location diagram is as shown in Figure 2.4:

Figure 2.4

BMC LED defined as follows in Table 2.2:

BMC LED	
LED color	**Status ID**
Off	Not powered on or BMC is not working, BMC FW is not running or hangs
Flashing green (0.1Hz)	Exception, some BMC interrupts are not processed for more than 2 seconds
Flashing green (0.5Hz)	BMC works fine, DRAM and interrupt monitoring enabled
Flashing green (2Hz)	BMC runs in memory (instruction fetch), interrupts are not enabled

Table 2.2

2.2.3 IPMI LAN port

Location diagram is as shown in Figure 2.5:
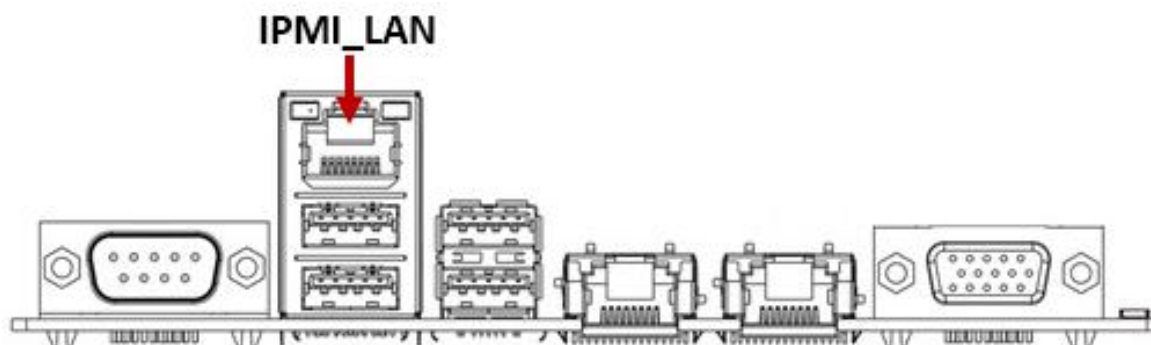
Figure 2.5

    IPMI LAN: Also known as Dedicated LAN, it is a dedicated network port for IPMI, which is used for IPMI remote management. It can be connected to the switch with CAT5 and above cables, and can also be directly connected to the customer's host. It can be adapted to adjust, but cannot be used as a service data network port. The LED of this network port is as shown in Figure 2.6:
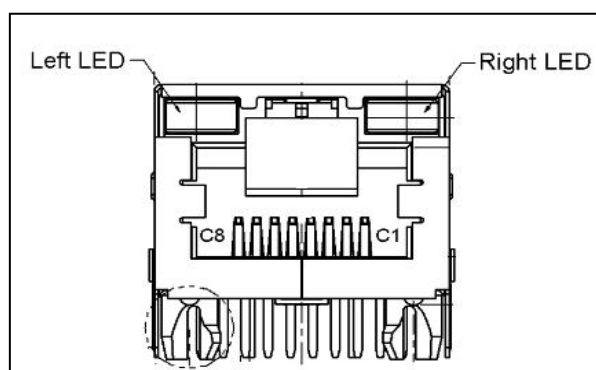
Figure 2.6

The color definitions of the IPMI network port lights are as follows in Table 2.3:

IPMI LAN Port LED	
LED	**Description**
Left LED	For the Link status LED: 1. Gigabit Link, long green on 2. 100MB Link, long orange on 3. 10MB Link, LED off
Right LED	When there is data activity, the yellow LED flashes; When there is no data activity, the LED lights on

Table 2.3

2.2.4 LAN port

The schematic diagram of the location of the network port is as shown in Figure 2.9:
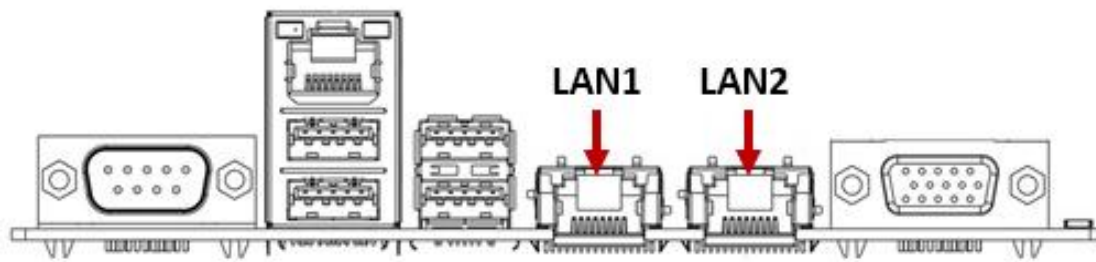
Figure 2.7

The LEDs of the two network ports are the same, and the colors of the lights are defined in Table 2.4:

Data LAN Port LED	
LED	**Description**
Left LED	For the Link status LED: 1. Gigabit Link, long green on; 2. 100M Link, long orange on; 3. 10M Link, LED off;
Right LED	When there is data activity, the yellow LED flashes; When there is no data activity, the LED lights on.

Table 2.4

2.2.5 VGA interface

Gooxi custom HDMI form interface to standard VGA interface, using custom wire. The graphics chip of the motherboard adopts **AST2500**. The **AST2500** has a built-in PCIE VGA Controller, and uses a custom HDMI to standard VGA adapter to connect to a VGA display and output host information.
The location diagram is as shown in Figure 2.9:
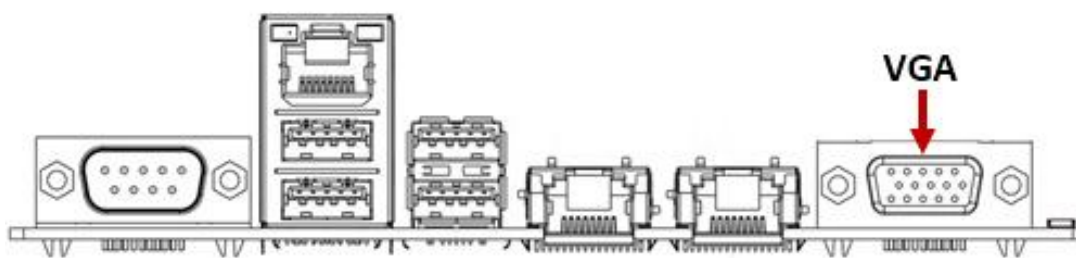
Figure 2.8

2.2.6 USB interface

2* USB 3.0 and 2* USB 2.0 on the rear, input user information.
The location diagram is as shown in Figure 2.9:
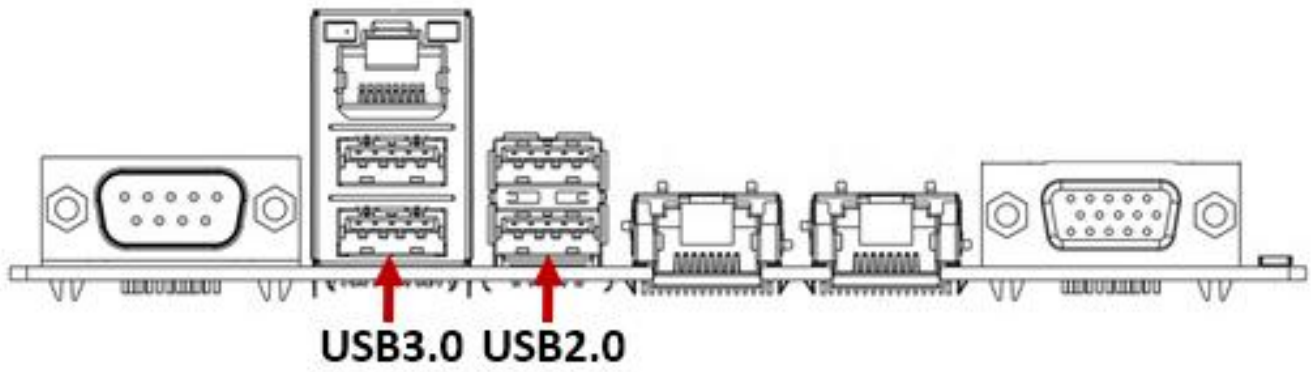
Figure 2.9

2.2.7 USB interface

1* 9PIN COM connector .

The schematic diagram is as follows:
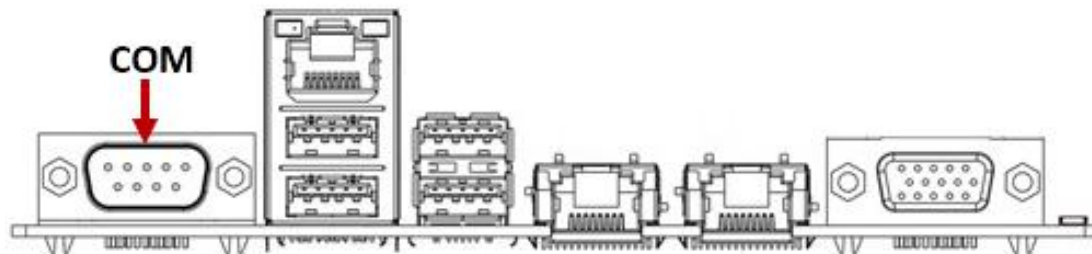
Figure 2. 10

2.2.8 SATA 3.0 connection header

The **G2DE-B** is onboard with 8* I-SATA 3.0 ports (I- Sata 0-3 , I-Sata 4-7) and 6* S-SATA (S-SATA 0-3, S-SATA 4, S-SATA 5). These SATA ports are provided by the C621/C622 chipset.

The location of the SATA 3.0 connection header is as follows:
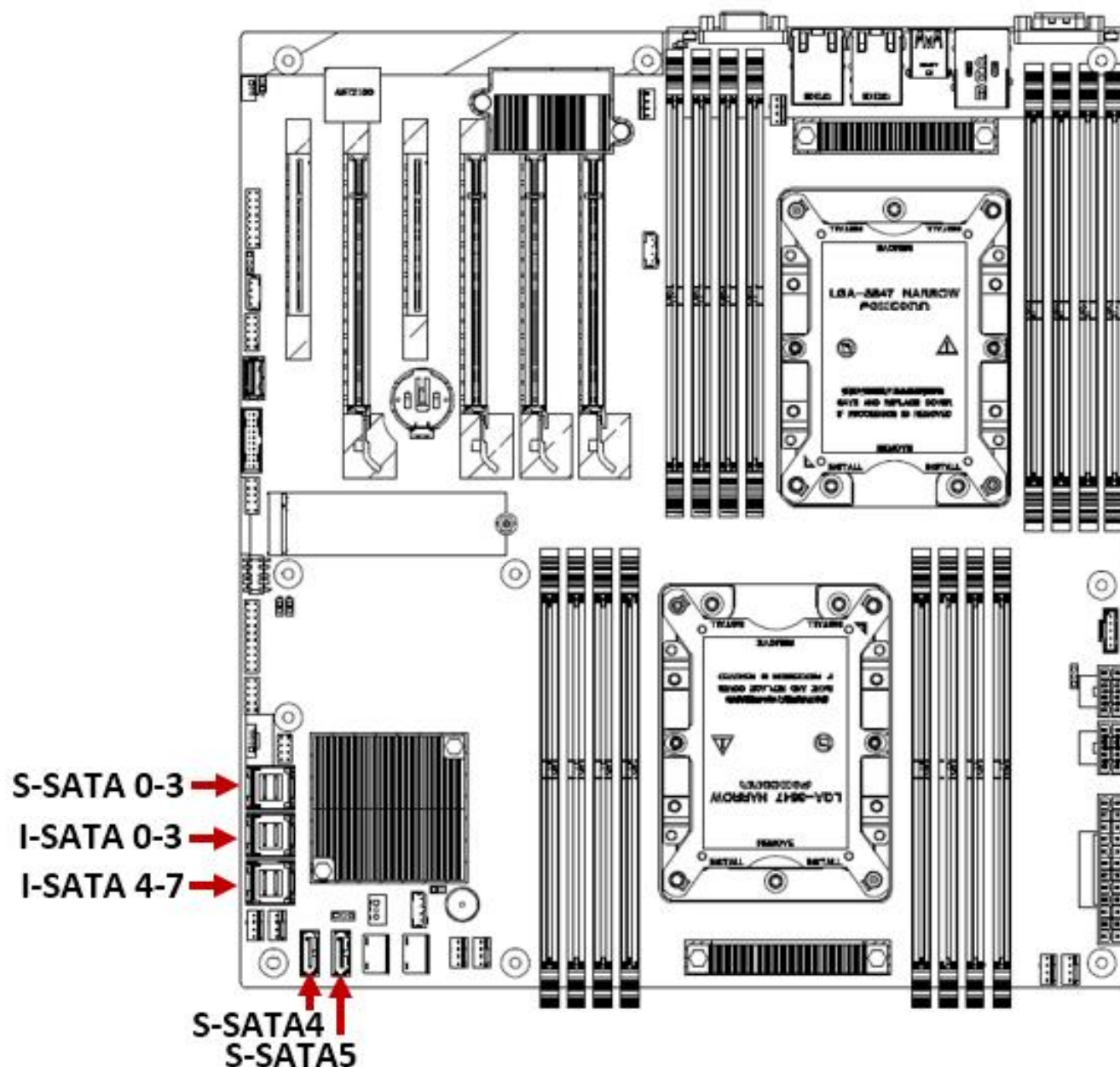
Figure 2.11

2.2.9 PCIE 3.0 interface introduction

The motherboard has built-in 4* PCIE3.0 X16 Slots and 2* PCIE3.0 X8 Slots. Among them, SLOT1, SLOT2, SLOT3, SLOT4 PCI-E slots come from CPU1; SLOT5, SLOT6 PCI-E slots come from CPU0; the location diagram is as shown in Figure 2.12:
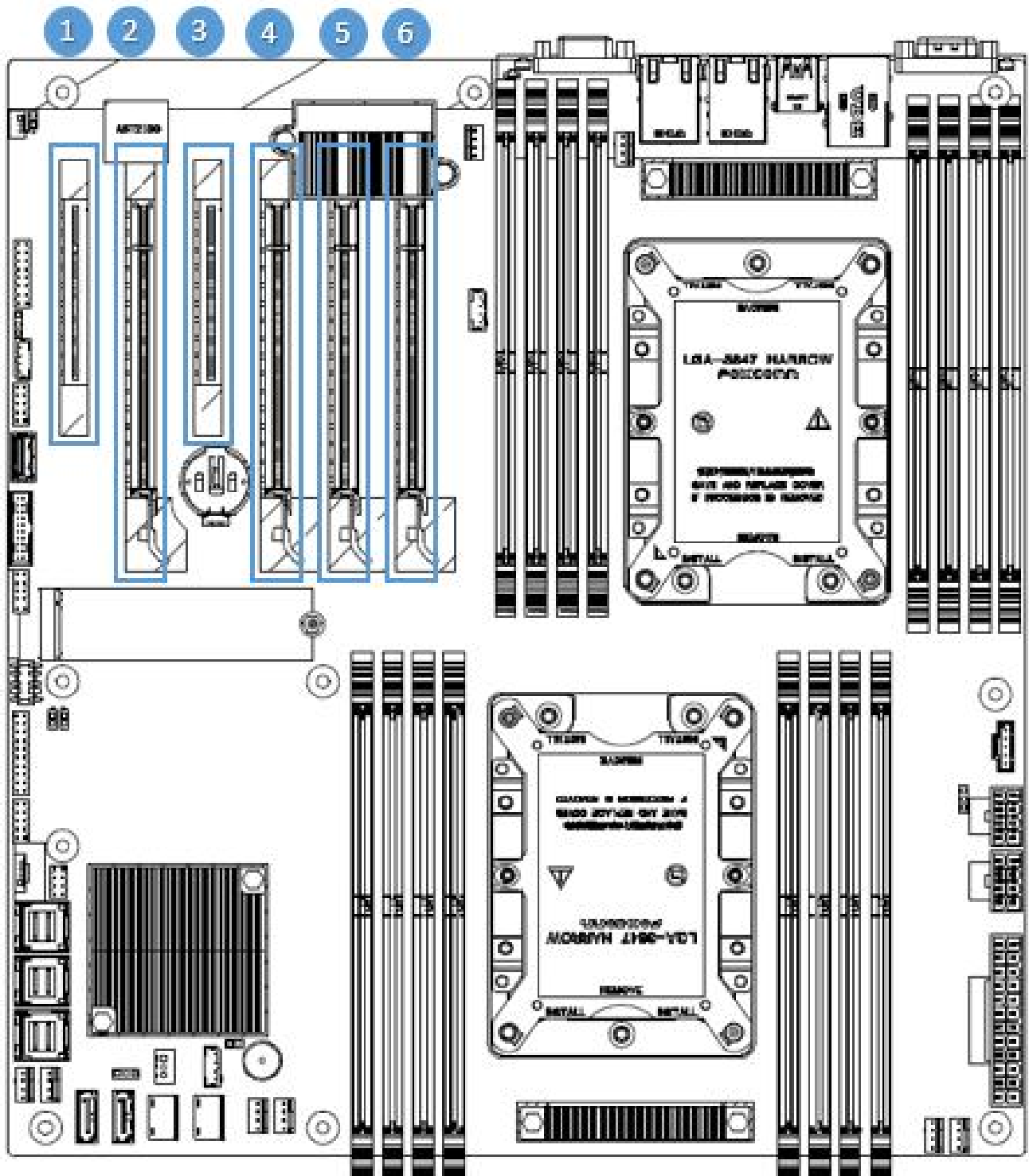
Figure 2.12

2.2.10 Introduction to DIMM SLOT

The **G2DE-B** single board supports 2 CPUs, each CPU supports 6 Channels, of which ChannelA/D each has 2 DIMMs, and the entire board can support 16 DIMMs, which are divided into two groups (CPU0 and CPU1) according to the CPU type, each group has 8 DIMMs. Note: When only one memory is inserted, the slot in the red frame is preferred. The DIMM slots are as shown in Figure 2.13:
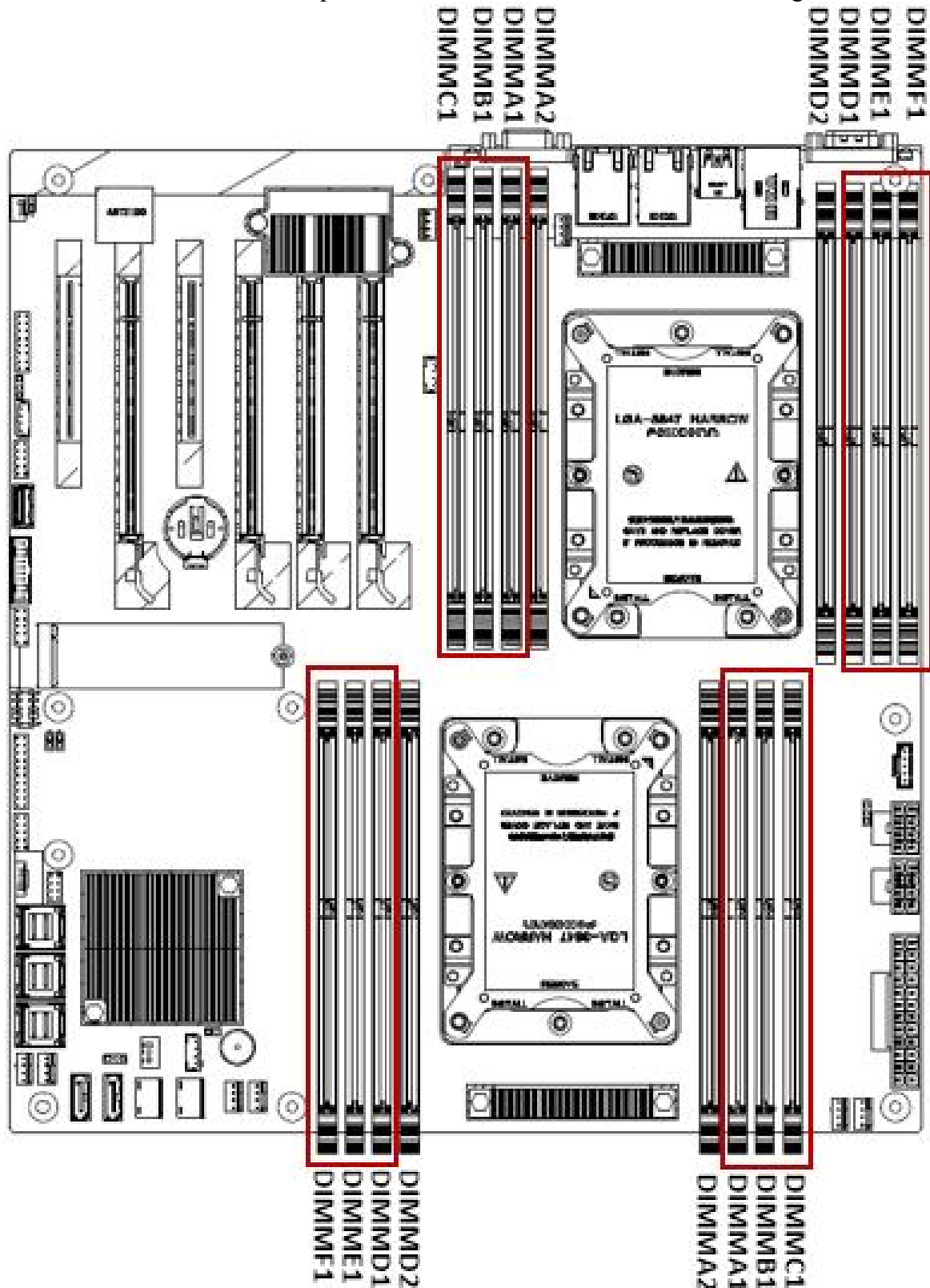
Figure 2.13

2.2.11 CPU Socket introduction

This motherboard has two **LGA3467** CPU sockets, which are used to install the **LGA3647** CPU. During the process of installing the CPU, it is necessary to pay attention to the installation of the 1st PIN. The 1st PIN is as follows: The red circle in the figure below shows the 1st PIN, which is indicated by a triangular arrow to correspond to the triangular arrow of the CPU. The schematic diagram of the CPU Socket position is shown in Figure 2.14:
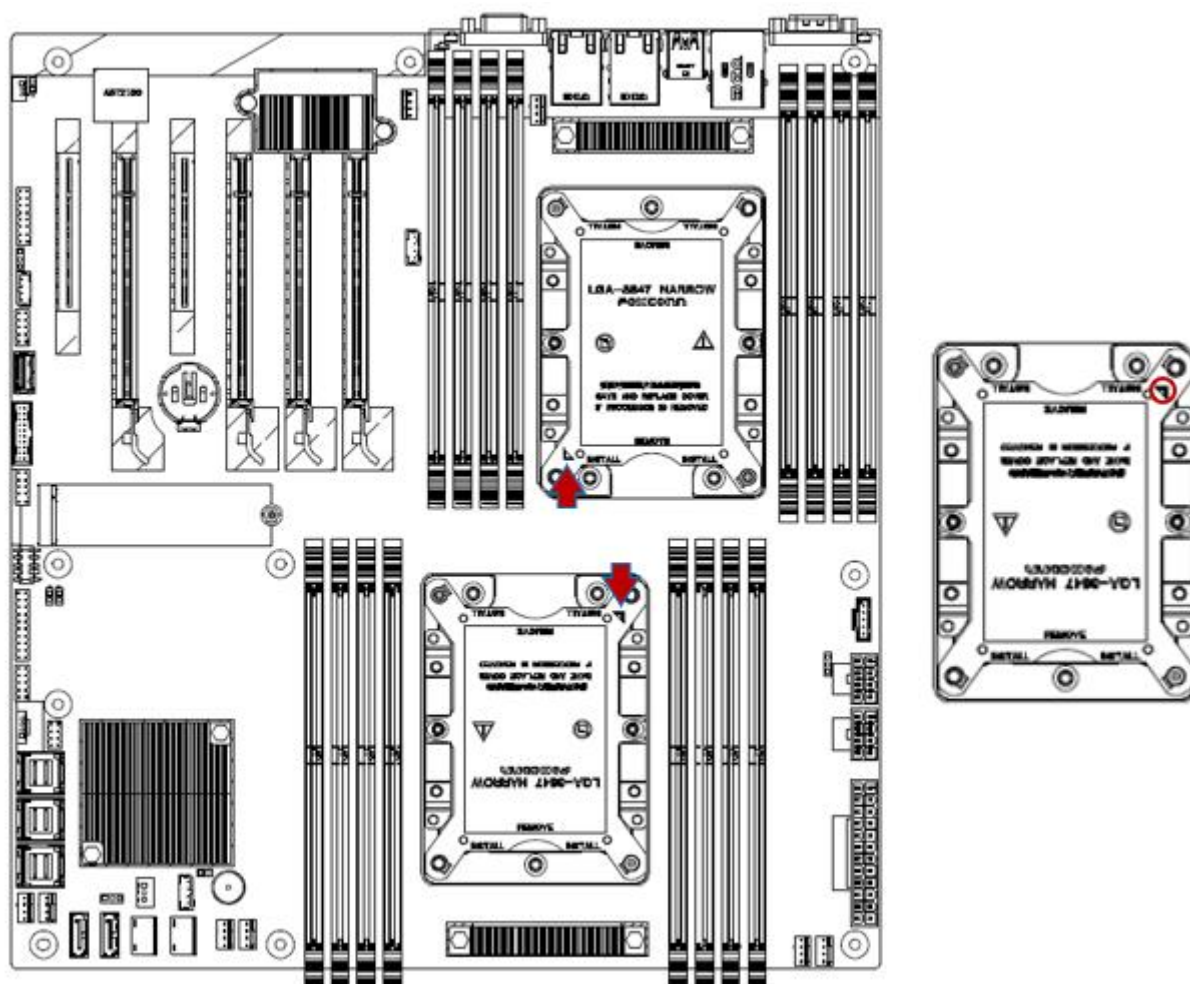
Figure 2.14

2.2.12 Chassis Intrusion and ME Update introduction of Jumper

Chassis Intrusion

In-board chassis intrusion pin: optional function, which means that it will detect and warn when someone disassembles the chassis.

ME Update Jumper:

Management Engine (ME), which is the management software developed by Intel® for its Chipset. When updating the BIOS with ME FW, you need to the 2nd and 3rd PIN, and return to the 1st and 2nd PIN after the update is completed. In other cases, the jump cap is not required.

The locations of Chassis Intrusion and ME Update are as shown below:

ME Update Jumper

Chassis Intrusion
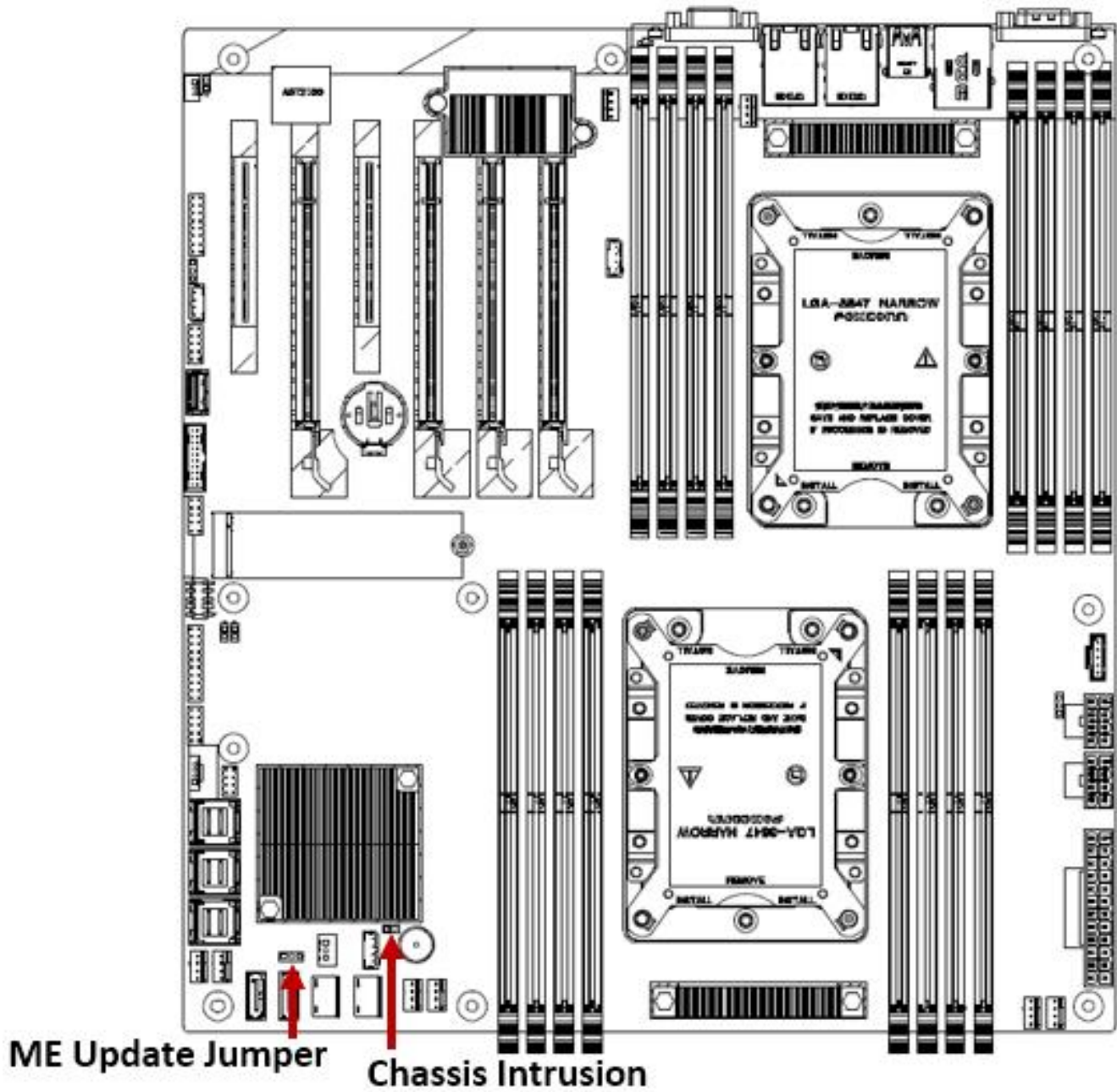
Figure 2.15

2.2.13 Introduction to NVMe Connector

The **G2DE-B** has two NVMe Connectors onboard, using two NVMe connectors (NVME1 and NVME2) to connect high-speed PCI-E storage devices.

Note: When installing NVMe devices on the motherboard, be sure to connect NVMe1 (J29) first to ensure the system works properly.

The location of the NVMe Connector is as follows:
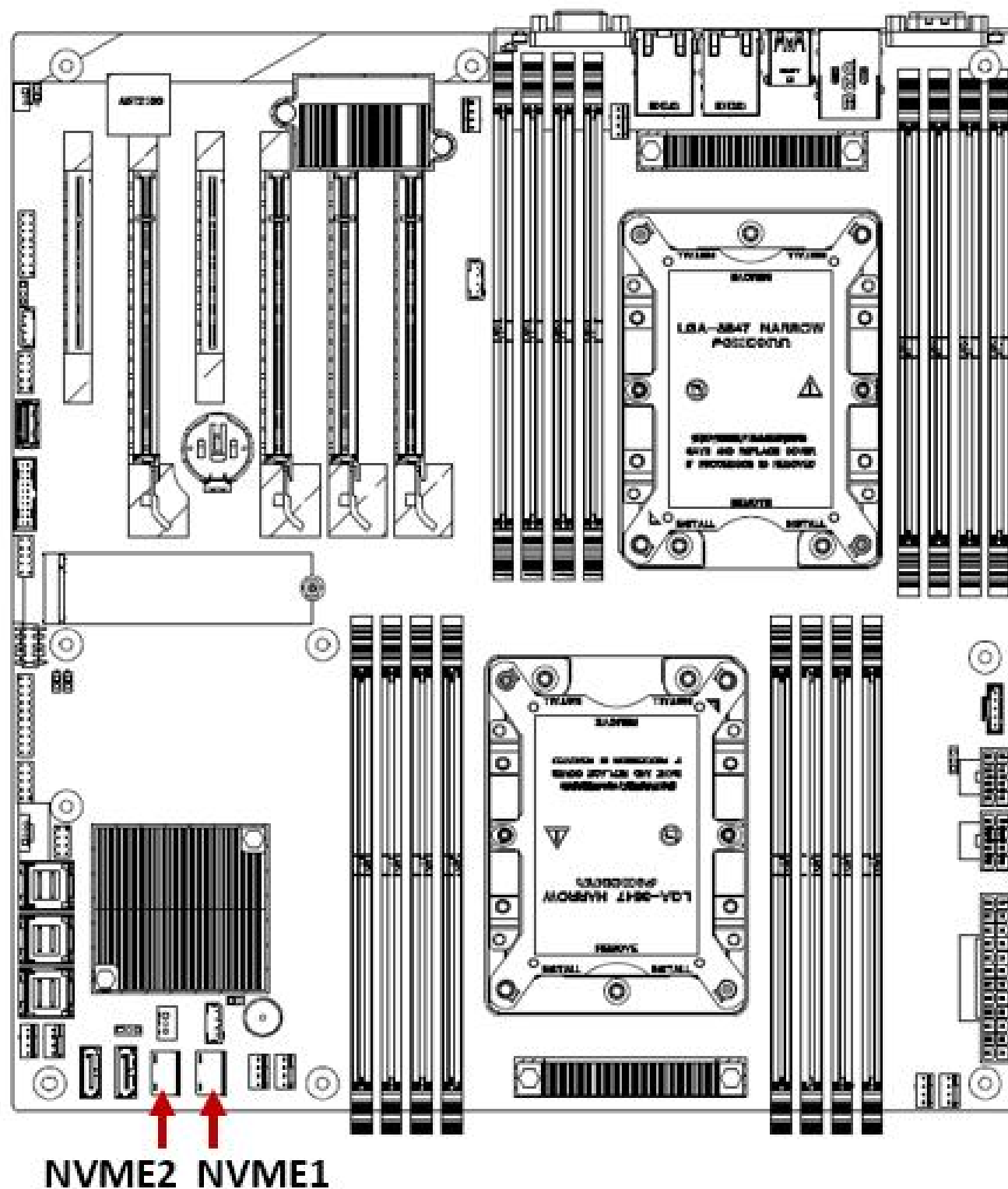
Figure 2.16

2.2.14 Power module LED

Location diagram is as shown in Figure 2.15:
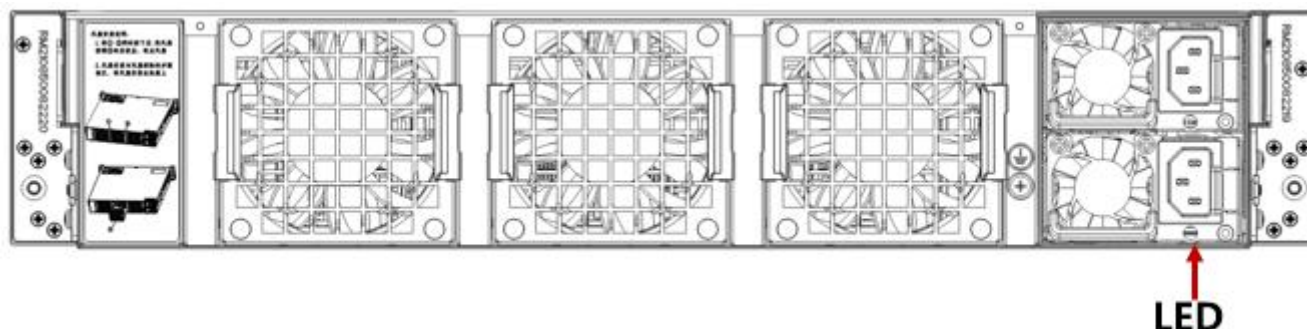
Figure 2.17

The arrows in the above figure are the LED of the power module. Each power module has its own LED display status, which is described in Table 2.7 below:

LED Status Description	
LED appearance	**Description**
Green light is on	The power module is operating normally
Orange light is on	The power module alarms, possibly over temperature, over voltage, over current, or fan failure
Off	AC power is not connected to the power module

Table 2.8

Chapter 3 Detailed Motherboard Disassembly and Assembly

This chapter introduces the installation steps of the main components on the system motherboard, including the installation descriptions of M.2, CPU, heat sink, memory, expansion card, backplane, etc.

3.1 Installation of the motherboard

1. Confirm the position of the screw holes on the motherboard, as shown in the circle in the following diagram.
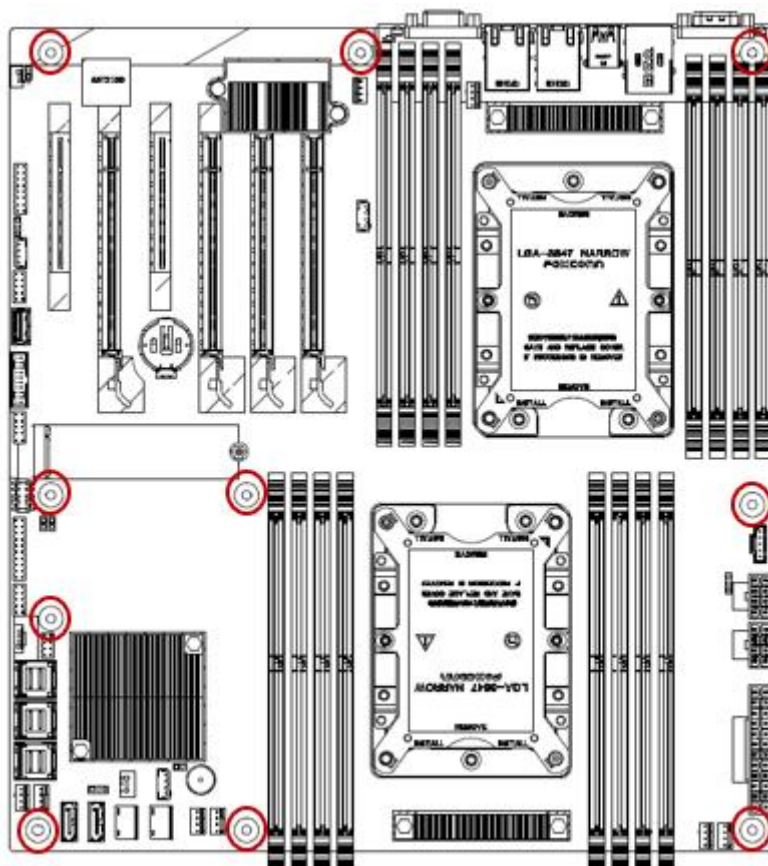
Figure 3.1

2. Align the motherboard holes and stud holes, and use a Phillips screwdriver to install the screws that fix the motherboard on the standard chassis base.

3.2 Installation of CPU

⚠️Notice:

①Please purchase Intel® CPU through official channels .

②Please make sure that the processor specification you purchased is of a supported type for this motherboard.

③If you buy a CPU in bulk, make sure your CPU is using a Gooxi® certified heat sink.

④The position of the air duct will affect the installation of the CPU. Please remove the air duct before installing the CPU.

⑤ When only one CPU is installed on a single node, it needs to be installed at the position of CPU1, otherwise it cannot be powered on.

⑥ The protective cover on the motherboard CPU installation box is used to protect the pins on the socket, so it can be removed before installing the CPU.

Step 1: CPU installation

1-1 Tilt the CPU angle as shown in Figure 3.2 below, align the A1 corner (triangular mark), and clamp it on one end of the clamping piece.
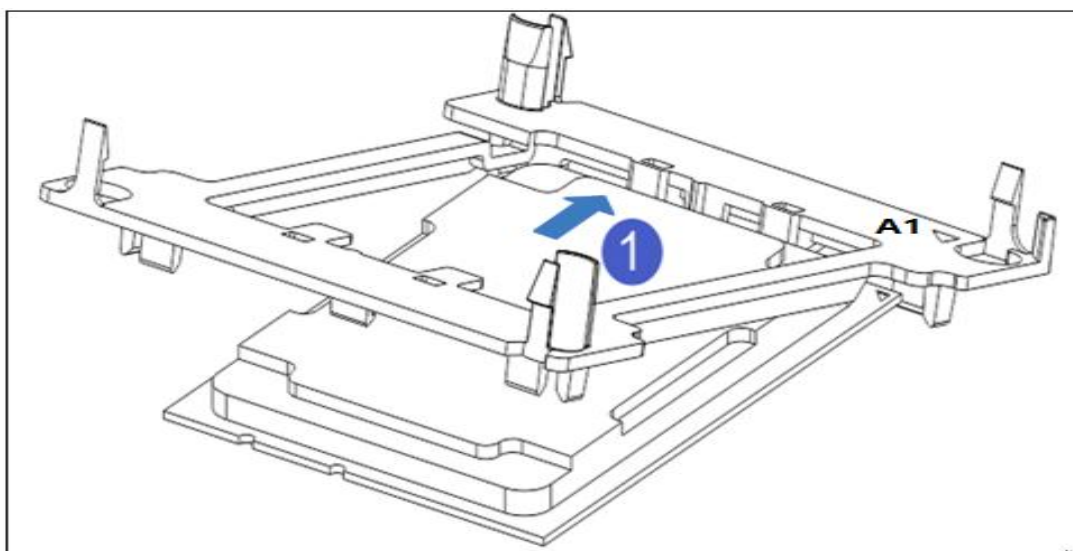
Figure 3.2

1-2 Press the other end of the clamping piece in the direction of the arrow to fix the CPU to the clamping piece, as shown in Figure 3.3 below.
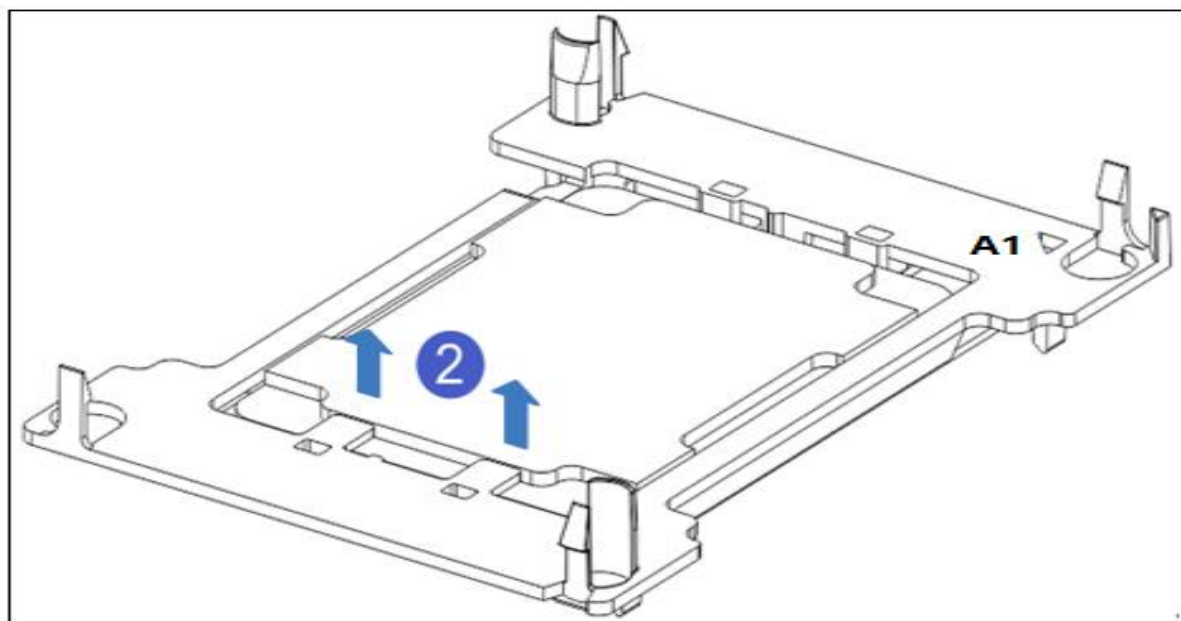
Figure 3.3

Step 2: Install the CPU on the heat sink, and ensure that the surface of the CPU and heat sink is clean.

2-1. Apply about 0.4ml of thermal grease on the CPU and smooth it evenly.

2-2. Align the A1 corner (triangle mark), and fasten the CPU to the heat sink, as shown in Figure 3.4 below.
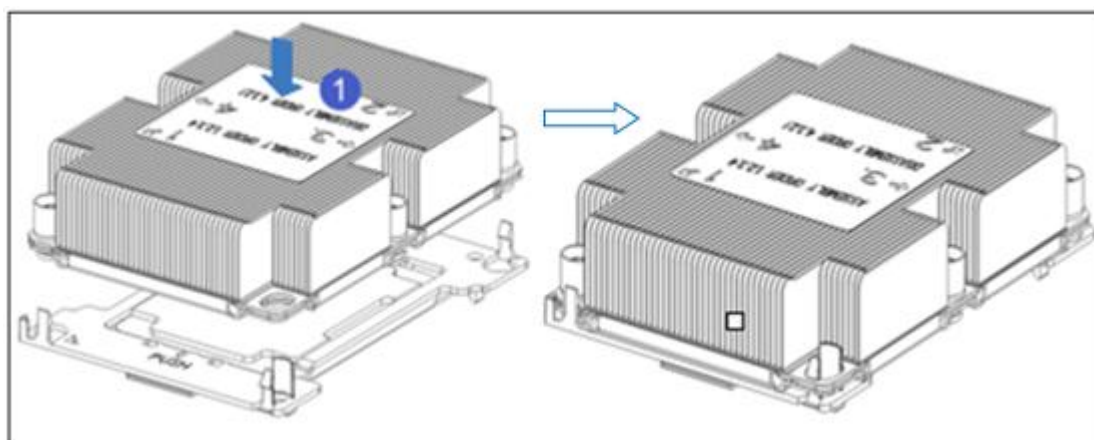
Figure 3.4

Step 3: Installation of CPU heat sink

3-1 Remove the processor blank (protective cover) as shown in Figure 3.5 below:
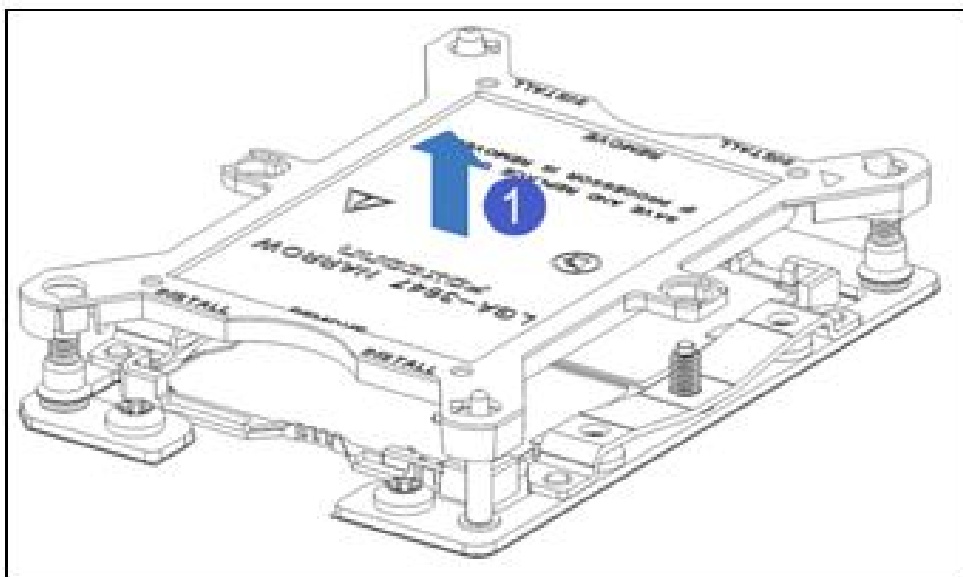
Figure 3.5

3-2 Align the heat sink with the heat sink fixing studs on the CPU base, and tighten the heat sink fixing screws in sequence according to the instructions, as shown in Figure 3.6 below:

NOTE: The pins on the motherboard are extremely fragile and easily damaged. To avoid damaging the motherboard, do not touch the processor or processor socket contacts. After installing the CPU, please install the air duct.
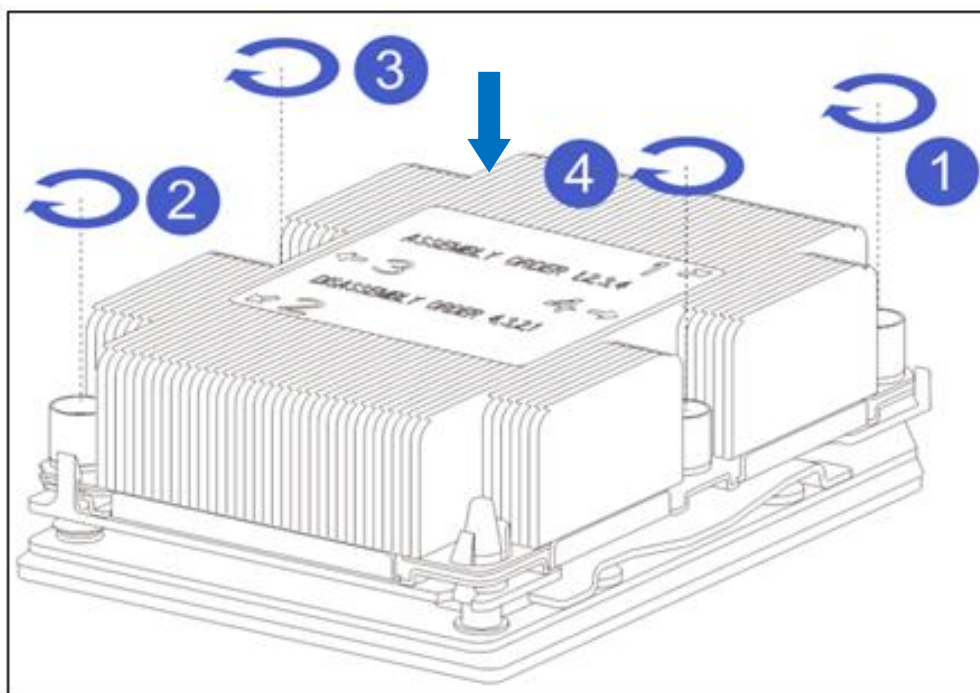
Figure 3.6

3.3 Disassembly and assembly of memory

3.3.1 Memory specifications supported

The motherboard supports 8GB/16GB/32GB R-DIMM, 32GB/64GB LR-DIMM, 128GB 3DS LRDIMM and 256GB 3DS RDIMM DDR4 memory, up to 2933MHz (Achieving 2933MT/s only when a single memory per channel is used).

⚠️**Notice:**

1. Refer to the Gooxi® official website memory compatibility list for selection.

2. Please use memory modules with the same CAS delay value on this motherboard. It is recommended that you use the same capacity and same frequency memory produced by the same manufacturer.

3. To install a memory module in a single CPU configuration, install the memory module in the A1 or D1 slot. Recommended settings are as follows in Table 3.1:

Memory access principle: (1 CPU)

Processor	Memory channel	Memory location	Amount of memory (recommended: √ not recommended: O)							
			√	√	√	√	O	√	O	√
			1	2	3	4	5	6	7	8
CPU1	A	CPU1 DIMM A1	x	x	x	x	x	x	x	x
		CPU1 DIMM A2							x	x
	B	CPU1 DIMM B1		x	x	x	x	x	x	x
	C	CPU1 DIMM C1			x	x	x	x	x	x
	D	CPU1 DIMM D1				x	x	x	x	x
		CPU1 DIMM D2								x
	E	CPU1 DIMM E1					x	x	x	x
	F	CPU1 DIMM F1						x	x	x

Memory access principle: (2 CPUs)

Processor	Memory channel	Memory location	Amount of memory (recommended: √ not recommended: O)															
			O	√	O	√	O	√	O	√	O	O	O	√	O	O	O	√
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CPU1	A	CPU1 DIMM A1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
		CPU1 DIMM A2													x	x	x	x
	B	CPU1 DIMM B1			x	x	x	x	x	x	x	x	x	x	x	x	x	x
	C	CPU1 DIMM C1					x	x	x	x	x	x	x	x	x	x	x	x
	D	CPU1 DIMM D1							x	x	x	x	x	x	x	x	x	x
		CPU1 DIMM D2															x	x
	E	CPU1 DIMM E1									x	x	x	x	x	x	x	x
	F	CPU1 DIMM F1											x	x	x	x	x	x
CPU2	A	CPU2 DIMM A1		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
		CPU2 DIMM A2														x	x	x
	B	CPU2 DIMM B1				x	x	x	x	x	x	x	x	x	x	x	x	x
	C	CPU2 DIMM C1						x	x	x	x	x	x	x	x	x	x	x
	D	CPU2 DIMM D1								x	x	x	x	x	x	x	x	x
		CPU2 DIMM D2																x
	E	CPU2 DIMM E1										x	x	x	x	x	x	x
	F	CPU2 DIMM F1												x	x	x	x	x

Table 3.1

3.3.2 Install memory

The 8 memory slots controlled by CPU0 on the motherboard are: DIMMA1, A2, DIMMB1, DIMM C1 and DIMM D1, D2, DIMM E1, DIMM F1; the 8 memory slots controlled by CPU1 are: DIMMA1, A2, DIMMB1 , DIMM C1, and DIMM D1, D2, DIMM E1, DIMM F1, pay attention to the notches of the memory and the notch of the DIMM slot (as shown in Figure 3.18 below), and snap each DIMM module into place vertically to prevent incorrect installation.
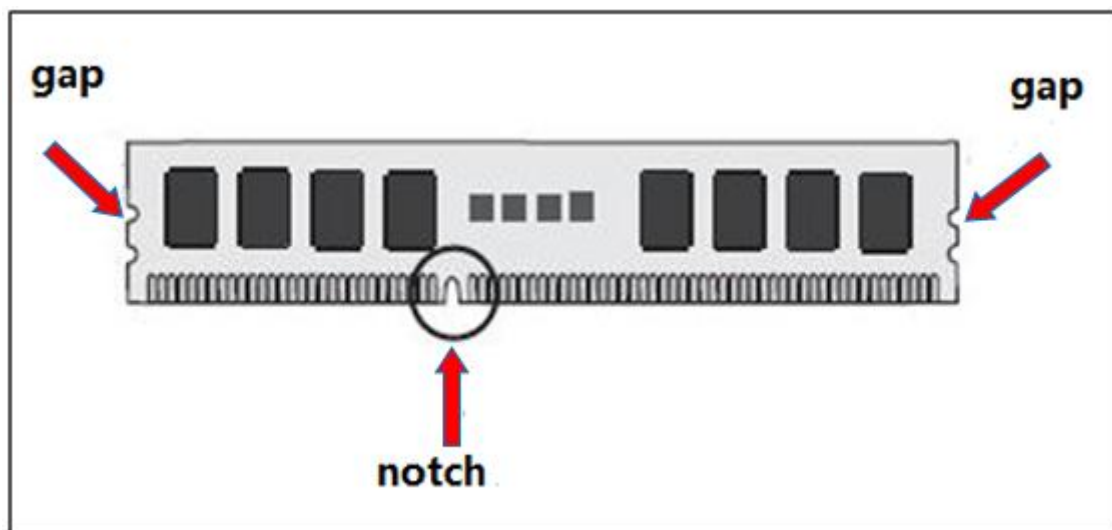
Figure 3.7

⚠ **NOTICE: When installing or removing DIMM memory modules, extreme care should be taken to prevent any possible damage to the DIMMs or their respective sockets.**

Installation: Insert the memory module vertically and press down on the memory slot snap position, PAYING attention to align the bottom of the notch.

The demonstration of inserting the memory stick is shown in Figure 3.8 and Figure 3.9:
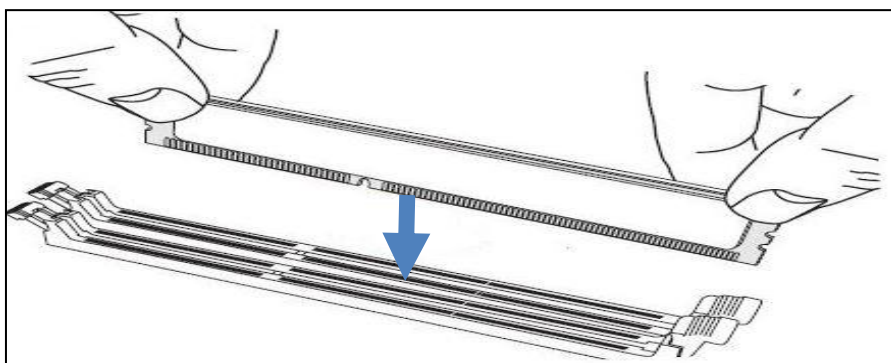
Figure 3.8

Figure 3.9

Removal: Use your thumbs to gently push the release tabs near the ends of the memory module socket to pull the memory out of the socket.

The demonstration to simulate dismantling the memory stick is shown in Figure 3.10:

Figure 3.10

3.4 Installation of M.2

Step 1: Install the positioning Stud A according to the length of the M.2 card to be installed.
Step 2: Install the M.2 Card
2-1. Insert the M.2 card connector end into the motherboard connector, as shown in Figure 3.11:
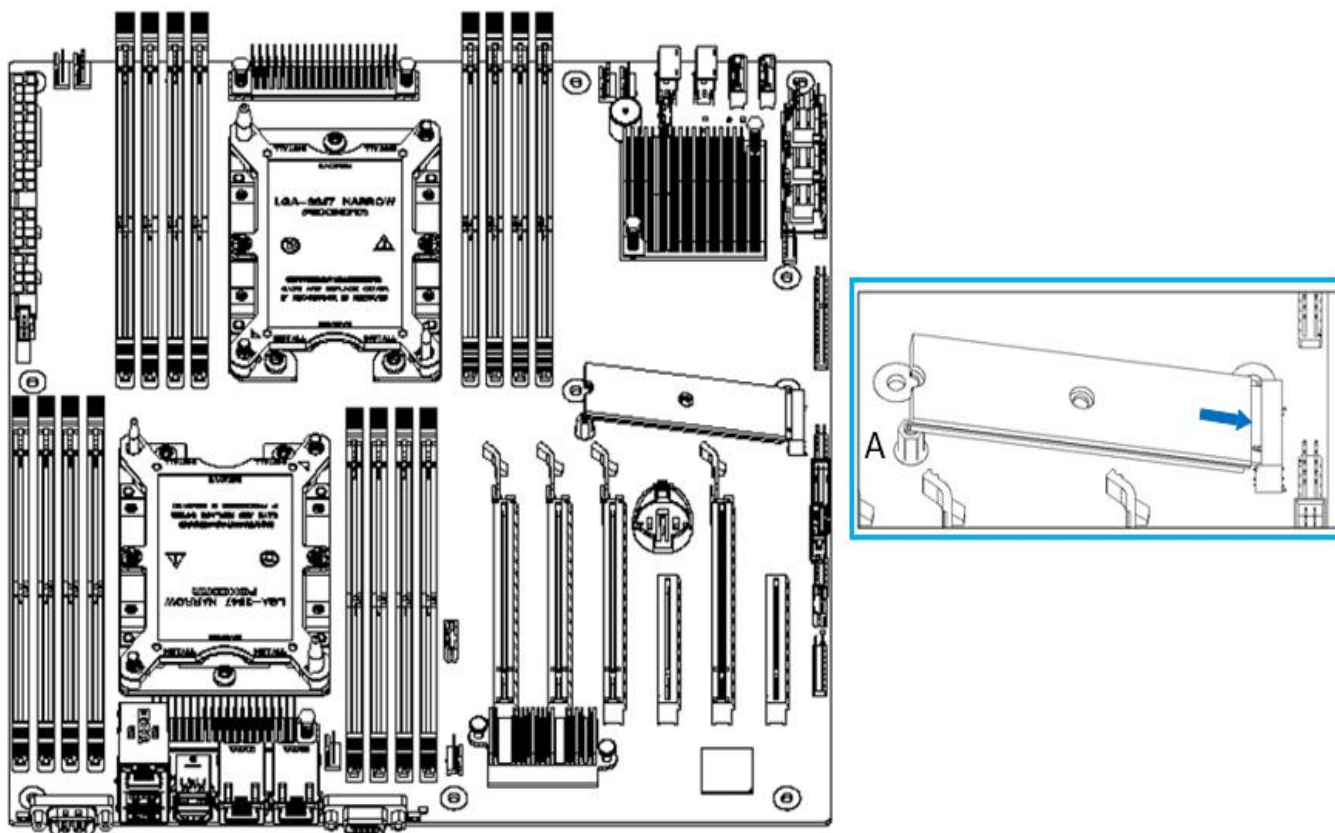
Figure 3.11

2-2. Press the other end of the M.2 card to the face of the positioning stud in step 1, and fix the Screw B, as shown in Figure 3.12 below:
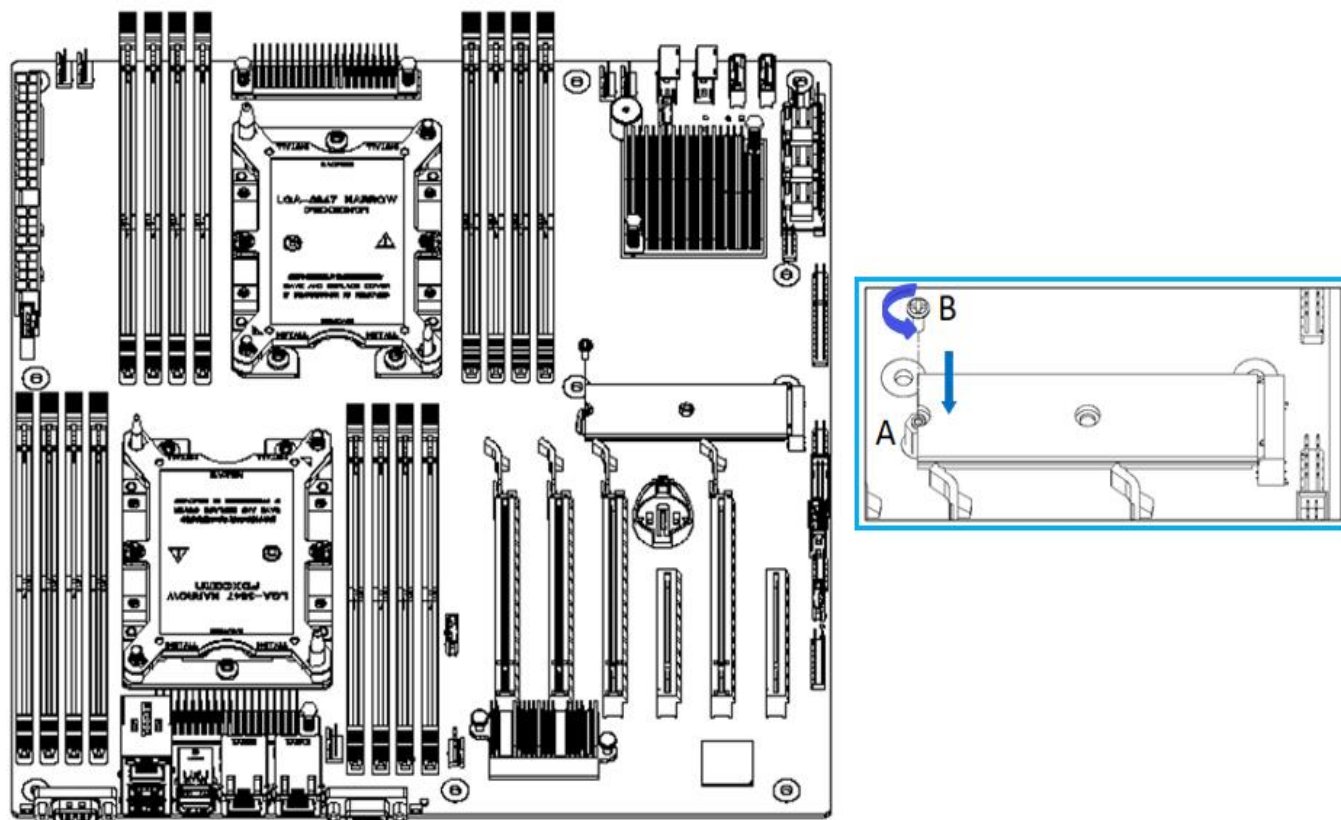
Figure 3.12

The installation is completed as shown in Figure 3.13:
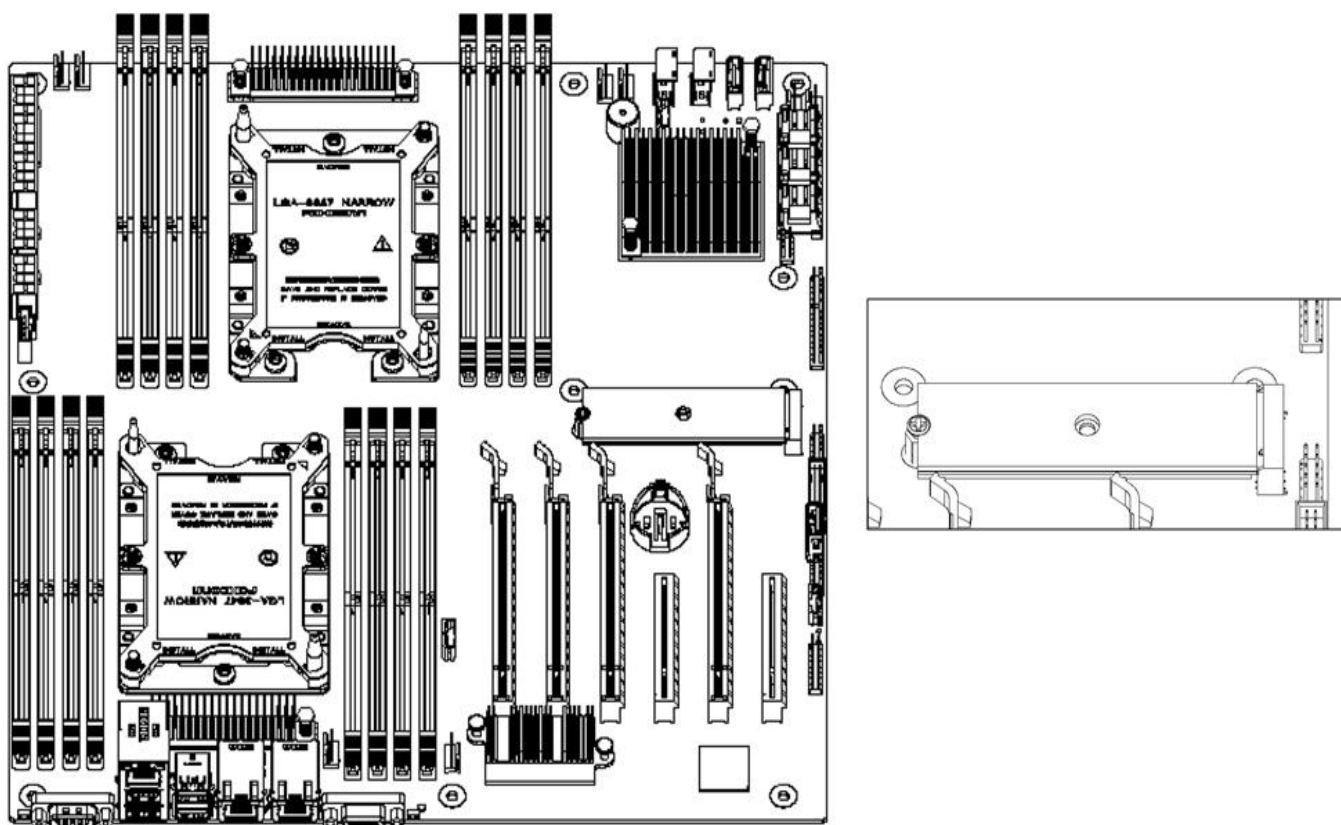
Figure 3.1 3

Chapter 4 Barebone System Installation and Maintenance

4.1 Disassembly and assembly of the upper cover of the chassis

To remove the upper cover, follow the steps below:
①First, unscrew the upper screws of the upper cover, as shown in Figure 4.1 below:
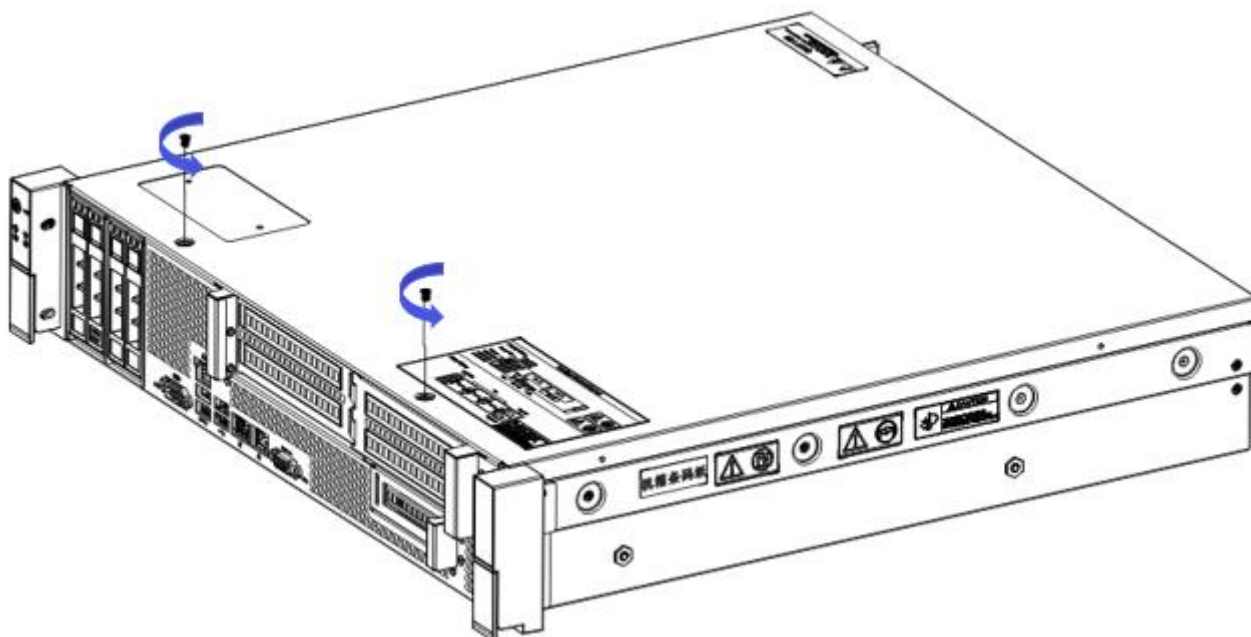
Figure 4.1

②Take out the upper cover, as shown in Figure 4.2:
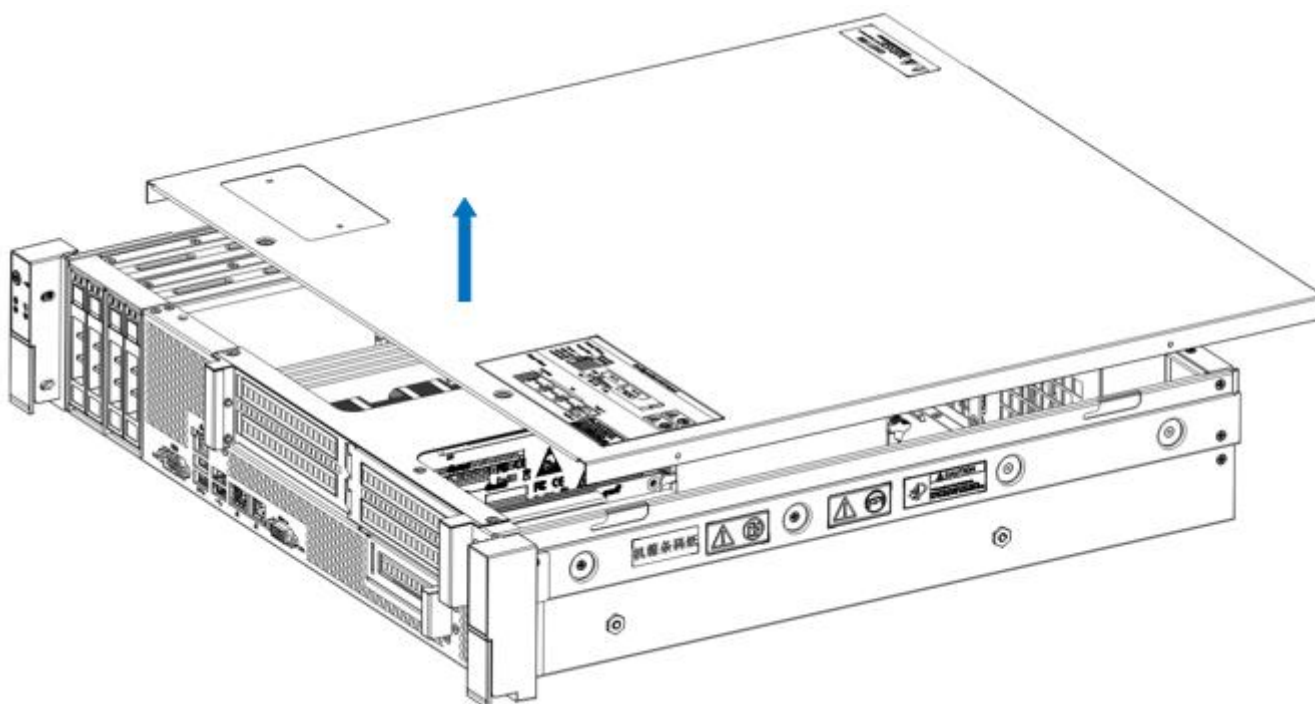
Figure 4.2

4.2 Fan replacement and maintenance

(1) After pressing ① and ② at the same time, pull the fan backward according to ③, and pull out the fan.
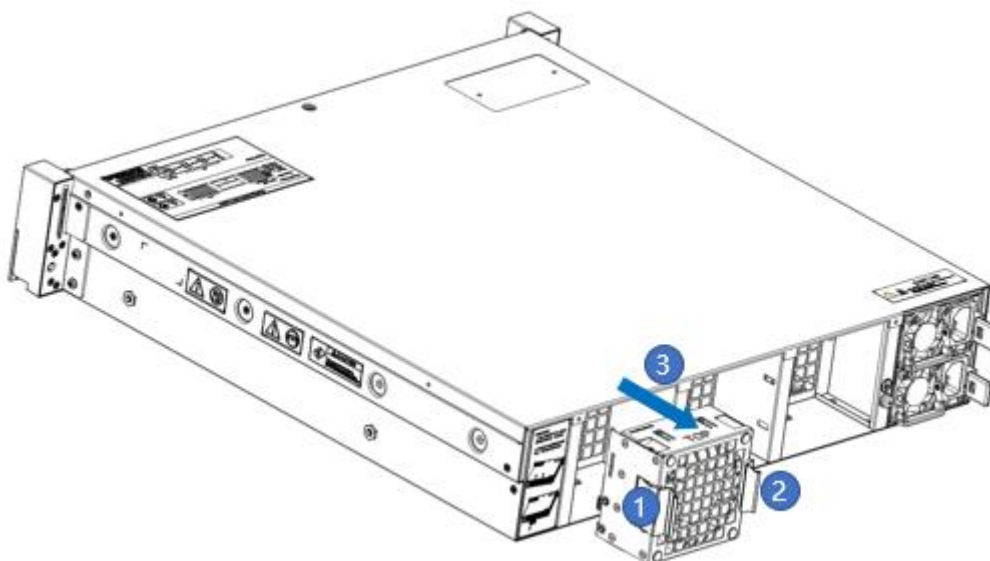
Figure 4.3

(2) The fan installation is the opposite of the fan removal, and the fan is installed on the chassis.
(3) The picture of the fan module installation completed.
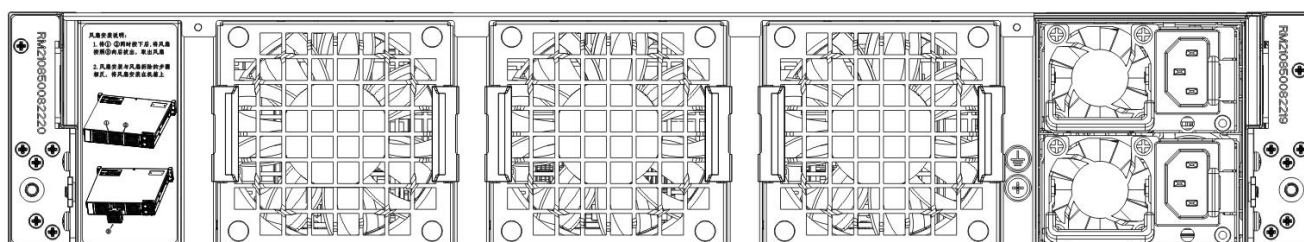
Figure 4.4

4.3 Installation of the air duct

Align the air duct with the position and put it down vertically.
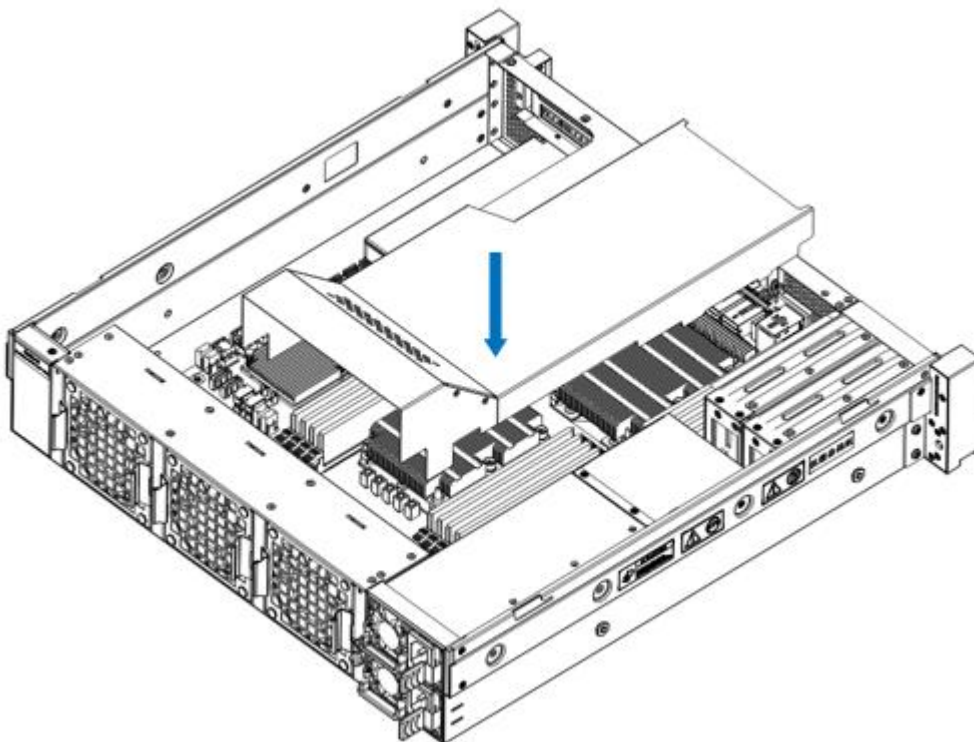
Figure 4.5

4.4 Rear 2.5-inch hard disk backplane installation

① Align the backplane of the hard disk with the screw holes of the frame, tighten the screws, and push in the direction of the arrow as shown in the figure below.
②After the frame is pushed and aligned with the screw holes, tighten the screws.
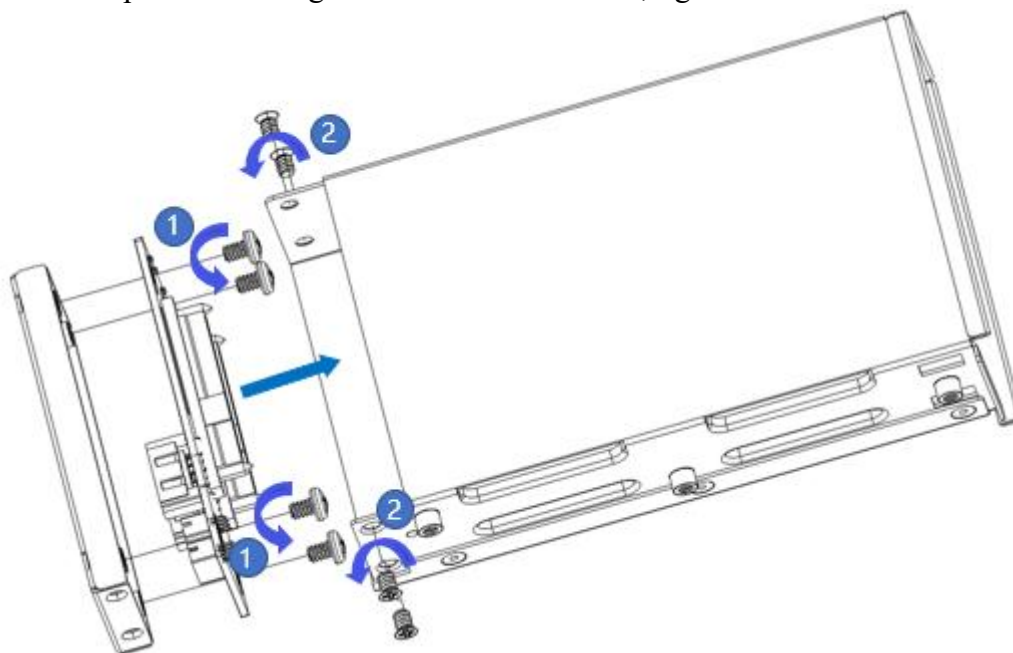
Figure 4.6

4.5 Installation of hard disk

Before installing the hard disk, you need to pull out the hard disk box from the front panel of the whole system. Press the unlocking buckle on the hard disk box (the red circle in the picture below), the wrench on the box will pop out, and then pull out the hard disk box, as shown in Figure 4.7 below:
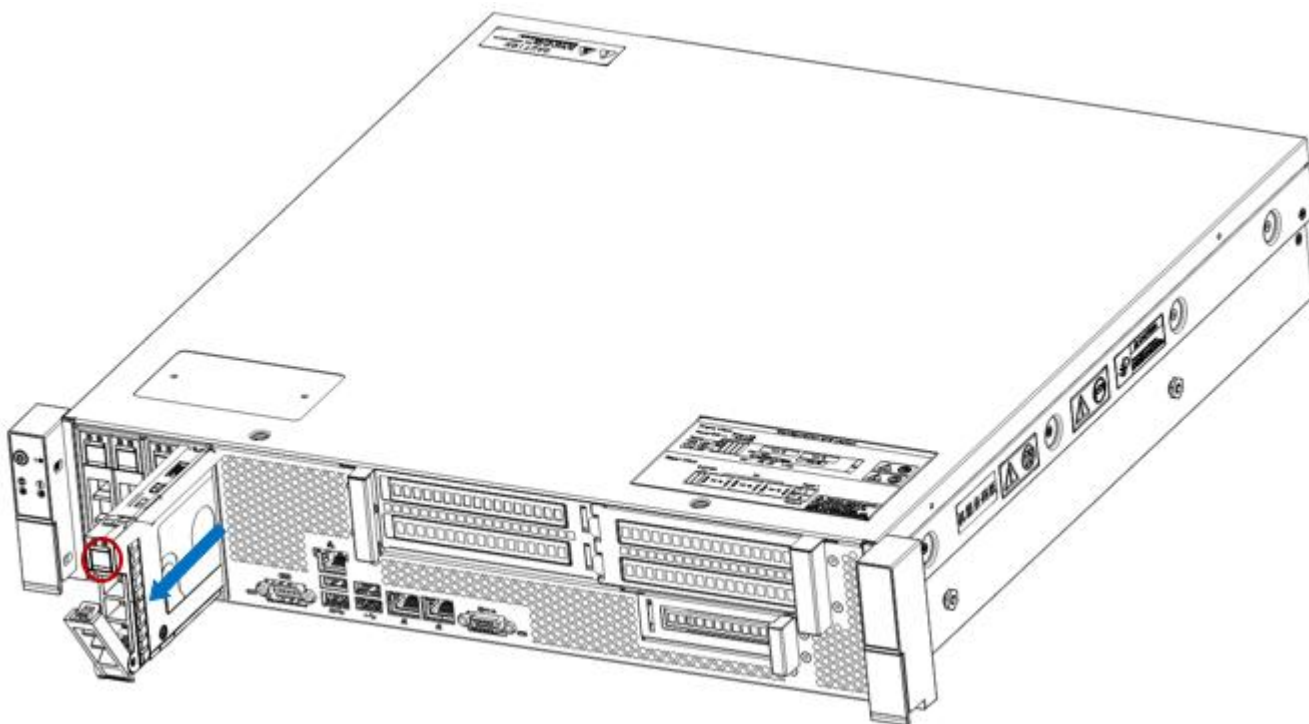
Figure 4.7

1. Put the hard drive in the tray

2. Lock the hard disk with 4 countersunk screws at the bottom (the screw heads protrude from the bottom of the tray) as shown in Figure 4.8:
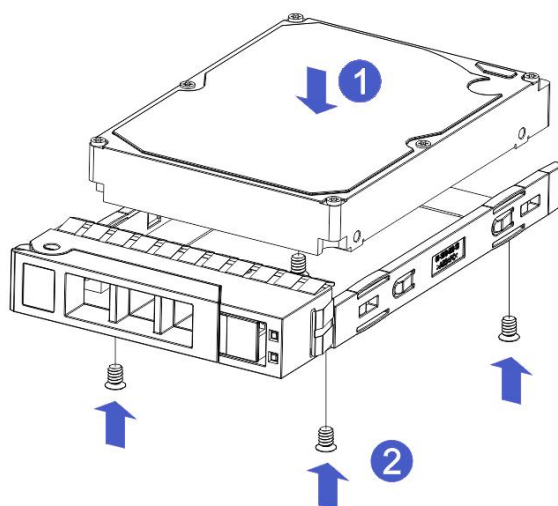
Figure 4.8

The installation is completed as shown in Figure 4.9:
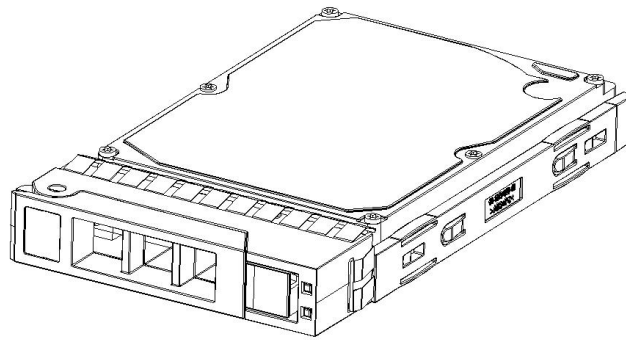
Figure 4.9

When the wrench is open, insert the box containing the hard disk into the front hard disk slot of the barebone system, and push the hard disk box inward to the end. During the process of closing the wrench, confirm that the hard disk box has entered the chassis again. After completion, the hard disk box remains on the panel. Consistent. As shown in Figure 4.10 below:
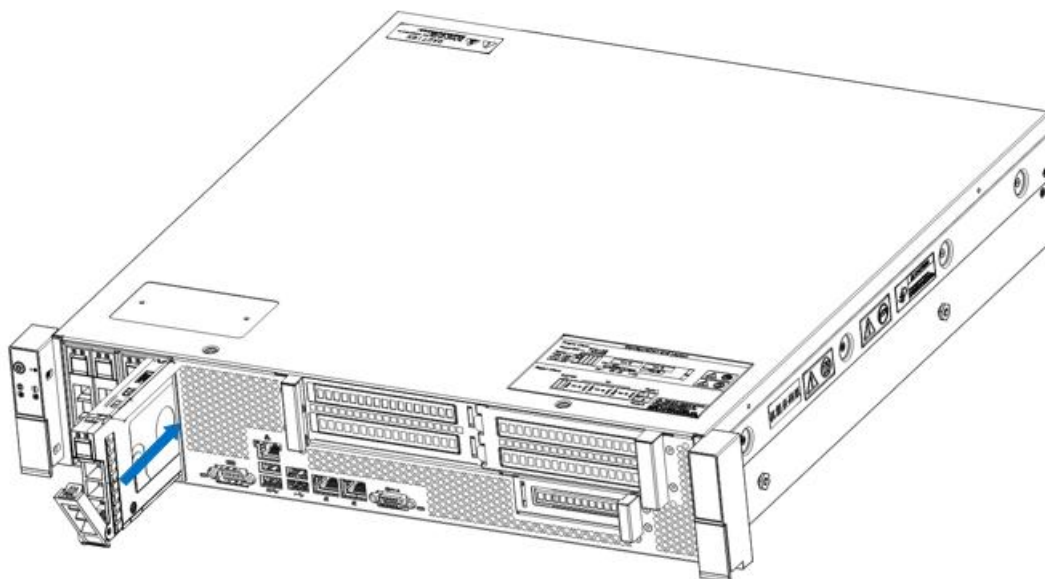
Figure 4. 10
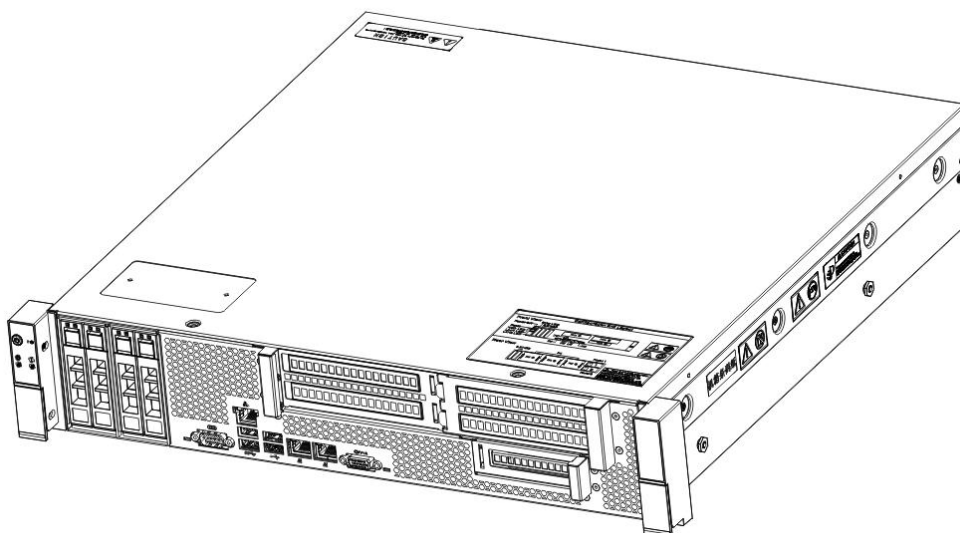
Figure 4.11 Installation completed picture

4.6 Installation of power module

Steps: Push the power supply to the end in the direction of the arrow, and after the spring wrench on the right makes a clicking sound, it means the installation is in place;
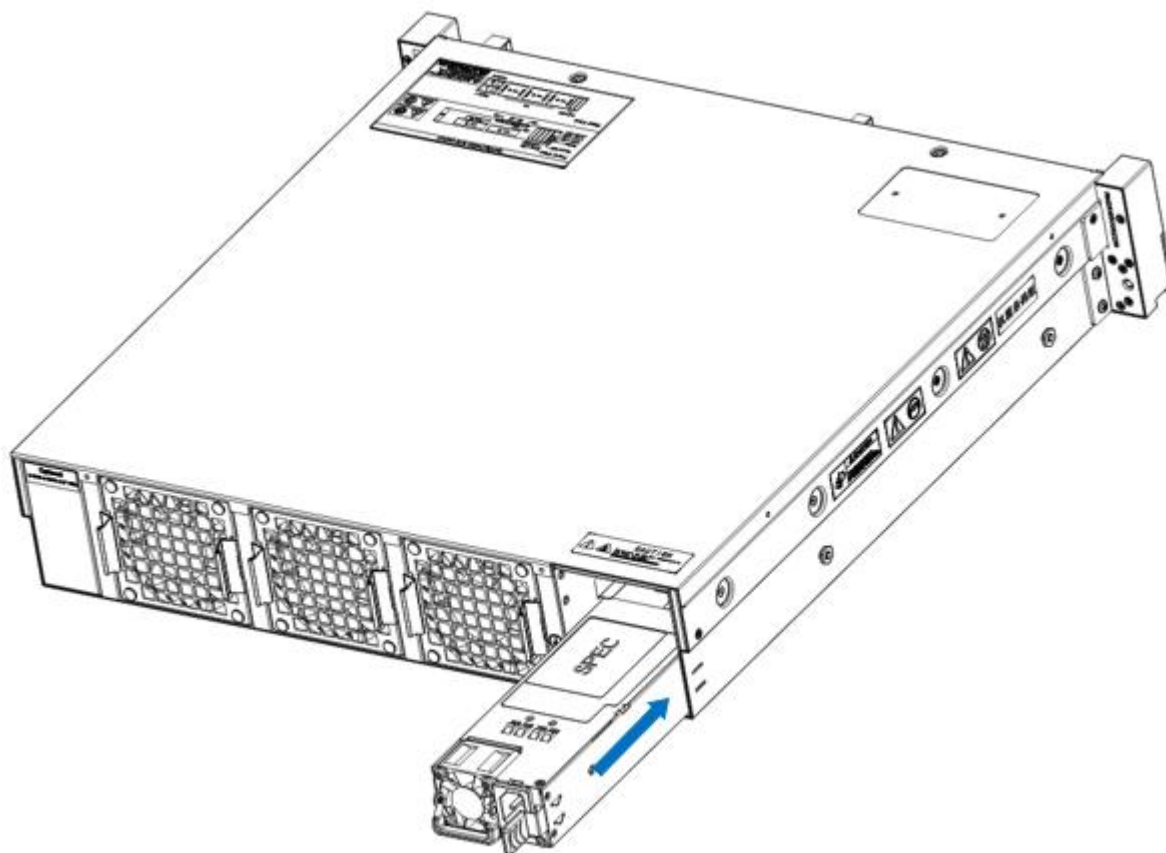
Figure 4.12
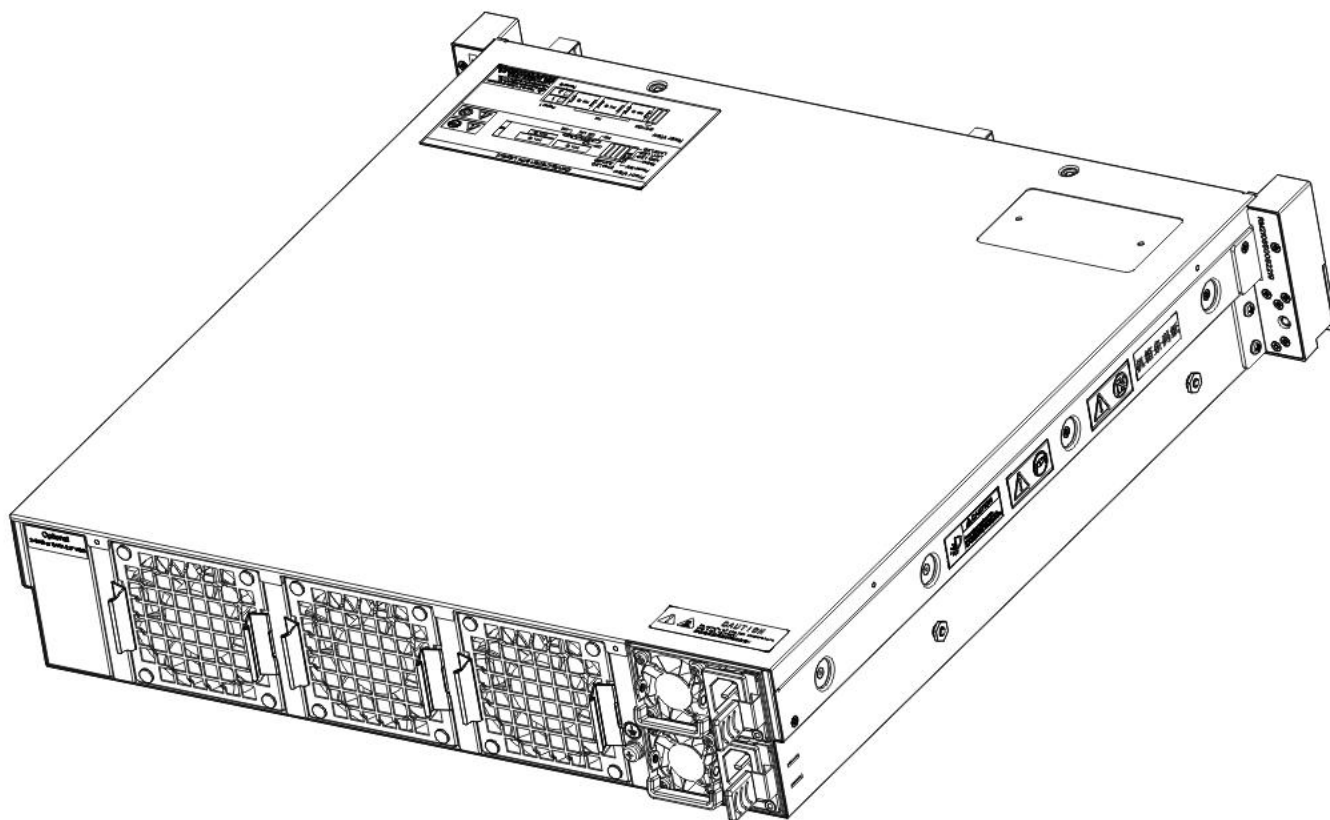
Figure 4. 13 Installation completed picture

Chapter 5 System Rack Installation

5.1 System installing into the rack overview

This chapter describes the procedures for putting the **MSY201-D04R** edge computing dual-socket server barebone system into the rack.

⚠️Note: Select an appropriate position on the rack to place the server system. This position should meet the following conditions: a clean and well-ventilated area with little or no dust, and be careful to avoid high temperature, electrical noise and electromagnetic interference. You will also need to have a power outlet nearby that the system plugs into.

5.2 Steps of system installing into the rack

The **MSY201-D04R** high-performance edge computing dual-socket server barebone system adopts a complete set of screw-free and tool-free guide rails, which are easy to install. Use rails with the following steps to install the system into the rack.

1. Pull out the inner rail of the guide rail. As shown in Figure 5.1, Figure 5.2, and Figure 5.3:
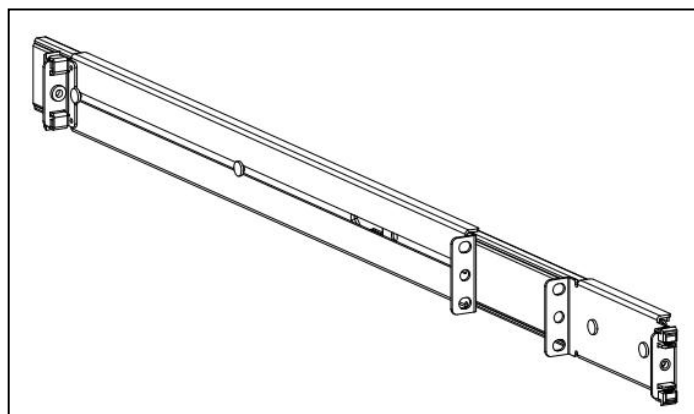
Figure 5.1
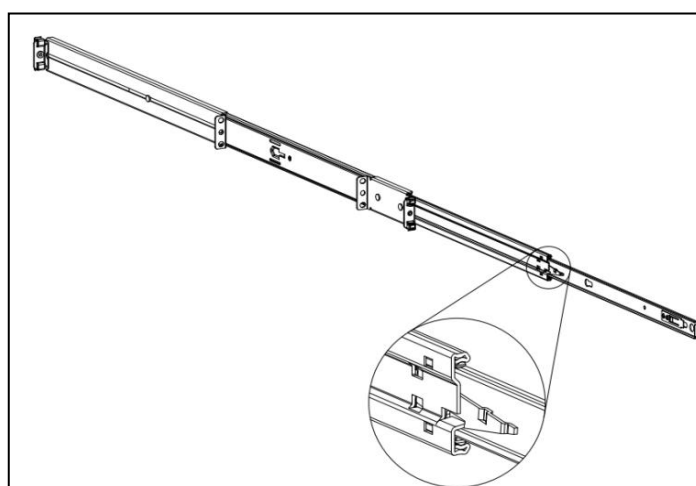
Figure 5.2
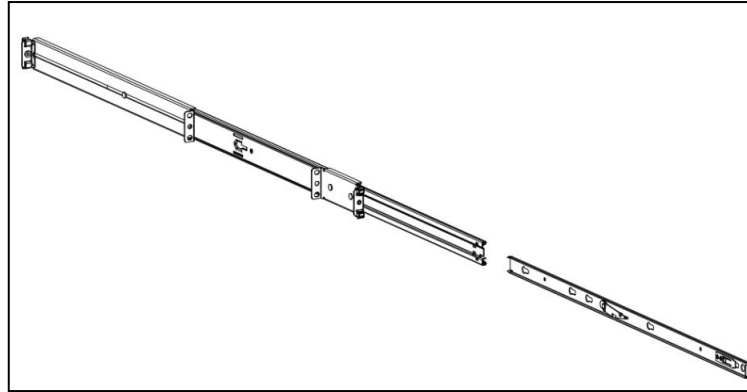
Figure 5.3

2. Install the drawn inner rail on the chassis, as shown in Figure 5.4 and Figure 5.5 below.
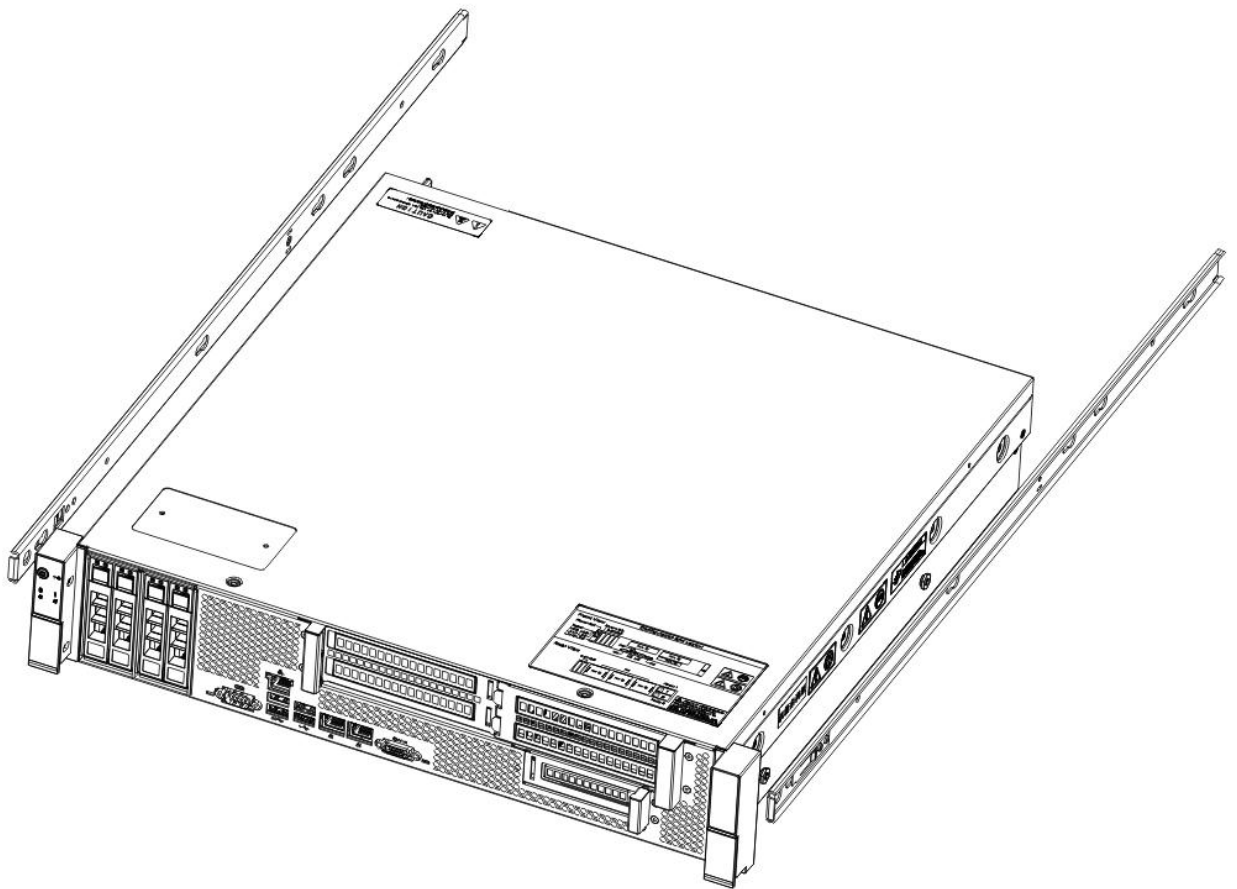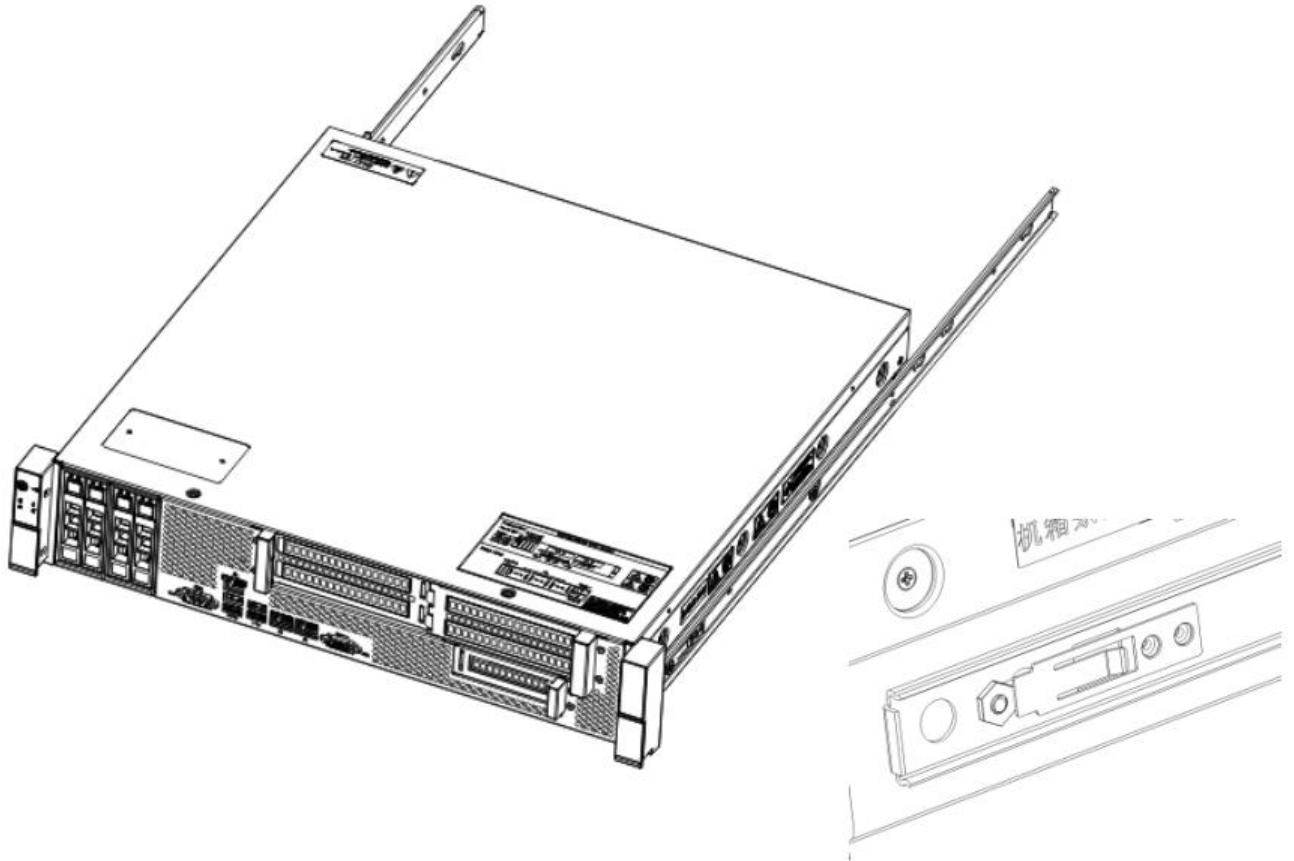

Figure 5.4

Figure 5.5

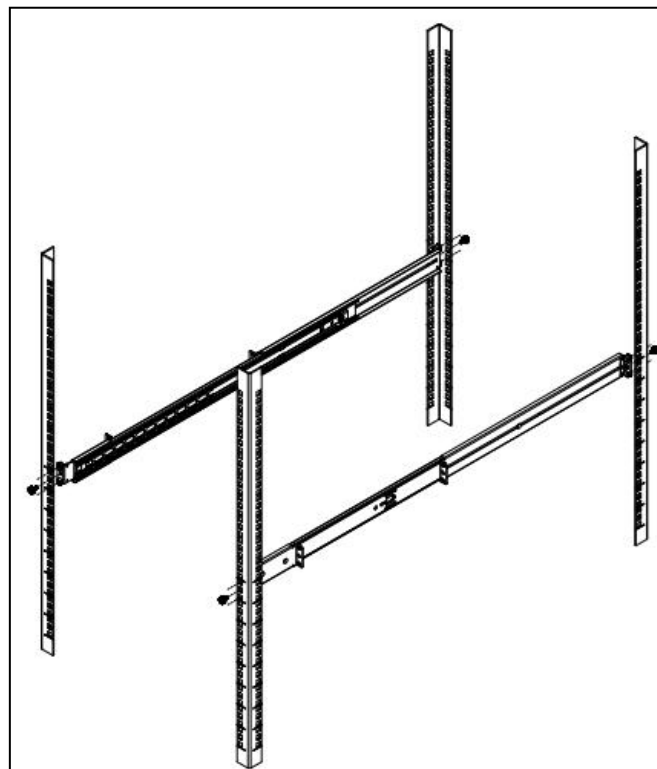3. Fix the rails into the cabinet, and then pull out the middle rails. As shown in Figure 5.6 and Figure 5.7:
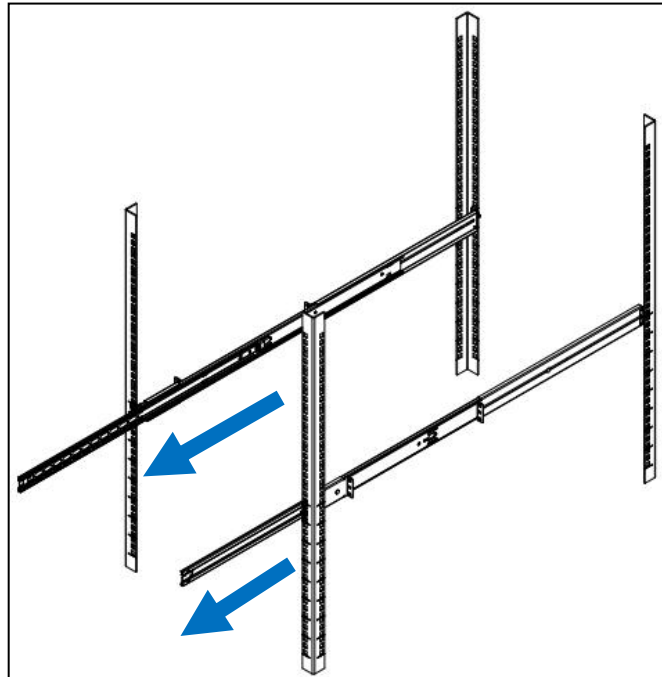

Figure 5.6

Figure 5.7

4. Raise the entire system, place it on the rails horizontally and push it into the rack. As shown in Figure 5.8 below:

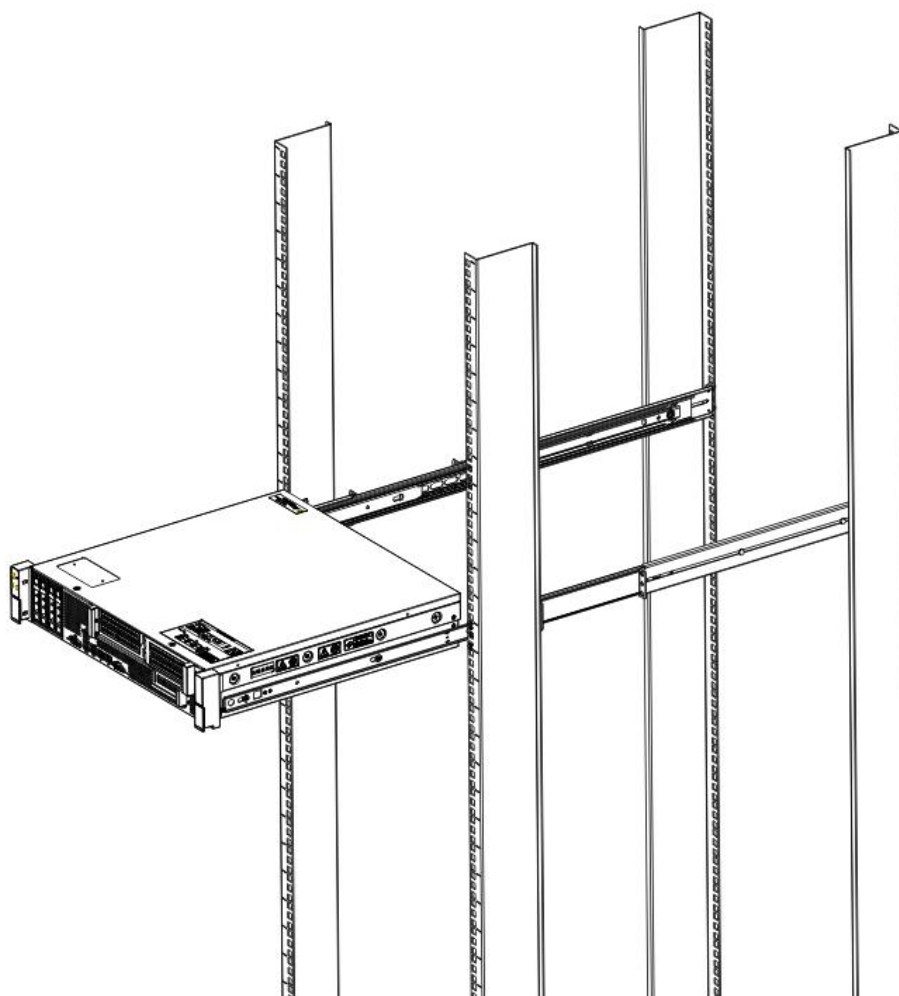⚠️Note: The server is heavy and should be lifted by two people to avoid damage.

Figure 5.8

⚠️Note: During the flat push-in process, there is a buckle in the middle section of the slide rails on both sides, the left buckle uplifted, and the right buckle pressed down to continue pushing. As shown in Figure 5.9 below:
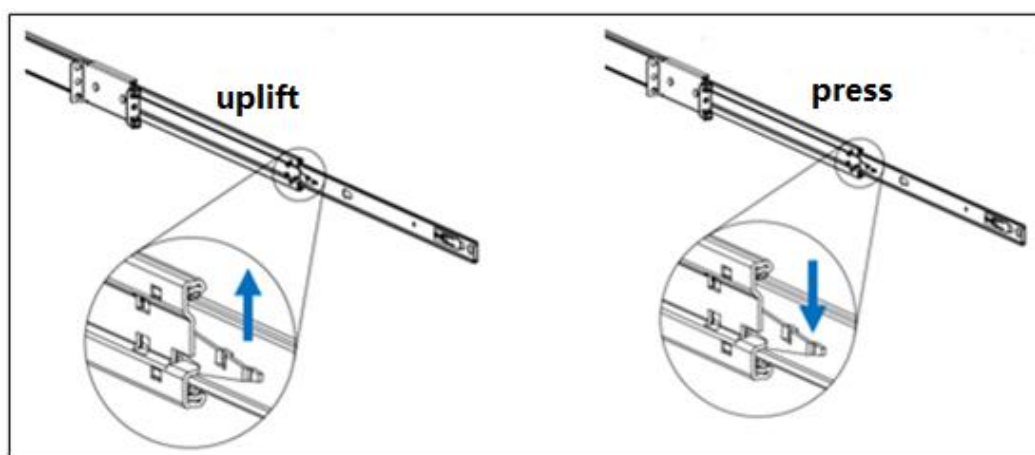

Figure 5.9

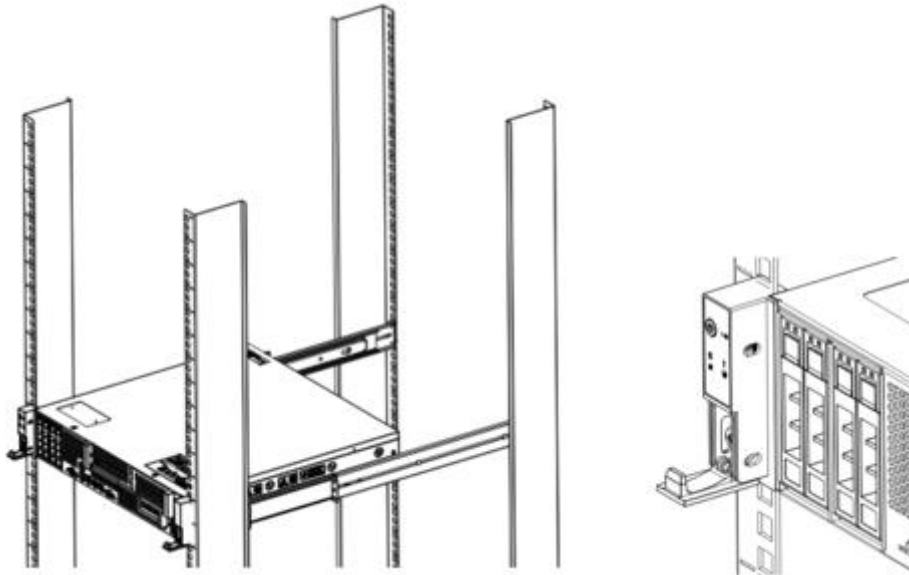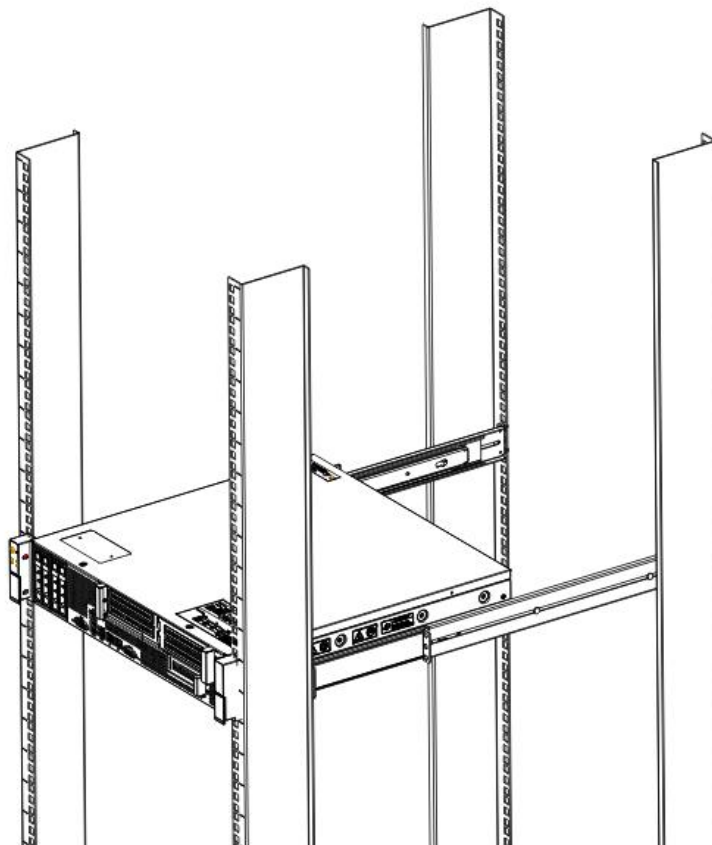5. Lock the fixing screws, the effect of the barebone system is as shown in Figure 5.10:

Figure 5. 1 0

Figure 5.11

⚠Warning: Do not pull the handle of the server system casually. Otherwise, the system will be pulled out of the rack, which may cause system power failure, downtime, and other failures. The rack must be secure, instability of the rack may cause the rack to tip over.