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GREEN Less Heat, Less Power Consumption

STABLE Robust Design, Quality Parts

Stable and
Reliable Solution

Server/Workstation
Motherboard

4U18N-AM5/2T

User Manual

English



Version 1.01

Published Nov. 2025

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

CALIFORNIA, USA ONLY

The Lithium battery adopted on this server motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance.

“Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate”

Setting up the Server in a Restricted Access Location/Restricted Access Area

- Access can only be gained by service persons or by users who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken.
- Access is through the use of a tool or lock and key, or other means of security, and is controlled by the authority responsible for the location.
- Leave enough clearance (25 inches in the front and 30 inches in the back of the rack) to allow the front door to be opened completely and to allow for sufficient airflow.
- This product is for installation merely in a Restricted Access Location.
- This product is not suitable for use with visual display work place devices according to §2 of the the German Ordinance for Work with Visual Display Units.
- Only skilled person and Instructed person can remove the chassis covers to access the inside of the system.

ASRock Rack's Website: www.ASRockRack.com

Replaceable Batteries

CAUTION

**RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS**

Warning

When removal of the chassis lid required for servicing:

- Turn off power and unplug any power cords/cables, and
- Reinstall the chassis lid before restoring power.



Important Safety Instructions

Pay close attention to the following safety instructions before performing any of the operation. Basic safety precautions should be followed to protect yourself from harm and the product from damage:

- Operation of the product should be carried out by suitably trained, qualified, and certified personnel only to avoid risk of injury from electrical shock or energy hazard.
- Disconnect the power cord from the wall outlet when installing or removing main system components, such as the server motherboard and power supply unit.
- Place the system on a stable and flat surface.
- Use extreme caution when working with high-voltage components.
- When handling parts, use a grounded wrist strap designed to prevent static discharge.
- Keep the area around the system clean and clutter-free.
- Keep all components and printed circuit boards (PCBs) in their antistatic bags when not in use.
- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or contacts.
- The power cord must be connected to a socket or outlet with a ground connection.

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Chapter 1 Introduction

Thank you for purchasing 4U18N-AM5/2T, a reliable barebone system produced under ASRock Rack's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock Rack's commitment to quality and endurance.

This guide provides the instructions of insertion and extraction of chassis components, such as chassis covers, system fans, power supplies, hard drive trays, and other main components this system supports. If the system is pre-installed a server motherboard, refer to the server motherboard user manual for the information of the server motherboard components, specifications and BIOS settings.

System	ASRock Rack Server Motherboard
4U18N-AM5/2T	AM5D4ID-2T/BCM



Because the hardware specifications might be updated, the content of this documentation will be subject to change without notice.



The illustrations shown in this manual are for reference purposes only and may not exactly match the model purchased.



If requiring technical support related to this system, please visit the website for specific information about the using model.
<http://www.asrockrack.com/support/>

1.1 Shipping Box Contents

Item	Quantity
Server Barebone: 4U18N-AM5/2T	1
CPU Heatsink	18
Rail Kit	1
Accessory Box	1
- 4 Power Cords	
- 1 Quick Installation Guide	
- 18 Screws for M.2 Sockets	

 *If any items are missing or appear damaged, contact the authorized dealer.*

1.2 Specifications

4U18N-AM5/2T	
System	
Form Factor	4U Rackmount
Dimension	950 x 438 x 176mm (37.4" x 17.2" x 6.9")
Support MB	AM5D4ID-2T/BCM
Front Panel	
Button	UID, power, reset
LED	System fail, LAN1/LAN2, UID, power
I/O Port	2 RJ45 (10GbE) by Broadcom BCM57416 2 Type-A (USB3.2 Gen1) 1 DB15
IPMI LAN	1 Dedicated IPMI (occupied for CM connection)
External Drive Bay / Storage	
Internal Side	2 Fixed 2.5" NVMe (PCIe4.0 x4) 1 M-key (PCIe5.0 x4), supports 2280 form factor [CPU]
Power Supply	
Type	4 (2+2) RPSU
Output Watts	2000W
Efficiency	Platinum
AC Input	100-240V, 50/60Hz
System Fan	
Middle	5 80x80mm
Processor System	
CPU	Supports: AMD EPYC™ 4005/4004 and AMD Ryzen™ 9000/8000/7000 Series Processors
Socket	AM5 (LGA 1718)
Thermal Design Power	Up to 65W
Chipset	AMD X600

System Memory	
Supported DIMM Quantity	4 DIMM slots (2DPC)
Supported Type	Supports DDR5 288-pin ECC/non-ECC UDIMM
Max. Capacity per DIMM	up to 48GB
Max. DIMM Frequency	AMD EPYC™ 4005 Processor: UDIMM: 5600MT/s (1DPC), 3600MT/s (2DPC) ECC-UDIMM: 5600MT/s (1DPC 1R), 5200MT/s (1DPC 2R), 3600MT/s (2DPC) AMD EPYC™ 4004 and AMD Ryzen™ 9000/8000/7000 Series Processors: 5200MT/s (1DPC), 3600MT/s (2DPC)
Voltage	1.1V
TPM	
TPM Support	By optional accessory
Server Management	
BMC Controller	ASPEED AST2600
IPMI Dedicated GLAN	1 Realtek RTL8211F for dedicated management GLAN
Graphics	
Controller	ASPEED AST2600
System BIOS	
BIOS Type	AMI UEFI BIOS; 256Mb (32MB) SPI Flash ROM
BIOS Features	Plug and Play, ACPI 5.1 compliance wake up events, SMBIOS 2.3
Hardware Monitor	
Temperature	CPU temperature sensing System temperature sensing
Fan	Middle fan tachometer Middle fan multi-speed control
Voltage	3VSB, 5VSB, VCPU, VCCM, APU VDDP, 1.05V_PROM_S5, 2.5V_PROM, 1.05V_PROM_RUN, BAT, 3V, 5V, 12V

Environment	
Temperature	Operation temperature: 10°C ~ 35°C Non operation temperature: -40°C ~ 70°C
Humidity	Non operation humidity: 20% ~ 90% (non condensing)

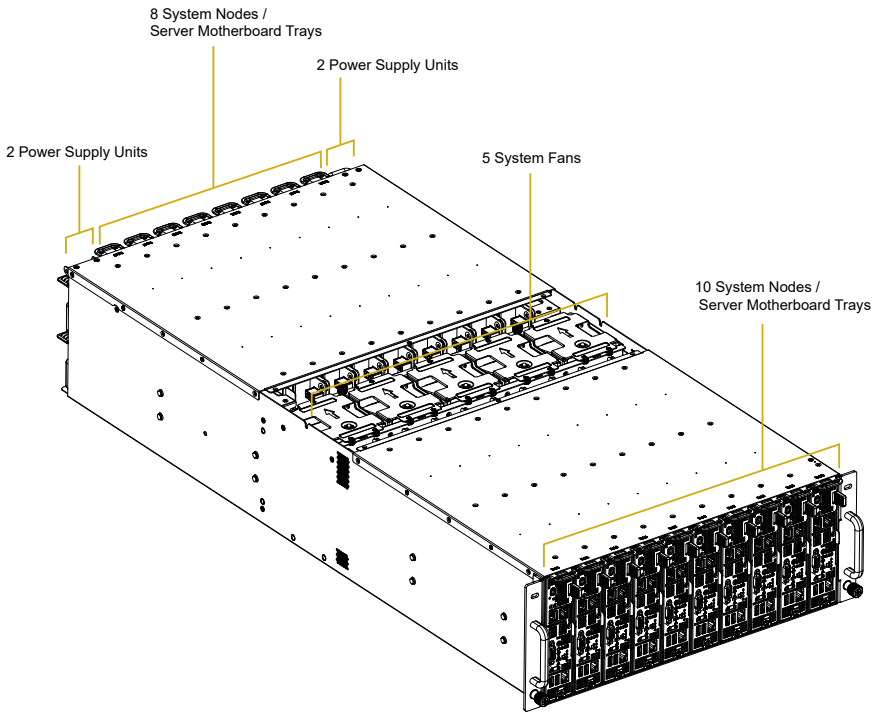


The functions are supported depending on the type of the server motherboard. Refer to the server motherboard user manual for detailed information.

Chapter 2 Server System Overview

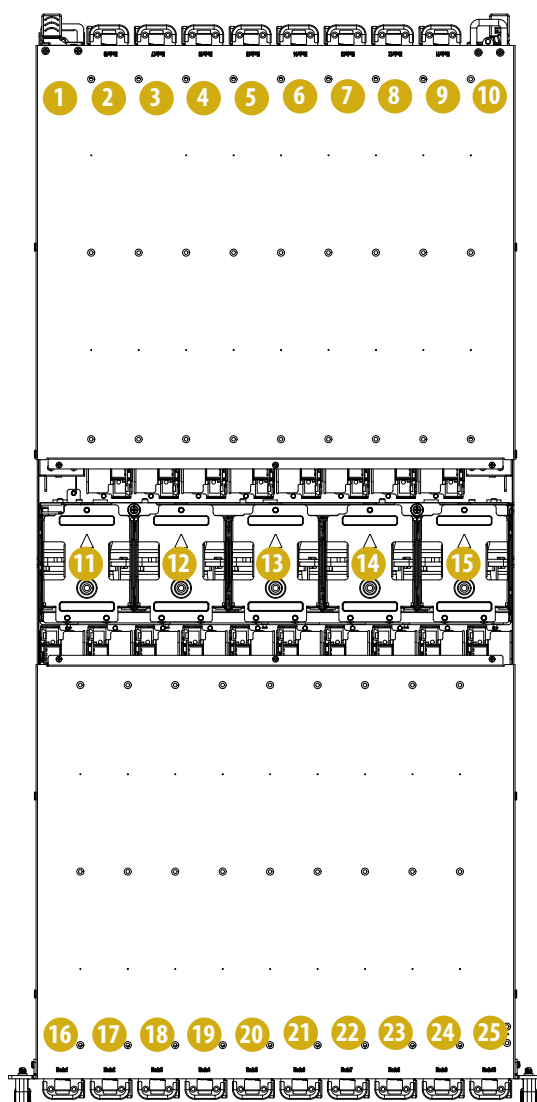
This chapter provides diagrams showing the location of important components of the server system.

2.1 System Components



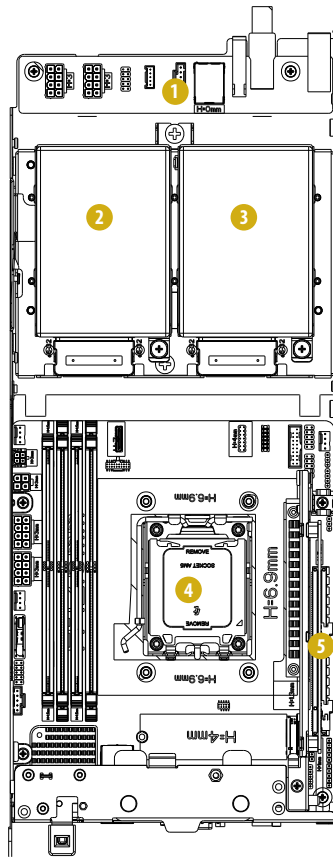
2.2 Internal Features

System



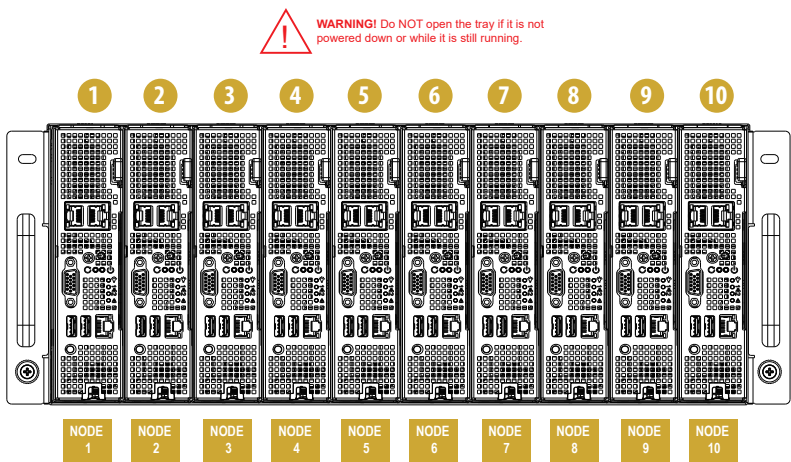
No.	Description
1	2 Power supply units (Top: PSU1 / Bottom: PSU2)
2	System node / server motherboard tray (Node18)
3	System node / server motherboard tray (Node17)
4	System node / server motherboard tray (Node16)
5	System node / server motherboard tray (Node15)
6	System node / server motherboard tray (Node14)
7	System node / server motherboard tray (Node13)
8	System node / server motherboard tray (Node12)
9	System node / server motherboard tray (Node11)
10	2 Power supply units (Top: PSU3 / Bottom: PSU4)
11	System fan (FAN5)
12	System fan (FAN4)
13	System fan (FAN3)
14	System fan (FAN2)
15	System fan (FAN1)
16	System node / server motherboard tray (Node1)
17	System node / server motherboard tray (Node2)
18	System node / server motherboard tray (Node3)
19	System node / server motherboard tray (Node4)
20	System node / server motherboard tray (Node5)
21	System node / server motherboard tray (Node6)
22	System node / server motherboard tray (Node7)
23	System node / server motherboard tray (Node8)
24	System node / server motherboard tray (Node9)
25	System node / server motherboard tray (Node10)

Node



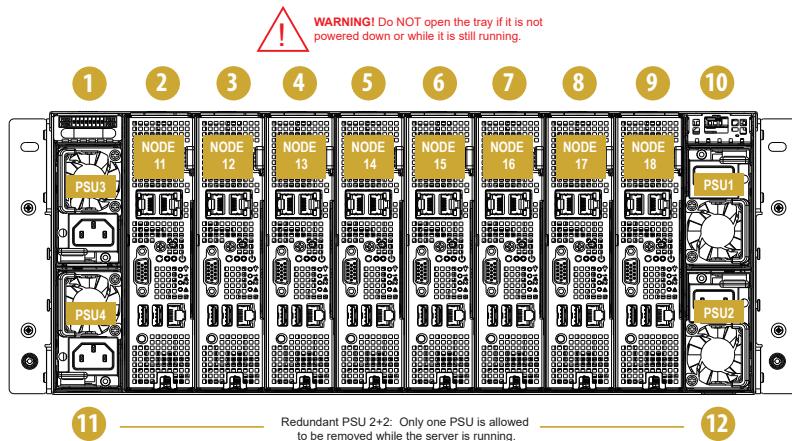
No.	Description
1	Interposer board (4U18N_IPB)
2	1 Fixed 2.5" NVMe SSD (PCIe4.0 x4)
3	1 Fixed 2.5" NVMe SSD (PCIe4.0 x4)
4	Server motherboard (MB)
5	Riser-card (PCIe to 2*Slimline) (RB1U2SL_G4)

2.3 System Front Panel



No.	Description
1	System node / server motherboard tray (Node1)
2	System node / server motherboard tray (Node2)
3	System node / server motherboard tray (Node3)
4	System node / server motherboard tray (Node4)
5	System node / server motherboard tray (Node5)
6	System node / server motherboard tray (Node6)
7	System node / server motherboard tray (Node7)
8	System node / server motherboard tray (Node8)
9	System node / server motherboard tray (Node9)
10	System node / server motherboard tray (Node10)

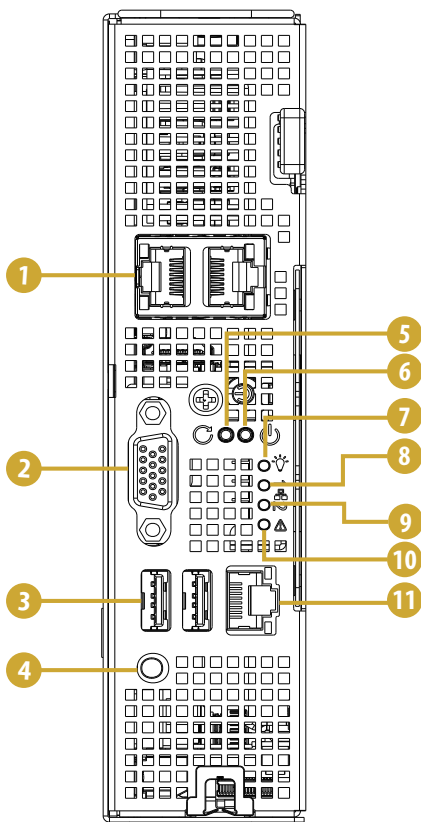
2.4 System Rear Panel



No.	Description
1	1 Power supply unit (PSU3)*
2	System node / server motherboard tray (Node11)
3	System node / server motherboard tray (Node12)
4	System node / server motherboard tray (Node13)
5	System node / server motherboard tray (Node14)
6	System node / server motherboard tray (Node15)
7	System node / server motherboard tray (Node16)
8	System node / server motherboard tray (Node17)
9	System node / server motherboard tray (Node18)
10	1 Power supply unit (PSU1)*
11	1 Power supply unit (PSU4)*
12	1 Power supply unit (PSU2)*

*Server requires 2 working PSUs, with 2 redundant PSUs. You must have at least 3 active PSUs, installed, functioning and connected to AC. Only 1 of the PSUs is allowed to be removed while the server is running.

2.5 Node IO Panel



No.	Description
1	2 RJ45 (10GbE) LAN ports
2	1 DB15
3	2 Type-A (USB 3.2 Gen1) LAN ports
4	UID button w/ LED
5	Reset button
6	Power button
7	Power LED
8	LAN1 LED
9	LAN2 LED
10	System fail LED
11	1 Dedicated IPMI LAN port (occupied for CM connection)

Note: Certain functions are supported depending on the type of the server motherboard.

UID Button

Press the ID button to toggle the front and rear UID LEDs on and off.

Reset Button

When the system is completely unresponsive, press the system reset button to reboot the server without shutting it off and initialize the system.

Power Button

Press the power button to power on or power off the system.

Status LED Definitions

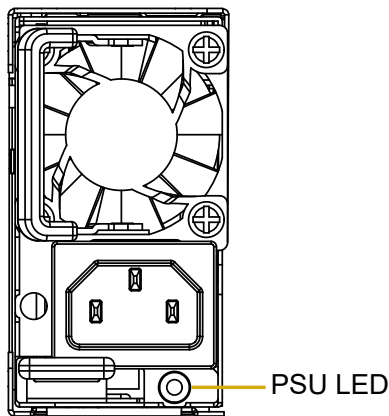
Power LED	
Status	Description
Off	Power off
Green	Power on

LAN1, LAN2 LEDs	
Status	Description
Off	Network disconnected
Green	Network connected

System Fail LED	
Status	Description
Off	Running or normal operation
Orange	At least one sensor has critical alert.

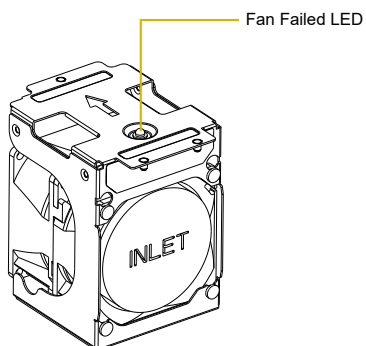
2.6 LED

PSU LED



PSU LED	
Status	Description
Green	Normal work; output ON and OK
Blinking Green at 0.5Hz	AC Present Only 12VSB on (PS off) or PSU in Smart Redundant state
Amber	Module fault/protection in operating mode (failure, OCP, OVP, Fan Fail, OTP, UVP) AC cord unplugged
Blinking Amber at 0.5Hz	Warning (high temp, high power, high current, slow fan)

Fan LED



Fan LED	
Status	Description
Off	Normal
Red	Fan failed

Chapter 3 Hardware Installation and Maintenance

This chapter helps user assemble the chassis and install components.

Before You Begin

Before working with the server, pay close attention to the “Important Safety Instructions” at the beginning of this manual.



Ensure the motherboard battery is installed before unplugging the power cord or installing/removing the motherboard. Failure to follow this precaution may result in physical injury or damage to motherboard components.

1. Make sure the server is powered off.

Power down the server if it is still running.

- (1) Press the Power button to power off the server from full-power mode to standby-power (sleep) mode. The Power LED at the front turns from solid green to blinking green.
- (2) Disconnect the power cord first from the AC outlet and then from the server.
The power LED turns off.



The server is not completely powered down when pressing the Power button on the front panel. The Power button lets the server toggle between Power On and Standby (Sleep) modes. Some internal circuitry remain active in the Standby mode. To remove all power from the system completely, be sure to disconnect the power cord from the server.

2. Ensure having a clean and stable working environment. Avoid dust and dirt because contaminants may cause malfunctions.
3. Ground properly before touching any system component. A discharge of static electricity may damage components. Wear a grounded wrist strap if available.

Installing Procedures

The followings are prerequisite to be installed.

- 2.5" NVME SSDs
- Power Supply Units (Pre-installed)
- System Fans (Pre-installed)
- Server Motherboard (Pre-installed)



1. Some components are already pre-installed. Simply properly connect the relevant cables before or after installation.
2. Refer to the server motherboard user manual for instructions on how to install server motherboard components.

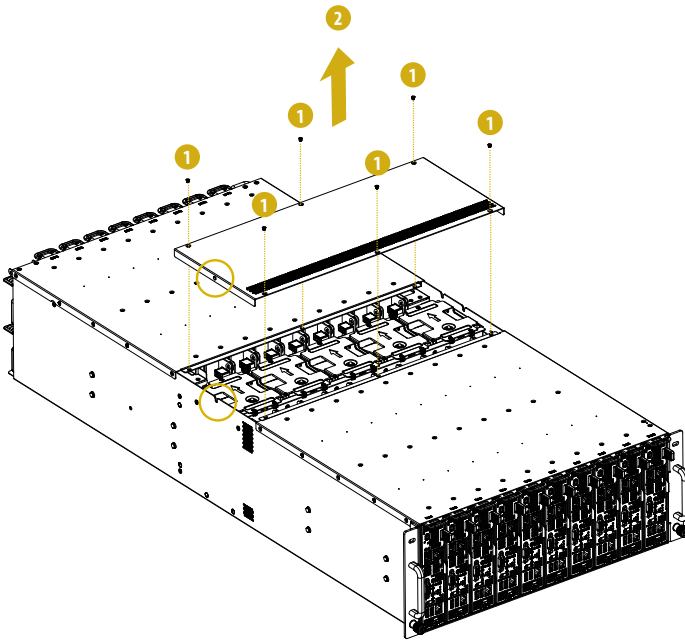
3.1 Server Top Cover

Removing the Server Top Cover



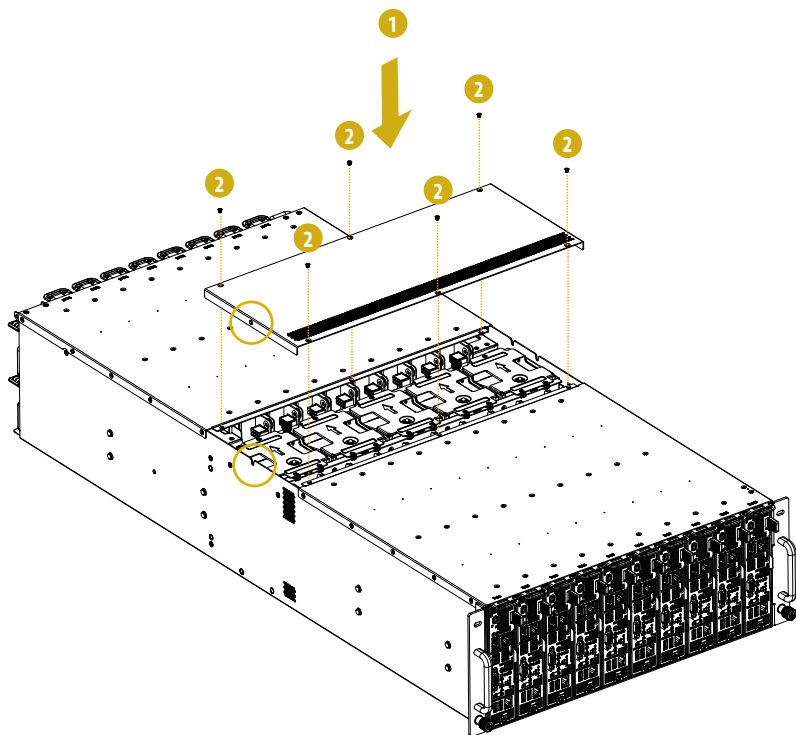
1. Before removing the top cover, power off the server and unplug the power cord.
2. The system must be operated with all the chassis top covers installed to ensure proper cooling.

1. Remove the screws securing the top cover to the chassis.
2. Lift up and remove the cover.



Installing the Server Top Cover

1. Lower the cover on the chassis, making sure the side latches align with the cutouts.
2. Secure the cover to the chassis with the screws.



3.2 Power Supply

The system can accommodate 4 power supply units in the bay at the rear of the chassis. 3 PSUs are required for full load operation, with the fourth PSU purely as a redundant, load-sharing backup. 1 PSU can be removed without affecting system operation.

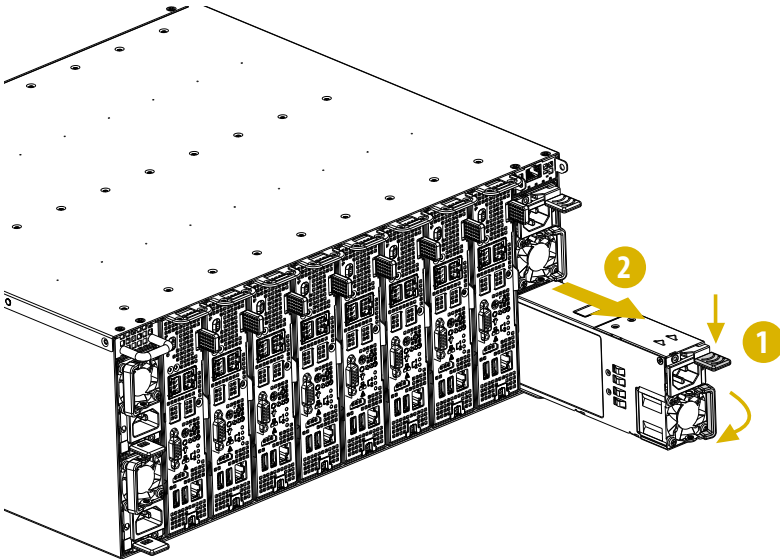
Removing the Power Supply Unit



1. Before replacing the power supply, power off the server, unplug the power cord, and disconnect all wiring from the power supply.
2. In a redundant system, it does not need to power down the server.

To remove a failed power supply unit, identify the failed PSU by checking the power supply LEDs on the PSUs.

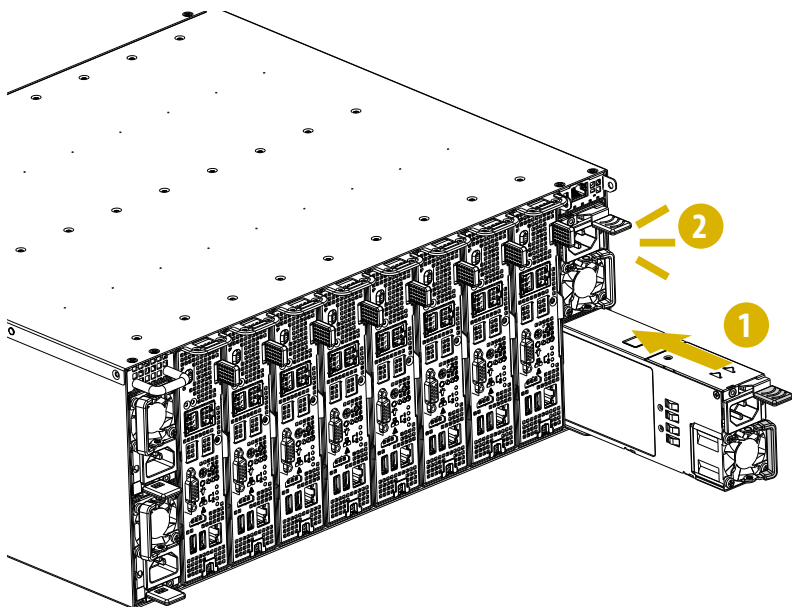
1. Hold onto the power supply handle while pressing the locking lever towards the power supply handle.
2. Pull to remove the PSU from the chassis.



Installing the Power Supply Unit

Align the power supply unit with the power supply bay. Ensure the LED appears on the lower right when installing the PSU.

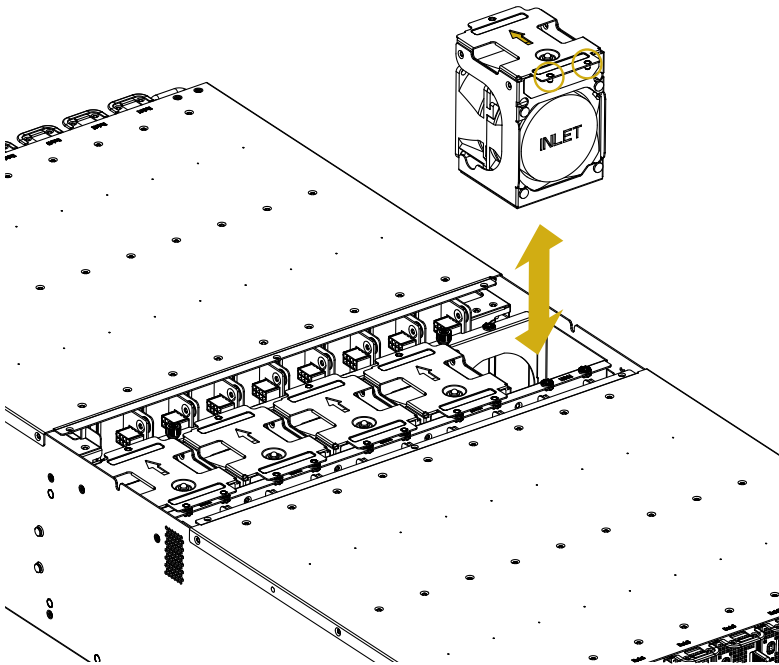
1. Carefully slide the PSU all the way into the power supply bay.
2. Make sure the PSU clicks in place and is well installed.



3.3 System Fan

Replacing the System Fan

1. Lift to remove the failed fan.
2. Align the mounting holes on the replacement fan with the fan mounts on the fan bar.
3. Make sure the arrow on the fan pointed to the REAR of the chassis.
4. Gently place the fan onto the mounts.
5. Make sure the fan is well seated.



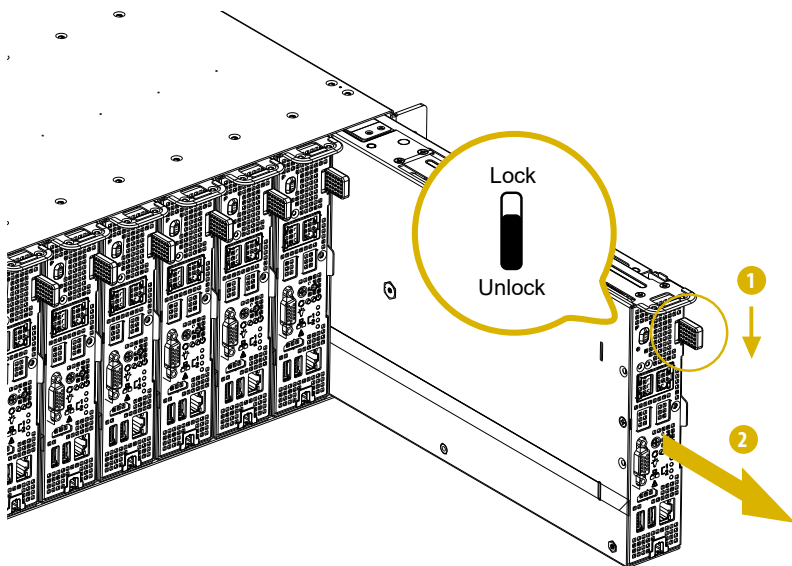
3.4 Node Tray

Removing a Node Tray from the Chassis



Before removing any specific node, power off that node in advance.

1. Press down the retention latch to unlock the node tray from the chassis.
2. Hold onto the tray handle and gently pull out the node tray from the chassis.

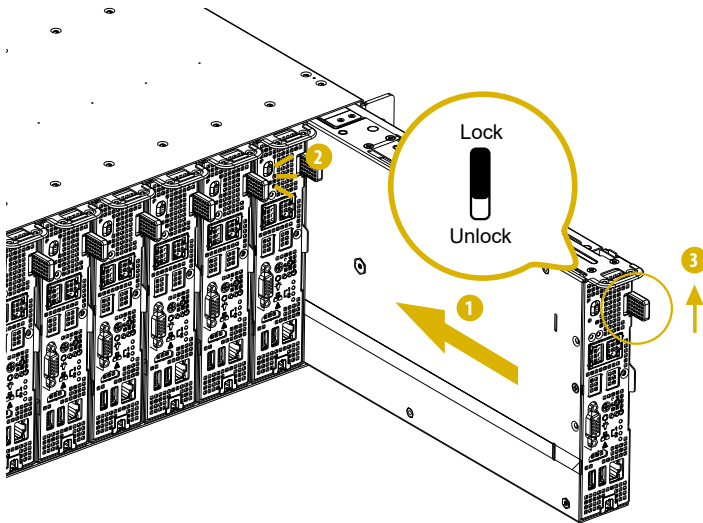


Installing a Node Tray into the Chassis



Make sure to have the node cover on before installing the node tray (see next section entitled "Node Cover" for more instructions).

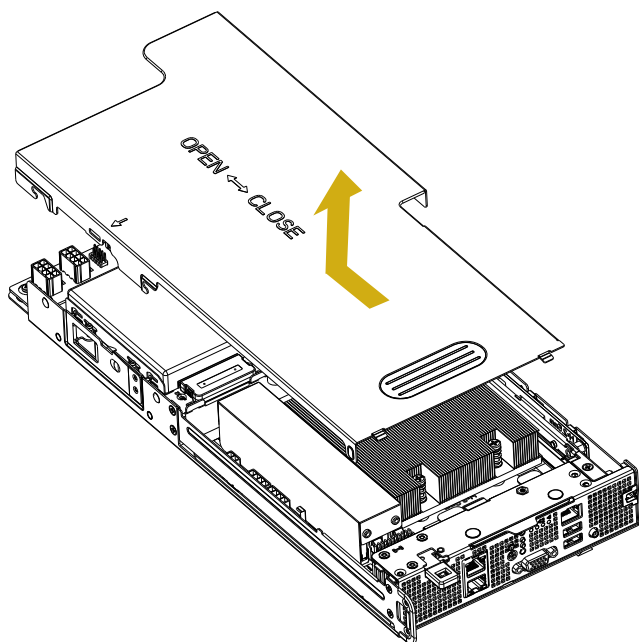
1. Align and carefully slide the node tray into the chassis.
2. Push the node tray along the rail until it clicks in place.
3. Pull up the retention latch to lock and secure the node tray to the chassis.



3.5 Node Cover

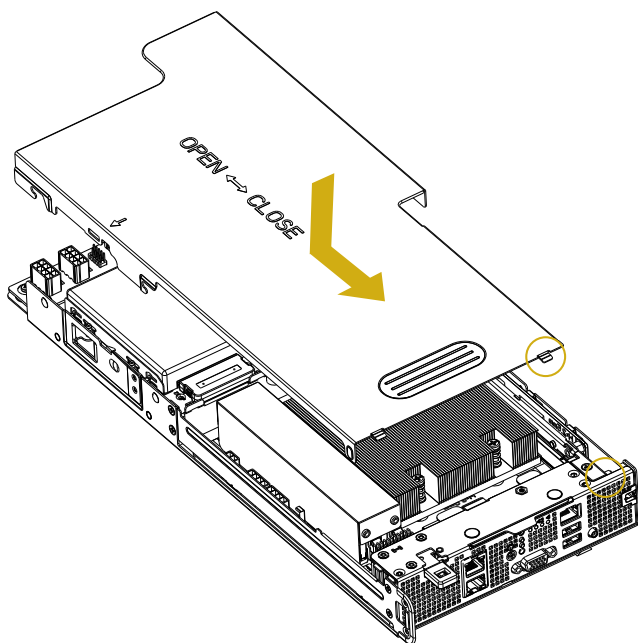
Removing the Node Cover

Press the tab and push straight back to release the node cover from the locked position. Lift up and remove the cover.



Installing the Node Cover

Place the node cover on the node tray and slide it toward the FRONT until the recessed front edge fits smoothly under the tray edge.

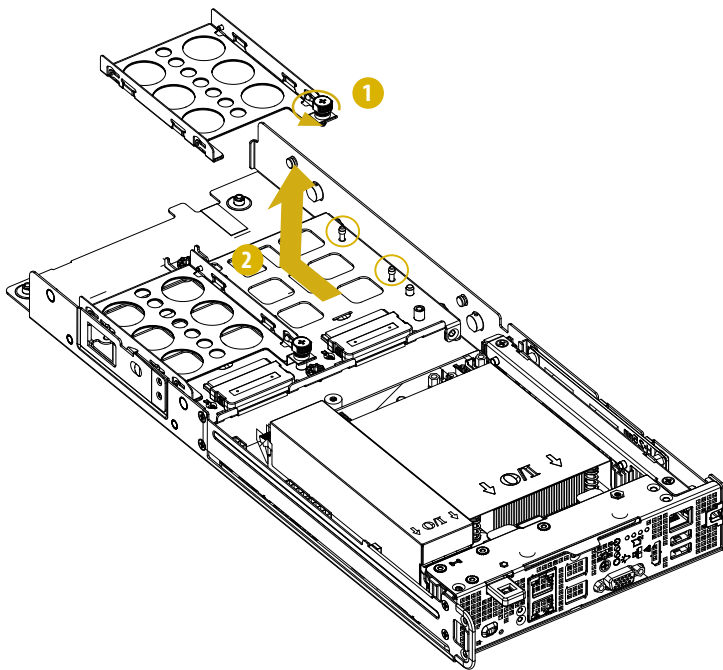


3.6 SSD

Each node in the system supports two 2.5" NVME SSD drives. The drive trays are located in the node tray.

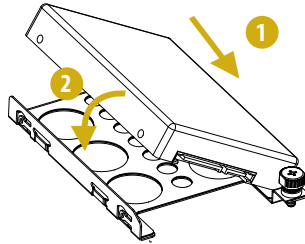
Removing the Drive Tray from the Node

1. Hand-release the thumbscrew on the drive tray.
2. Push the drive tray toward the REAR side of the node to release it from the locked position. Lift up and remove the tray.

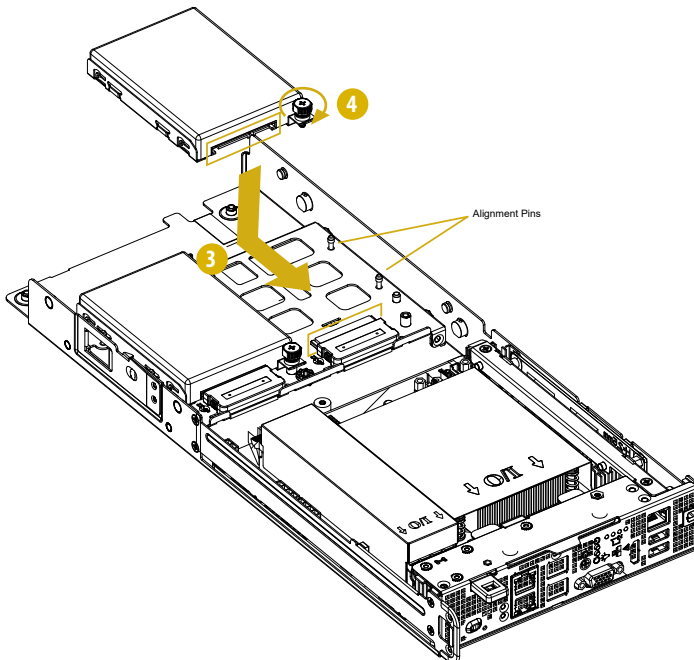


Installing a Drive to the Node

1. Engage the two embossed pins into the side dimples on the tray.
2. Carefully push down the other side of the drive until the other two embossed pins and side dimples lock in place.

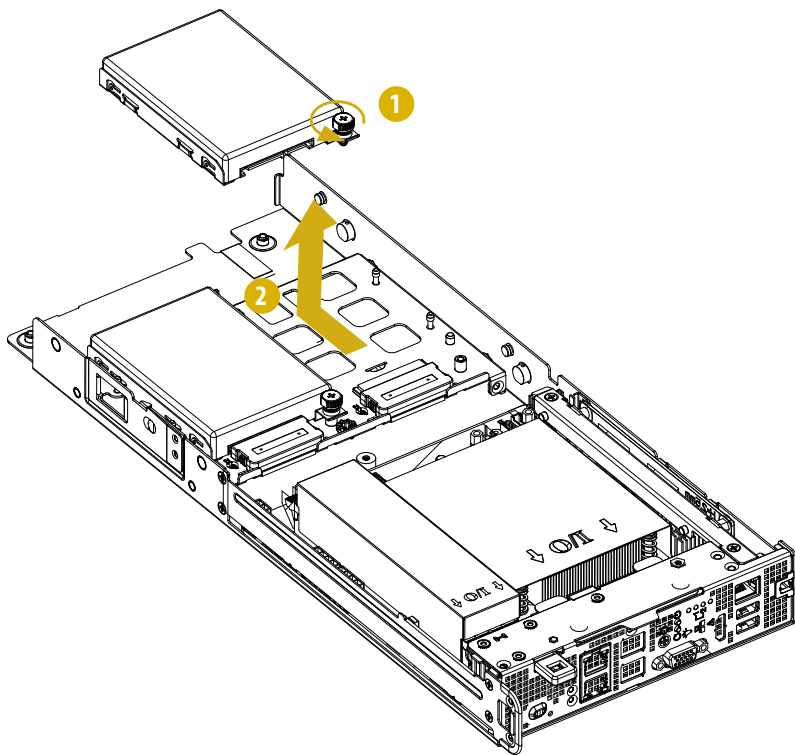


3. Position the drive assembly into the chassis, making sure the holes on the assembly are aligned with the alignment pins. Slide it toward the FRONT, making sure the drive is fully seated into the connector.
4. Hand-tighten the thumbscrew to secure the assembly in place.



Removing a Drive Assembly from the Node

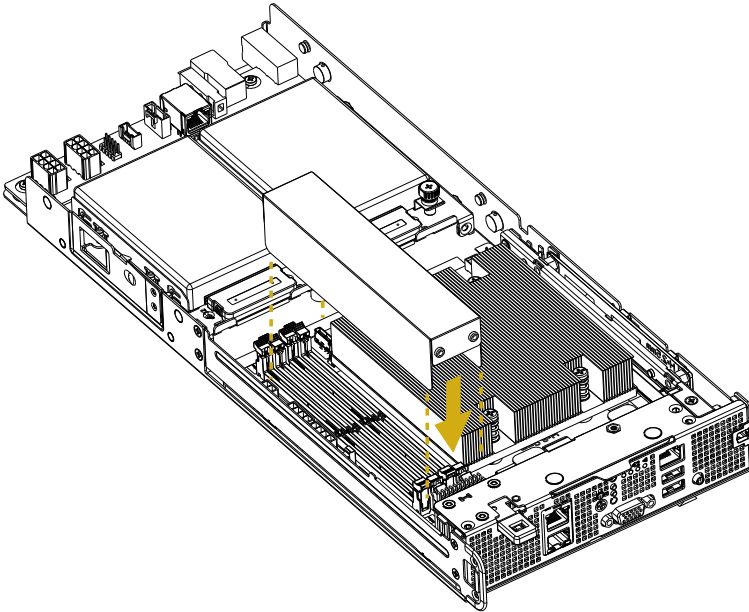
1. Hand-release the thumbscrew.
2. Slide the drive assembly toward the REAR side of the chassis to release it from the locked position. Lift up and remove the assembly.



3.7 Air Duct

Installing the Air Duct

2 types of air ducts are provided with the system. The large one is for the CPU heatsink and the small one is for the memory modules. Place the air ducts onto the heatsink and DIMM slots in the node for better air flow.

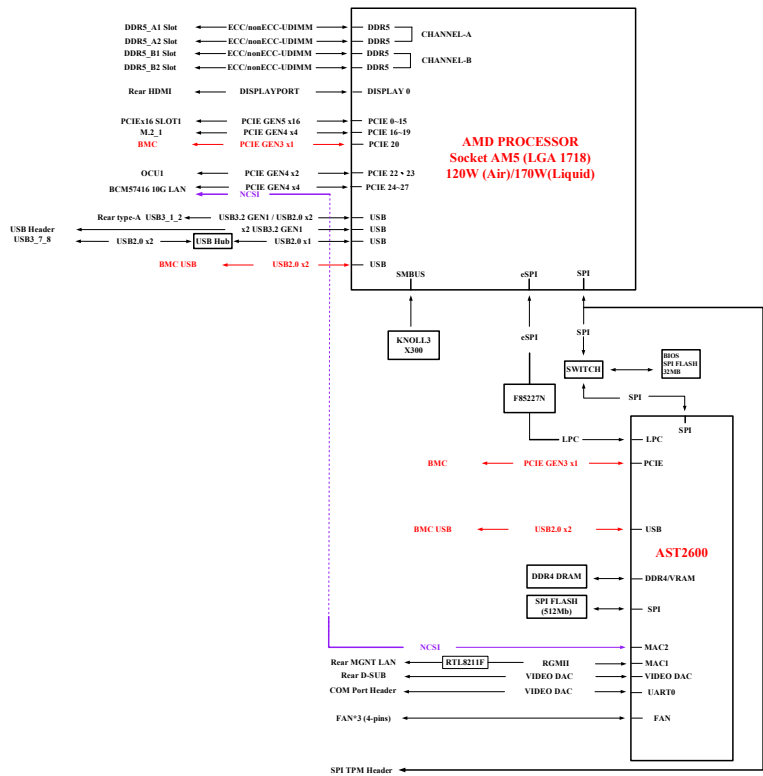


4.1 Layout



No.	Description
1	PSU SMBus Header (PSU_SMB1)
2	NSCI Header (NSCI1)
3	Clear CMOS Pad (CLRCMOS1)
4	System Fan Header (FAN1)
5	ATX 12V Power Connector (ATX12V1)
6	ATX 12V Power Connector (ATX12V2)
7	HDD Power Connector (SATA_PWR1)
8	ATX 4-PIN Power Connector (ATX4PIN1)
9	System Fan Header (FAN2)
10	2 x 288-pin DDR5 DIMM Slots (DDR5_A1, DDR5_B1)
11	2 x 288-pin DDR5 DIMM Slots (DDR5_A2, DDR5_B2)
12	OCuLink x4 Connector (OCU1)
13	SPI TPM Header (TPM_BIOS_PH1)
14	80 Debug Port Header (TPM1)
15	USB 3.2 Gen1 Header (USB3_3_4)
16	System Panel Header (PANEL1)
17	System Fan Header (FAN3)
18	Thermal Sensor Header (TR1)
19	Speaker Header (SPEAKER1)
20	Auxiliary Panel Header (ITX_AUX_PANEL1)
21	PWM Configuration Header (PWM_CFG1)
22	AMD Socket AM5 (LGA 1718) (CPU1)
23	PCI Express 5.0 x16 Card Slot (PCIE7)
24	M.2 Socket (M2_1) (Type 2280)
25	IPMI LAN LED Header (IPMI_LED1)
26	Chassis ID Jumper (CHASSIS_ID0)
27	UID Button Header (UID_HD)
28	Serial Port Header (COM1)
29	Baseboard Management Controller SMBus Header (BMC_SMB1)
30	Intelligent Platform Management Bus Header (IPMB1)

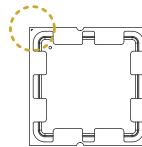
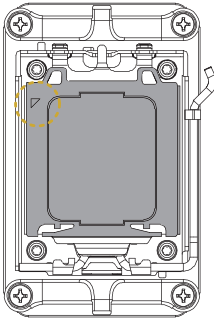
4.2 Block Diagram



4.3 Installing the CPU (LGA 1718 Socket)

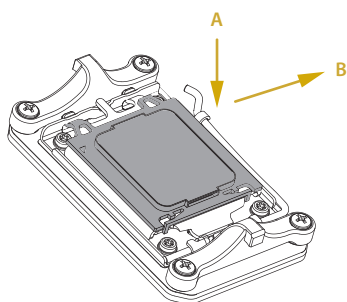


1. Before inserting the 1718-Pin CPU into the socket, check if the **PnP cap** is on the socket, if the CPU surface is unclean, or if there are any **bent pins** in the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.
2. Unplug all power cables before installing the CPU.

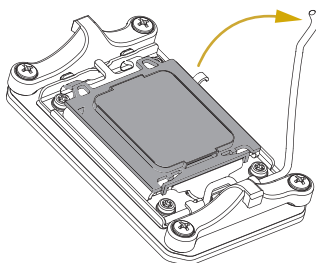


Turn the CPU to the correct orientation before opening the CPU socket cover.

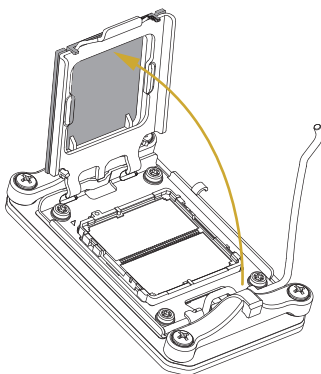
1



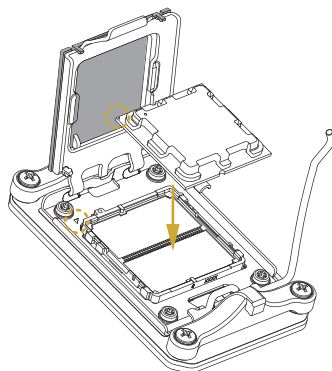
2



3

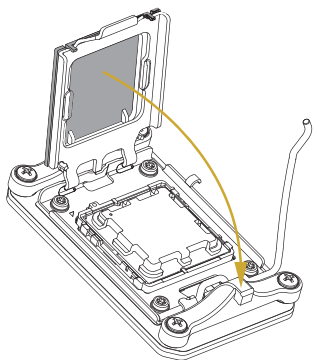


4

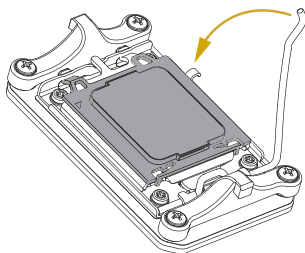


Carefully place the CPU in as flat as possible. Do not drop it.

5



6

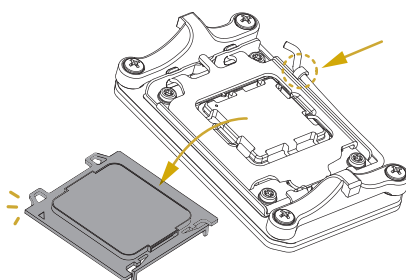


Make sure the CPU is aligned with the socket before locking it into place.

7



Make sure the black cover plate is always in place until it pops off when closing the socket lever.



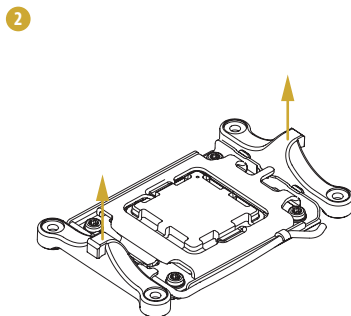
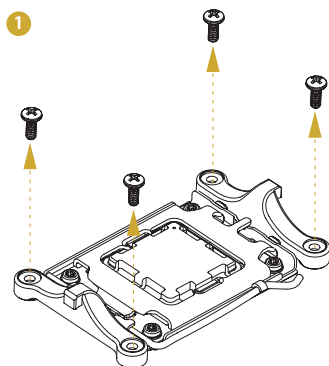
Please save the cover if the processor is removed. The cover must be placed if wishing to return the motherboard for after service.

4.4 Installing the CPU Fan and Heatsink

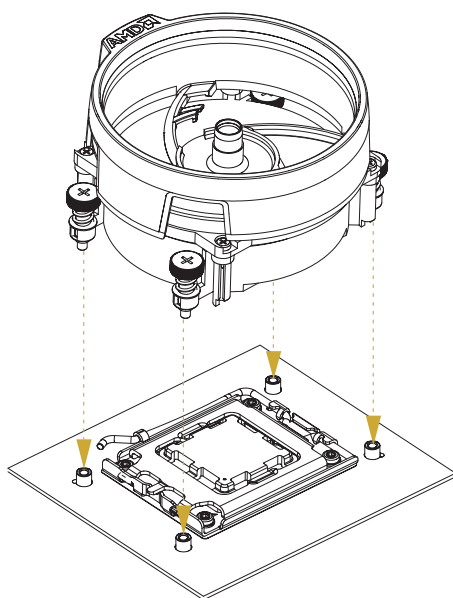
After installing the CPU into this motherboard, it is necessary to install a larger heatsink and cooling fan to dissipate heat. It also needs to spray thermal grease between the CPU and the heatsink to improve heat dissipation. Make sure that the CPU and the heatsink are securely fastened and in good contact with each other.



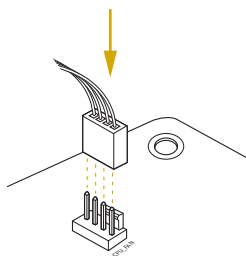
Turn off the power or remove the power cord before changing a CPU or heatsink.



3



4

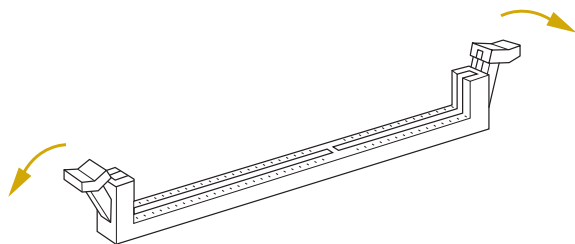


4.5 Installing the Memory Modules (DIMM)

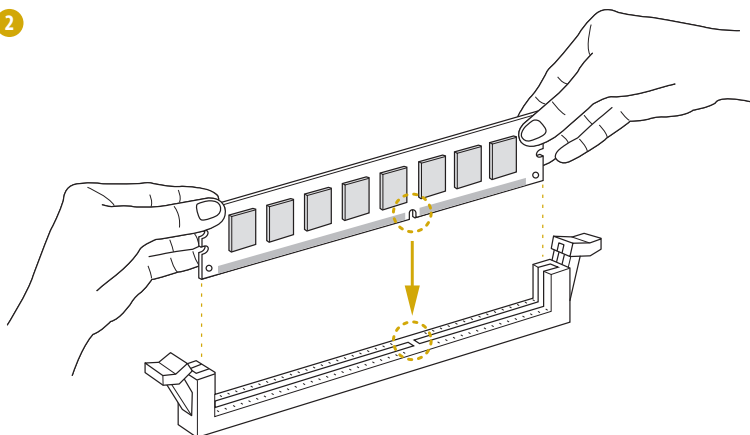


The DIMM only fits in one correct orientation. It will cause permanent damage to the server motherboard and the DIMM if forcing the DIMM into the slot at incorrect orientation. For more information about DIMM installation, refer to the server motherboard user manual.

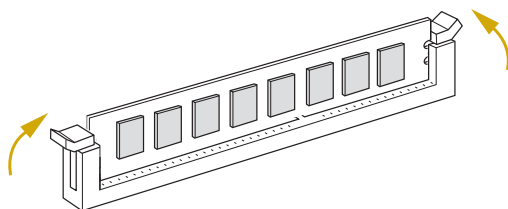
1



2



3



Appendix

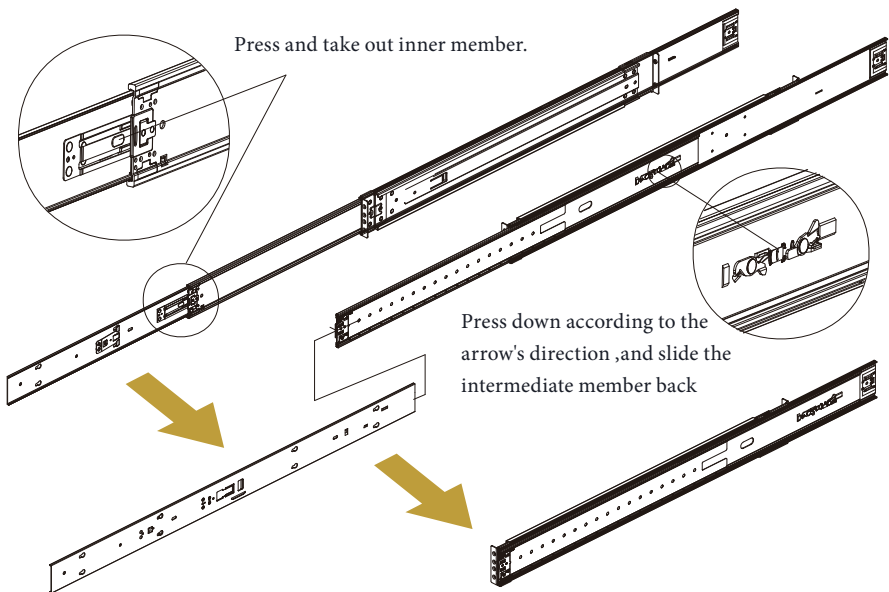
Installing the Server in a Rack

This section describes how to rackmount the server with slide rail assembly.

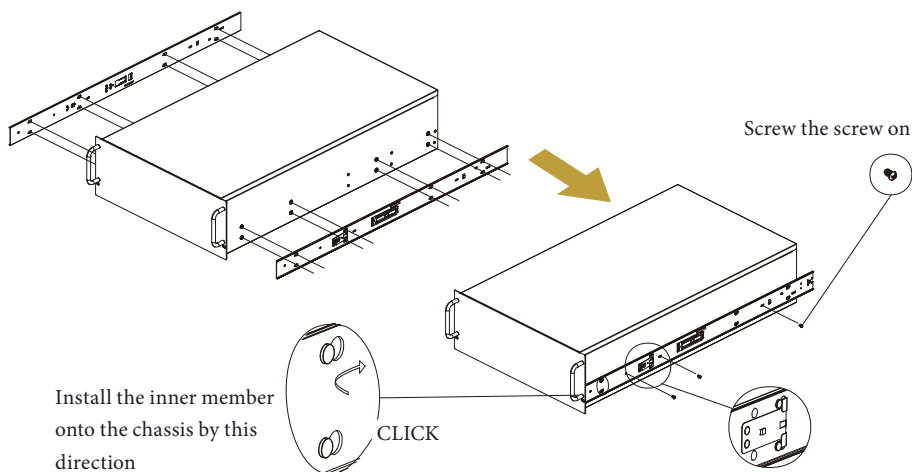


The rails installation instructions in this manual are example only, the actual rail assembly procedure may differ slightly.

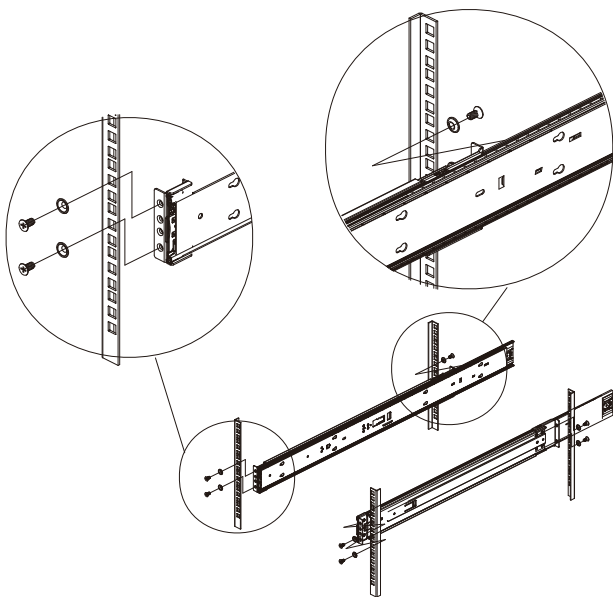
1. Take out the inner member and slide the intermediate member back.
2. Install the inner member onto the chassis.



3. Screw the outer member and bracket onto the rack.



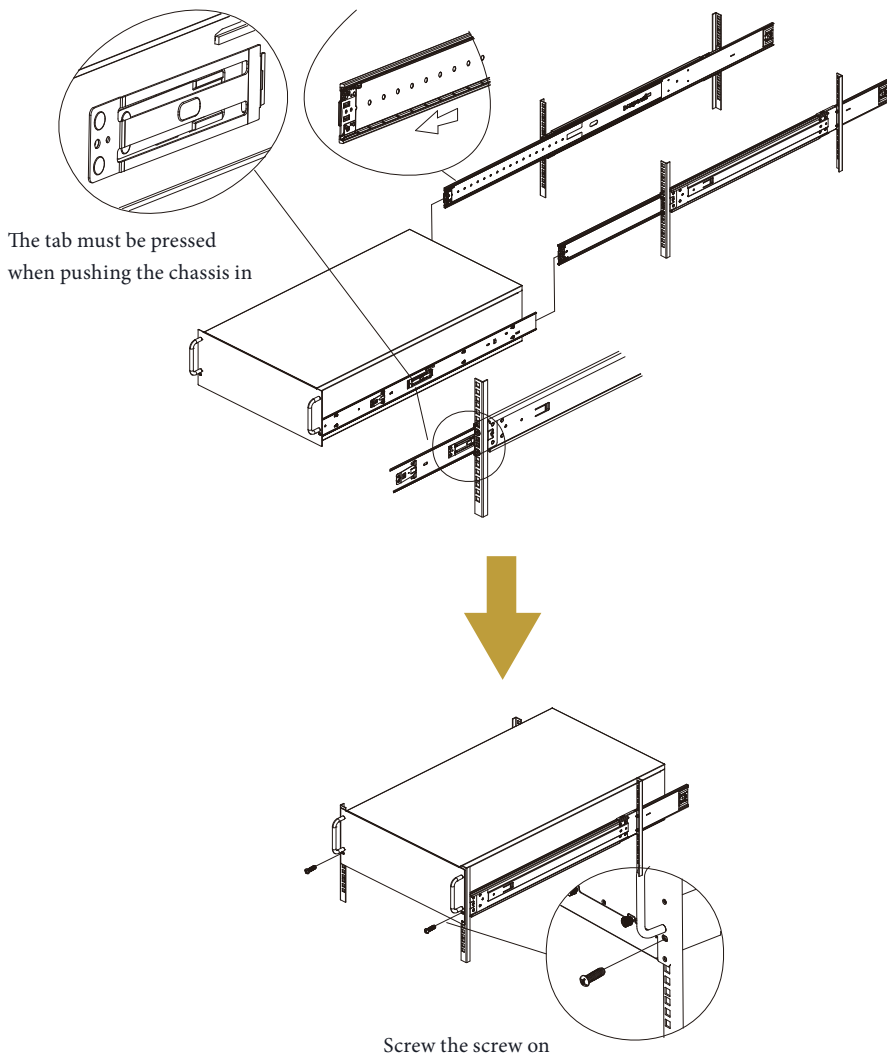
4. Chassis installation: Make sure the ball-bearing retainer is at the front of intermediate



member, then aim and push the inner member (chassis installed) into the intermediate/outer member.

CAUTION!

Verify ball bearing retainer is locked forward.



Contact Information

Contact ASRock Rack or want to know more about ASRock Rack, you're welcome to visit ASRock Rack's website at <http://www.asrockrack.com>; or contact the dealer for further information. For technical questions, please submit a support request form at <https://event.asrockrack.com/tsd.asp>

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