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GREEN Less Heat, Less Power Consumption

STABLE Robust Design, Quality Parts

Stable and
Reliable Solution

Server/Workstation
Motherboard

1U12E-TURIN2

1U12E-TURIN2/EVAC

User Manual

English



Version 2.00

Published Dec. 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”

ASRock Rack’s Website: www.ASRockRack.com

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.

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 1U12E-TURIN2 or 1U12E-TURIN2/EVAC, 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
1U12E-TURIN2	TURIN2D24TM3-2L+/500W/1U12E
1U12E-TURIN2/EVAC	TURIN2D24TM3-2L+/500W/1U12E



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

Items	Quantity
Server Barebone: 1U12E-TURIN2	1
CPU Heatsink	2
Rail Kit	1
Accessory Box	1
- 2 Power Cords	
- 2 M3 Screws for M.2 Sockets	

Items	Quantity
Server Barebone: 1U12E-TURIN2/EVAC	1
CPU EVAC Heatsink	2
Rail Kit	1
Accessory Box	1
- 2 Power Cords	
- 2 M3 Screws for M.2 Sockets	

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

1.2 Specifications

1U12E-TURIN2	
System	
Form Factor	1U Rackmount
Dimension	830 x 438 x 43.5mm (32.7" x 17.2" x 1.7")
Support MB	TURIN2D24TM3-2L+/500W/1U12E
Front Panel	
Button	Power button w/ LED, UID button w/ LED, system reset, NMI
LED	Hard drive activity, LAN 1/2, system fault
I/O Port	1 Type-A (USB3.2 Gen1)
External Drive Bay / Storage	
Front Side Drive Bay	12 Hot-swap 2.5" NVMe (PCIe5.0 x4) drive bays
Front Side Backplane	12-port NVMe passive backplanes
Internal Side	1 M-key (PCIe3.0 x4), supports 2280/2260/2242/2230 form factor [CPU0] 1 M-key (PCIe3.0 x4), supports 2280/2242 form factor [CPU1]
Power Supply	
Type	1+1 CRPS
Output Watt	1600W
Efficiency	80-PLUS Platinum
System Fan	
Fan	8 Easy-swap 40x56mm fans
Processor System	
CPU	Supports AMD EPYC™ 9005/9004 (with AMD 3D V-Cache™ Technology) and 97x4 series processors
Socket	Dual Socket SP5 (LGA 6096)
Thermal Design Power	Up to 240W
Chipset	System on Chip

System Memory	
Supported DIMM Quantity	12+12 DIMM slots (1DPC)
Supported Type	Supports DDR5 288-pin RDIMM, RDIMM-3DS
Max. Capacity per DIMM	RDIMM: 128GB (2Rx4) RDIMM-3DS: 256GB (2Rx4)
Max. DIMM Frequency	6400MHz
Voltage	1.1V
PCIe Expansion Slot	
PCIe x16	Rear: 2 FHHL PCIe5.0 x16 [CPU0][CPU1]
TPM	
TPM Support	1 (13-pin, TPM-SPI)
Ethernet	
Additional GbE Controller	Intel® i350: 2 RJ45 (1GbE)
OCP Slot	1 OCP NIC 3.0 (PCIe5.0 x16) [CPU1]
Server Management	
BMC Controller	ASPEED AST2600
IPMI Dedicated GLAN	1 Realtek RTL8211F for dedicated management GLAN
Graphics	
Controller	ASPEED AST2600
VRAM	DDR4 512MB
Rear I/O	
UID Button/ LED	1 UID button w/ LED
Video Port	1 DB15 (VGA)
Serial Port	1 RJ45 (COM)
USB3.2 Gen1 Port	2 Type-A (USB3.2 Gen1)
RJ45	2 RJ45 (1GbE) 1 Dedicated IPMI

System BIOS	
BIOS Type	AMI UEFI BIOS; 256Mb (32MB) SPI Flash ROM
BIOS Features	ASRock Rack Instant Flash, ACPI 6.4 and above compliance wake up events, SMBIOS 3.5.0 and above, Plug and Play (PnP)
Hardware Monitor	
Temperature	CPU, MB, card side temperature sensing
Fan	Fan tachometer CPU quiet fan (allows chassis fan speed auto-adjust by CPU temperature) Fan multi-speed control
Voltage	P0_VDDCR_CPU0, P0_VDDCR_CPU1, P0_VDDCR_SOC, P0_VDD_18_DUAL, P0_VDD_11_S3, P0_VDDIO, P1_VDDCR_CPU0, P1_VDDCR_CPU1, P1_VDDCR_SOC, P1_VDD_18_DUAL, P1_VDD_11_S3, P1_VDDIO, +BAT, +12V, +3VSB, +5VSB
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 more information.

1U12E-TURIN2/EVAC	
System	
Form Factor	1U Rackmount
Dimension	830 x 438 x 43.5mm (32.7" x 17.2" x 1.7")
Support MB	TURIN2D24TM3-2L+/500W/1U12E
Front Panel	
Button	Power button w/ LED, ID button w/ LED, system reset, NMI
LED	Hard drive activity, LAN 1/2, system fault
I/O Port	1 Type-A (USB3.2 Gen1)
External Drive Bay / Storage	
Front Side Drive Bay	12 Hot-swap 2.5" NVMe (PCIe5.0 x4) drive bays
Front Side Backplane	12-port NVMe passive backplanes
Internal Side	1 M-key (PCIe3.0 x4), supports 2280/2260/2242/2230 form factor [CPU0] 1 M-key (PCIe3.0 x4), supports 2280/2242 form factor [CPU1]
Power Supply	
Type	1+1 CRPS
Output Watt	1000W @100-127Vac input* 2000W @200-240Vac input
Efficiency	80-PLUS Platinum
AC Input	Low-line*: 100-127Vac, 60/50Hz High-line: 200-240Vac, 60/50Hz <i>* Full redundancy may not be supported with low-line input. Redundancy support depends on total system power consumption relative to single PSU capacity.</i>
System Fan	
Fan	8 Easy-swap 40x56mm fans
Processor System	
CPU	Supports AMD EPYC™ 9005/9004 (with AMD 3D V-Cache™ Technology) and 97x4 series processors
Socket	Dual Socket SP5 (LGA 6096)
Thermal Design Power	Up to 360W* <i>*360W is conditionally supported. Please contact ASRock Rack for suggested operating temperature.</i>
Chipset	System on Chip

System Memory	
Supported DIMM Quantity	12+12 DIMM slots (1DPC)
Supported Type	Supports DDR5 288-pin RDIMM, RDIMM-3DS
Max. Capacity per DIMM	RDIMM: 128GB (2Rx4) RDIMM-3DS: 256GB (2Rx4)
Max. DIMM Frequency	6400MHz
Voltage	1.1V
PCIe Expansion Slot	
PCIe x16	Rear: 2 FHHL PCIe5.0 x16 [CPU0][CPU1]
TPM	
TPM Support	TPM-SPI
Ethernet	
Additional GbE Controller	Intel® i350: 2 RJ45 (1GbE)
OCF Slot	1 OCP NIC 3.0 (PCIe5.0 x16) [CPU1]
Server Management	
BMC Controller	ASPEED AST2600
IPMI Dedicated GLAN	1 Realtek RTL8211F for dedicated management GLAN
Graphics	
Controller	ASPEED AST2600
VRAM	DDR4 512MB
Rear I/O	
UID Button/ LED	1 UID button w/ LED
VGA Port	1 DB15 (VGA)
Serial Port	1 RJ45 (COM)
USB3.2 Gen1 Port	2 Type-A (USB3.2 Gen1)
RJ45	2 RJ45 (1GbE) 1 Dedicated IPMI

System BIOS	
BIOS Type	AMI UEFI BIOS; 256Mb (32MB) SPI Flash ROM
BIOS Features	ASRock Rack Instant Flash, ACPI 6.4 and above compliance wake up events, SMBIOS 3.5.0 and above, Plug and Play (PnP)
Hardware Monitor	
Temperature	CPU, MB, card side temperature sensing
Fan	Fan tachometer CPU quiet fan (allows chassis fan speed auto-adjust by CPU temperature) Fan multi-speed control
Voltage	P0_VDDCR_CPU0, P0_VDDCR_CPU1, P0_VDDCR_SOC, P0_VDD_18_DUAL, P0_VDD_11_S3, P0_VDDIO, P1_VDDCR_CPU0, P1_VDDCR_CPU1, P1_VDDCR_SOC, P1_VDD_18_DUAL, P1_VDD_11_S3, P1_VDDIO, +BAT, +12V, +3VSB, +5VSB
Environment	
Temperature	Operation temperature: 10°C ~ 35°C Non operation temperature: -40°C ~ 70°C
Humidity	Non operation humidity: 20% ~ 90% (non condensing)



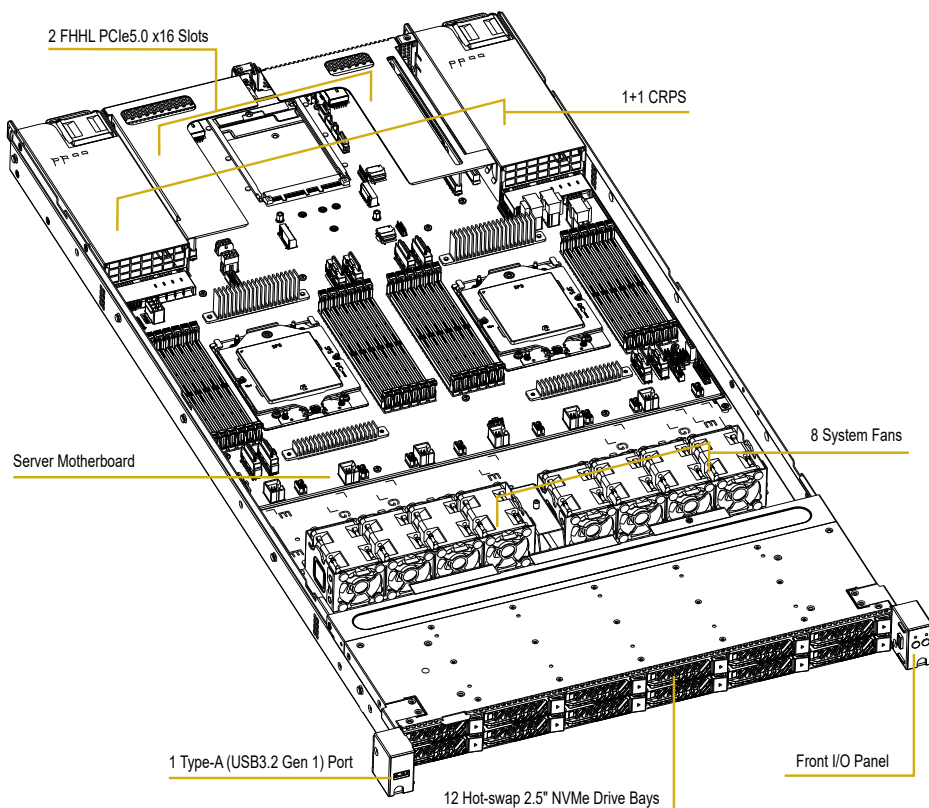
The functions are supported depending on the type of the server motherboard. Refer to the server motherboard user manual for more information.

Chapter 2 Server System Overview

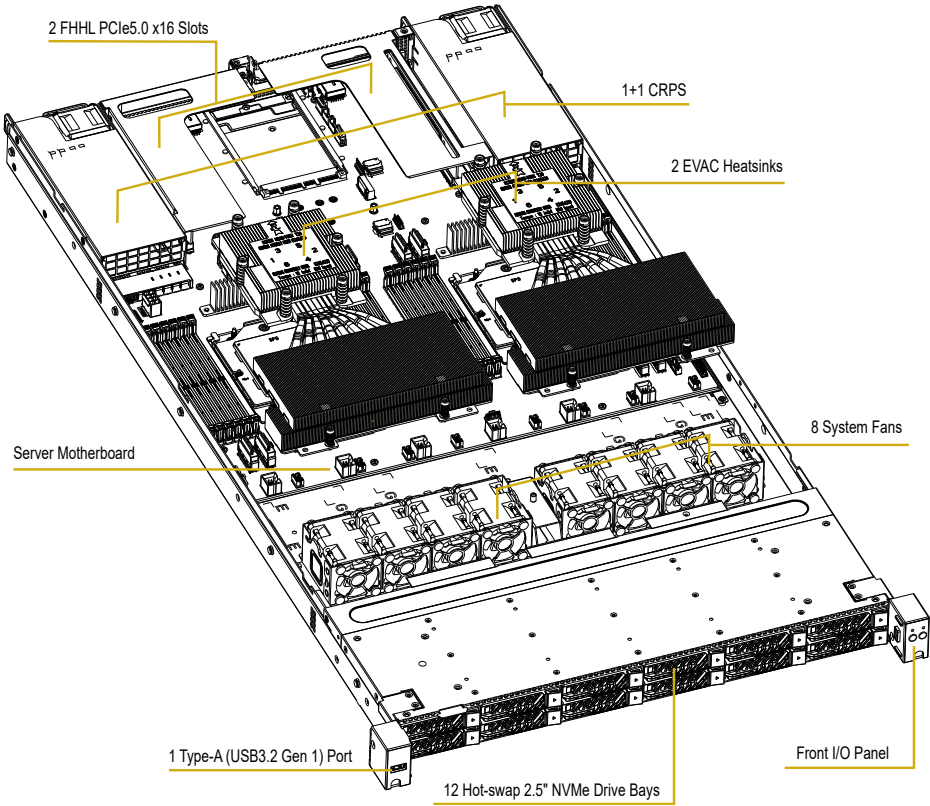
This chapter provides diagrams showing the location of important components of the server system.

2.1 System Components

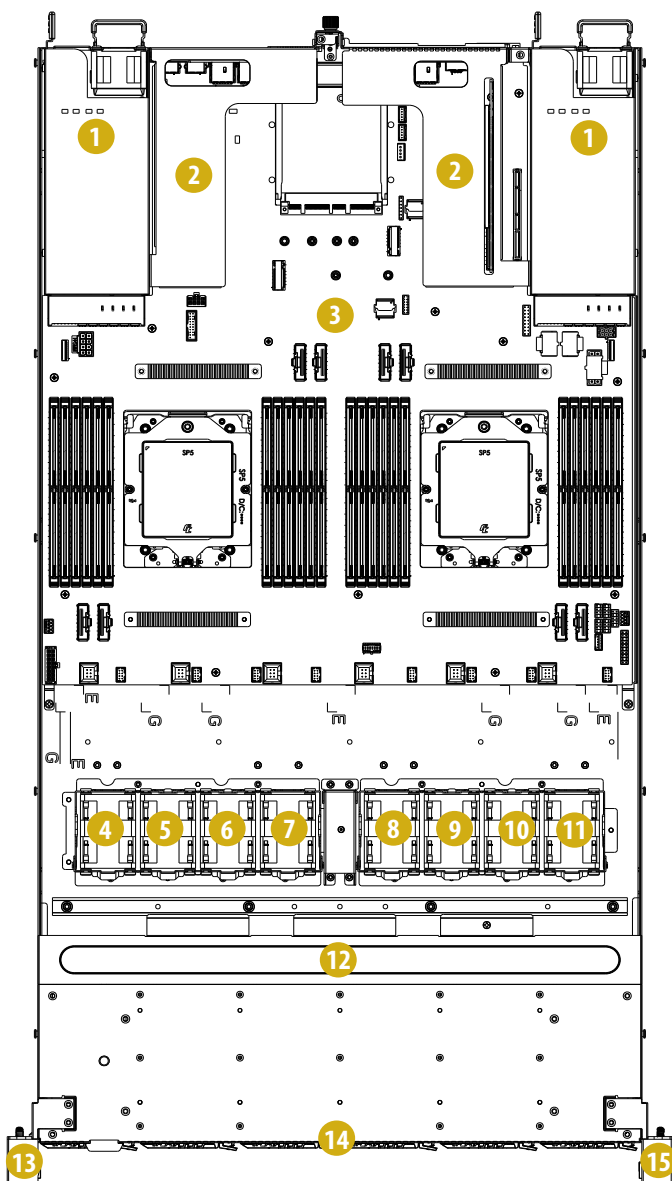
1U12E-TURIN2



1U12E-TURIN2/EVAC



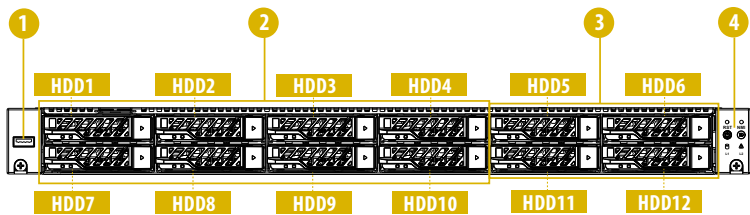
2.2 Internal Features



Note: This illustration is without EVAC. For more information about EVAC, refer to section 3.7 EVAC.

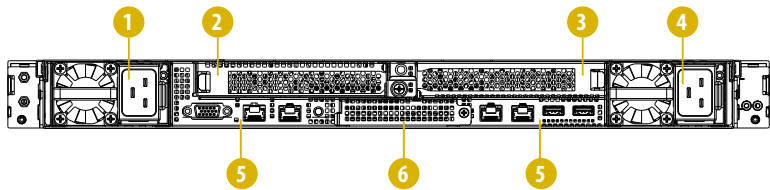
No.	Description
1	1+1 CRPS
2	2 FHHL PCIe5.0 x16 slots
3	Server motherboard
4	1 Easy-swap 40x56mm fan (FAN1)
5	1 Easy-swap 40x56mm fan (FAN2)
6	1 Easy-swap 40x56mm fan (FAN3)
7	1 Easy-swap 40x56mm fan (FAN4)
8	1 Easy-swap 40x56mm fan (FAN5)
9	1 Easy-swap 40x56mm fan (FAN6)
10	1 Easy-swap 40x56mm fan (FAN7)
11	1 Easy-swap 40x56mm fan (FAN8)
12	Hard drive backplane board (BPB)
13	1 Type-A (USB3.2 Gen1) port
14	12 Hot-swap 2.5" NVMe (PCIe5.0 x4) drive bays
15	Front I/O panel

2.3 System Front Panel



No.	Description
1	1 Type-A (USB3.2 Gen1) port
2	8 Hot-Swap 2.5" NVMe (PCIe5.0 x4) drive bays [CPU1] Top: HDD1 ~ HDD4 Bottom: HDD7 ~ HDD10
3	4 Hot-Swap 2.5" NVMe (PCIe5.0 x4) drive bays [CPU0] Top: HDD5, HDD6 Bottom: HDD11, HDD12
4	Front I/O panel

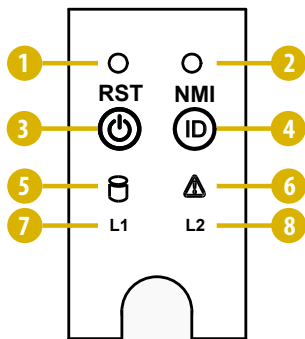
2.4 System Rear Panel



No.	Description
1	1 Power supply unit (PSU1)
2	1 FHHL PCIe5.0 x16 slot (Riser1) [CPU0]
3	1 FHHL PCIe5.0 x16 slot (Riser2) [CPU1]
4	1 Power supply unit (PSU2)
5	Rear I/O panel (depends on the specification of the server motherboard)
6	1 OCP NIC 3.0 (PCIe5.0 x16) slot [CPU1]

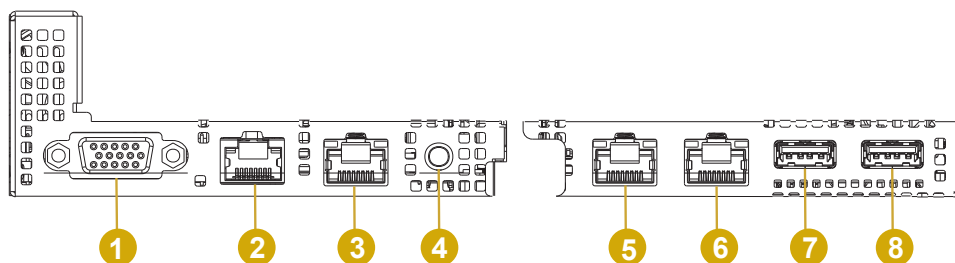
2.5 I/O Panel

Front I/O Panel



No.	Description
1	System reset button
2	NMI button
3	Power button w/ LED
4	UID button w/ LED
5	Hard drive activity LED
6	System fault LED
7	LAN1 LED
8	LAN2 LED

Rear I/O Panel



No.	Description
1	1 DB15 (VGA) port
2	1 RJ45 (COM) port
3	1 Dedicated IPMI LAN port
4	1 UID button w/ LED
5	1 RJ45 (1GbE) LAN port (LAN1)
6	1 RJ45 (1GbE) LAN port (LAN2)
7	1 Type-A (USB3.2 Gen1) port (USB3.0_1)
8	1 Type-A (USB3.2 Gen1) port (USB3.0_2)

System 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.

NMI (Nonmaskable Interrupt) Button

Press the NMI button with a paper clip or pin to generate a nonmaskable interrupt and to put the server in a halt state for examination.

Power Button

Press the power switch button to toggle the system power on and power off modes. To remove all power from the system completely, disconnect the power cord from the server.

UID Button

Press the ID button to toggle the front panel UID LED and the baseboard UID LED on and off. Use this button to locate the server working on behind a rack of servers.



1. Press and hold the UID button for 4 seconds, the BMC will trigger an external reset.
2. Press and hold the UID button for 10 seconds, the BMC will reset and load default values.

Status LED Definitions

Power LED	
Status	Description

Off	Power off
Green	Power on

UID LED	
Status	Description

Off	System identification is disabled.
Blue	System identification is active.

Hard Drive Activity LED	
Status	Description

Off	Hard drive inactive
Blinking Green	Hard drive active

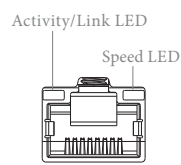
System Fault LED	
Status	Description

Off	BMC not alert
Red	BMC alert

LAN1, LAN2 LEDs	
Status	Description

Amber	Link between system and network or no access
Blinking Amber	Network access

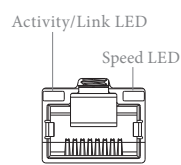
Dedicated IPMI LAN Port



Activity / Link LED	
Status	Description
Off	No link
Blinking Yellow	Data activity
On	Link

Speed LED	
Status	Description
Off	10Mbps connection or no link
Yellow	100Mbps connection
Green	1Gbps connection

RJ45 (1GbE) LAN Port

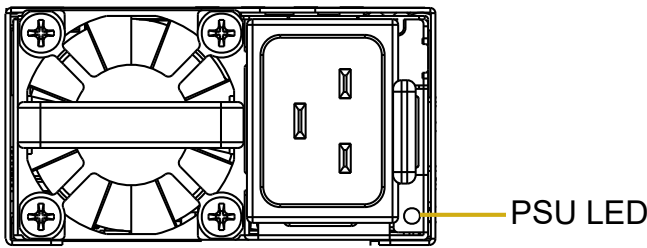


Activity / Link LED	
Status	Description
Off	No link
Blinking Orange	Data activity
On	Link

Speed LED	
Status	Description
Off	10Mbps connection or no link
Orange	100Mbps connection
Green	1Gbps connection

2.6 LED

PSU LED



Status	Description
Off	No AC power to all power supplies
Green	Output ON and OK
Blinking Green (1Hz)	PSU standby state AC preset / Only +5VSB on
Blinking Green (2Hz)	Power supply FW updating (Bootloader mode)
Red	Power supply critical event causing a shutdown, failure, over current, short circuit, over voltage, fan failure, over temperature
Blinking Red (1Hz)	AC cord unplugged or AC power lost with a second power supply in parallel still with AC input power
Blinking 1 Second Red and 1 Second Green	Power supply warning events where the power supply continues to operate; high temp, high power, high current, slow fan

Drive Tray LED



No.	Description
1	Drive tray status LED
2	Drive tray activity LED

LED Definitions

Status (No. 1)	Activity (No. 2)	Description
Off	Off	Drive not present
Blue	Green	Drive present but not active
Blue	Blinking Green (4Hz)	Drive present and active
Blinking Blue (4Hz)	Green	Locate (identify)
Red	Green	Fail
Blinking Red (1Hz)	Blinking Green (4Hz)	Rebuild

Chapter 3 Hardware Installation and Maintenance

This chapter helps user to 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.



1. Ensure the motherboard battery is installed before unplugging the power cord or installing/removing the motherboard.
2. Before installing or removing any component, ensure that the power supply is off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or 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.



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.

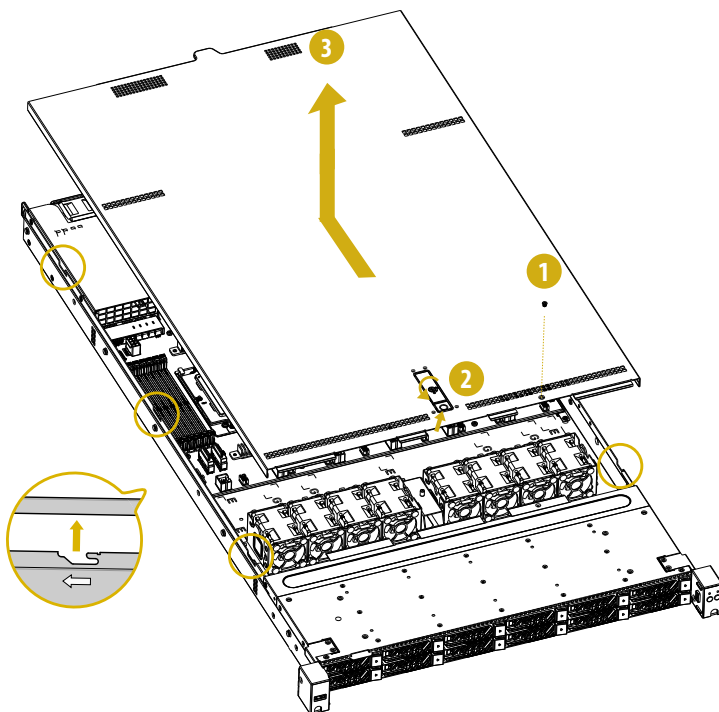
3.1 Server Top Cover

Removing the Server Top Cover

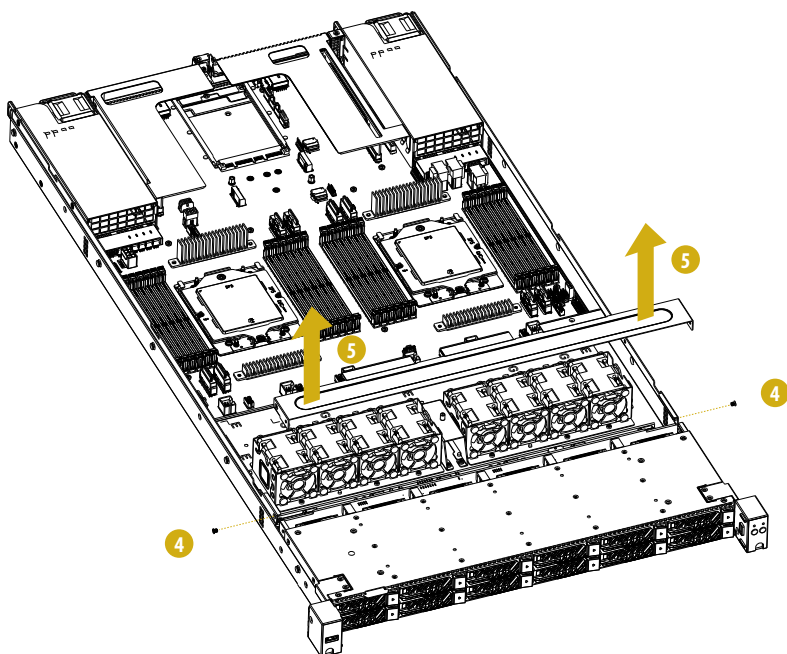


1. Before removing the top cover, power off the server and unplug the power cord.
2. The system must be operated with the chassis top cover installed to ensure proper cooling.

1. Remove the screw securing the rear top cover to the chassis.
2. Loosen the screw on the locking tab and press the button to unlock the cover.
3. Push the cover toward the REAR of the chassis to release the cover from the locked position. Lift up and remove the cover.

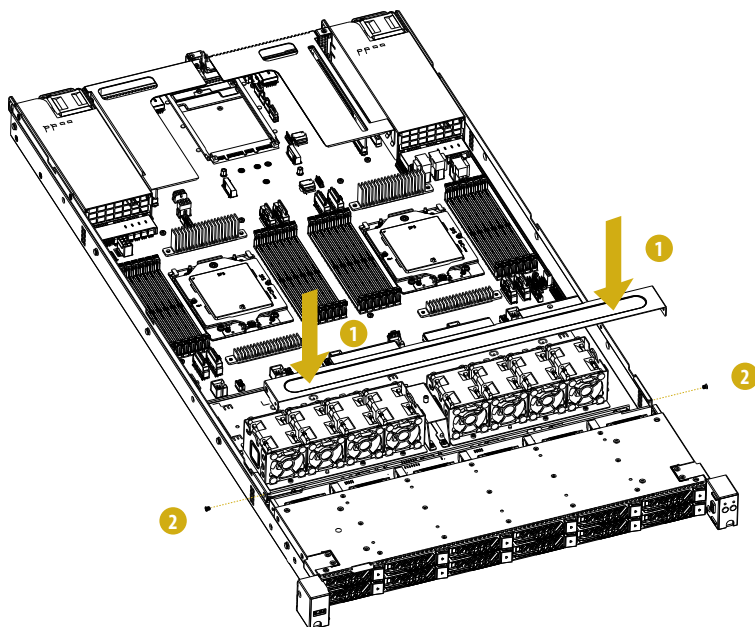


4. Remove the screws securing the hard drive backplane board cover to the chassis.
5. Lift up and remove the cover.

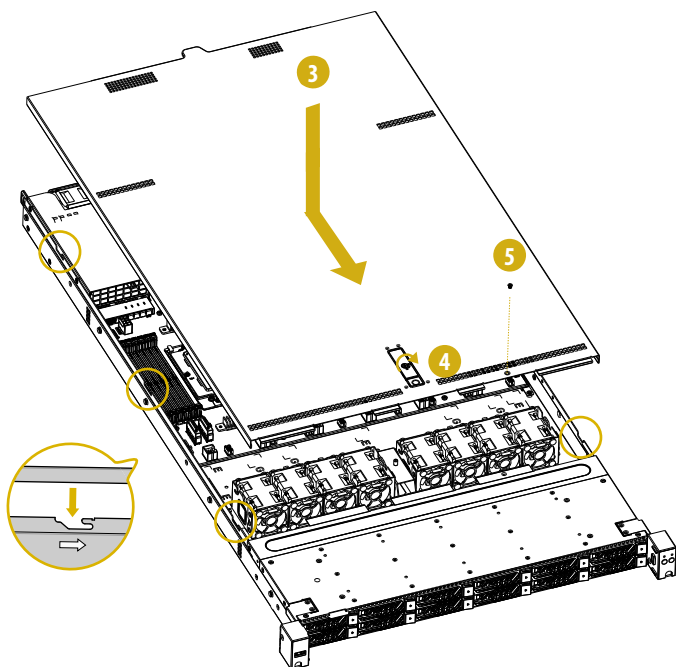


Installing the Server Top Cover

1. Align and place the hard drive backplane board cover on the chassis.
2. Secure the cover in place with the screws.



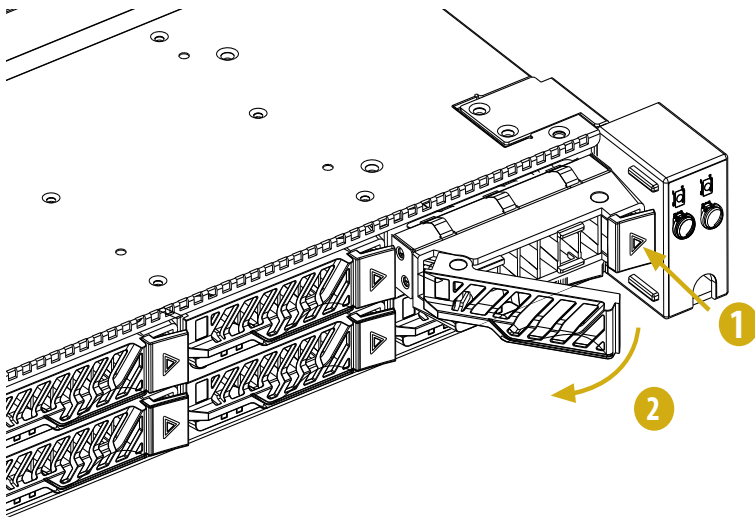
3. Lower the rear top cover on the chassis, making sure the side latches align with the cutouts. Slide the cover toward the FRONT of the chassis.
4. Press down the locking tab and tighten the screw.
5. Secure the cover in place with the screw.



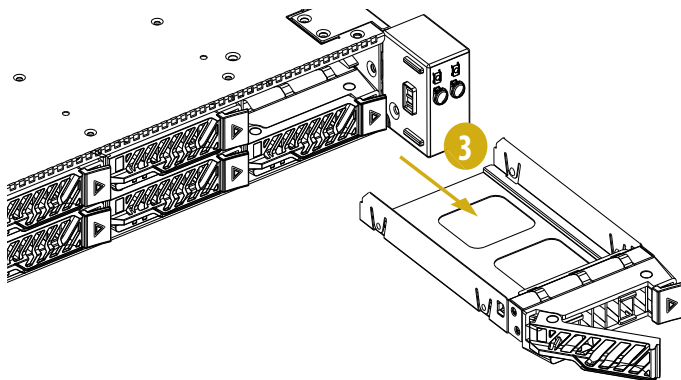
3.2 Hard Drive

Removing Hard Drive Tray from the Chassis

1. Press the locking lever latch on the hard drive tray to unlock the retention lever.
2. Rotate the lever out and away from the module bay.

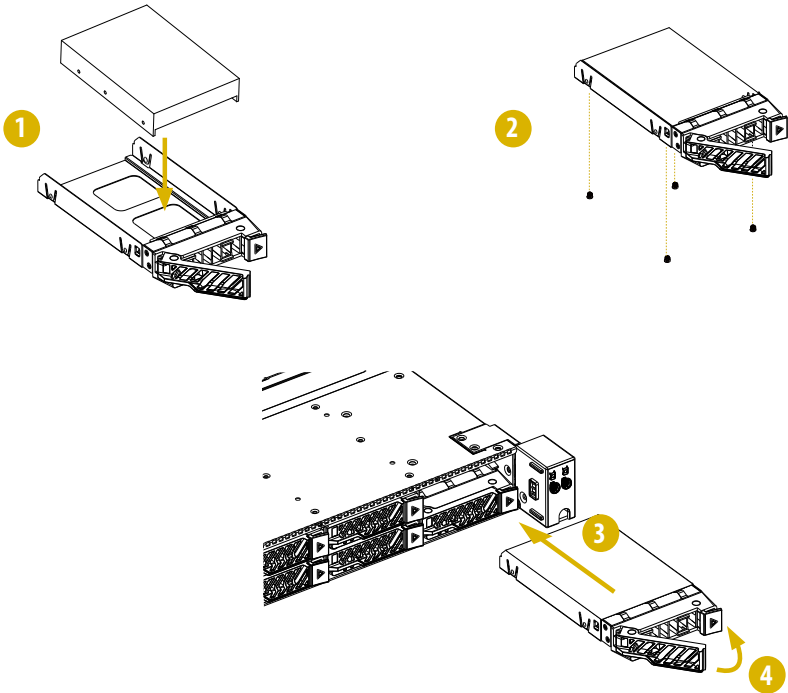


3. Pull the tray out.



Installing 2.5" Hard Drive to the Chassis

1. Place the hard drive into the hard drive tray with printed circuit board side facing down.
2. Secure the drive with the screws.
3. Slide the hard drive assembly into the hard drive bay until the assembly is fully seated.
4. Push in the locking lever to lock the assembly in place.



3.3 Power Supply

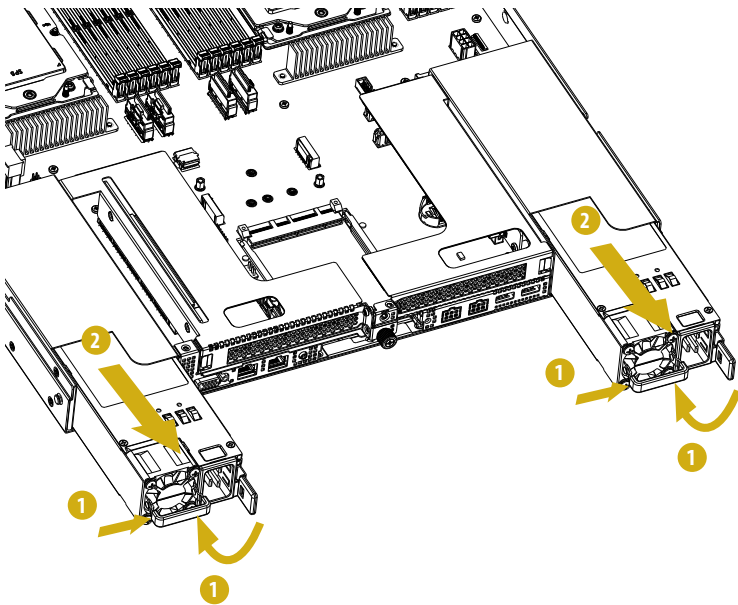
This system can accommodate 2 power supply units in the bay at the rear of the chassis.

1 PSU is required for full load operation, with the other unit purely as a redundant, load-sharing backup. 1 PSU can be removed without affecting system operation.

Removing the Power Supply Unit

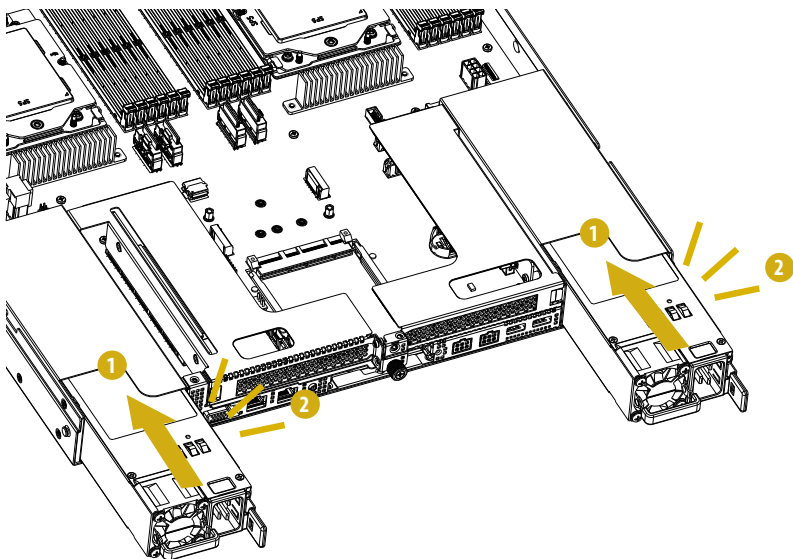
To remove a failed power supply unit, identify the failed PSU by checking the power supply LEDs on the PSUs.

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

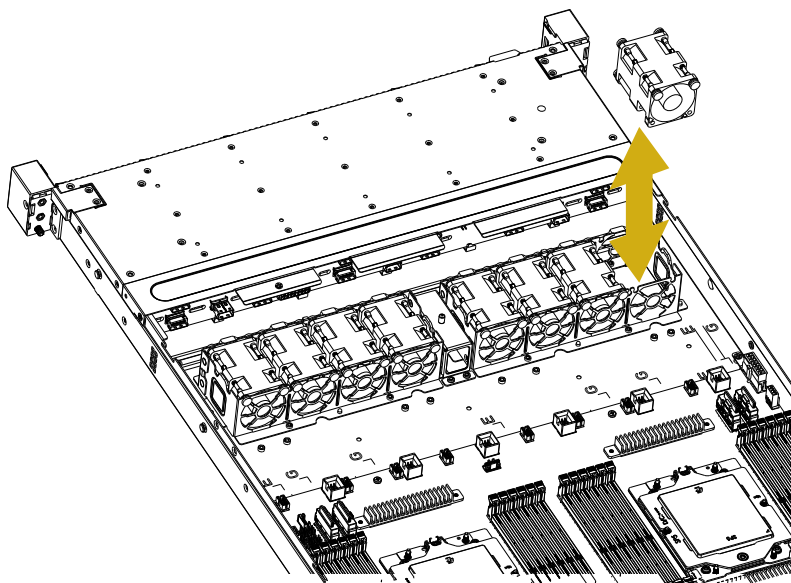
1. Align the power supply unit with the power supply bay.
2. Carefully slide the PSU all the way into the bay until the PSU clicks in place.



3.4 System Fan

Replacing System Fan

Press and hold the fan clip on to replace the fan.



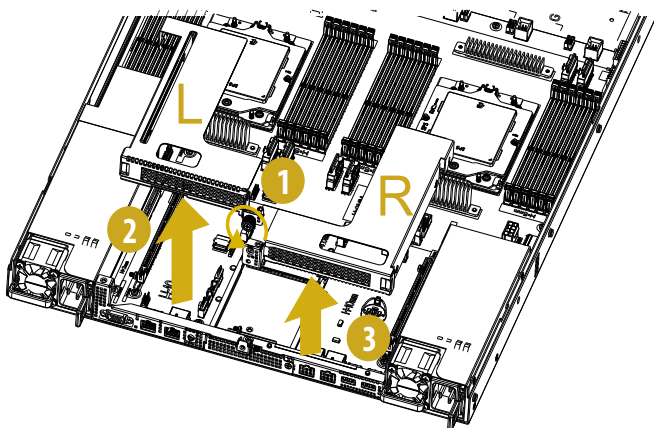
3.5 Add-in Card



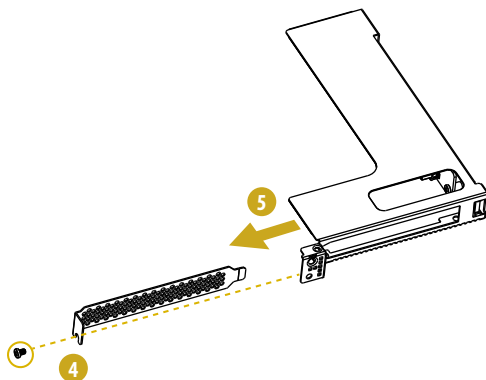
Before installing the add-in cards, power off the server and unplug the power cord.

Installing the Add-in Card

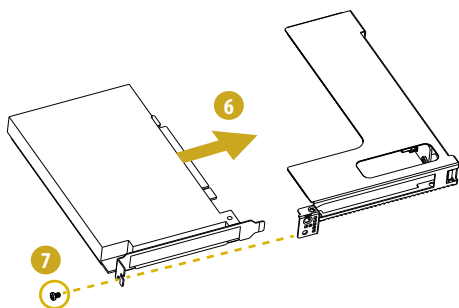
1. Hand-release the thumbscrew securing the left and right brackets on the chassis.
2. Lift up and remove the left bracket from the chassis.
3. Lift up and remove the right bracket from the chassis.



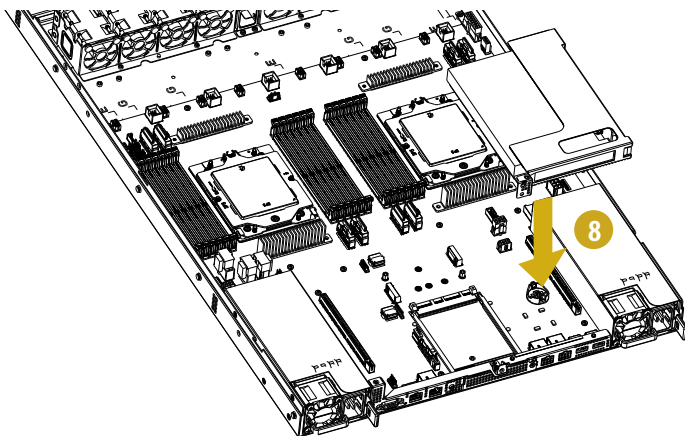
4. Remove the screw securing the blanking plate on the right bracket.
5. Slide the blanking plate out sideways.



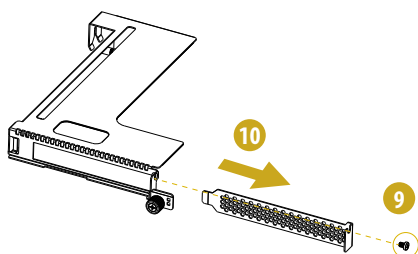
6. Install an add-in card to the right bracket.
7. Secure the add-in card to the bracket with the screw.



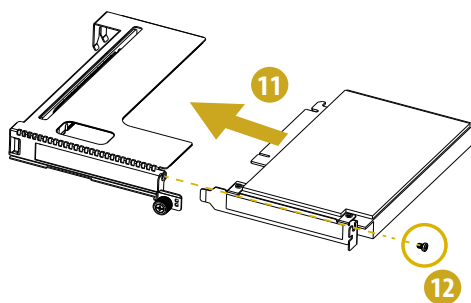
8. Align the add-in card assembly with the opening of the chassis to place it to the chassis.



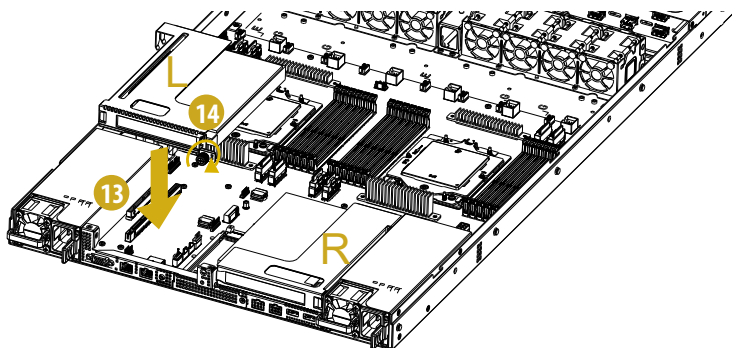
9. Remove the screw securing the blanking plate on the left bracket.
10. Slide the blanking plate out sideways.



11. Install an add-in card to the left bracket.
12. Secure the add-in card to the bracket with the screw.



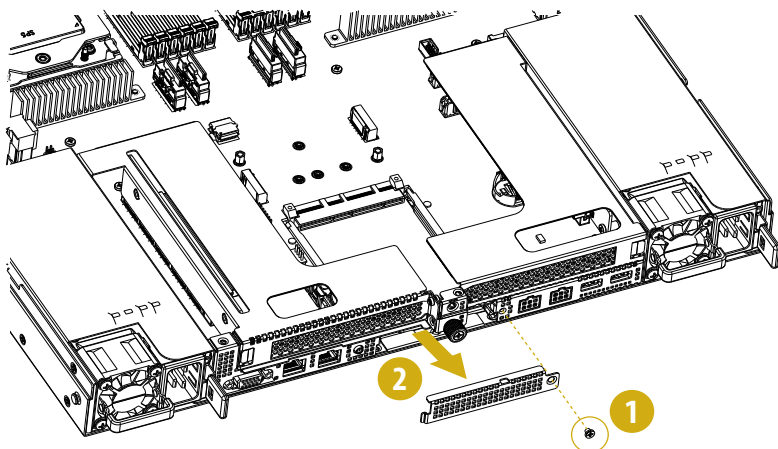
13. Align the add-in card assembly with the opening of the chassis to place it to the chassis.
14. Hand-tighten the thumbscrew to secure the left and right assemblies to the chassis.



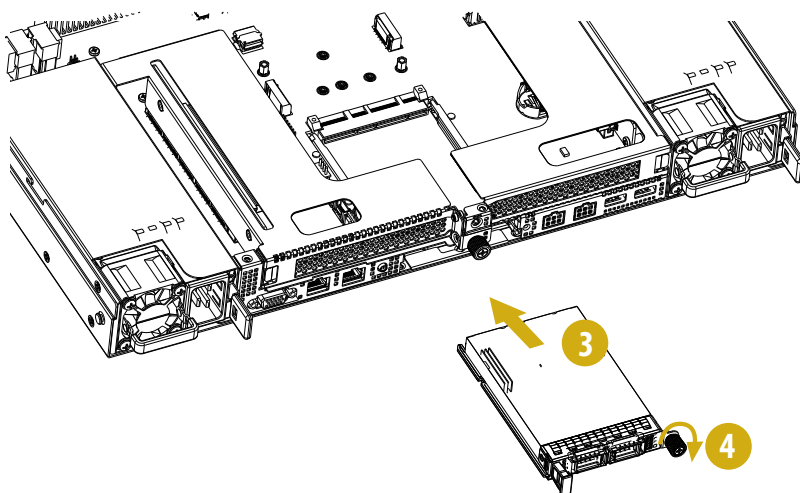
3.6 OCP Card

Installing the OCP Card

1. Remove the screw securing the slot cover to the chassis.
2. Remove the slot cover.



3. Install the OCP card into the slot.
4. Make sure the card is well seated and hand-tighten the thumbscrew on the face plate.



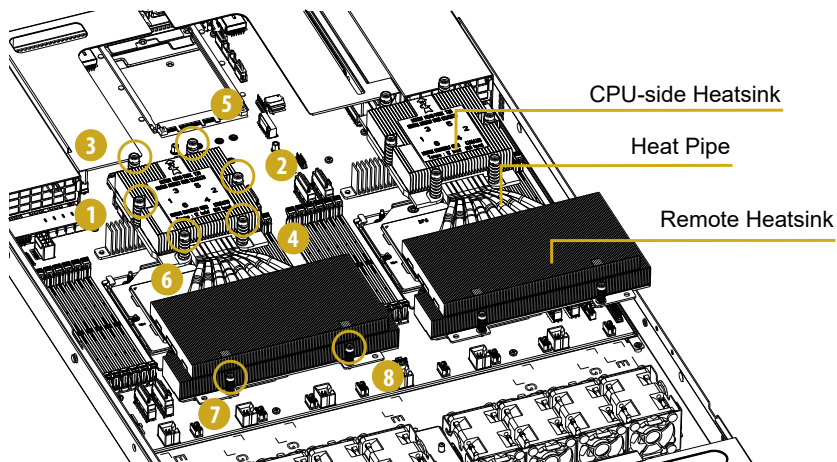
3.7 EVAC

EVAC (Enhanced Volume Air Cool Solution) is a heatsink module used for improving CPU cooling capability and memory cooling balance. The EVAC consists of CPU-side heatsink, heat pipe, and remote heatsink.

Installing the EVAC

1. To avoid damaging the heat pipe, make sure to hold both the CPU-side heatsink and remote heatsink simultaneously and place the EVAC on the chassis.
2. Set a T20 Torx screwdriver to a torque of 10.8 ~ 13in-lbf (12.5 ~ 15kg-cm).
3. Tighten the screws in a sequential order 1 > 2 > 3 > 4 > 5 > 6 > 7 > 8.

Note: Loosen the screws in a reverse order.

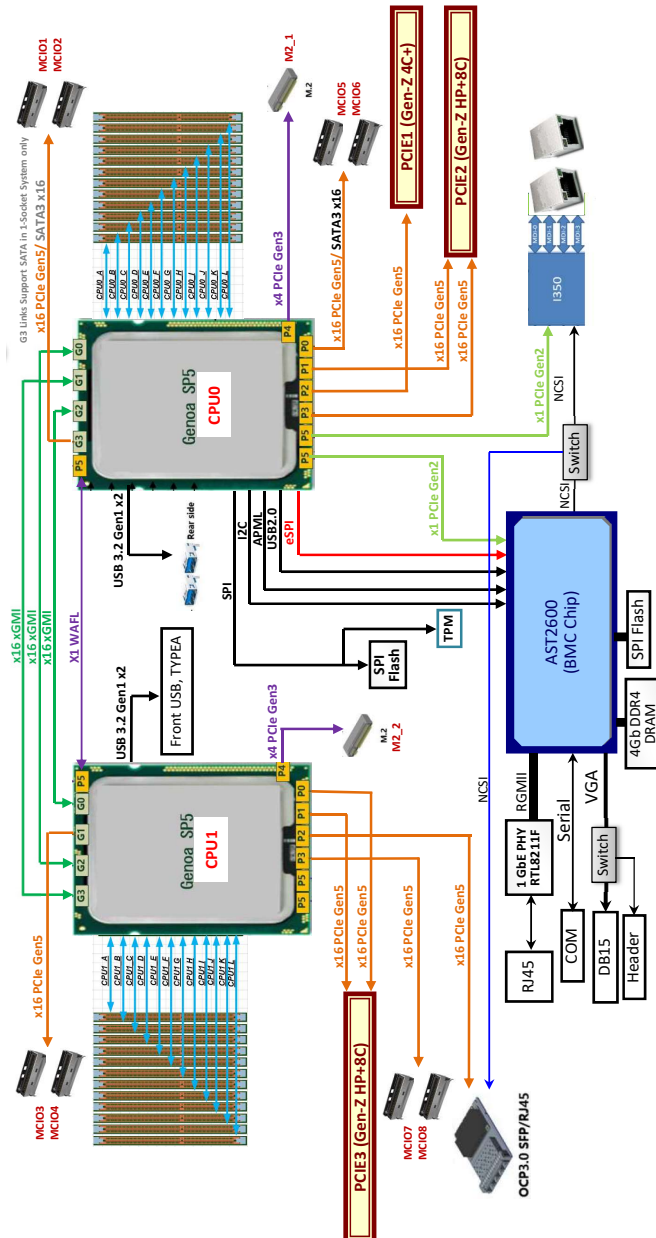


No.	Description
1	GPU Power Connector (GPU_PWR2)
2	GPU Power Connector (GPU_PWR1)
3	Power Supply Unit Connector (PSU_CON1)
4	OCF Power Connector (OCF_PWR1)
5	Auxiliary Panel Header (AUX_PANEL1)
6	HDD Backplane Power Connector (HSBP_PWR1)
7	3 288-pin DDR5 DIMM Slots (DDR5_G1, DDR5_I1, DDR5_K1)
8	3 288-pin DDR5 DIMM Slots (DDR5_H1, DDR5_J1, DDR5_L1)
9	SATA SGPIO Connector (SATA_SGPIO2)
10	SATA SGPIO Connector (SATA_SGPIO1)
11	System Panel Header (PANEL1)
12	CPU0 Fan Connector (CPU0_FAN1)
13	SATA SGPIO Connector (SATA_SGPIO3)
14	Auxiliary Panel Header (AUX_PANEL2)
15	Non Maskable Interrupt Button (NMI_BTN1)
16	System Fan Connector (FAN7_1) <i>(for 1U system)</i>
17	Backplane PCI Express Hot-Plug Connector (CPU0_HSBP1)
18	SATA SGPIO Connector (SATA_SGPIO4)
19	Mini Cool Edge IO Connector (MCIO1)
20	Mini Cool Edge IO Connector (MCIO2)
21	System Fan Connector (FAN1) <i>(for 2U system)</i>
22	System Fan Connector (FAN1_1) <i>(for 1U system)</i>
23	System Fan Connector (FAN2_1) <i>(for 1U system)</i>
24	System Fan Connector (FAN2) <i>(for 2U system)</i>
25	AMD Socket SP5 (LGA6096) (CPU0)
26	System Fan Connector (FAN3_1) <i>(for 1U system)</i>
27	3 288-pin DDR5 DIMM Slots (DDR5_A1, DDR5_C1, DDR5_E1)
28	3 288-pin DDR5 DIMM Slots (DDR5_B1, DDR5_D1, DDR5_F1)
29	System Fan Connector (FAN3) <i>(for 2U system)</i>
30	3 288-pin DDR5 DIMM Slots (DDR5_T1, DDR5_V1, DDR5_X1)
31	System Fan Connector (FAN8_1) <i>(for 1U system)</i>
32	3 288-pin DDR5 DIMM Slots (DDR5_S1, DDR5_U1, DDR5_W1)
33	System Fan Connector (FAN4) <i>(for 2U system)</i>
34	System Fan Connector (FAN4_1) <i>(for 1U system)</i>

No.	Description
35	System Fan Connector (FAN5_1) <i>(for 1U system)</i>
36	System Fan Connector (FAN5) <i>(for 2U system)</i>
37	AMD Socket SP5 (LGA6096) (CPU1)
38	System Fan Connector (FAN6_1) <i>(for 1U system)</i>
39	Mini Cool Edge IO Connector (MCIO3)
40	System Fan Connector (FAN6) <i>(for 2U system)</i>
41	Micro-Fit HDD Backplane Power Connector (HSBP_PWR2)
42	CPU1 Fan Connector (CPU1_FAN1)
43	Mini Cool Edge IO Connector (MCIO4)
44	PWM Configuration Header (PWM_CFG1)
45	3 x 288-pin DDR5 DIMM Slots (DDR5_N1, DDR5_P1, DDR5_R1)
46	3 x 288-pin DDR5 DIMM Slots (DDR5_M1, DDR5_O1, DDR5_Q1)
47	GPU Power Connector (GPU_PWR3)
48	Front USB 3.2 Gen1 Header (USB3_3)
49	USB 3.2 Gen1 Header (USB3_4)
50	Power Supply Unit Connector (PSU_CON2)
51	Micro-Fit Riser Card Power Connector (RISER_PWR1)
52	PCIe 5.0 x32 Slot (PCIe3)
53	Clear CMOS Pad (CLRMOS1)
54	M.2 Socket (M2_2) (Type 2242/2280)
55	NCSI Mode Jumper (NCSI_SEL1)
56	Mini Cool Edge IO Connector (MCIO8)
57	OCPI 3.0 Gen5 x16 NIC Slot (OCPI)
58	Mini Cool Edge IO Connector (MCIO7)
59	Mini Cool Edge IO Connector (MCIO6)
60	M.2 Socket (M2_1) (Type 2230/2242/2260/2280)
61	Chassis Intrusion Header (CASEOPEN1)
62	Intelligent Platform Management Bus Header (IPMB1)
63	BMC SMBus Header (BMC_SMB1)
64	BMC SMBus Header (BMC_SMB2)
65	BMC SMBus Header (BMC_SMB3)
66	TPM-SPI Header (TPM_BIOS_PH1)
67	Mini Cool Edge IO Connector (MCIO5)
68	PCIe 5.0 x32 Slot (PCIe2)

No.	Description
69	PCIE 5.0 x16 Slot (PCIE1)
70	Front VGA Header (FRNT_VGA1)

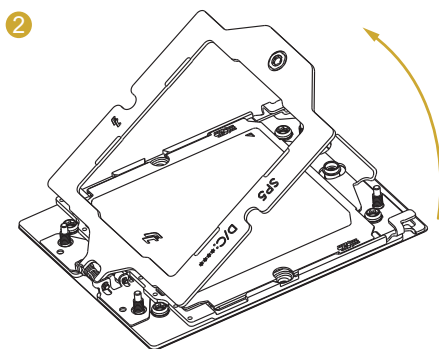
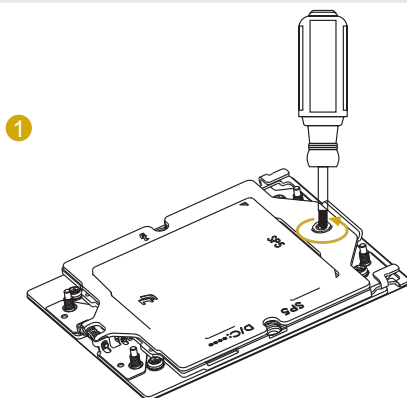
4.2 Block Diagram



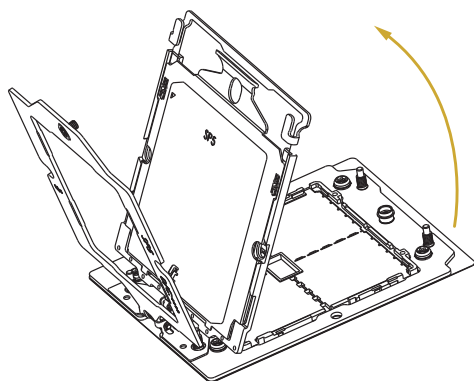
4.3 Installing the CPU (LGA 6096 Socket) and 1U12E-TURIN2 Heatsink



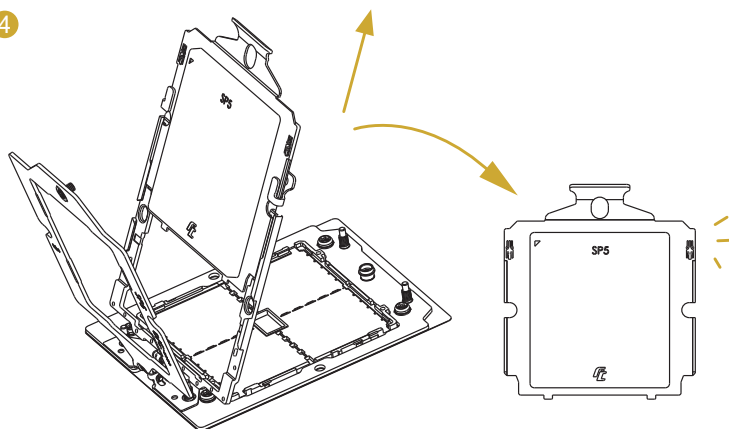
1. Before inserting the CPU into the socket, check if the PnP cap is on the socket, if the CPU surface is unclean, or if there are any bent pins in the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.
2. Unplug all power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



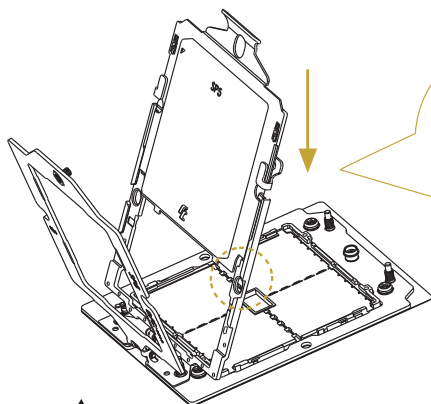
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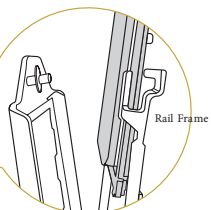
4



5



Carrier Frame with CPU



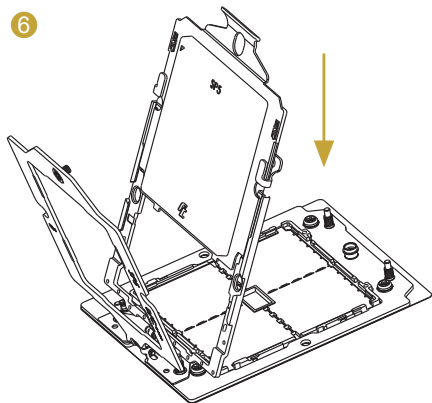
Rail Frame

Please make sure that the carrier frame with CPU is closely attached to the rail frame while inserting it.

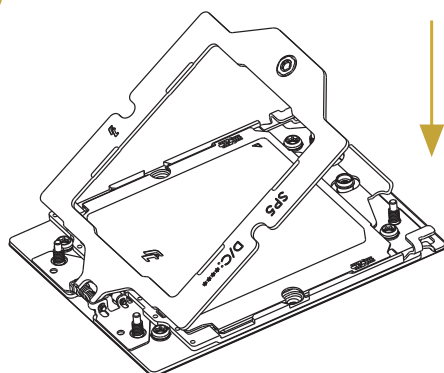


Install the carrier frame with CPU. Don't separate them.

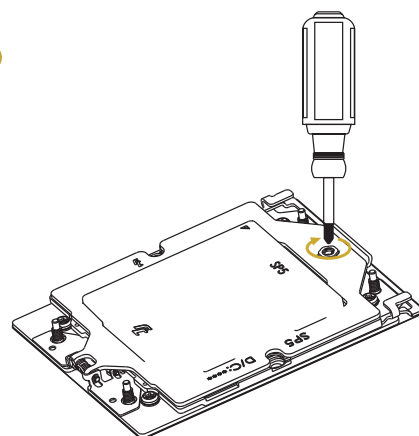
6



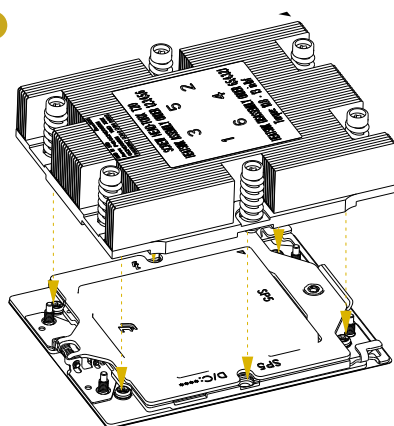
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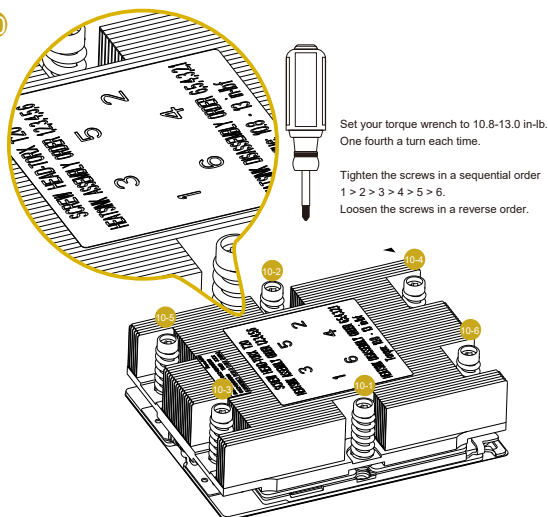
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9



10

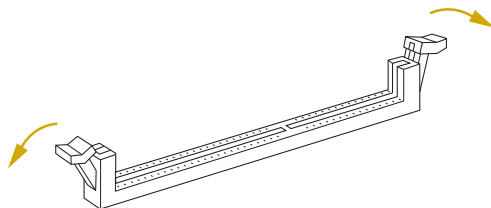


4.4 Installing the Memory Modules (DIMM)

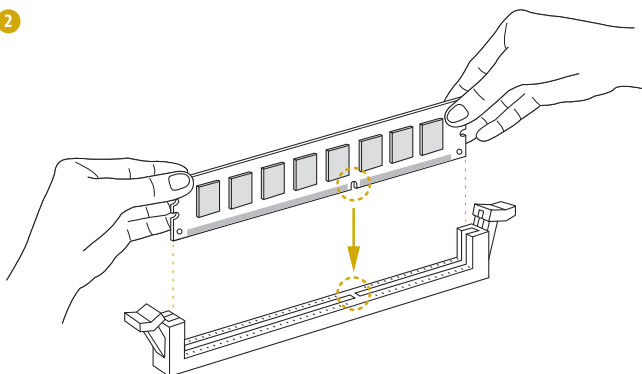


The DIMM only fits in one correct orientation. It will cause permanent damage to the server motherboard and the DIMM if forcing the DIMM into the slot at incorrect orientation. For more information about DIMM installation, refer to the server motherboard user manual.

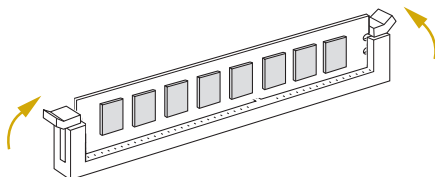
1



2



3



Appendix

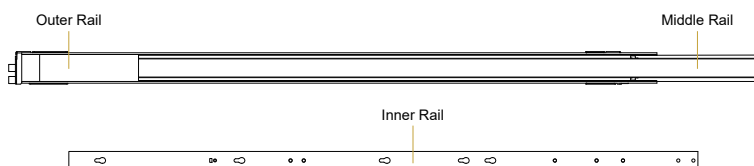
Installing the Server in a Rack

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.

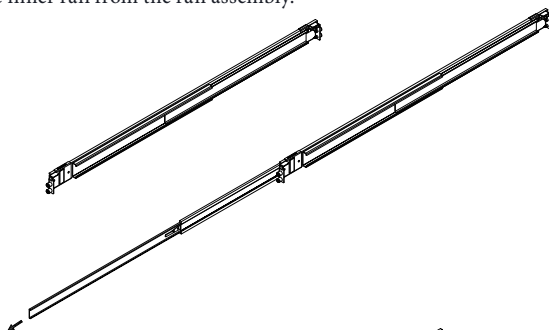
The rail assembly consists of outer, middle and inner rail.



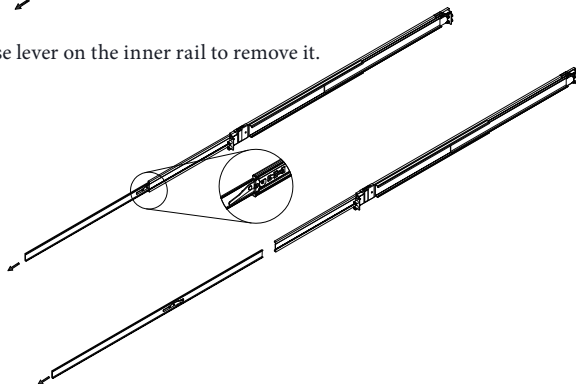
Each slide rail is labeled with either L or R. Identify prior to rail installation. Install the rail labeled with L on the left side of rack, and the rail labeled with R on the right side of rack.

Release the inner rail from the outer rail

1. Fully extend the inner rail from the rail assembly.

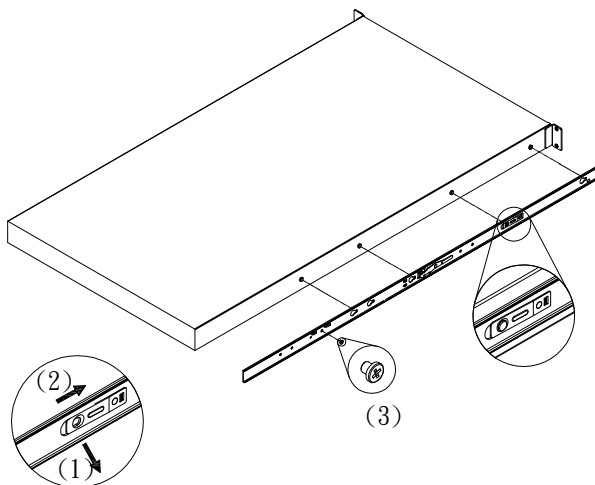


2. Press the release lever on the inner rail to remove it.



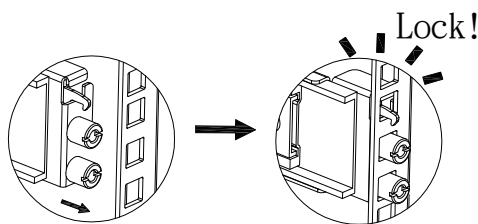
Attach the inner rail to the chassis

1. Lift the clip on the inner rail.
2. Slide the inner rail toward the chassis rear.
3. Secure the inner rail to the chassis with screw.

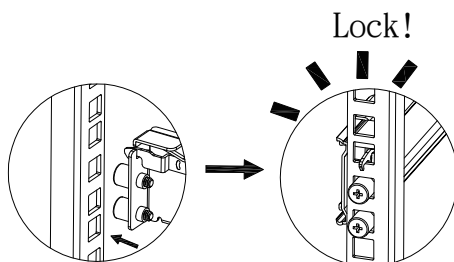


Attach the outer rail to the rack

1. Lift lever, aim the rack mount pin to the rack post and push forward.

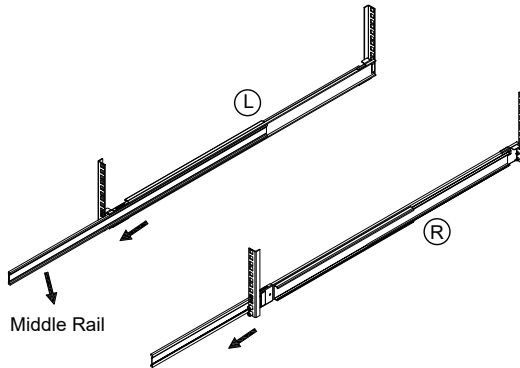


2. Lift lever, aim the rack mount pin to the rack post and pull back.

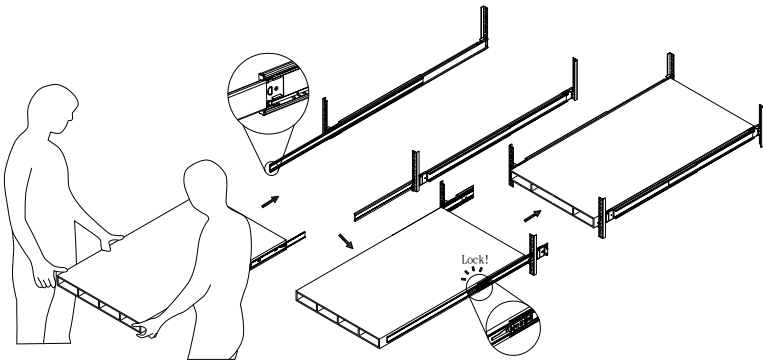


Mount the server in rack

1. Make sure the outer rail is locked to rack securely.
2. Fully extend the middle rail out of the outer rail until locked.

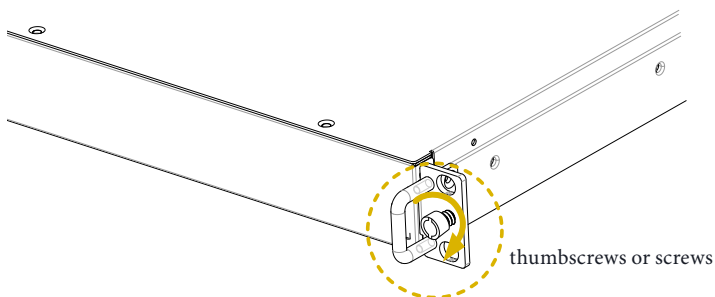


3. Aim the rail to push server into rack.



The server is heavy. For safe lifting, two or more persons are required to install the server into the rack.

4. Tighten the thumbscrews or screws on the front of server to secure the server to the rack.
5. To remove the server from the rack, reverse these instructions.



When connecting cables to the server, make sure there is enough cable slack so sliding the server in and out of the rack without accidentally unplugging a cable.

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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