



OPEN Industry Standard, Flexible Architecture

GREEN Less Heat, Less Power Consumption

STABLE Robust Design, Quality Parts

Stable and
Reliable Solution

Server/Workstation
Motherboard

2U12L8E-GENOA2

User Manual

English



Version 1.02

Published Oct. 2025

Copyright©2025 ASRock Rack Inc. All rights reserved.

Copyright Notice:

No part of this documentation may be reproduced, transcribed, transmitted, or translated in any language, in any form or by any means, except duplication of documentation by the purchaser for backup purpose, without written consent of ASRock Rack Inc.

Products and corporate names appearing in this documentation may or may not be registered trademarks or copyrights of their respective companies, and are used only for identification or explanation and to the owners' benefit, without intent to infringe.

Disclaimer:

Specifications and information contained in this documentation are furnished for informational use only and subject to change without notice, and should not be constructed as a commitment by ASRock Rack. ASRock Rack assumes no responsibility for any errors or omissions that may appear in this documentation.

With respect to the contents of this documentation, ASRock Rack does not provide warranty of any kind, either expressed or implied, including but not limited to the implied warranties or conditions of merchantability or fitness for a particular purpose.

In no event shall ASRock Rack, its directors, officers, employees, or agents be liable for any indirect, special, incidental, or consequential damages (including damages for loss of profits, loss of business, loss of data, interruption of business and the like), even if ASRock Rack has been advised of the possibility of such damages arising from any defect or error in the documentation or product.



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.

Contents

Chapter 1 Introduction	1
1.1 Shipping Box Contents	2
1.2 Specifications	3
Chapter 2 Server System Overview	6
2.1 System Components	6
2.2 Internal Features	7
2.3 System Front Panel	9
2.4 System Rear Panel	10
2.5 Front I/O Panel	11
2.6 PSU LED	13
2.7 Hard Drive Tray LED	14
Chapter 3 Hardware Installation and Maintenance	15
3.1 Server Top Cover	16
3.2 Hard Drive	20
3.3 Power Supply	25
3.4 System Fan	27
3.5 Add-in Card	28
3.6 OCP Card	31
Chapter 4 Server Motherboard (GENOA2D24TM3-2L+/2U)	33
4.1 Layout	33
4.2 Block Diagram	37
4.3 Installing the CPU and Heatsink (LGA6096 Socket)	38
4.4 Installing the Memory Modules (DIMM)	43
Appendix	44
Installing the Server in a Rack	44

Chapter 1 Introduction

Thank you for purchasing 2U12L8E-GENOA2, 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
2U12L8E-GENOA2	GENOA2D24TM3-2L+/2U



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: 2U12L8E-GENOA2	1
CPU Heatsink	2
Rail Kit	1
Accessory Box - 2 Power Cords - 1 Quick Installation Guide - 2 Screws for M.2	1



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

1.2 Specification

2U12L8E-GENOA2	
System	
Form Factor	2U Rackmount
Dimension	770.0 x 438.0 x 86.4mm (30.3" x 17.2" x 3.4")
Support MB	GENOA2D24TM3-2L+/2U
Front Panel	
Button	Power, reset, UID
LED	Power, LAN 1/2, hard drive activity, system status
I/O Port	1 Type-A (USB3.2 Gen1), 1 Type-A (USB2.0), 1 DB15 (VGA)
External Drive Bay / Storage	
Front Side Drive Bay	8 Hot-swap 3.5"/2.5" NVMe (PCIe4.0 x4)/SATA drive bays 4 Hot-swap 3.5"/2.5" SATA drive bays
Front Side Backplane	12-port NVMe/SATA/SAS* passive backplanes *SAS drive is only supported with additional RAID/HBA cards.
Internal Side	2 Fixed 2.5" NVMe (PCIe5.0 x4) drive bays 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	2000W
Efficiency	80-PLUS Platinum
System Fan	
Fan	6 PWM hot-swap 60x38mm fans
Processor System	
CPU	Supports AMD EPYC™ 9005*/9004 (with AMD 3D V-Cache™ Technology) and 97x4 series processors *A BIOS update is required to support AMD EPYC™ 9005 series processors.
Socket	Dual Socket SP5 (LGA 6096)
Thermal Design Power	Up to 360W* *Over 210W is conditionally supported. Please contact ASRock Rack for suggested storage configurations.
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	4800MHz
Voltage	1.1V
PCIe Expansion Slot	
PCIe x16	Rear: 2 FHHL PCIe5.0 x16 or 1 FHHL PCIe5.0 x16, 2 FHHL PCIe5.0 x8 2 FHHL PCIe5.0 x16 or 1 FHHL PCIe5.0 x16, 2 FHHL PCIe5.0 x8 1 HHHL PCIe5.0 x16 or 2 HHHL PCIe5.0 x8
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
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)

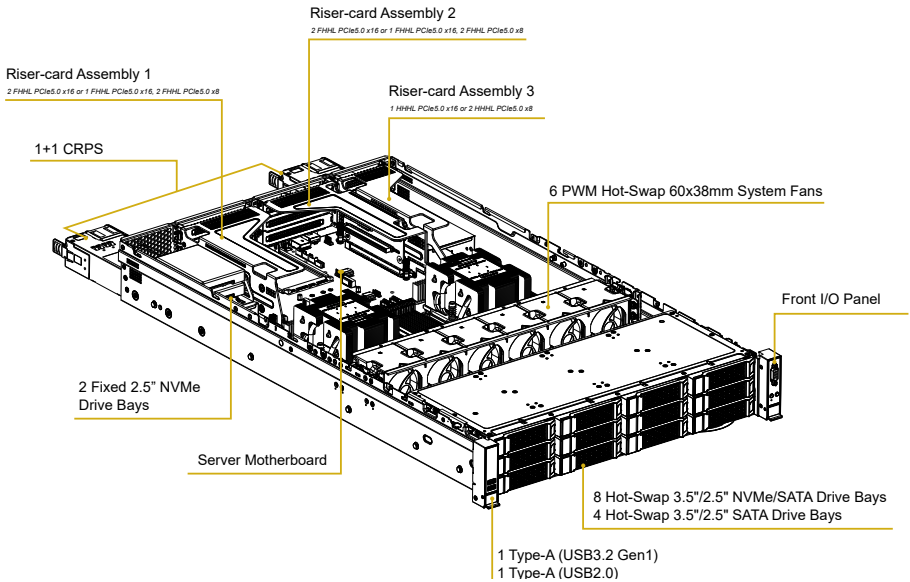
The functions are supported depending on the type of the server motherboard. Refer to the server motherboard user manual for detailed information.



Chapter 2 Server System Overview

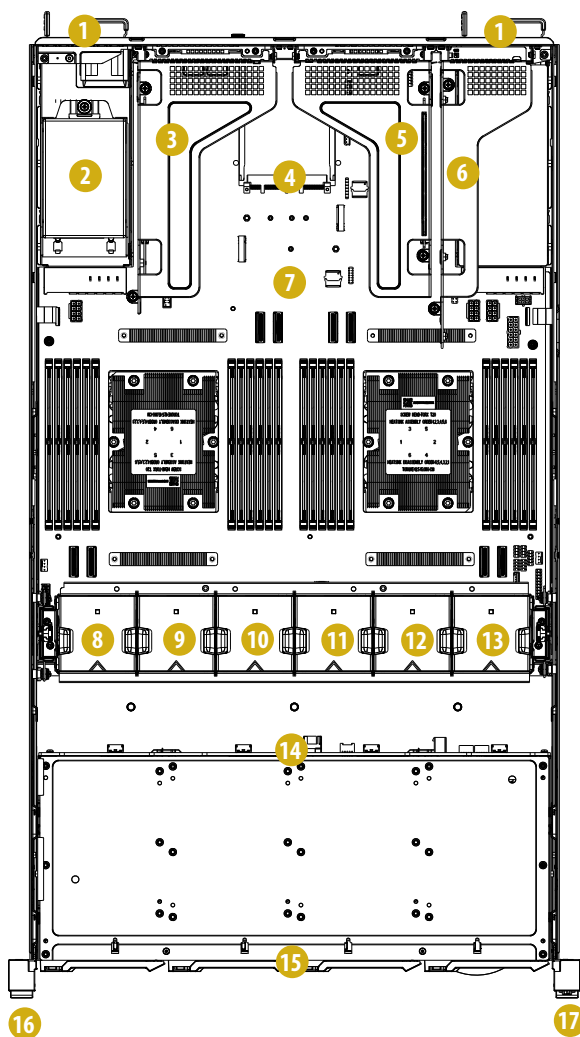
This chapter provides diagrams showing the location of important components of the server system.

2.1 System Components



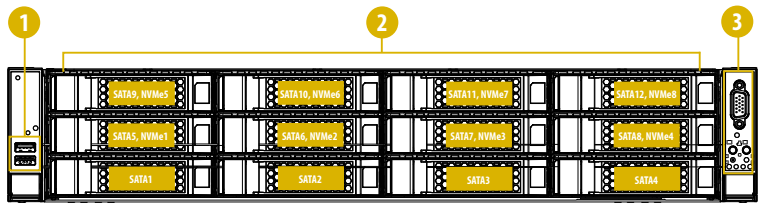
Note: The illustrations in this User Manual are for references only. The actual product may be slightly different by SKU.

2.2 Internal Features



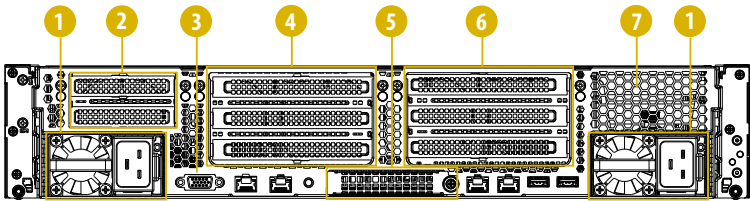
No.	Description
1	1+1 CRPS
2	2 Fixed 2.5" NVMe (PCIe5.0 x4) driver bays
3	Riser-card assembly 1: 2 FHHL PCIe5.0 x16 or 1 FHHL PCIe5.0 x16, 2 FHHL PCIe5.0 x8
4	1 OCP NIC 3.0 (PCIe5.0 x16)
5	Riser-card assembly 2: 2 FHHL PCIe5.0 x16 or 1 FHHL PCIe5.0 x16, 2 FHHL PCIe5.0 x8
6	Riser-card assembly 3: 1 HHHL PCIe5.0 x16 or 2 HHHL PCIe5.0 x8
7	Server motherboard
8	Hot-swap system fan (FAN6)
9	Hot-swap system fan (FAN5)
10	Hot-swap system fan (FAN4)
11	Hot-swap system fan (FAN3)
12	Hot-swap system fan (FAN2)
13	Hot-swap system fan (FAN1)
14	12-port NVMe/SATA/SAS* passive backplane (BPB) *SAS drive is only supported with additional RAID/HBA cards
15	8 Hot-swap 3.5"/2.5" NVMe (PCIe4.0 x4)/SATA drive bays 4 Hot-swap 3.5"/2.5" SATA drive bays
16	1 Type-A (USB2.0) port 1 Type-A (USB3.2 Gen1) port
17	Front I/O panel

2.3 System Front Panel



No.	Description
1	Upper: 1 Type-A (USB2.0) port Lower: 1 Type-A (USB3.2 Gen1) port
2	Upper: 8 Hot-swap 3.5"/2.5" NVMe (PCIe4.0 x4)/SATA drive bays Lower: 4 Hot-swap 3.5"/2.5" SATA drive bays
3	Front I/O panel

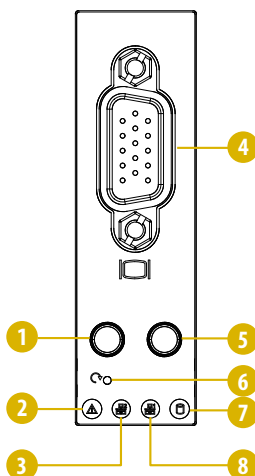
2.4 System Rear Panel



Redundant PSU 1+1: Only one PSU is allowed to be removed while the server is running.

No.	Description
1	1+1 CRPS
2	1 HHHL PCIe5.0 x16 or 2 HHHL PCIe5.0 x8 (Riser-card Assembly 3)
3	Rear I/O panel <i>(depends on the specification of the server motherboard)</i>
4	2 FHHL PCIe5.0 x16 or 1 FHHL PCIe5.0 x16, 2 FHHL PCIe5.0 x8 (Riser-card Assembly 2)
5	1 OCP NIC 3.0 (PCIe5.0 x16) card slot
6	2 FHHL PCIe5.0 x16 or 1 FHHL PCIe5.0 x16, 2 FHHL PCIe5.0 x8 (Riser-card Assembly 1)
7	Rear vent

2.5 Front I/O Panel



No.	Description
1	Power button w/ LED
2	System status LED
3	LAN2 LED
4	1 DB15 (VGA) port
5	UID button w/ LED
6	Reset button
7	Hard drive activity LED
8	LAN1 LED

Power Button

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

UID Button

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

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.

Status LED Definitions

Power LED	
Status	Description
Off	Power off
Green	Power on

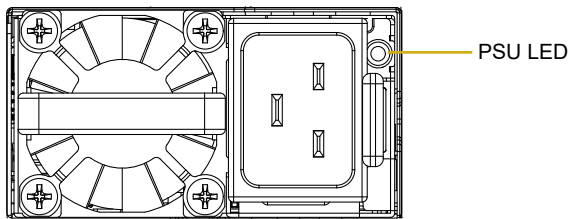
System Status LED	
Status	Description
Off	Running or normal operation
Red	Signal error

LAN1 and LAN2 LEDs	
Status	Description
Off	No access
Green	Link between system and network

UID LED	
Status	Description
Off	System identification is disabled.
Blue	System identification is active.

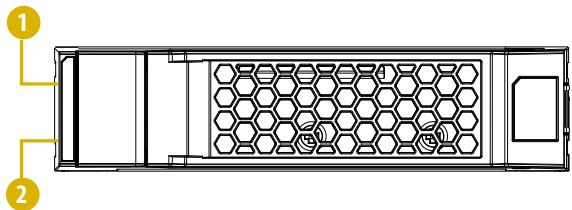
Hard Drive Activity LED	
Status	Description
Off	Hard drive is idle.
Amber	Hard drive is active.

2.6 PSU LED



PSU Status LED	
Status	Description
Off	NO AC power to all power supplies
Green	Output on and ok
Blinking Green (1Hz)	- PSU standby state AC present/Only 12VSB on - Power supply is cold standby state or always standby state as defined in the Cold Redundancy section of the CRPS Common Requirements Specification
Blinking Green (2Hz)	FW updating for power supply
Amber	- AC cord unplugged, or AC power lost; with a second power supply in parallel still with AC input power. - Power supply critical event is causing a shutdown; failure, over current, short circuit, over voltage, fan failure, over temperature
Blinking Amber (1Hz)	Power supply warning events where the power supply continues to operate; high temp, high power, high current, slow fan

2.7 Hard Drive Tray LED



No.	Description
1	Hard drive locate LED (Blue)
2	Hard drive status LED (Green/Red)

Status LED Definitions

Locate LED	Status LED		Hard Drive Status
Blue	Green	Red	Description
Off	Off	Off	Drive not present
On	On	Off	Drive present, not active
On	4Hz	Off	Drive present, active
4Hz	On	Off	Locate (identify)
On	Off	On	Fail
Off	Off	1Hz	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.



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.

- 3.5"/2.5" Hard Drives
- Riser-card Assemblies
- Power Supply Units (Pre-installed)
- System Fans (Pre-installed)
- Server Motherboard (Pre-installed)
- Hard Drive Backplane Boards (Pre-installed)
- Front Panel Boards (Pre-installed)



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

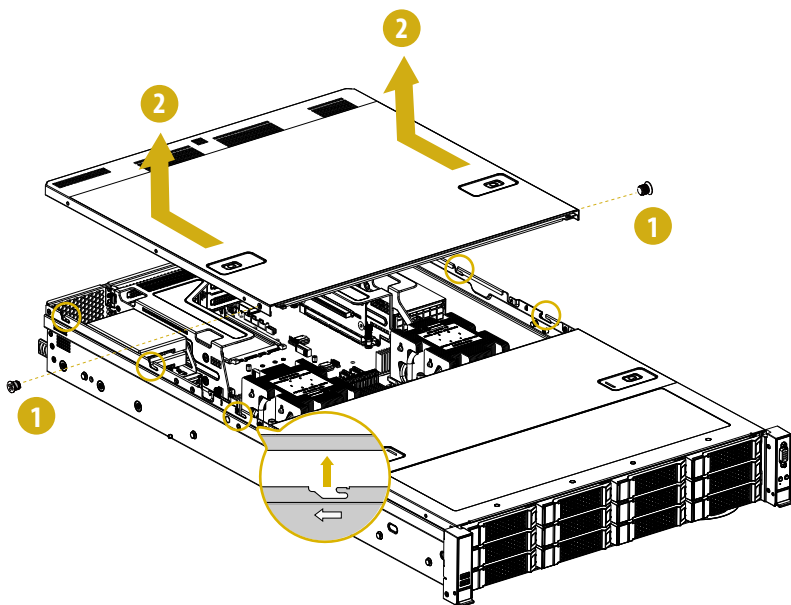
3.1 Server Top Cover

Removing the Top Cover

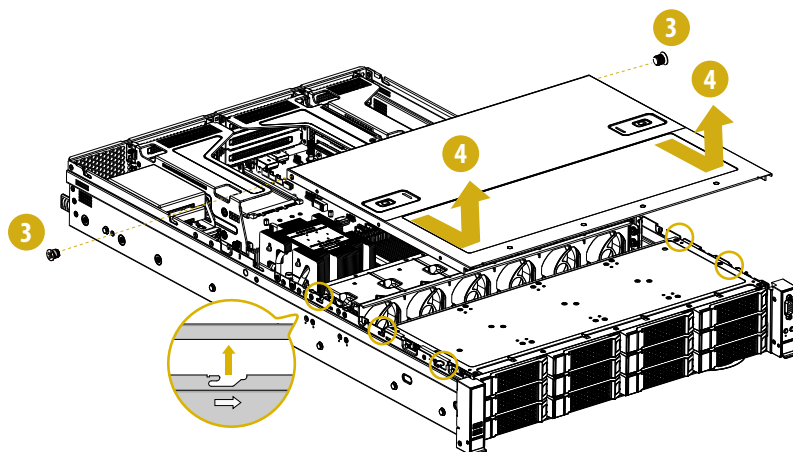


1. Before removing the top cover, power off the server and unplug the power cord.
2. The system must be operated with the chassis top cover installed to ensure proper cooling.
3. Top front cover and top rear cover can be removed and installed separately.

1. Remove the screws securing the top rear cover to the chassis.
2. Press the tabs and push straight back to release the cover from the locked position. Lift up and remove the cover.

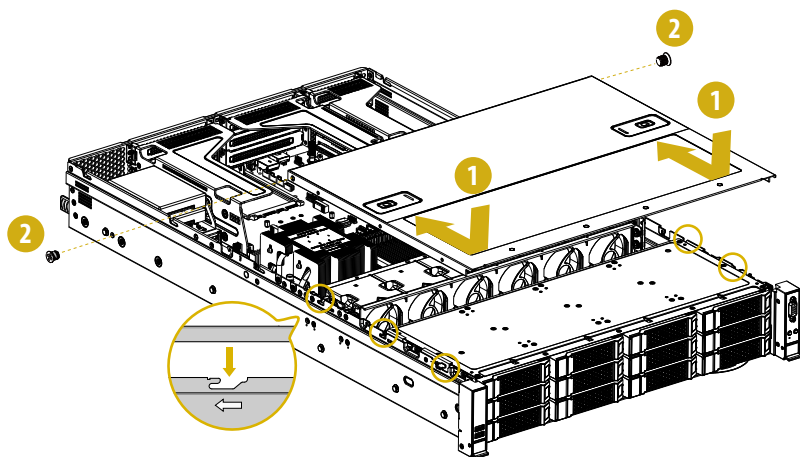


3. Remove the screws securing the top front cover to the chassis.
4. Press the tabs and push forward to release the cover from the locked position. Lift up and remove the cover.

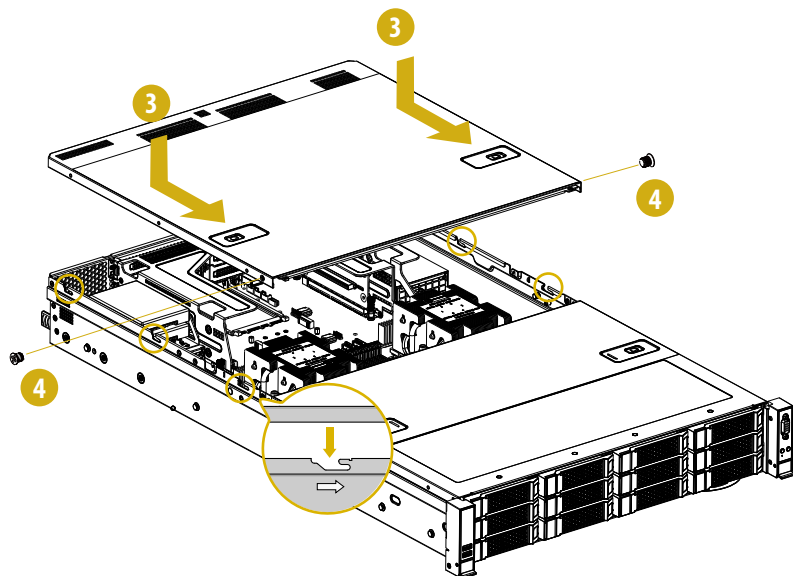


Installing the Top Cover

1. Lower the top front cover on the chassis, making sure the side latches align with the cutouts. Slide the cover toward the REAR of the chassis.
2. Secure the cover with the screws.



3. Lower the top rear cover on the chassis, making sure the side latches align with the cutouts. Slide the cover toward the FRONT of the chassis.
4. Secure the cover with the screws.

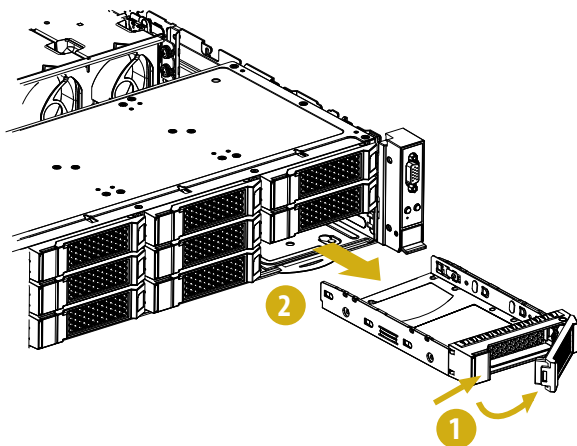


3.2 Hard Drive

Front Side

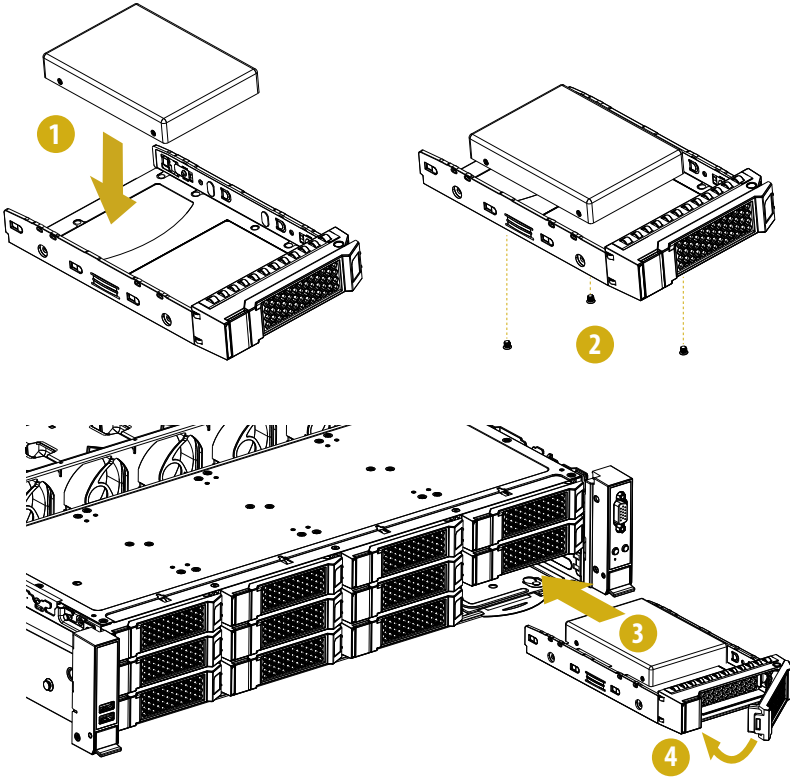
Removing the Drive Tray from the Chassis

1. Press the locking latch on the drive tray to unlock the retention lever.
2. Pull the drive tray out.



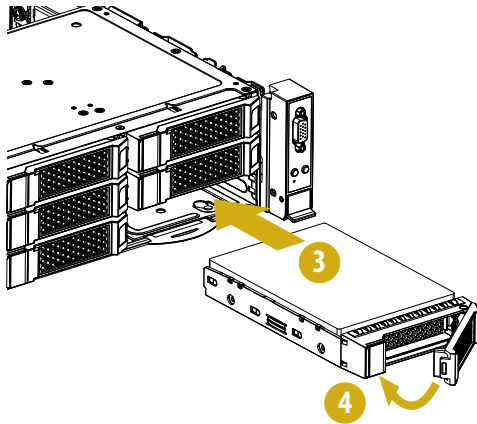
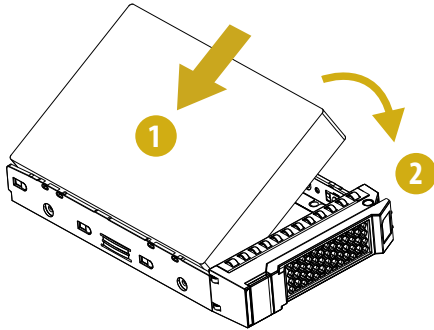
Installing the 2.5" Hard Drive

1. Carefully place the 2.5" hard drive on the drive tray.
2. Secure the 2.5" hard drive with 3 screws.
3. Slide the drive tray into the bay until the hard drive is fully seated.
4. Push in the lever to lock the drive tray in place.



Installing the 3.5" Hard Drive

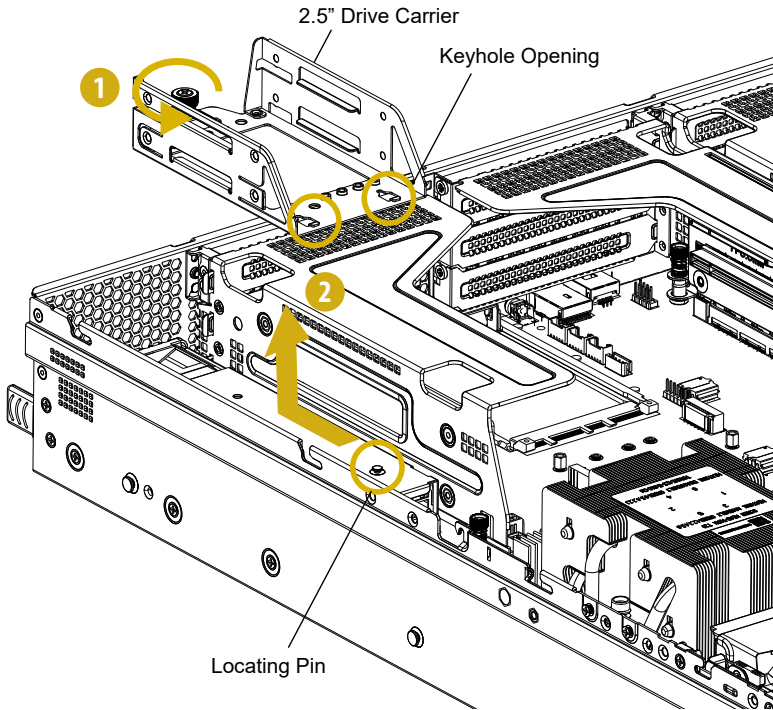
1. Engage two embossed pins into the side dimples on the tray.
2. Carefully push down the other side of hard drive until the other two embossed pins and side dimples lock in place.
3. Slide the drive tray into the bay until the hard drive is fully seated.
4. Push in the lever to lock the drive tray in place.



Internal Side

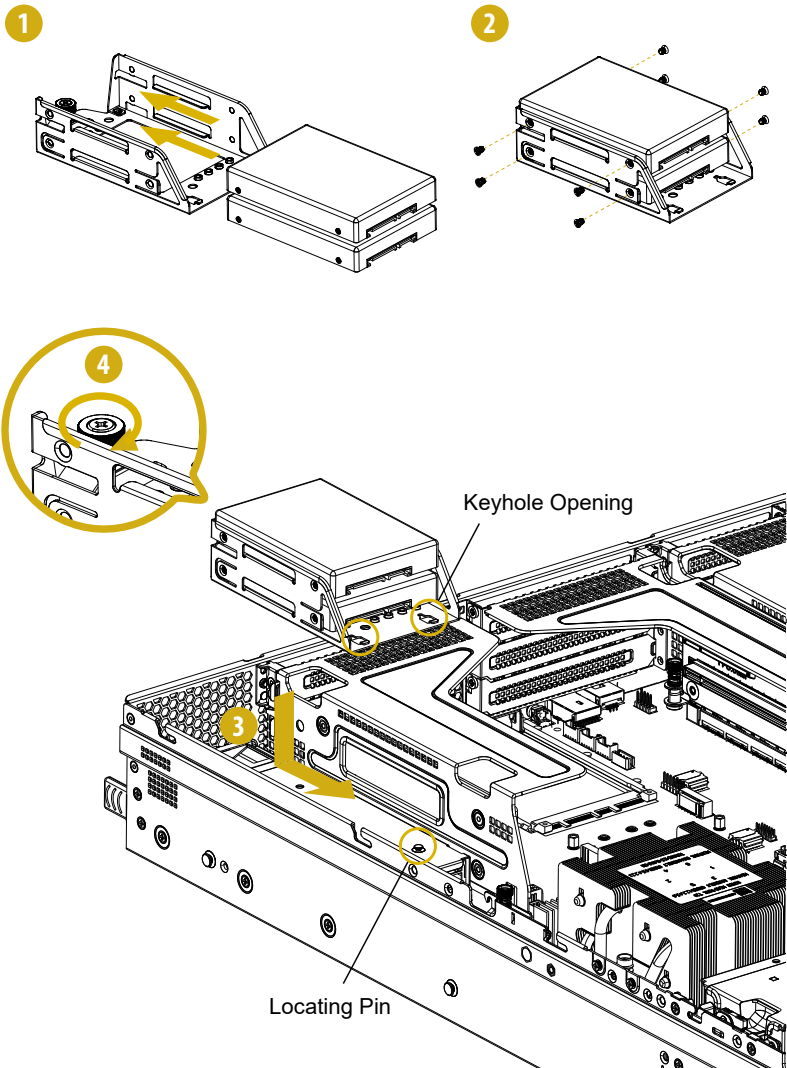
Removing the Hard Drive Carrier from the Chassis

1. Hand-release the thumbscrew securing the hard drive carrier to the chassis.
2. Push the carrier straight back to release it from the locked position. Lift up and remove the carrier.



Installing the 2.5" Hard Drive to the Chassis

1. Slide the 2.5" hard drives into the hard drive carrier with the printed circuit board side facing down. Carefully align the mounting holes on the hard drives and the carrier.
2. Secure the hard drives with the screws.
3. Place the carrier on the base plate in the chassis. Align the keyhole openings on the bottom of the carrier with the locating pins on the base plate. Pull the carrier toward the FRONT of the chassis until the carrier clips.
4. Hand-tighten the thumbscrew on the carrier to secure the hard drive assembly to the base plate.



3.3 Power Supply

The 2U12L8E-GENOA2 system can accommodate two power supply units in the bay at the rear of the chassis. Each unit provides up to 2000W of power. One PSU is required for full load operation, with the other PSU purely as a redundant, load-sharing backup. One PSU can be removed without affecting system operation.

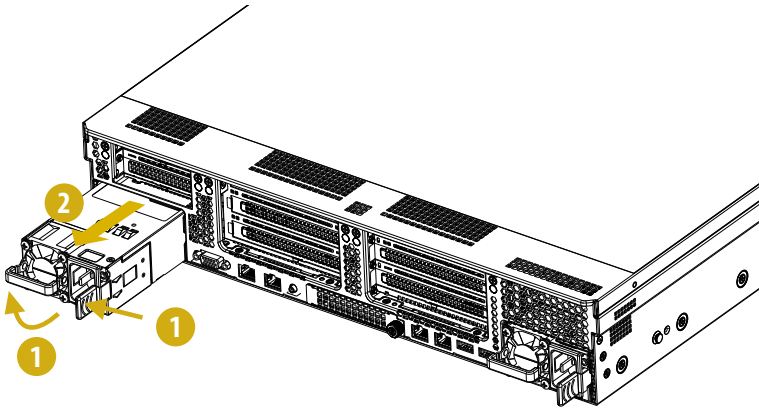
Removing the Power Supply Unit



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.

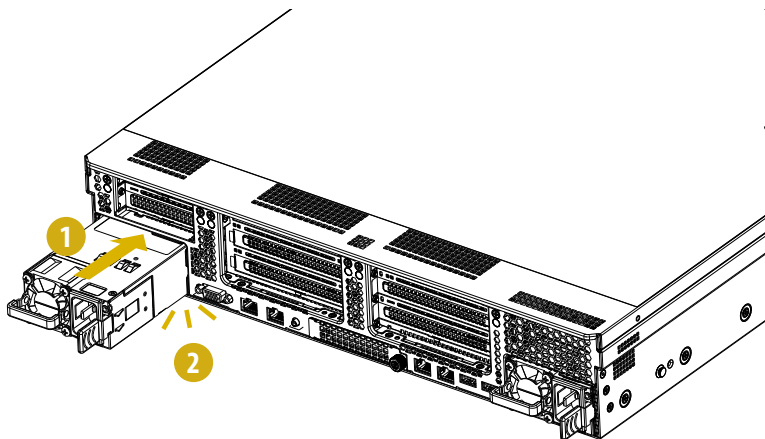
To remove a failed power supply unit, identify the failed PSU by checking the power supply LEDs on the PSUs.

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

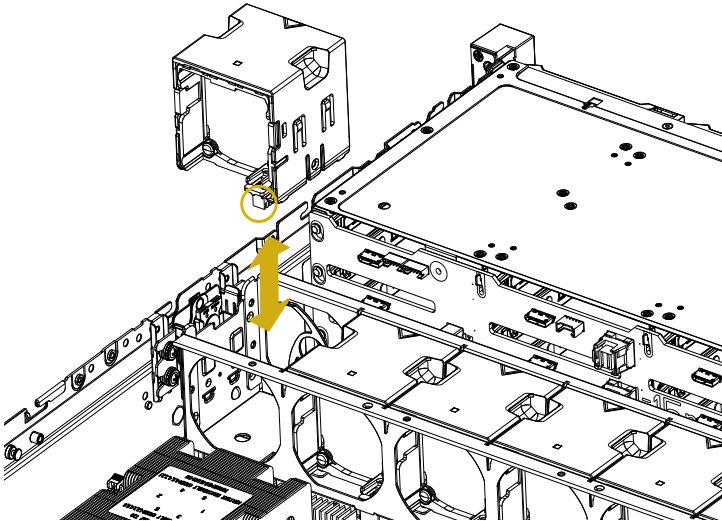
1. Align the PSU with the power supply bay. Ensure the LED appears on the upper right when installing the PSU.
2. Carefully slide the PSU all the way into the power supply bay until it clicks in place.



3.4 System Fan

Replacing the System Fan

1. Lift to remove the failed fan.
2. Align the fan connector on the bottom of the replacement fan with the fan connector in the fan cage.
3. Gently place the fan into the fan cage.
4. Make sure the fan is well seated.



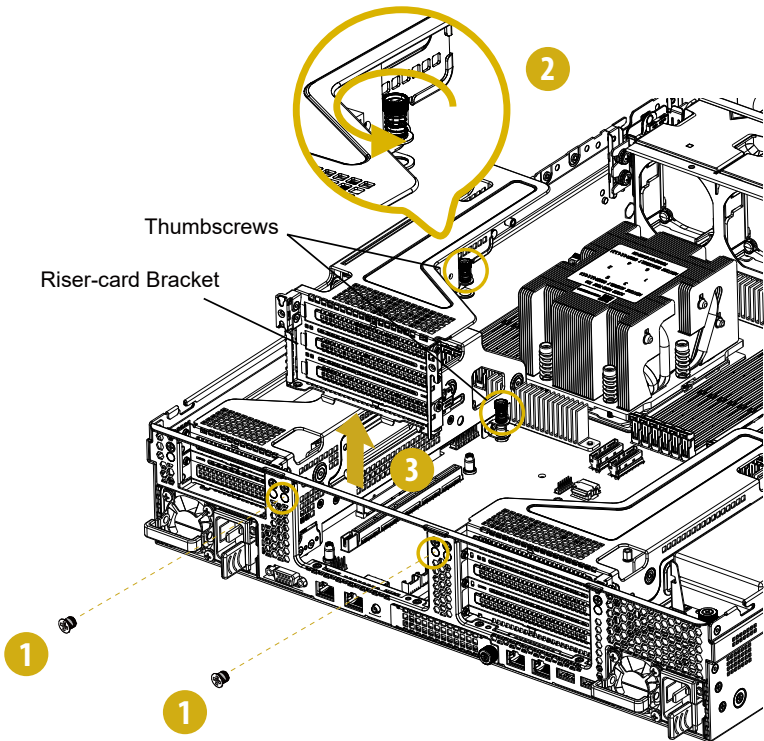
3.5 Add-in Card



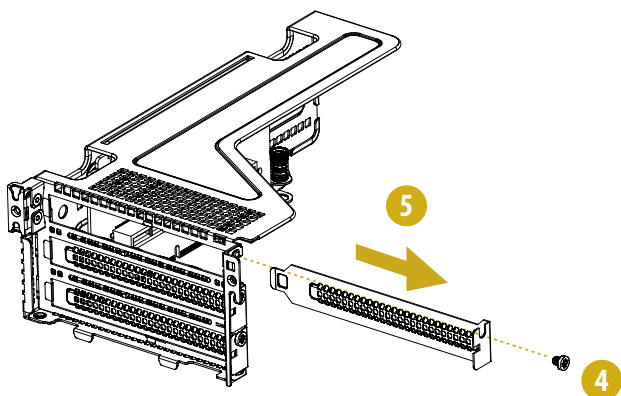
1. When installing an add-in card to the chassis, make sure the riser-card assembly have been pre-installed on the server motherboard.
2. Before installing the add-in card, power off the server and unplug the power cord.

Installing the Add-in Card

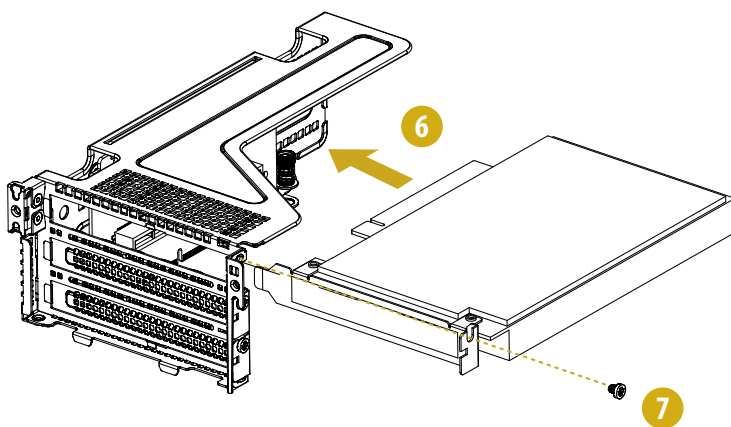
1. Remove the screws securing the riser-card bracket to the chassis.
2. Hand-release two thumbscrews on the bracket.
3. Push upward to remove the bracket from the chassis.



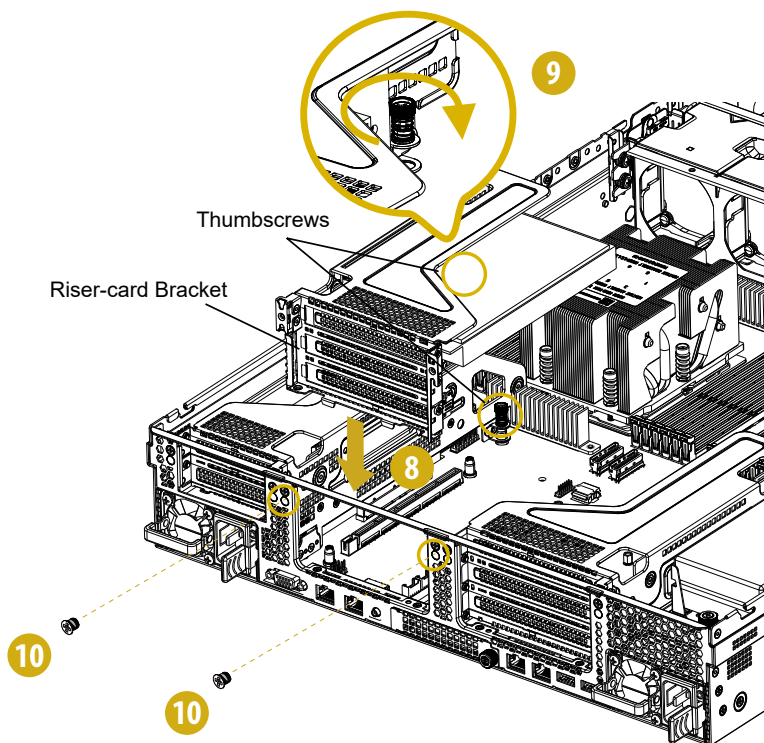
4. Remove the screw securing the blanking plate to the bracket.
5. Slide the blanking plate out sideways.



6. Install the add-in card to the bracket.
7. Tighten the screw to secure the add-in card.



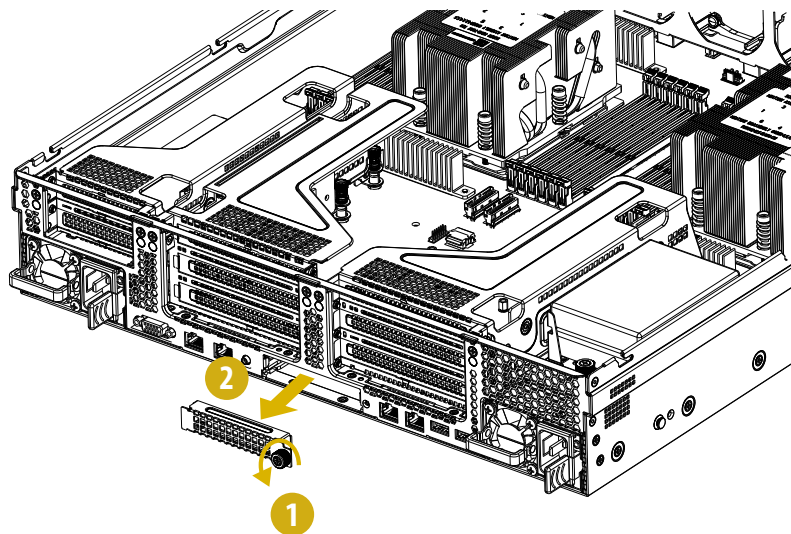
8. Align the add-in card assembly with the opening of the chassis. Install the assembly to the chassis.
9. Hand-tighten two thumbscrews on the bracket.
10. Secure the assembly to the chassis with the screws.



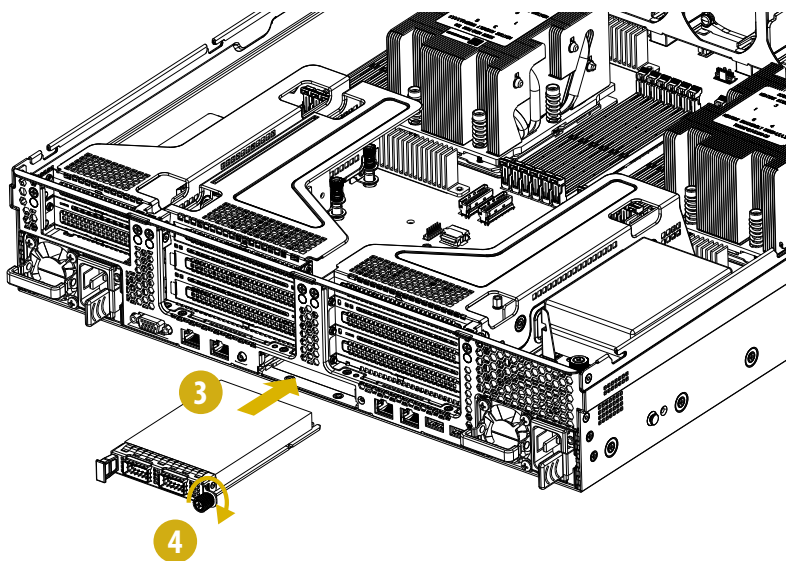
3.6 OCP Card

Installing the OCP Card

1. Hand-release the thumbscrew securing the slot cover to the chassis.
2. Remove the slot cover.

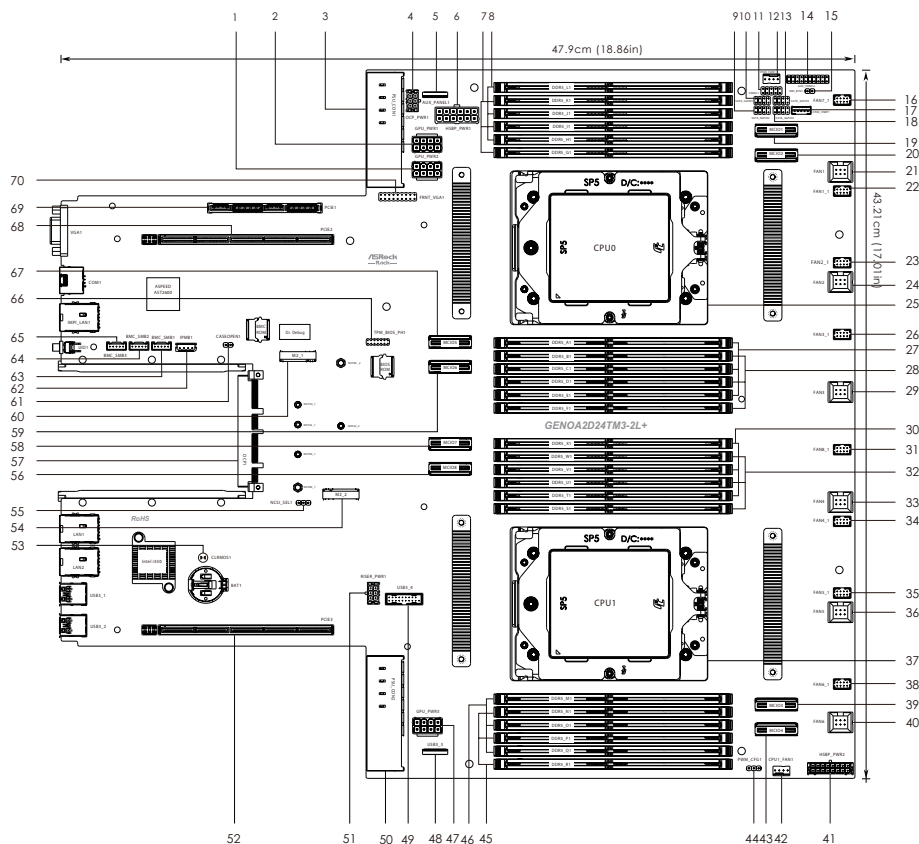


3. Install the OCP card into the slot.
4. Make sure the card is well seated and hand-tighten the thumbscrew on the face plate.



Chapter 4 Server Motherboard (GENOA2D24TM3-2L+/2U)

4.1 Layout



The illustration here is for references only. The actual layout may slightly vary depending on the model and the version used.

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 x 288-pin DDR5 DIMM Slots (DDR5_G1, DDR5_I1, DDR5_K1)
8	3 x 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 x 288-pin DDR5 DIMM Slots (DDR5_A1, DDR5_C1, DDR5_E1)
28	3 x 288-pin DDR5 DIMM Slots (DDR5_B1, DDR5_D1, DDR5_F1)
29	System Fan Connector (FAN3) <i>(for 2U system)</i>
30	3 x 288-pin DDR5 DIMM Slots (DDR5_T1, DDR5_V1, DDR5_X1)
31	System Fan Connector (FAN8_1) <i>(for 1U system)</i>
32	3 x 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>

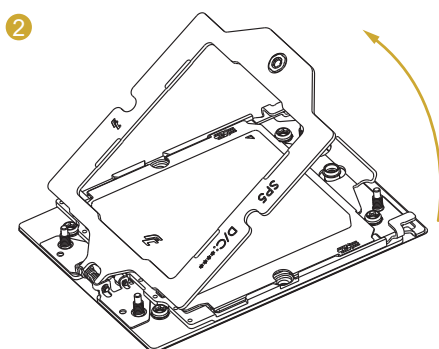
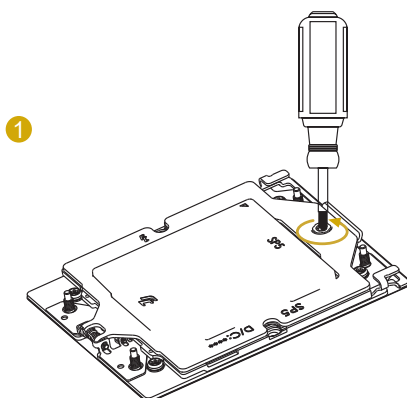
No.	Description
35	System Fan Connector (FAN5_1) <i>(for 1U system)</i>
36	System Fan Connector (FAN5) <i>(for 2U system)</i>
37	AMD Socket SP5 (LGA6096) (CPU1)
38	System Fan Connector (FAN6_1) <i>(for 1U system)</i>
39	Mini Cool Edge IO Connector (MCIO3)
40	System Fan Connector (FAN6) <i>(for 2U system)</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)

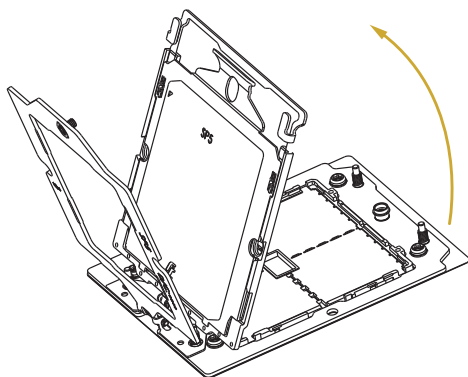
4.3 Installing the CPU and Heatsink (LGA 6096 Socket)



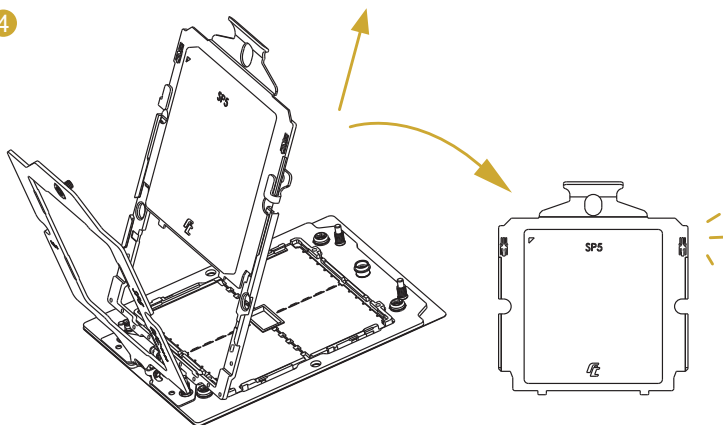
1. Before inserting the CPU into the socket, check if the PnP cap is on the socket, if the CPU surface is unclean, or if there are any bent pins in the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.
2. Unplug all power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



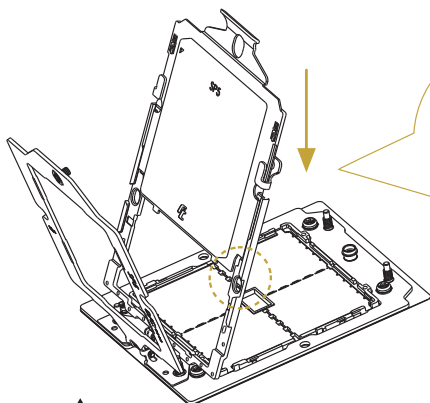
3



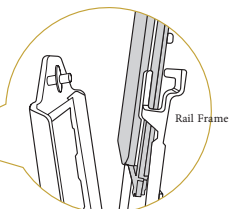
4



5



Carrier Frame with CPU



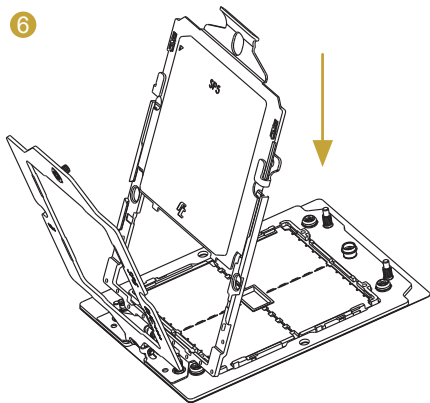
Rail Frame

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

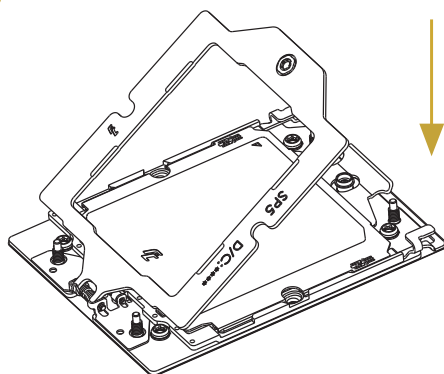


Install the carrier frame with CPU. Don't separate them.

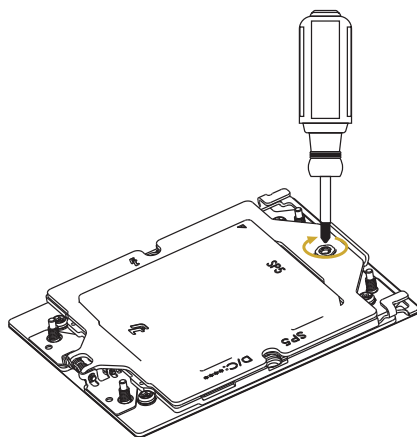
6



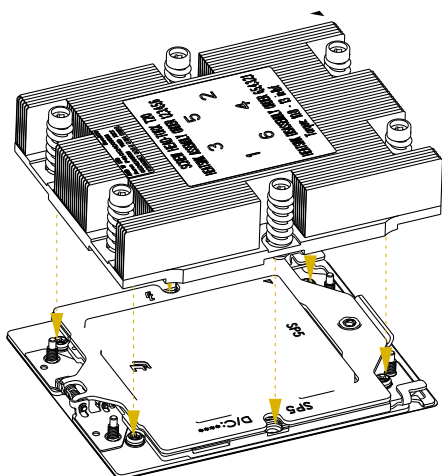
7



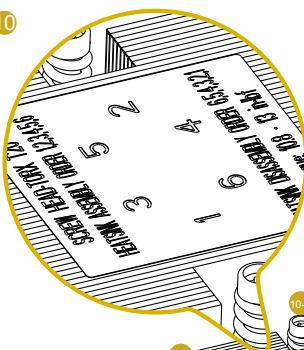
8



9



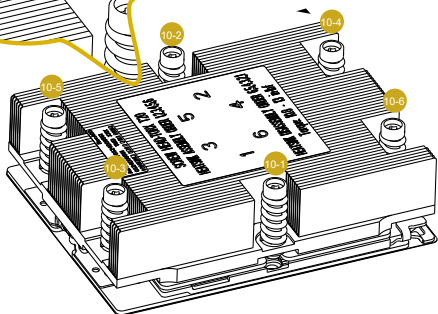
10



Set the torque wrench to 10.8-13.0 in.-lb.
One fourth a turn each time.

Tighten the screws in a sequential order
1 > 2 > 3 > 4 > 5 > 6.

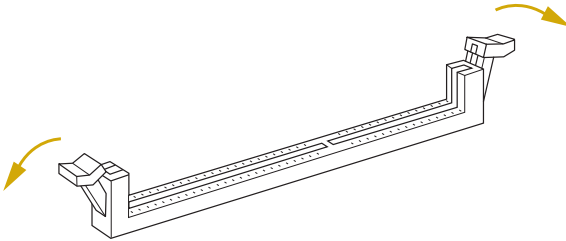
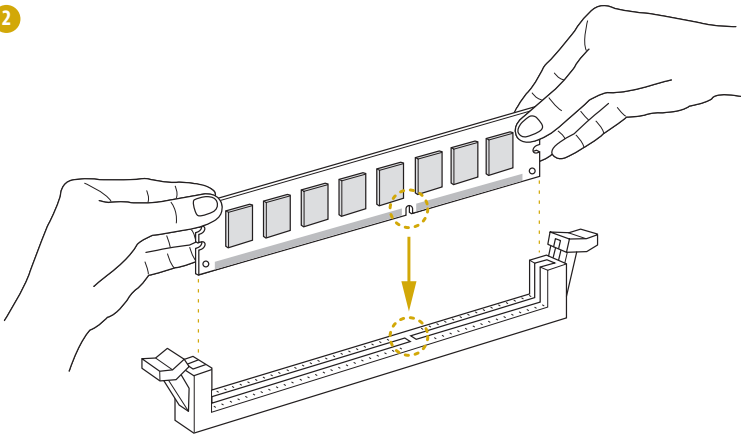
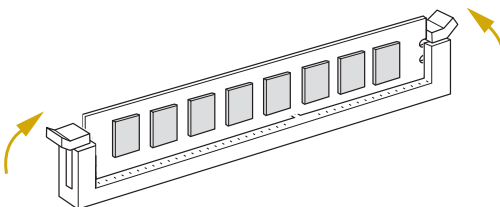
Loosen the screws in the reverse order.



4.4 Installing the Memory Modules (DIMM)



The DIMM only fits in one correct orientation. It will cause permanent damage to the server board 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

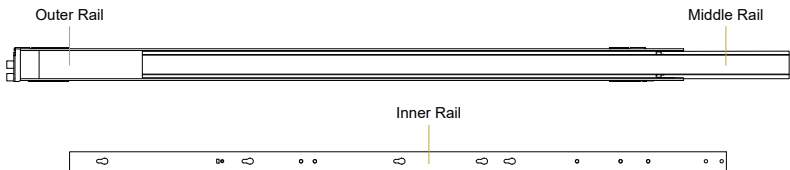
Installing the Server in a Rack

This section describes how to rackmount the 2U12L8E-GENOA2 server with slide rail assembly.



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

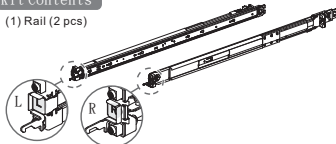
The rail assembly consists of outer, middle and inner rail.



Some slide rails are labeled with either L or R, please 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.

Kit Contents

(1) Rail (2 pcs)



(2) Screw Sack (optional but all required for rack shipping)

Ⓐ M4x4L screw (2 pcs)

Ⓑ M5x10L-P0.8 screw (2 pcs)

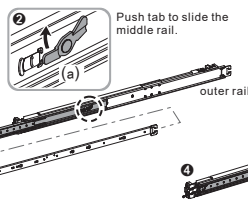
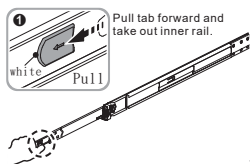
Ⓒ Washer (2 pcs)



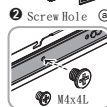
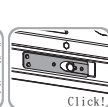
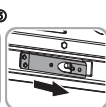
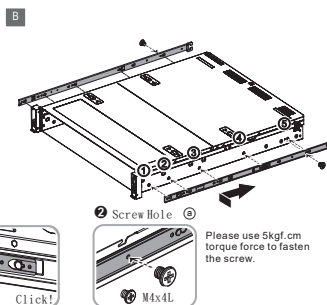
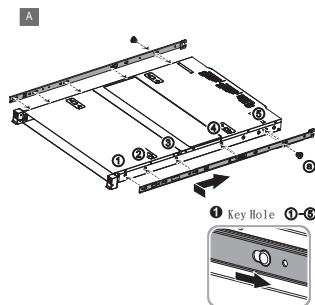
The maximum supported system weight for this rail kit is 31kg (68.3lbs). Exceeding the rail kit's specified maximum weight limit or misalignment of the server in the rack may result in failure of the rack rails, resulting in damage to the system or personal injury.

Server System Installation

- (1) Remove the inner rail member of both rail assemblies as shown in figure #1. Then slide each intermediate rail member back into the rail assembly.



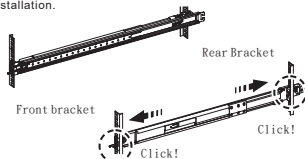
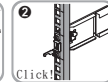
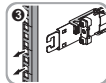
- (2) Attach the inner rail members to the system.



Please use 5kgf.cm torque force to fasten the screw.

Rail Installation

- (3) Attach the rail assemblies to the rack frame
- <1> Ensure the each rail assembly is installed level, and that each rail assembly is at the same height as the other.
 - <2> Ensure that each rail is locked to the rack frame before system installation.

**Front bracket****Rear Bracket**

for rack shipping only

Install System into Rack

(4) Install the system into the rails.

- <1> Pull out the intermediate rail member until fully extended.
- <2> Carefully align and insert the inner rail members on the system to the intermediate rail members, and horizontally push the system forward until locked.

Note: Hold the system units to push system units till engagement of 1st travel.

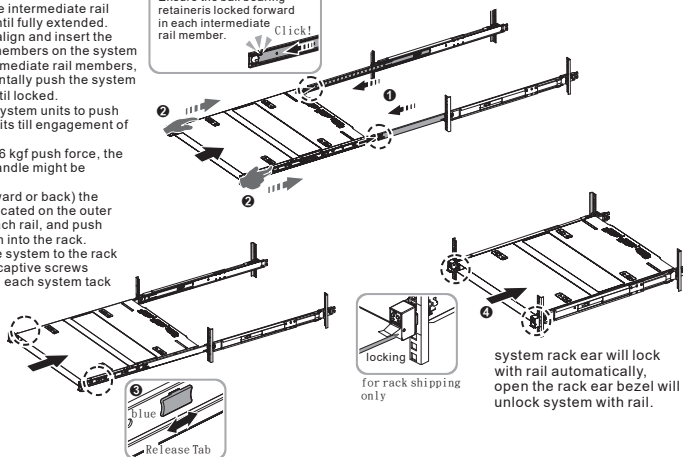
With over 6 kgf push force, the chassis handle might be damaged!

- <3> Slide (forward or back) the blue tab located on the outer edge of each rail, and push the system into the rack.

- <4> Secure the system to the rack using the captive screws located on each system rack handle.

CAUTION!

Ensure the ball bearing retainers are locked forward in each intermediate rail member.



system rack ear will lock with rail automatically, open the rack ear bezel will unlock system with rail.

Removing System from Rails

- (1) If the system is secured in the rack, loosen the system handle screws and shipping screw (if present).

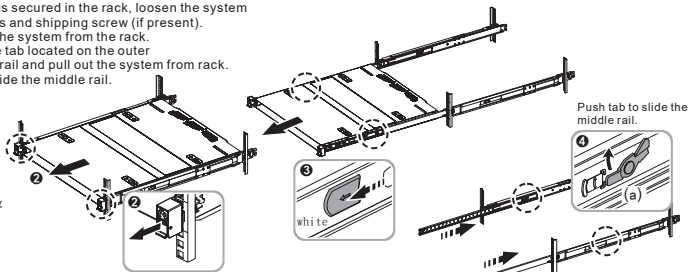
- (2) Fully extend the system from the rack.

- (3) Pull the White tab located on the outer edge of each rail and pull out the system from rack.

- (4) Push tab to slide the middle rail.



for rack shipping only



Push tab to slide the middle rail.

Rail Removal:

- (1) Remove server system from rails.

- (2) Push the latch on rear bracket outwards and pull out the bracket from rack pillar Space while holding rails.

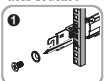
- (3) Push the hook on front bracket outwards and pull out the bracket from rack pillar.

Inner Rail Removal:

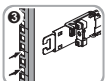
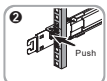
- (1) Loosen the screw.

- (2) Slightly lift up keyhole spring plate, slide inner rail forward to remove inner rail.

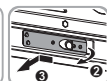
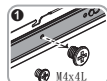
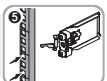
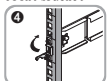
Rear Bracket



for rack shipping only



Front bracket



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>

ASRock Rack Incorporation

e-mail: ASRockRack_sales@asrockrack.com

ASRock Rack EUROPE B.V.

Bijsterhuizen 11-11

6546 AR Nijmegen

The Netherlands

Phone: +31-24-345-44-33

ASRock Rack America, Inc.

4331 Eucalyptus Ave, Chino, CA 91710 U.S.A.

Phone: +1-909-590-8308

Fax: +1-909-590-1026