OPEN
Industry Standard, Flexible Architecture

GREEN
Less Heat, Less Power Consumption

STABLE
Robust Design, Quality Parts

Stable and
Reliable Solution

Server/Workstation
Motherboard

1U12E-GENOA/2L2T

User Manual

English

Version 1.0
Published Sep 2023

Copyright Notice:

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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 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

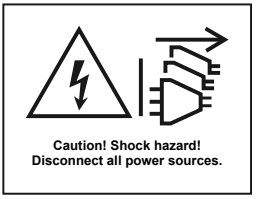
RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

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 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

Thank you for purchasing 1U12E-GENOA/2L2T, 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 disk drive trays, and other main components this system supports. If the system is pre-installed a serverboard, please refer to the user's manual of the serverboard for the information of the serverboard components, specifications and BIOS settings.

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/

English

1.1 Shipping Box Contents

Item	Quantity
1U12E-GENOA/2L2T Barebone (1U form factor)	1
System Boards (MB)*	1
Power Supply Units*	2
System Fans*	6
HDD Backplane (BPB)*	1
Power Distribution Board (PDB)*	1
Riser Cards*	2
Accessory Box	1
1U Cooler	1
Slide Rail	1
Quick Installation Guide	1

** The components are pre-installed.*

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

1.2 Specifications

1U12E-GENOA/2L2T	
System Physical Status	
Form Factor	1U Rackmount
Dimension	676.5 x 438 x 43.4 mm (26.6" x 17.2" x 1.7")
Support MB	GENOAD24QM3-2L2T/BCM
Front Panel	
Buttons	• Power • Reset • ID buttons
LEDs	• Power • LAN 1/2 • System Event • ID LEDs
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)/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 M-key (PCIe5.0 x4); support 22110/2280/2260 form factor
System Fan	
Fan	6 PWM hot-swap 40 x 56 mm fans
Power Supply	
Type	1+1 Slim PSU
Output Watts	1000W
Efficiency	80-PLUS Platinum
AC Input	100-240V, 60/50Hz

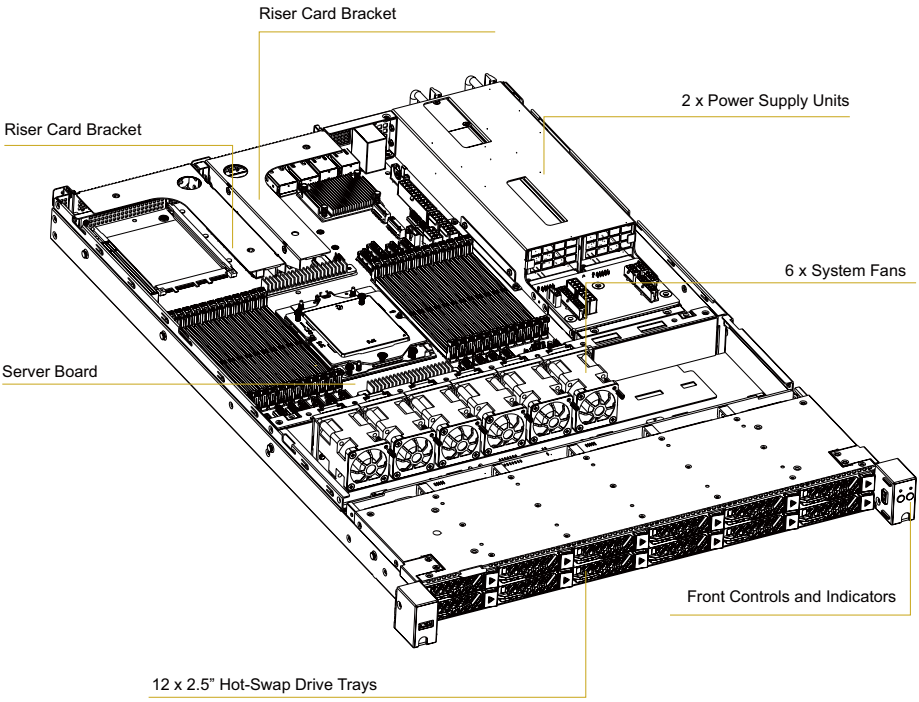
**Please be noted that the functions are supported depending on the type of the server board.*

Please refer to the user manual of the motherboard you use for detailed information about motherboard components and features.

Chapter 2 Server System Overview

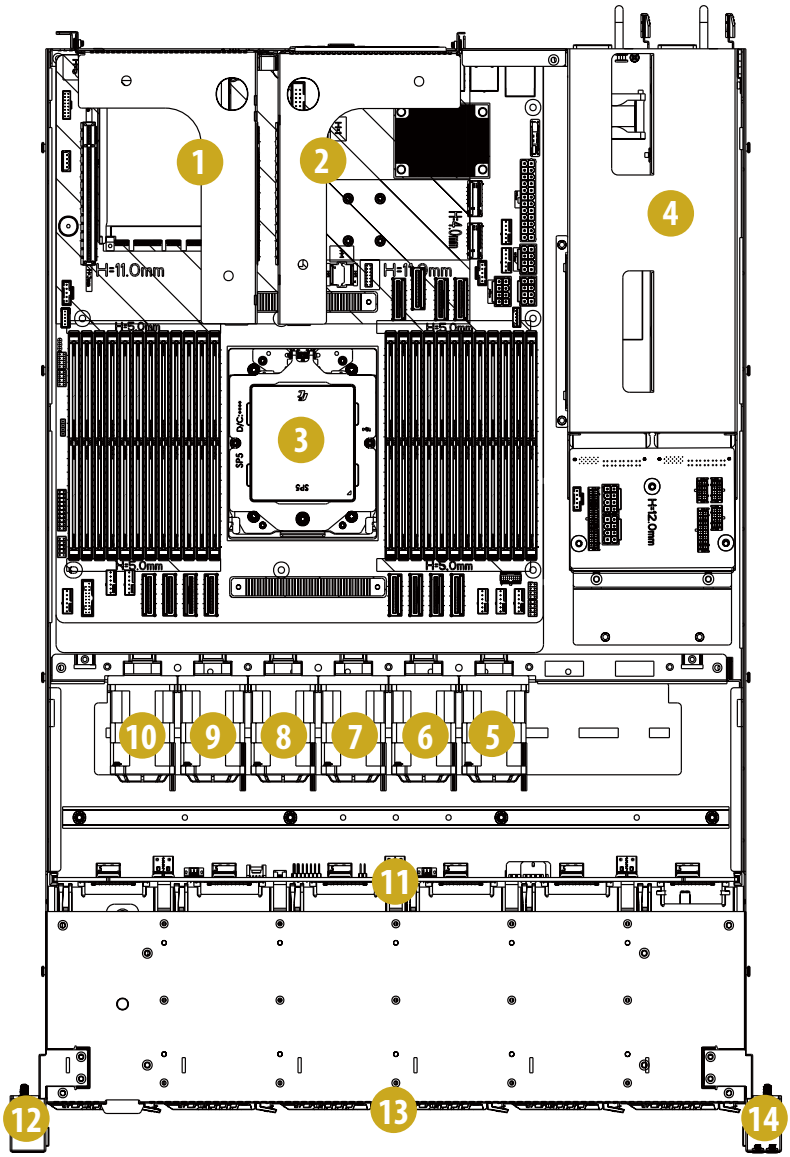
This chapter provides diagrams showing the location of important components of the server system.

2.1 System Components



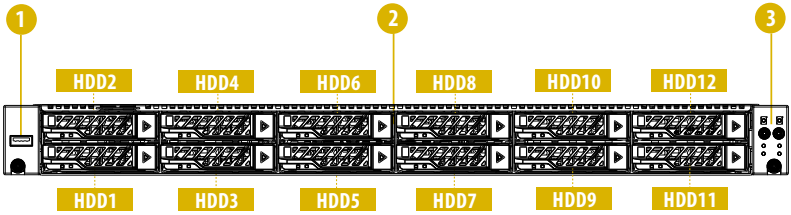
English

2.2 Internal Features



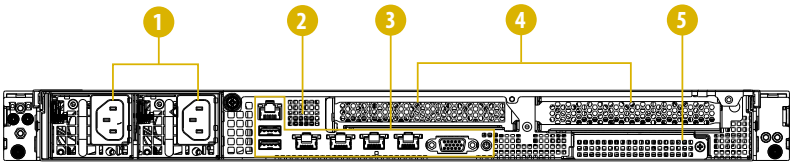
No.	Description
1	Riser Card (PCIe x16) (RB1)
2	Riser Card (PCIe x16) (RB2)
3	Serverboard
4	2 x Power Supply Units (PSU)
5	System Fan 1
6	System Fan 2
7	System Fan 3
8	System Fan 4
9	System Fan 5
10	System Fan 6
11	2.5" HDD Backplane Board (BPB)
12	Front USB 3.2 Gent1 Port
13	12 x 2.5" HDD Trays (HDD1) (Hot-swapable)
14	Front Control Panel

2.3 System Front Panel



No.	Description
1	1 x USB 3.2 Gen1 Port
2	12 x 2.5" Hot-Swap HDD Trays (2.5" NVMe / SATA SSD / SAS HDD)
3	Control Panel (depends on the specification of the server board)

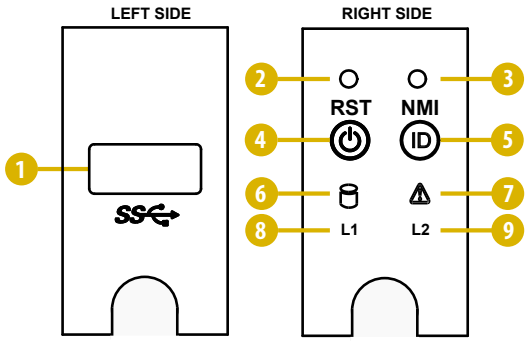
2.4 System Rear Panel



No.	Description
1	2 x Power Supply Units (PSU)
2	Rear Vent
3	I/O Shield (depends on the specification of the server board)
4	2 x PCI Express Slots (for the riser cards)
5	1 x OCP NIC 3.0 Slot (supports up to PCIE Gen5 device)

2.5 Front Control Panel Buttons and LEDs

Front Control Panel



No.	Description
1	USB 3.2 Gen1 Port
2	System Reset Button
3	NMI (Nonmaskable Interrupt) Button
4	Power Button and LED
5	ID Button and LED
6	HDD Status LED
7	System Status LED
8	LAN1 and Activity LED
9	LAN2 and Activity LED

**Please be noted that the functions are supported depending on the type of the server board.*

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.

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.

Power Button

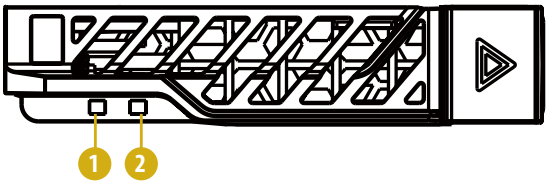
Press the power switch button to toggle the system power-on and power-off modes.
To remove all power from the system completely, disconnect the power cord from the server.

Status LED Definitions

Power LED	
Status	**Description**
Green	Power on
Off	Power off

LAN1, LAN2 LED	
Status	**Description**
Amber	Link between system and network or no access
Blinking Amber	Network access

2.6 Hard Drive Tray LEDs



No.	Description
1	Hard Drive Tray Status LED
2	Hard Drive Tray Activity LED

LED Definitions

Description	Activity (No.2)	Status (No.1)
Drive Not Present	OFF	OFF
Drive Present(no active)	Solid Green	Solid Blue
Drive Present(active)	Green Blinking at 4Hz	Solid Blue
Locate	Solid Green	Blue Blinking at 4Hz
Fail	Solid Green	Solid Red
Rebuild	Green Blinking at 4Hz	Red Blinking at 1Hz

Chapter 3 Hardware Installation and Maintenance

This chapter helps you assemble the chassis and install components.

Before You Begin

Before you work with the server, pay close attention to the "Important Safety Instructions" at the beginning of this manual.

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. The Power LED at the front turns from solid green to dark.
   (2) Disconnect the power cord first from the AC outlet and then from the server. The power LED turns off.
2. Ensure you have a clean and stable working environment. Avoid dust and dirt because contaminants may cause malfunctions.
3. Ground yourself 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" HDD(s)
- Power Supply Unit(s) (Pre-installed)
- System Fans (Pre-installed)
- Server Board (Pre-installed)
- HDD Backplane (Pre-installed)

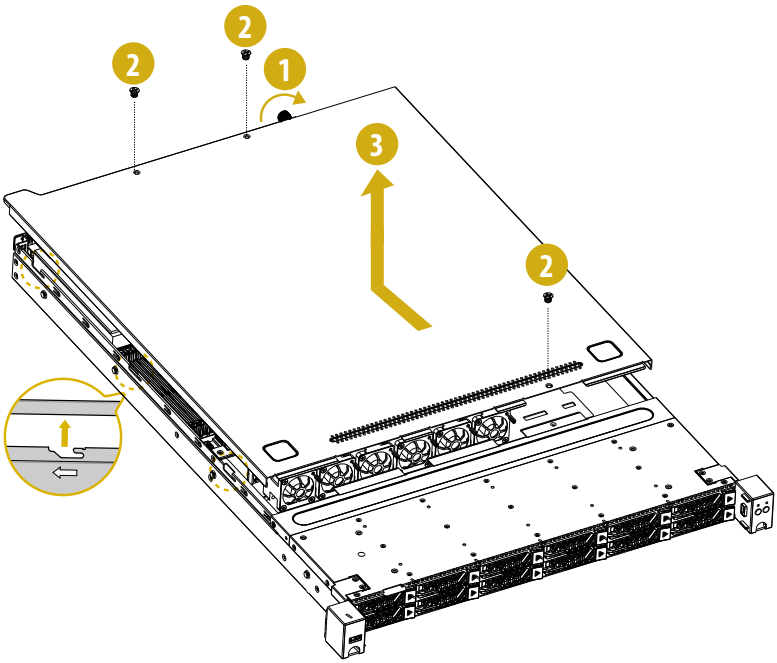
1. *Some components are already pre-installed. Simply properly connect the relavant cables before or after installation. See the Quick Installation Guide for more details.*
2. *Refer to the user manual of the server board you use for instructions on how to install server board components.*

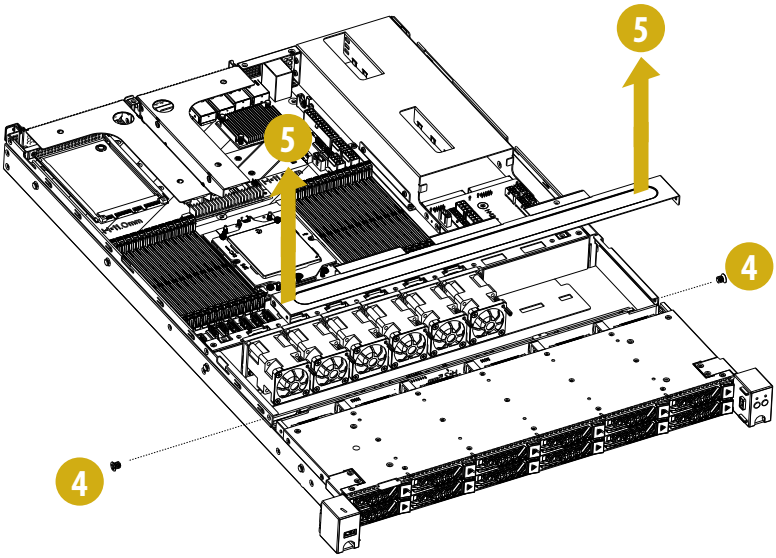
3.1 Server Top Cover

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. Release the rear and top rear cover screws and then remove them.
2. Push the top rear cover to lift up and remove it.
3. Remove all top front cover screws. Push the top front cover to lift up and remove it.

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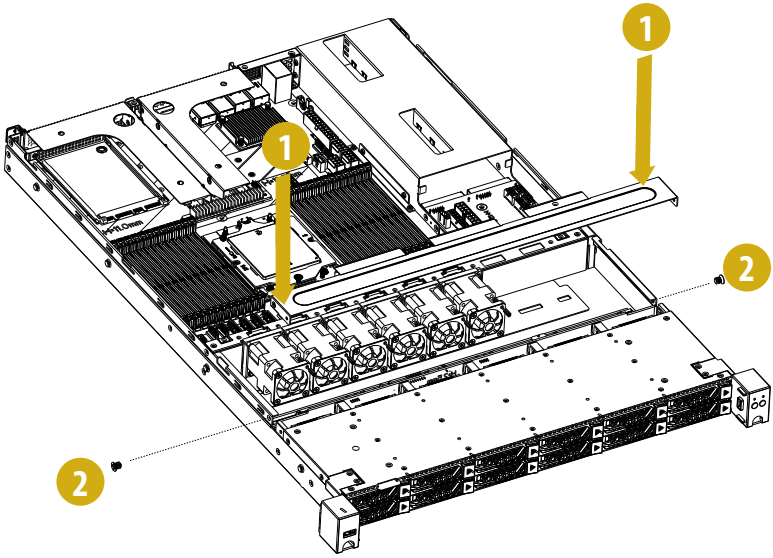
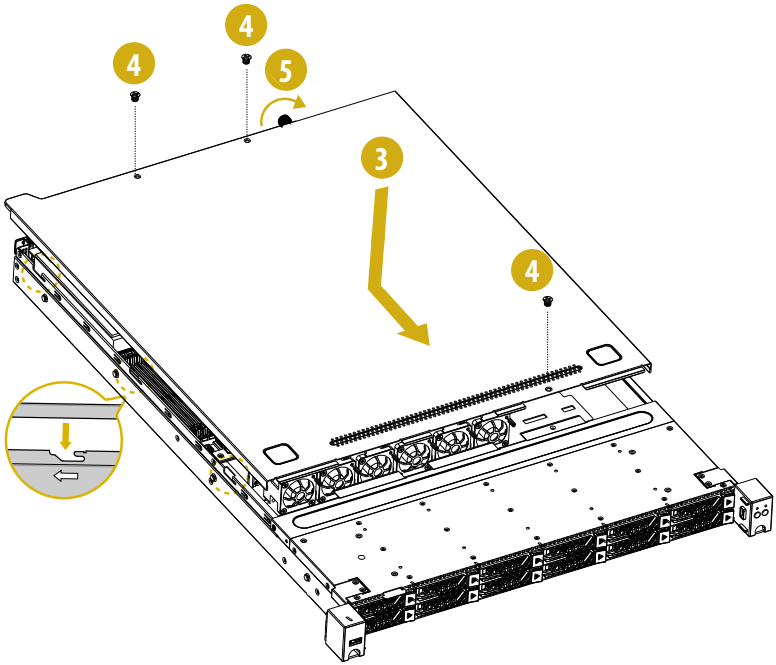
5
4
4

Installing the Server Top Cover

1. For installation, align both side latches with the cutouts. Lower and slide the top front cover toward the FRONT and secure it with screws to the chassis.
2. Lower and slide the top rear cover toward the FRONT and secure it with a rear thumbscrew and a top screw to the chassis.

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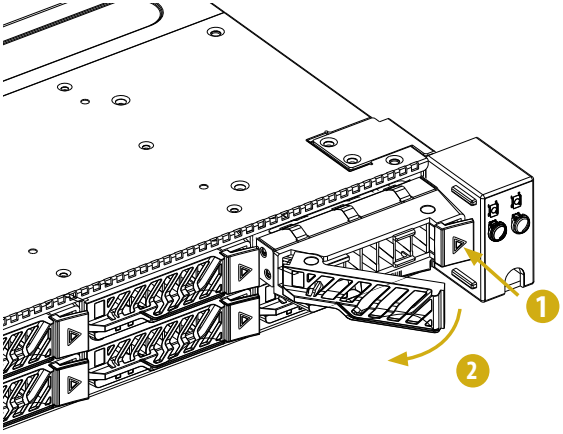
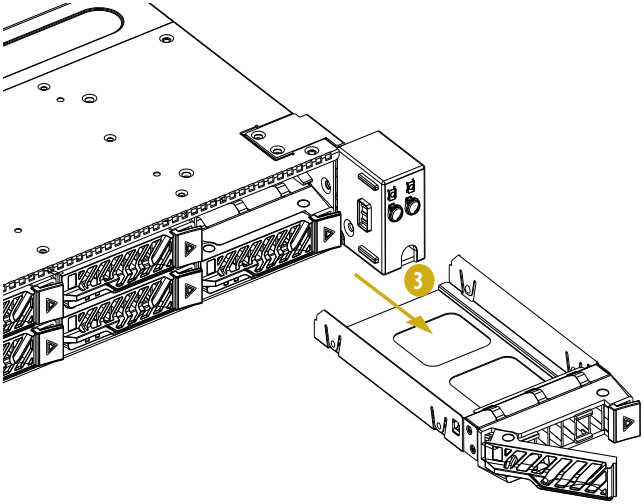
3.2 Hard Drive

Removing Hard Drive Trays from the Chassis

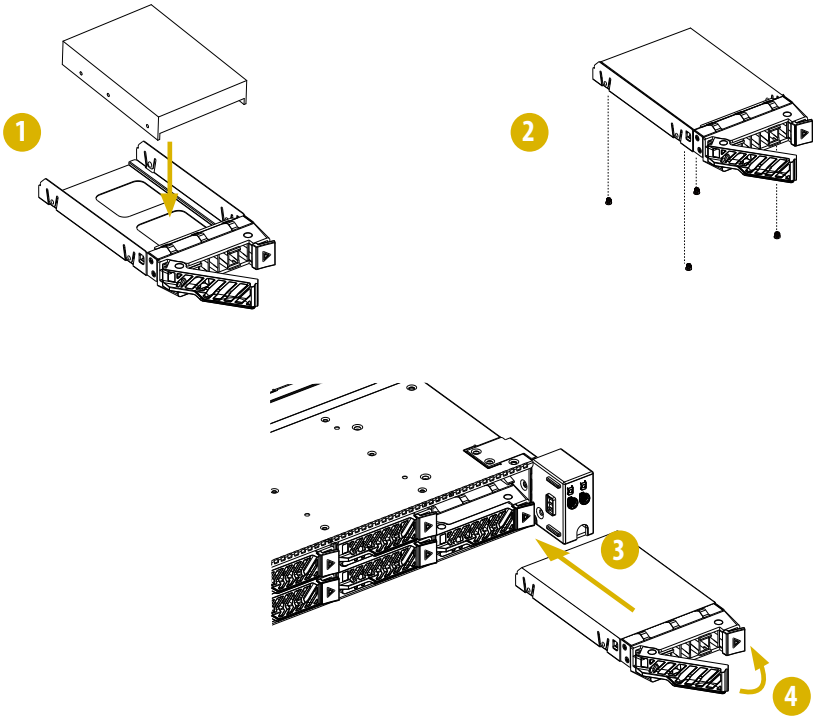
1. Press the locking lever latch to open the lever.
2. Pull the driver carrier out.





Install 2.5" Hard Drive

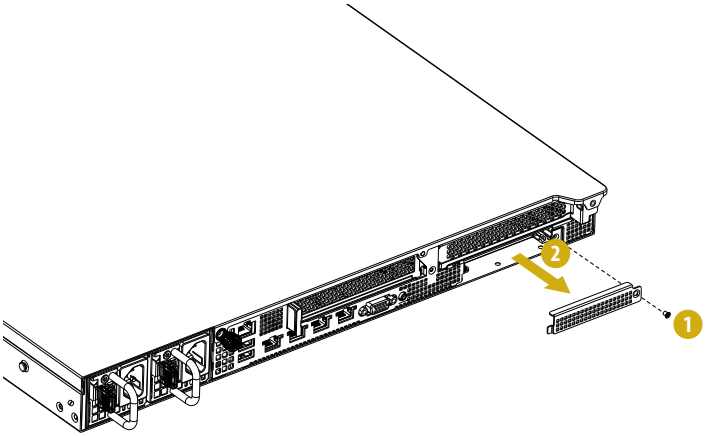
1. Place the HDD into the carrier with printed circuit board side facing down.
2. Use the screws to secure the HDD. Slide the driver carrier into the HDD bay. Push in the locking lever to lock the HDD carrier into place.



3.3 Install OCP

Remove Slot Cover

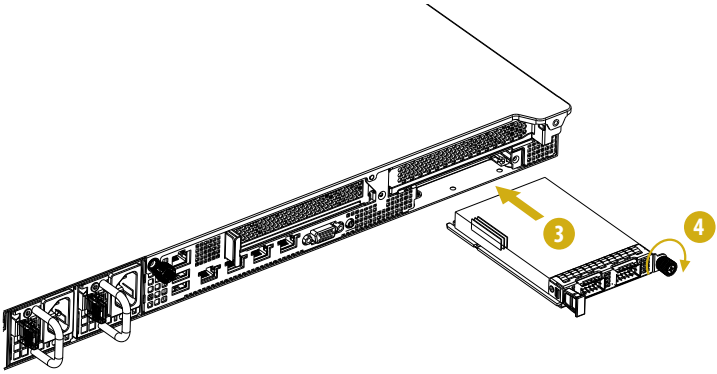
Release the thumbscrew that secures the slot cover to the chassis and remove the slot cover.



Install OCP Card

Install an OCP card into the slot.

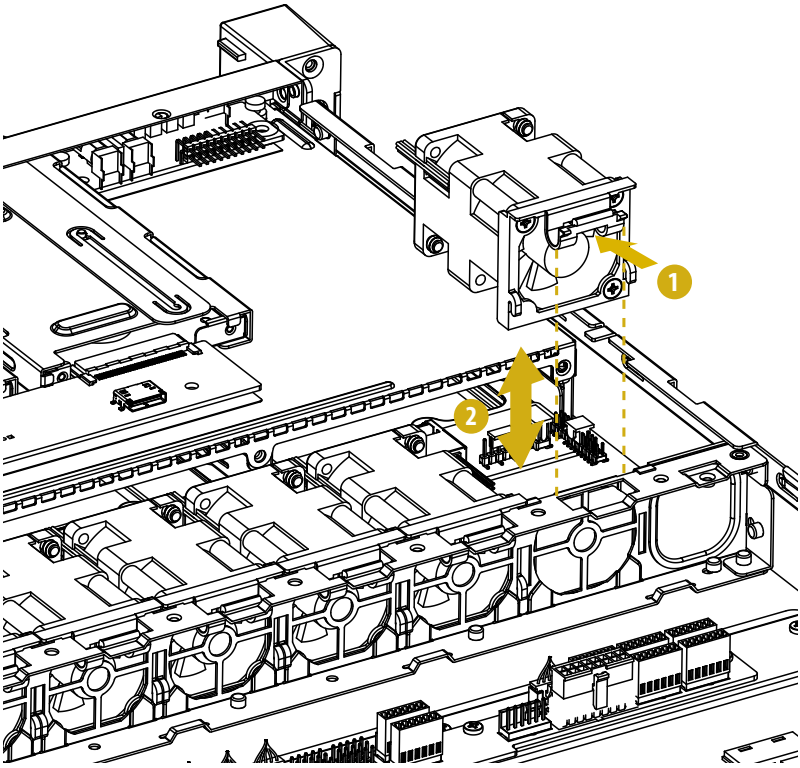
Make sure the card is well seated and hand-tighten the thumbscrew on the face plate.



3.4 System Fan

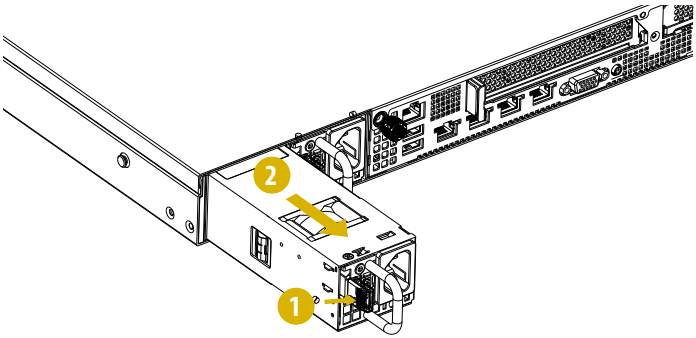
Replace FAN

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

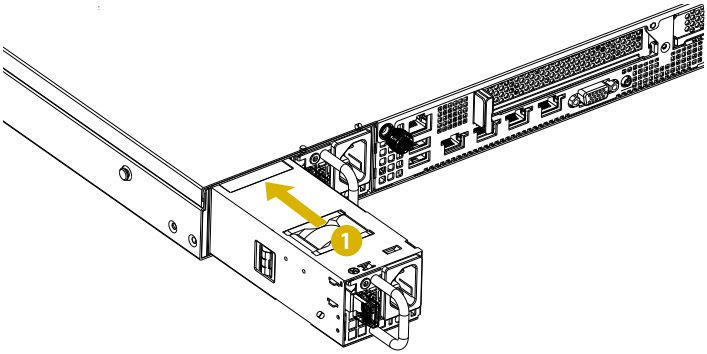


3.5 Replace PSU

Press the locking lever and hold on the handle to pull the Old PSU out.



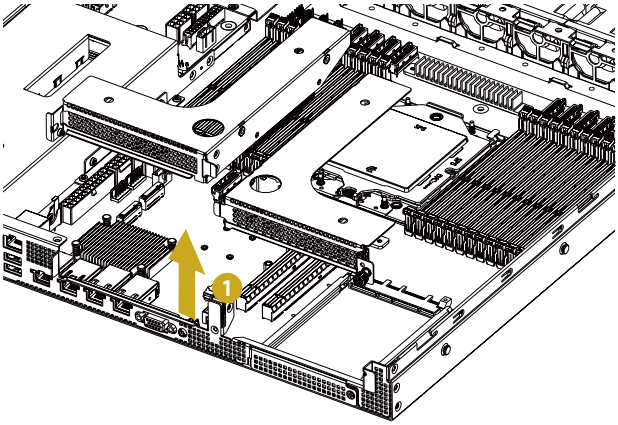
Slide the New PSU into the power supply

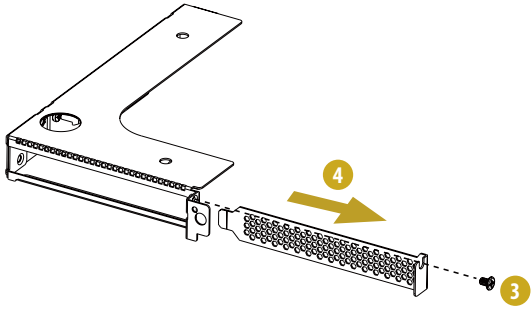


3.6 Add-in Card

Replace Add-in Card

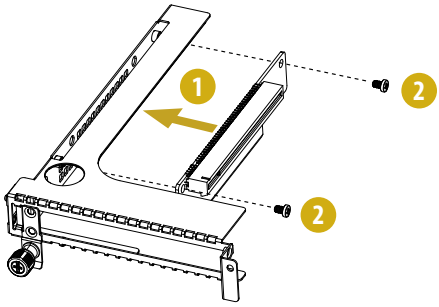
1. Release the thumbscrew to lift up the riser-card bracket.
2. Remove the screw to slide the blanking plate out.

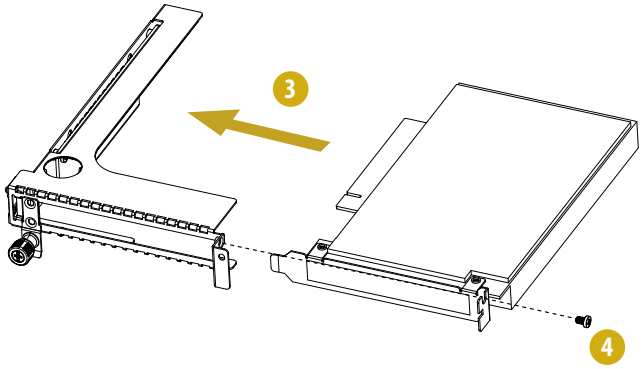




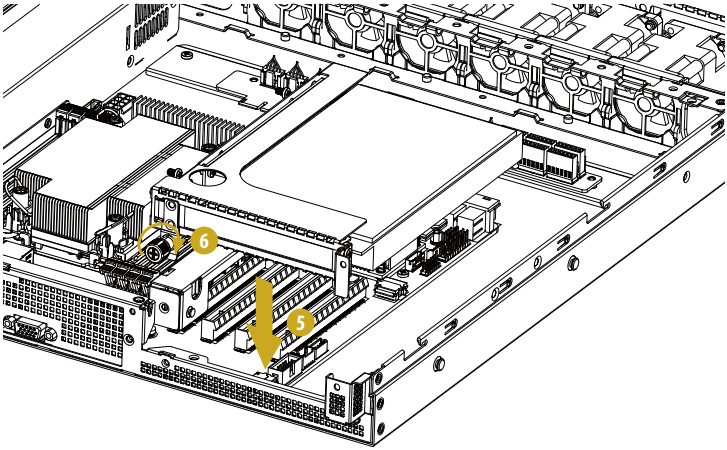
Installing Add-in Card

1. Install riser card to the bracket and secure it with screws.
2. Install the add-on card to the bracket assembly and secure it with a screw.





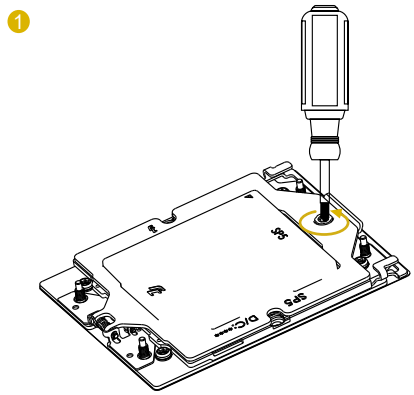
Install the riser-card assembly to the chassis with the thumbscrew.

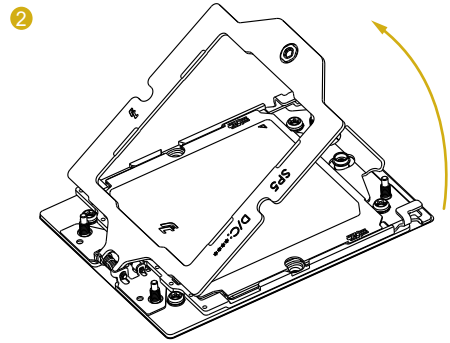


The illustration is for references only. The actual location may be slightly differnet by models.

Installing the CPU

1. *Before you insert the CPU into the socket, please 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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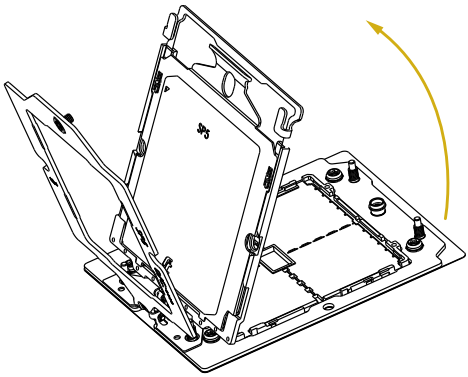

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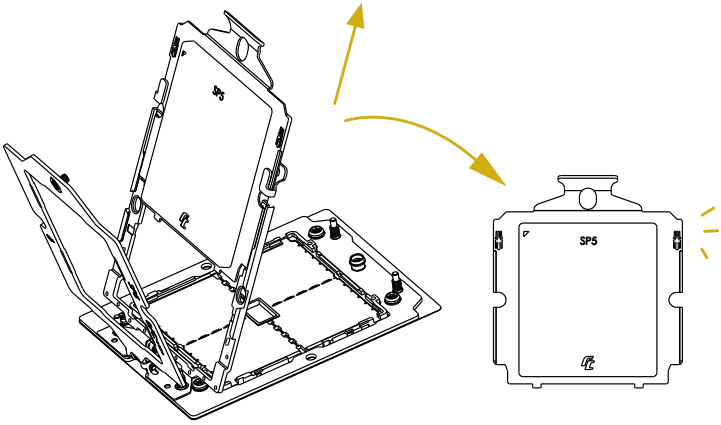

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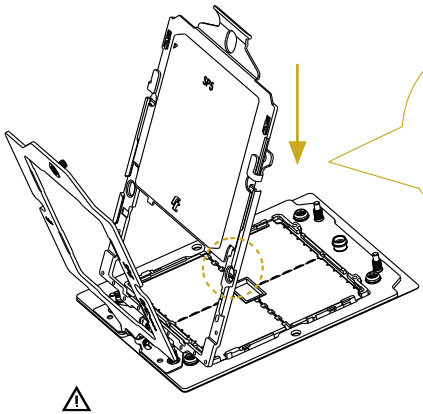
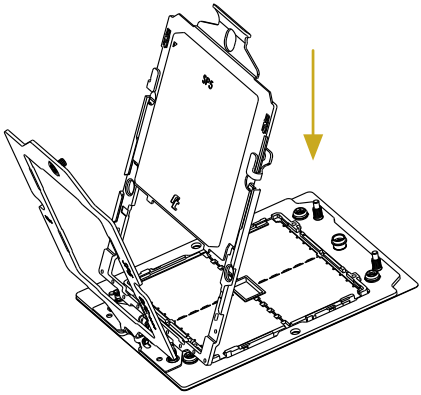


Please make sure that the carrier frame with CPU is closely attached to the rail frame while inserting it.

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

6



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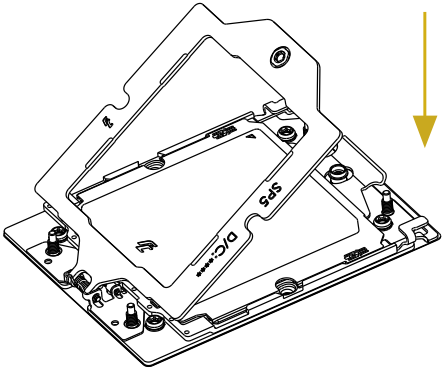

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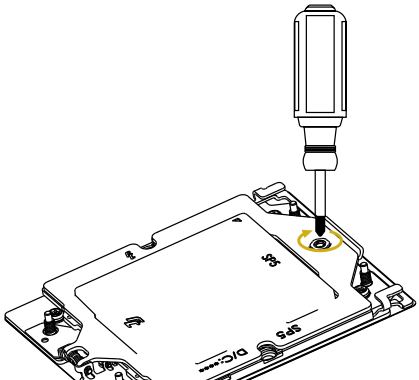

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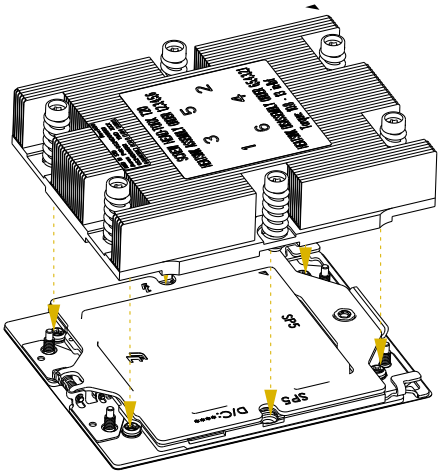

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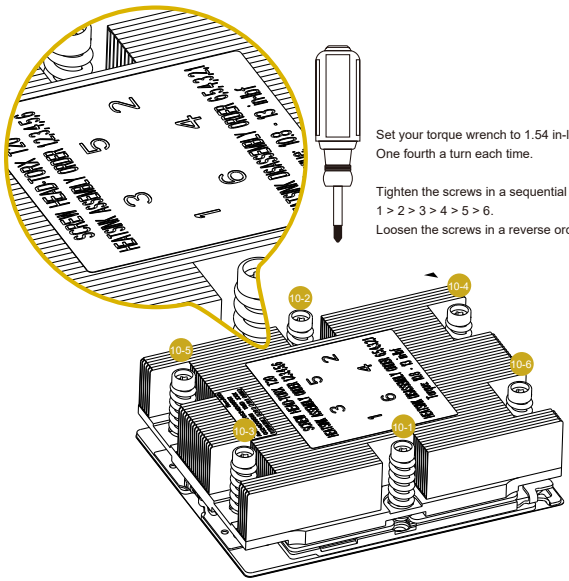


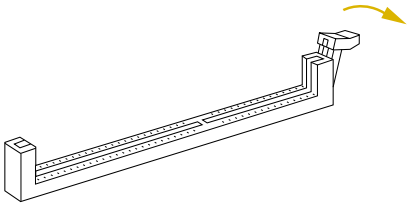
Set your torque wrench to 1.54 in-lb.
One fourth a turn each time.

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

Installation of Memory Modules (DIMM)

The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation. For more information about DIMM installation, please refer to the User Manual that comes with the server board used.

1



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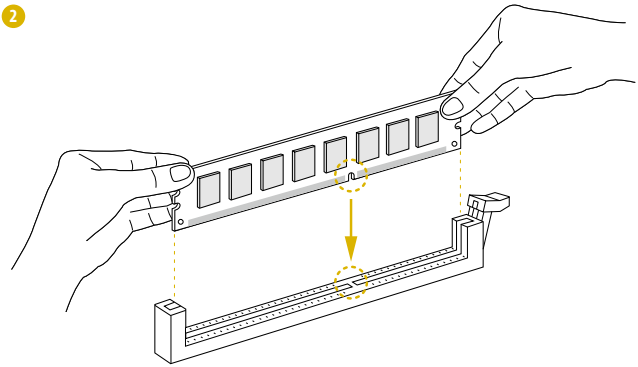

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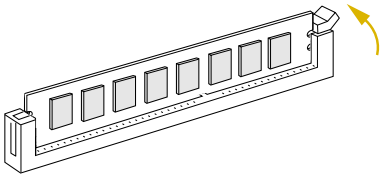
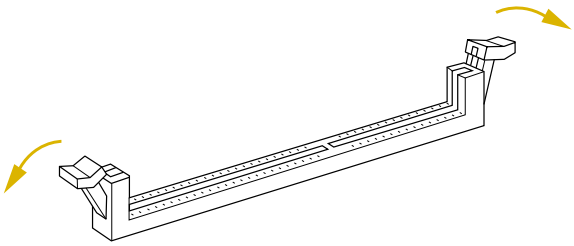


Type B (Two Clips)

1



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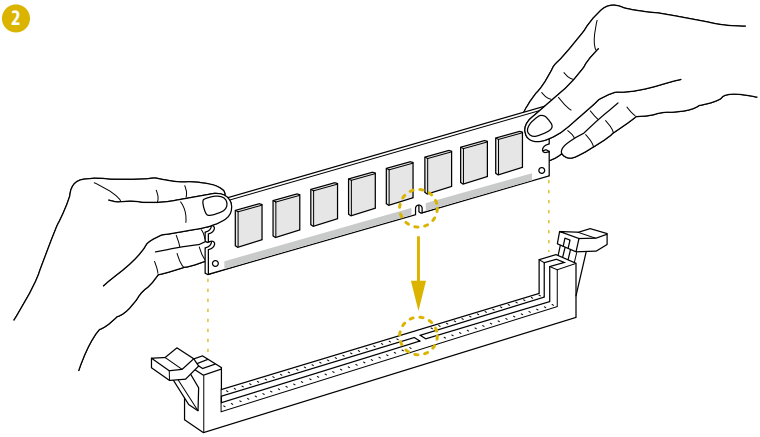

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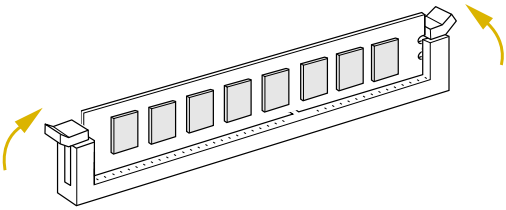
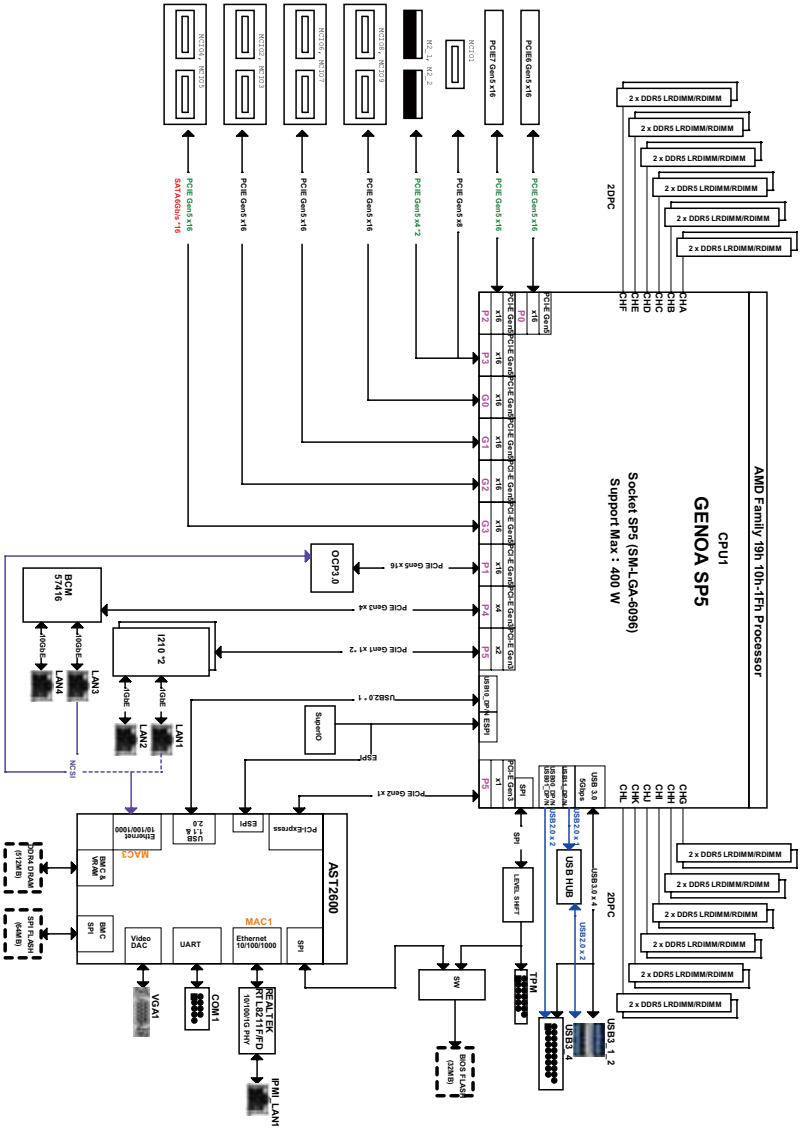


Block Diagram (GENOAD24QM3-2L2T/BCM)



English

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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