OPEN
Industry Standard, Flexible Architecture

GREEN
Less Heat, Less Power Consumption

STABLE
Robust Design, Quality Parts

Stable and
Reliable Solution

Server/Workstation
Motherboard

1U10E Series
1U8S2E Series

User Manual

English

Version 1.0
Published May 2022

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

- 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.

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.

Contents

Chapter 1 Introduction

Thank you for purchasing 1U10E / 1U8S2E Series Series, 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.

Because the hardware specifications might be updated, the content of this documentation will be subject to change without notice. In case any modifications of this documentation occur, the updated version will be available on ASRock Rack's website without further notice. If you require technical support related to this product, please visit our website for specific information about the model you are using.
ASRock Rack's Website: www.ASRockRack.com

The illustrations shown in this manual are examples only, the actual system may differ slightly .

1.1 Shipping Box Contents

Item	Quantity		
	1U10E-ROME/2T	1U8S2E-ROME/2T	1U8S2E-ICX/2T
1U8S2E Series Barebone	1	1	1
System Boards (MB)*	1	1	1
Power Supply Units*	2	2	2
System Fans*	6	6	6
HDD Backplane (BPB)*	1	1	1
Front Panel Board (FPB)*	1	1	1
Fan Board (FB)*	1	0	1
Accessory Box	1	1	1
1U Cooler	1	1	1
Riser Board	1	1	2
Slide Rail	1	1	1

** The components are pre-installed.*

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

English

1.2 Specifications

1U10E / 1U8S2E Series	
System Physical Status	
Form Factor	1U Rackmount
Dimension	• 1U10E-ROME/2T: 625.0 mm x 430.0 mm x 43.5 mm (L/W/H) • 1U8S2E-ROME/2T / 1U8S2E-ICX/2T: 625.0 mm x 430.0 mm x 43.5 mm (L/W/H)
Support MB Size	ATX, micro ATX
MB Model	• 1U10E-ROME/2T: ROMED8QM-2T • 1U8S2E-ROME/2T: ROMED8U-2T • 1U8S2E-ICX/2T: SPC621D8U-2T
Front Panel	
Buttons	• Power button • System reset button • NMI button
LEDs	• Power LED • 2 x Network activity LEDs
I/O Port	1 x USB 3.2 Gen1 port
Rear Panel *(depends on the specification of the server board)*	
Button	UID button
I/O Ports	• 2 x USB 3.2 Gen1 ports • 1 x VGA port • 1 x COM port
LAN Ports	• 2 x LAN(10G) ports • 1 x MLAN(1G) port
External Drive Bay	
Front Side Drive Bay	• 1U10E-ROME/2T: 10 x 2.5" Gen3 NVME/SATA SSD/HDD, Hot Swap • 1U8S2E-ROME/2T / 1U8S2E-ICX/2T: 2*2.5" Gen3 NVME/SATA SSD/HDD + 8*2.5" SATA SSD/HDD, HotSwap
System Cooling	
Fan	6 x 4056 Fans, Simple Swap
Power Supply	
Type	Redundant PSU
Output Watts	750W
Efficiency	Platinum

**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.

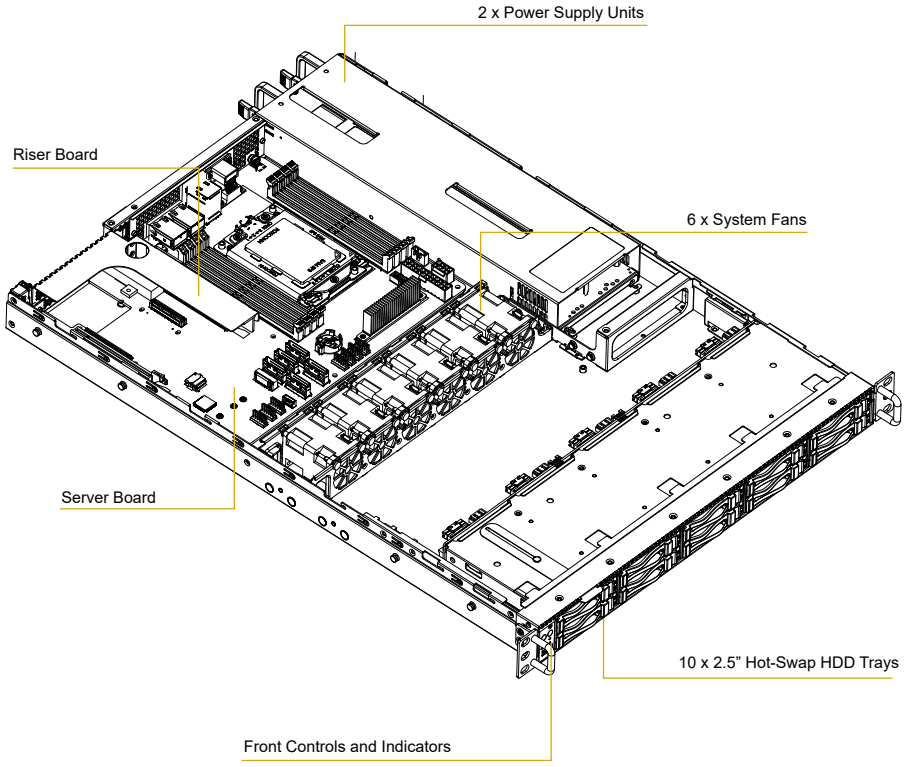
English

Chapter 2 Server System Overview

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

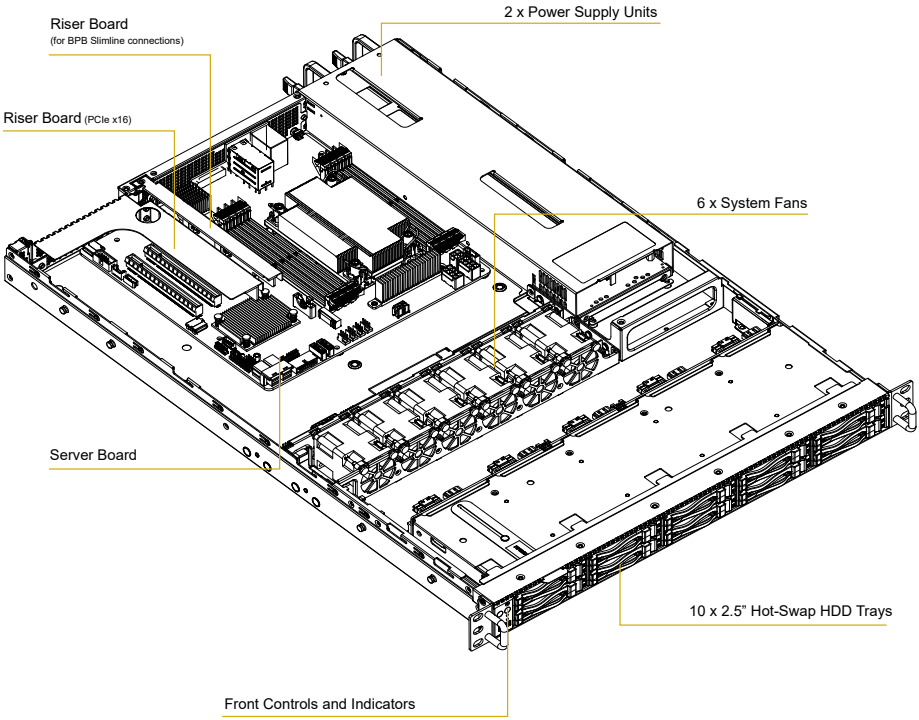
2.1 System Components

1U10E Series:



English

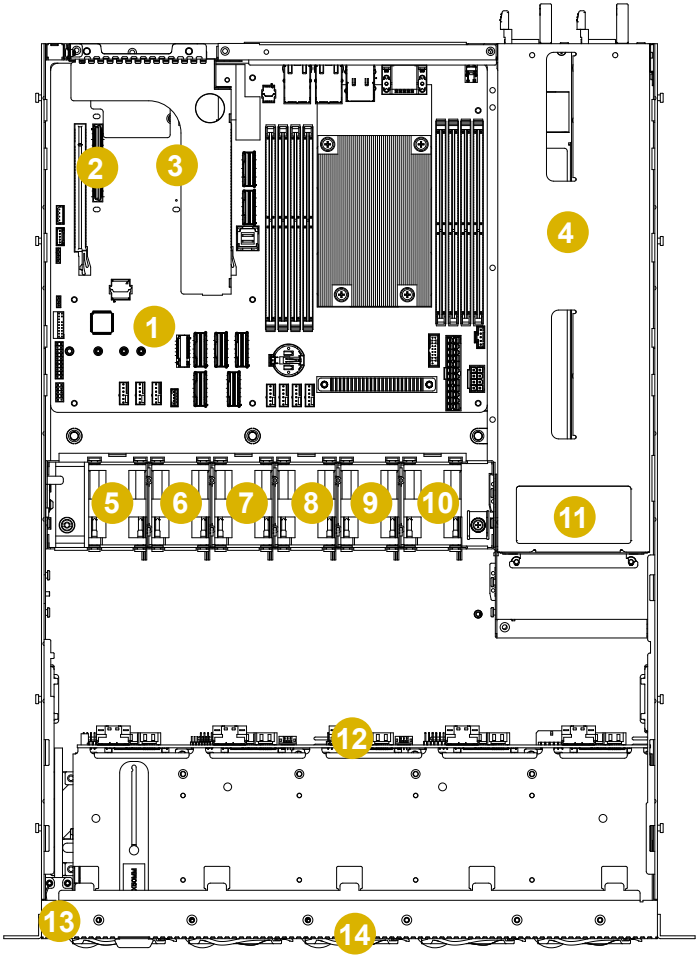
1U8S2E Series:



English

2.2 Internal Features

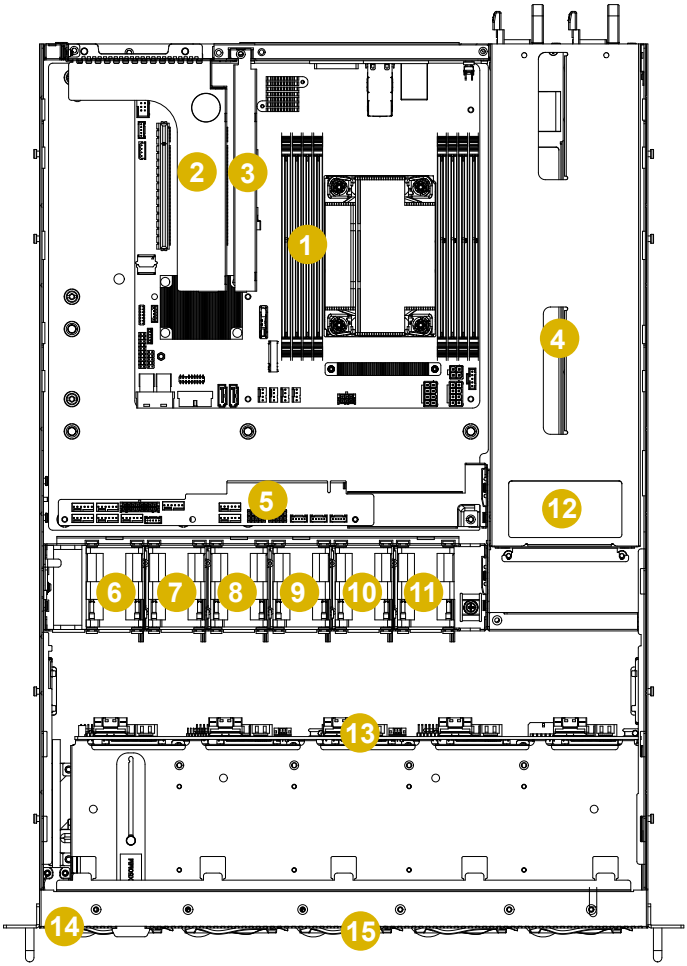
1U10E Series:



No.	Description
1	Server Board
2	LAN Mezzanine Card
3	Riser Board (PCIe x16)
4	2 x Power Supply Units
5	System Fan1, 4056

6	System Fan2, 4056
7	System Fan3, 4056
8	System Fan4, 4056
9	System Fan5, 4056
10	System Fan6, 4056
11	Power Distribution Board (PDB)
12	Backplane Board (BPB)
13	Front Panel Board (FPB)
14	10 x 2.5” HDD Trays

1U8S2E Series:

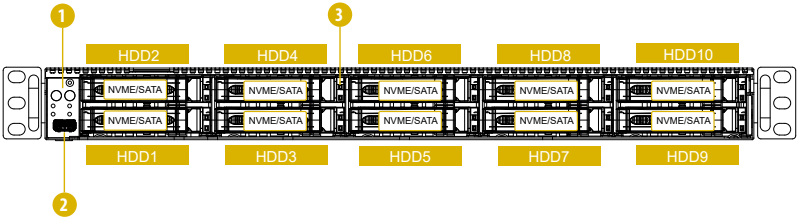


No.	Description
1	Server Board
2	Riser Board (PCIe x16)
3	**1U8S2E-ICX/2T:** Riser Board (for BPB SLIMLINE connections) **1U8S2E-ROME/2T:** N/A
4	2 x Power Supply Units
5	**1U8S2E-ICX/2T:** Fan Board (FB) **1U8S2E-ROME/2T:** N/A

6	System Fan6, 4056
7	System Fan5, 4056
8	System Fan4, 4056
9	System Fan3, 4056
10	System Fan2, 4056
11	System Fan1, 4056
12	Power Distribution Board (PDB)
13	Backplane Board (BPB)
14	Front Panel Board (FPB)
15	10 x 2.5" HDD Trays

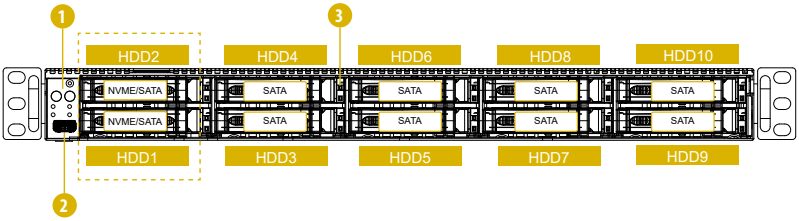
2.3 System Front Panel

1U10E Series



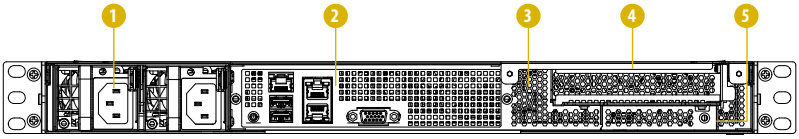
No.	Description
1	Control Panel Buttons and LEDs
2	1 x USB 3.2 Gen1 Port
3	10 x 2.5" Hot-Swap HDD Trays (10*2.5" NVME+SATA) : All ten drive trays (HDD1~HDD10) can support 2.5" Gen3 NVME SSD/ HDDs and 2.5" SATA SSD/HDDs.

1U8S2E Series



No.	Description
1	Control Panel Buttons and LEDs
2	1 x USB 3.2 Gen1 Port
3	10 x 2.5" Hot-Swap HDD Trays (2*2.5" NVME+ 8*2.5" SATA) : HDD1 and HDD2 drive trays can support 2.5" Gen3 NVME SSDs and 2.5" SATA SSD/HDDs. The other eight drive trays (HDD3 ~ HDD9) only support 2.5" SATA SSD/HDDs.

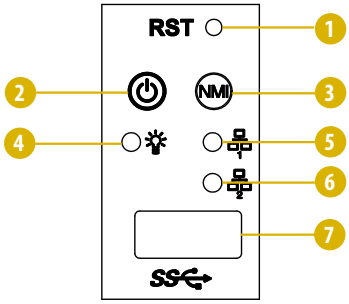
2.4 System Rear Panel



No.	Description
1	2 x Power Supply Units
2	I/O Shield *(The I/O shield varies depending on the specifications of the serverboard.)*
3	Rear Vent
4	PCI Express Slot (for the riser card)
5	Mezzanine Card Slot *(The mezzaine card may not be supported depending on the serverboard of you system.)*

2.5 Front Control Panel Buttons and LEDs

Front Control Panel



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

**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

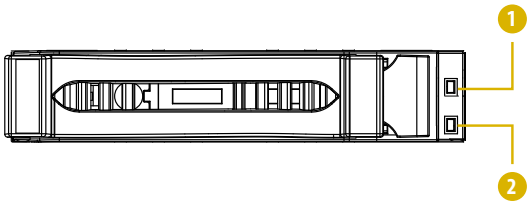
Press the power switch button to toggle the system power-on and power-off modes.
To remove all power from the system completely, disconnect the power cord from the server.

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 Drive Tray LEDs



No.	Description
1	HDD Activity LED
2	HDD Status LED

Status LED Definitions

HDD Activity LED	
Status	**Description**
Solid Green	HDD present, no activity
Blinking Green	HDD accessing / RAID rebuild *(with HDD Status LED blinking Red alternatively)*
Off	HDD not present

HDD Status LED	
Status	**Description**
Blue	HDD present
Blinking Blue	HDD locate (identify)*
Red	HDD failed*
Blinking Red	RAID rebuild*
Off	HDD not present

**When the HDD0/HDD1 tray is installed with a 2.5" SATA SSD/HDD, the LED indicators for HDD failed, HDD Locate, and RAID rebuild will be disabled.*

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)
- Fan Board (Pre-installed, if supported)

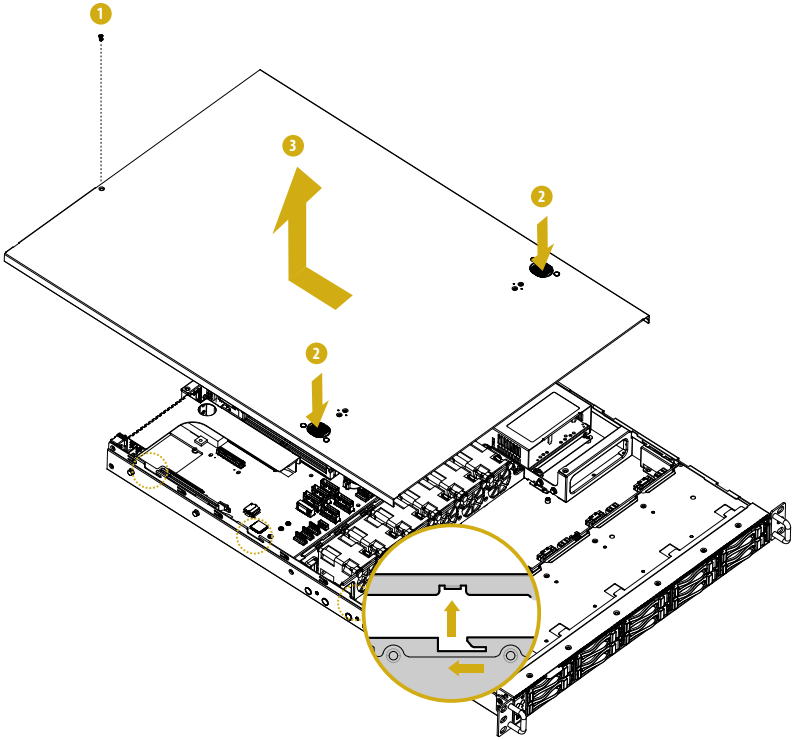
1. *Some components are already pre-installed. Simply properly connect the relavant cables before or after installation. See the Quick Installation Guide for more details.*
2. *Refer to the user manual of the server board you use for instructions on how to install server board components.*

English

3.1 Server Top Cover

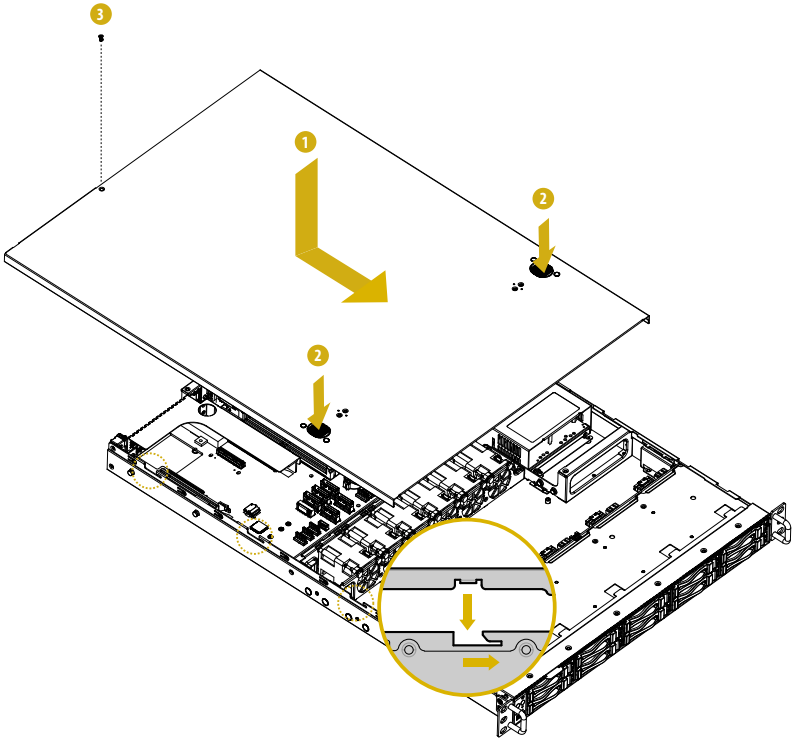
Removing the Server Top Cover

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 that secures the top cover to the chassis.
2. Press the latches on the top cover.
3. Push the top cover toward the rear of the chassis to remove the cover from the locked position. Lift up and remove the top cover.

Installing the Server Top Cover

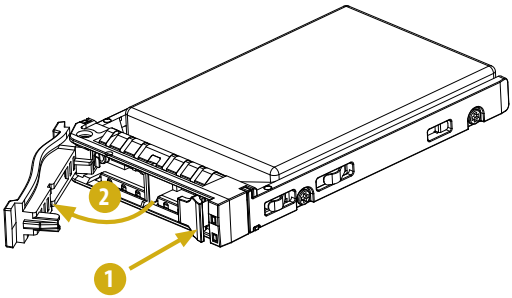


1. Lower the top cover on the chassis, making sure the side latches align with the cutouts. Slide the top cover toward the front.
2. Press down on the latches and slide the top cover into place.
3. Secure the top cover with the screw.

3.2 Hard Drive

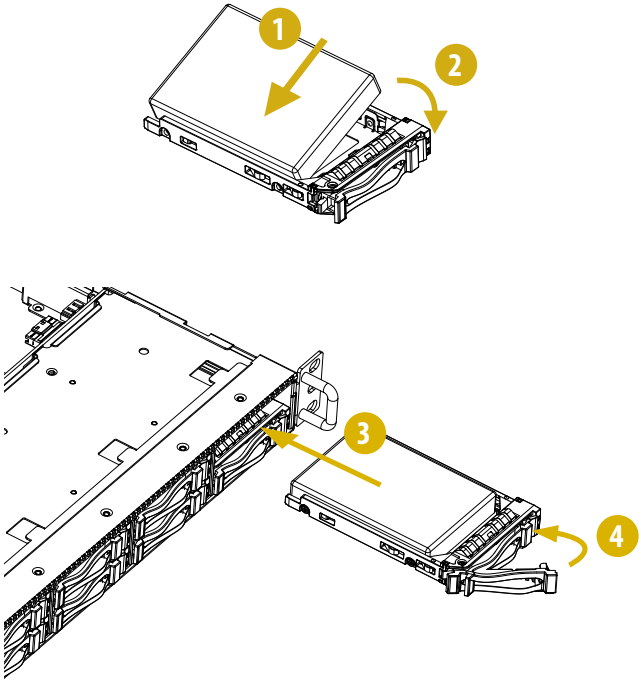
Removing Hard Drive Trays from the Chassis

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



Installing a Hard Drive to the Hard Drive Tray

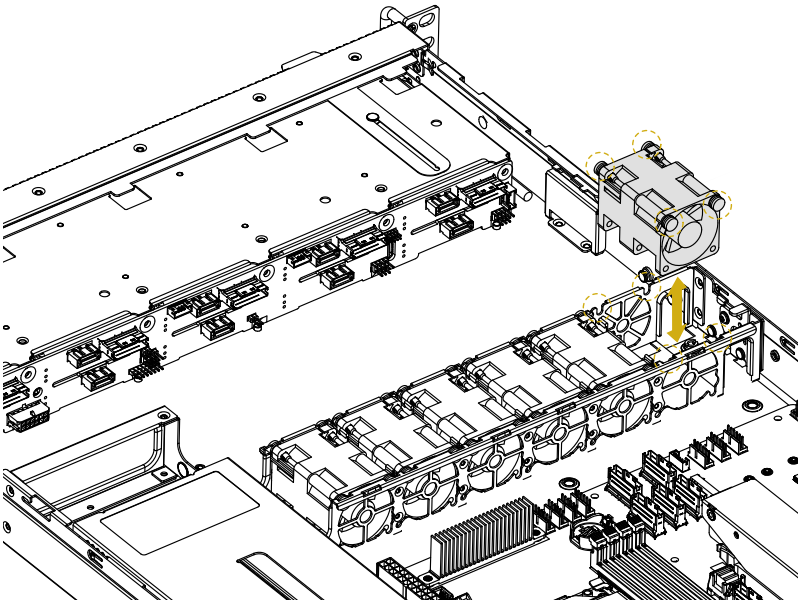
1. Engage two embossed pins into the side dimples on the tray.
2. Carefully push down the other side of the tray until the other two embossed pins and side dimples lock into place.
3. Slide the drive tray into the HDD bay until the drive is fully seated.
4. Push in the locking lever to lock the HDD tray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



3.3 System Fan

Replacing the Simple-Swap Fan

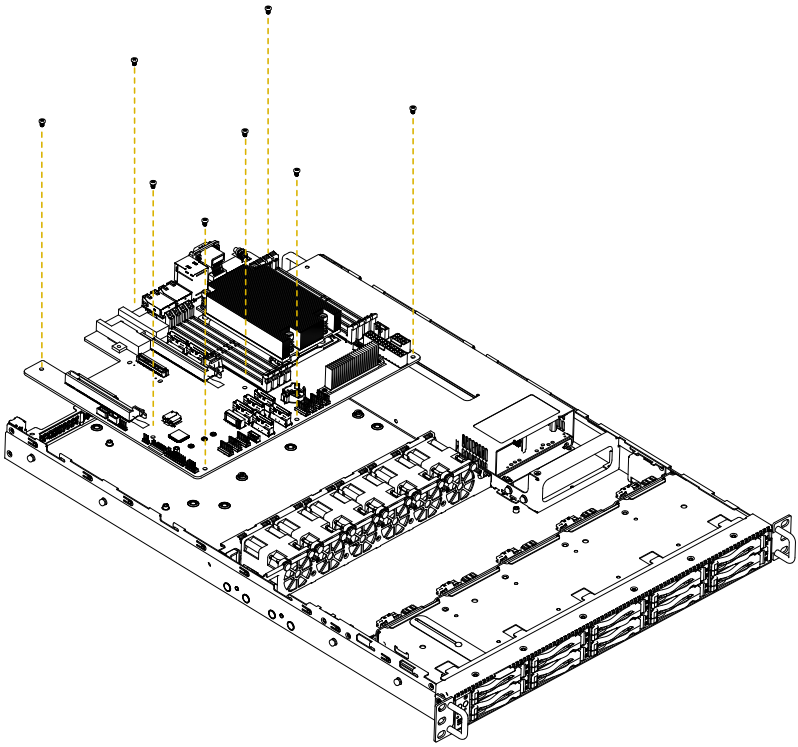
1. Unplug the fan connecter and remove the failed fan.
2. Align the mounting holes on the fan bar with the fan mounts on the replacement fan corners.
3. Gently place the fan on the fan bar. Make sure the fan is well seated.
4. Connect the end of the fan cable to the fan connector.



3.4 Server Board

Follow the steps below to install the server board to the chassis.

1. Hold the server board only by the edges.
2. Gently place the server board into the chassis. Sit the server board on the server board tray.
3. Position the server board in the server system. Align mounting holes of the server board to the standoff on the chassis.
4. Affix the screws clockwise into the mounting holes in all of the corners of the server board.



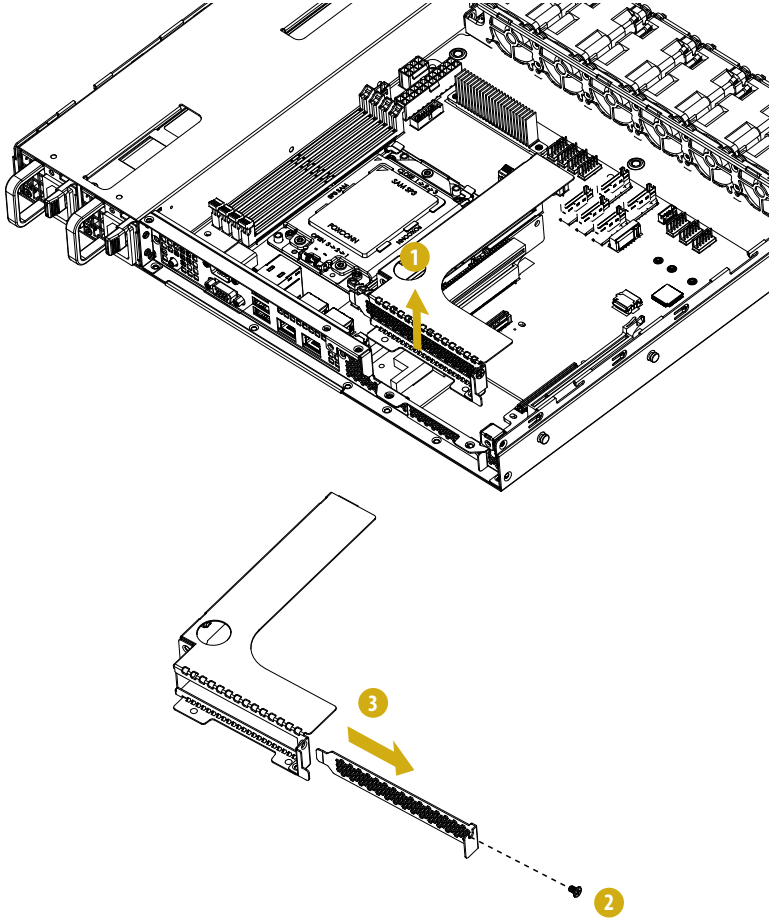
1. Do not over-tighten the screws! Doing so may damage the motherboard.
2. Refer to the user manual of the server board you use for instructions on how to install and remove the server board components and how to use its setup utility.

3.5 Add-on Card

1. *You can install an add-on card to the chassis only when you have a riser card installed on the server board.*
2. *Before installing the add-on card, power off the server and unplug the power cord.*

Removing the Blanking Plate from the Chassis

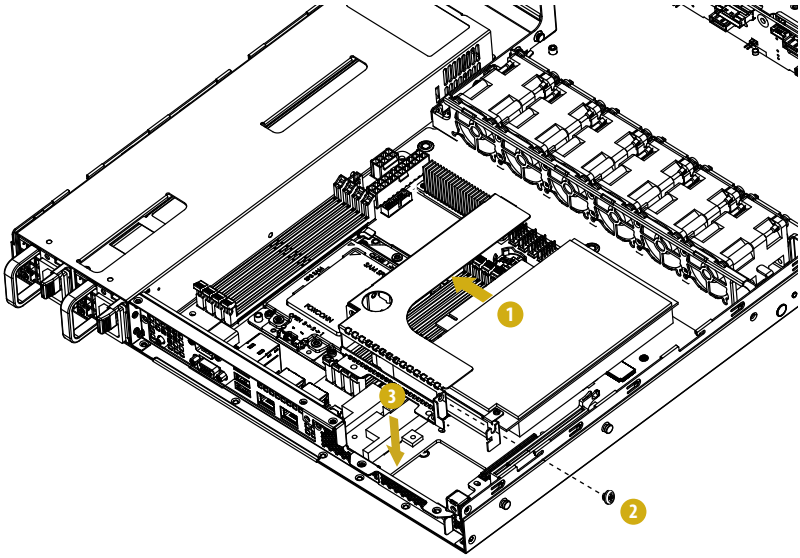
1. Lift up the blanking plate assembly.
2. Remove the screw securing the blanking plate on the assembly.
3. Slide the blanking plate out sideways.



Installing the Add-on Card

Before installing an add-on card, you need to install a mezzaine card and a riser card first. Please refer to the followings for instructions.

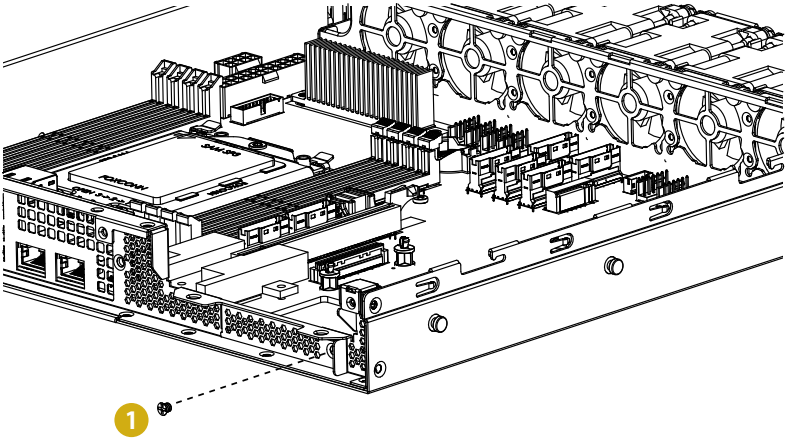
1. Install the add-on card to the assembly.
2. Secure the add-on card to the assembly with the screw.
3. Align the assembly with the openings of the chassis. Make sure it is properly installed.



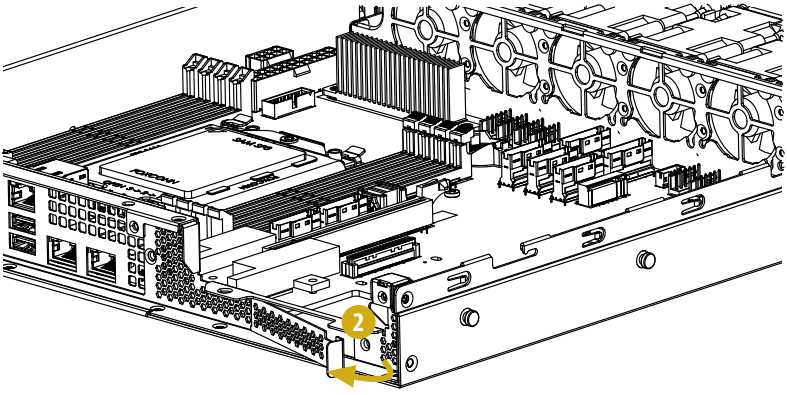
3.6 Mezzanine Card

Before installing a Mezzanine card, please remove the riser-card assembly from the chassis first.

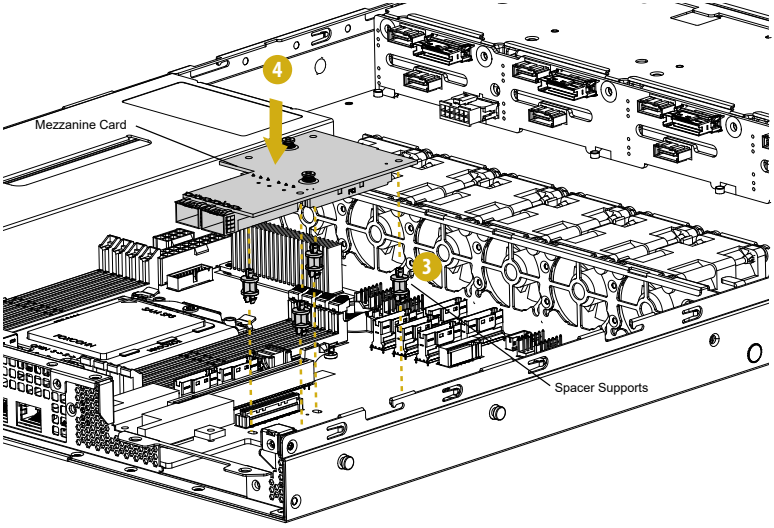
1. Remove the screws that secure the blanking plate on the chassis. Keep the screws for later use. .



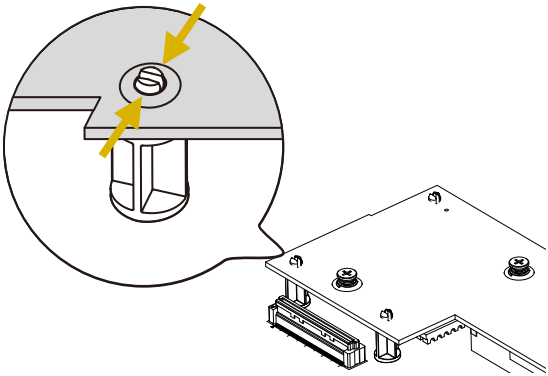
2. Slide the blanking plate out sideways.



3. Install the four spacer supports into the server board around the mezzanine card slot.
   Note: Please contact the ASRockRack Technical Support Team for more information about the mezzanine adapter card and the supported mezzzaine cards.
4. Gently insert the mezzanine card into the mezzanine card slot.



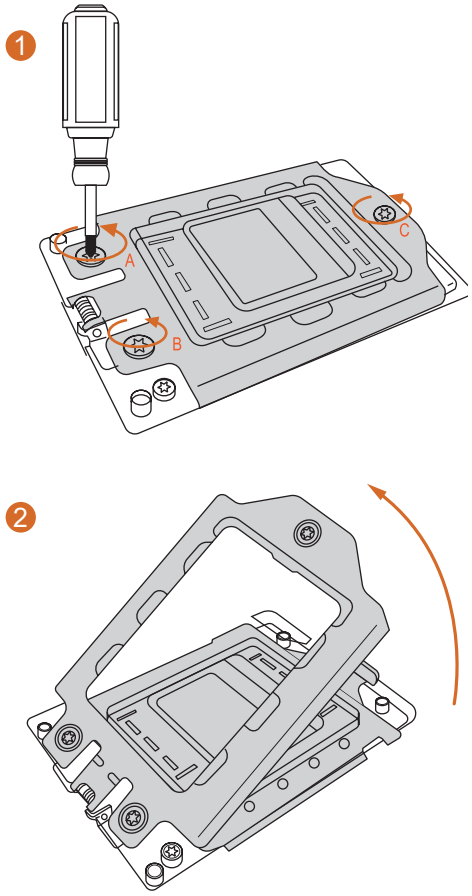
Note: Simply squeeze the top of each spacer support to release the mezzanine card.



Appendix A

Installing the CPU (LGA 4094)

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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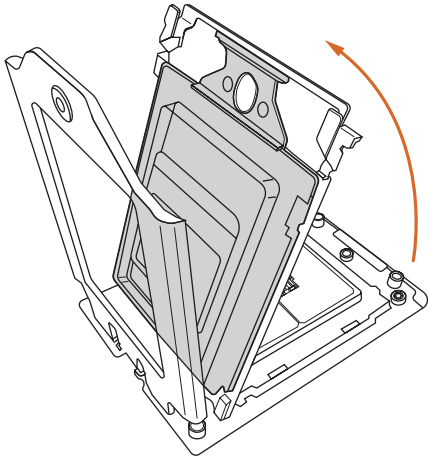

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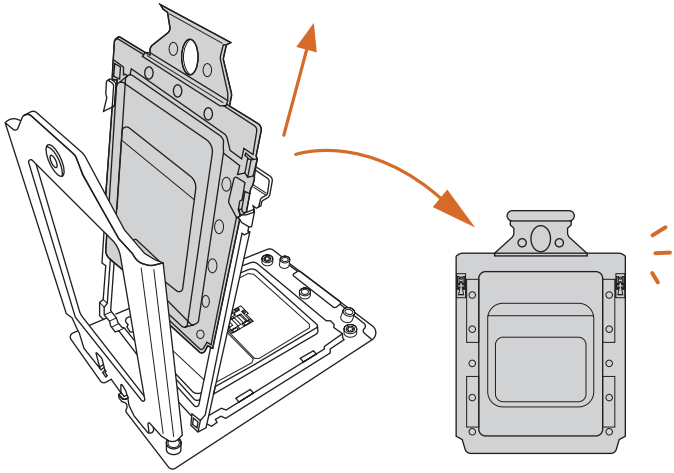

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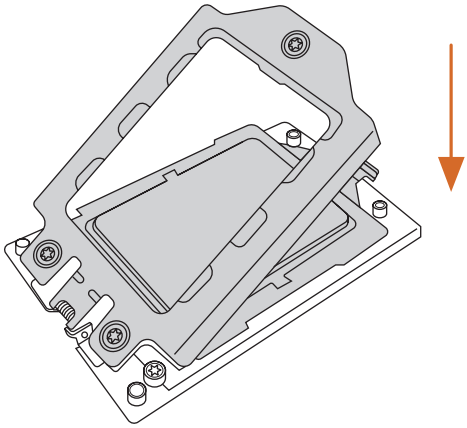

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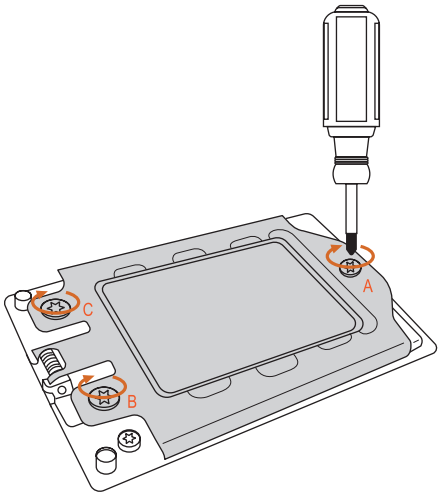
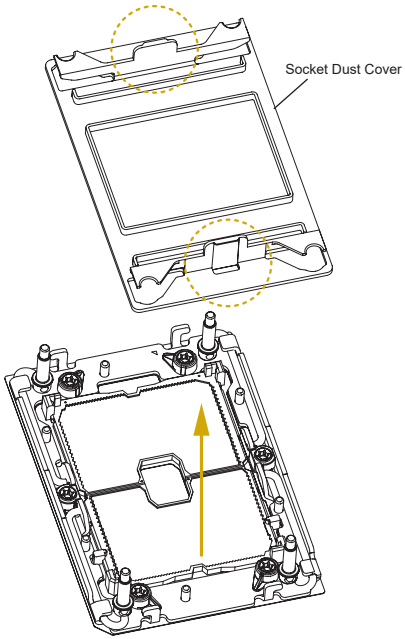


Installing the CPU (LGA 4189)

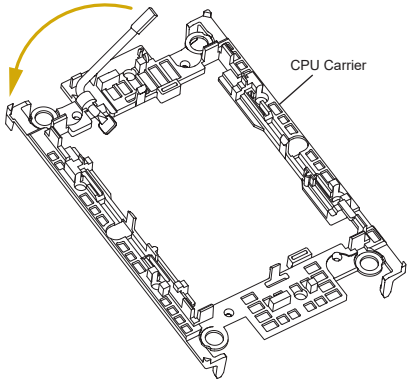
1. *Before you insert the CPU into the socket, please check if the PnP cap is on the socket, if the CPU surface is unclean, or if there are any bent pins in the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.*
2. *Unplug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

1



1. *Before you installed the heatsink, you need to spray thermal interface material between the CPU and the heatsink to improve heat dissipation.*
2. *Illustration in this documentation are examples only. Heatsink or fan cooler type may differ.*

2



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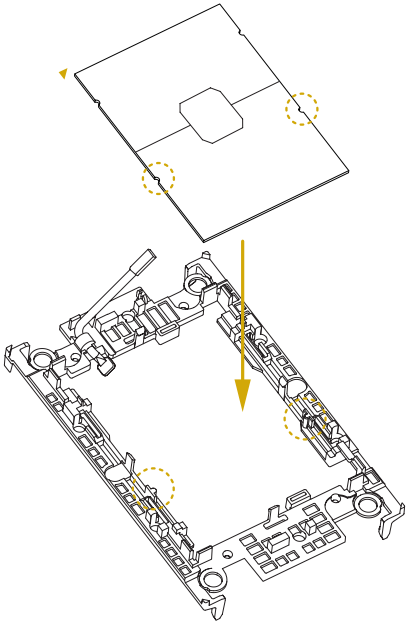

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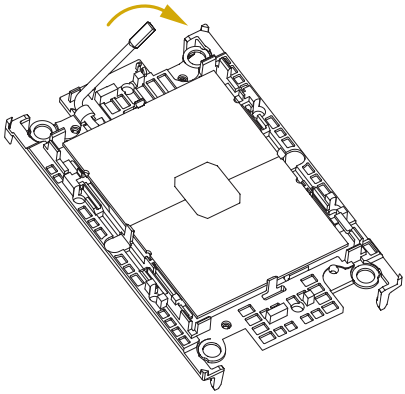

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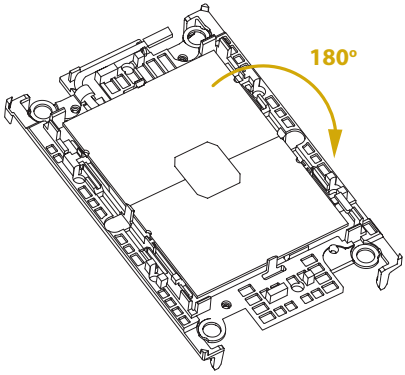

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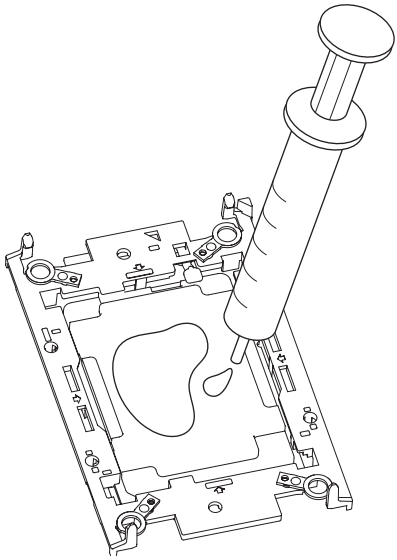

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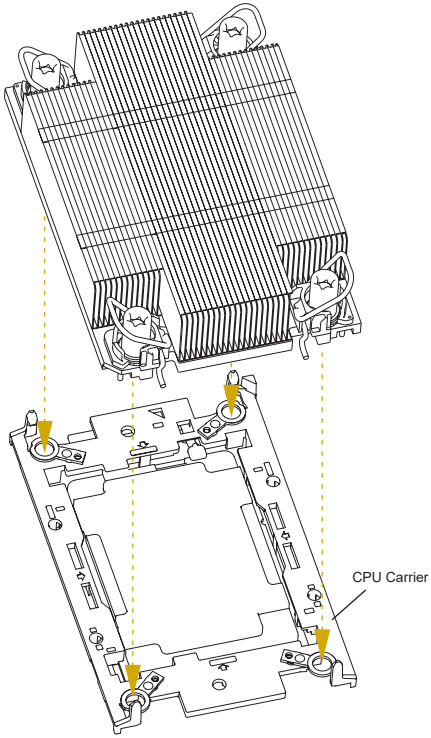

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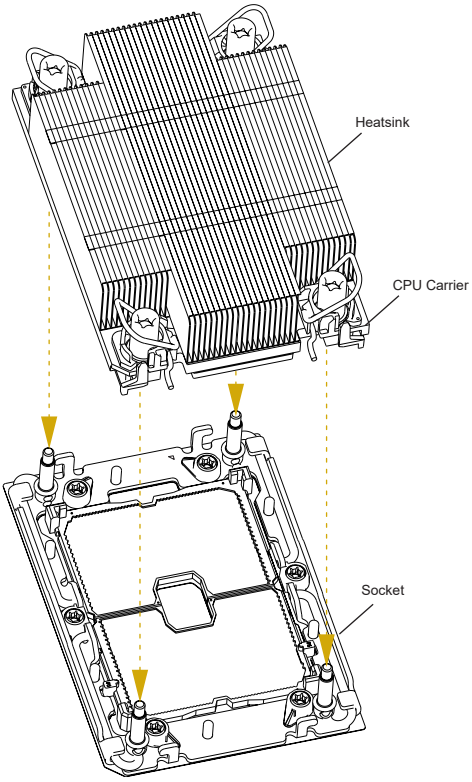

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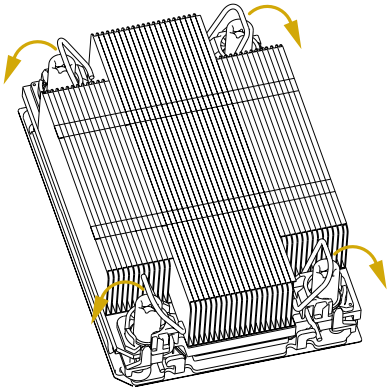

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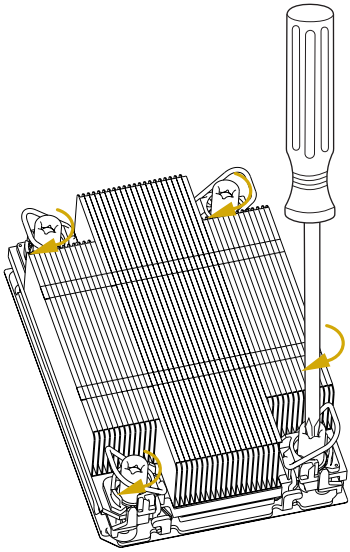
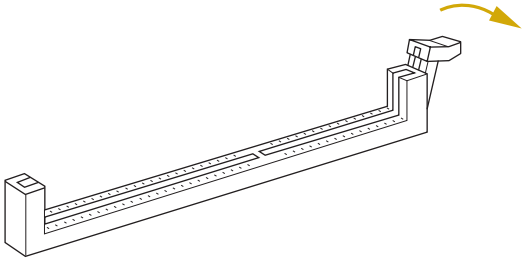


Appendix B

Installation of Memory Modules (single clip)

1



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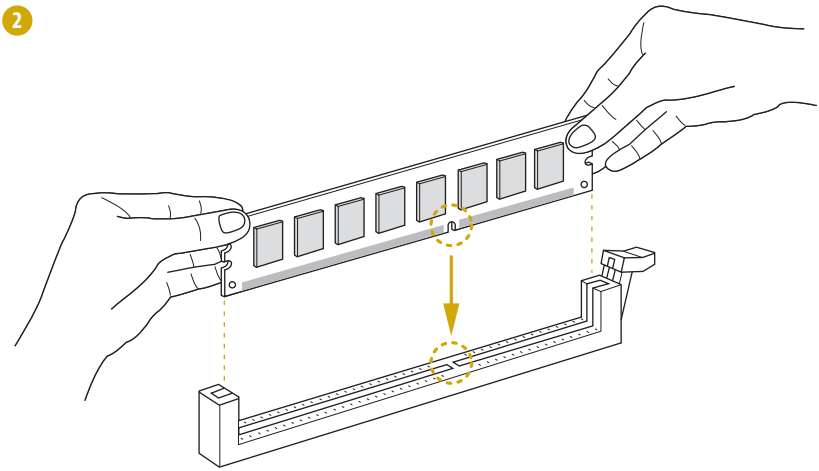

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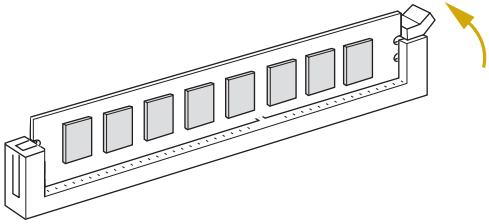
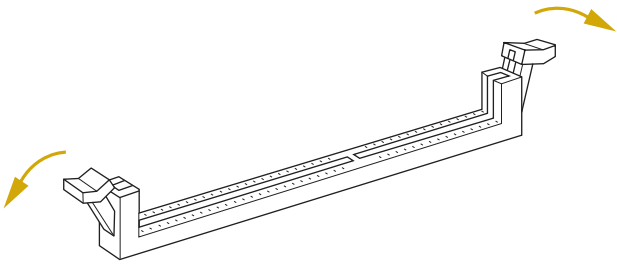


Installation of Memory Modules (double clips)

1



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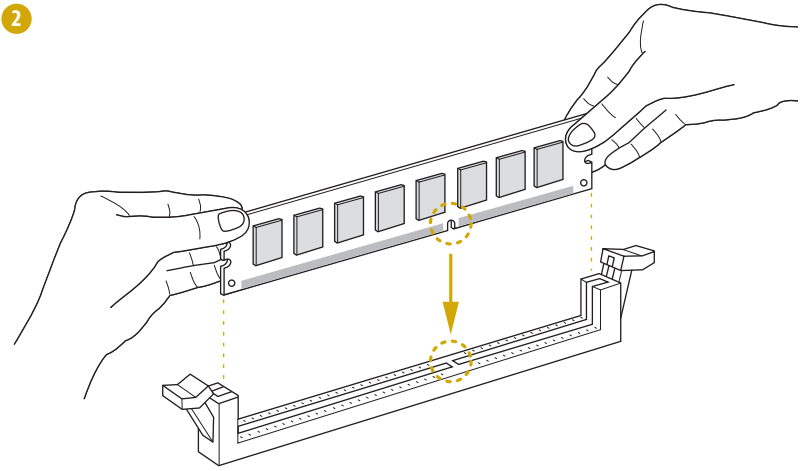

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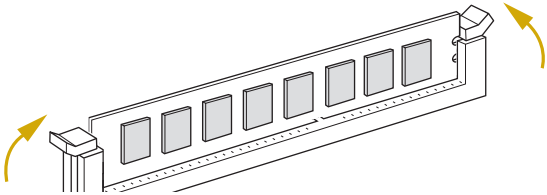
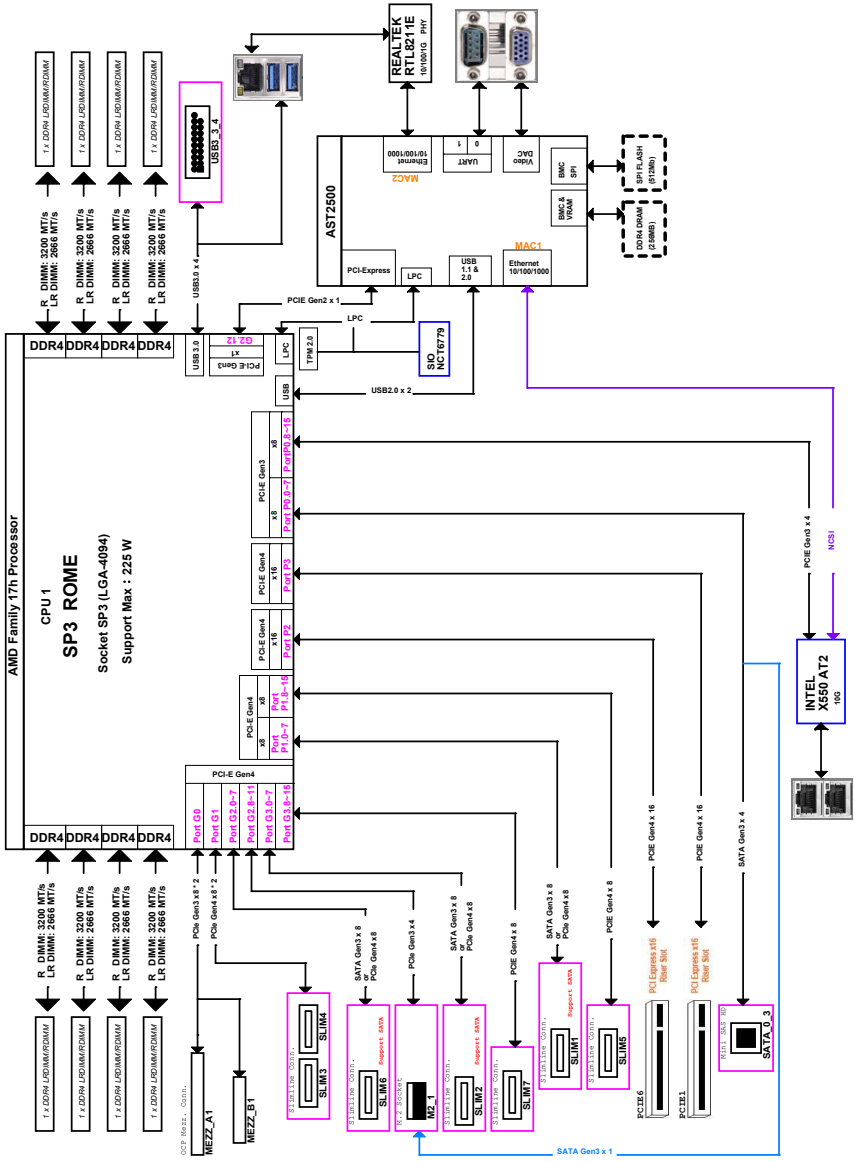


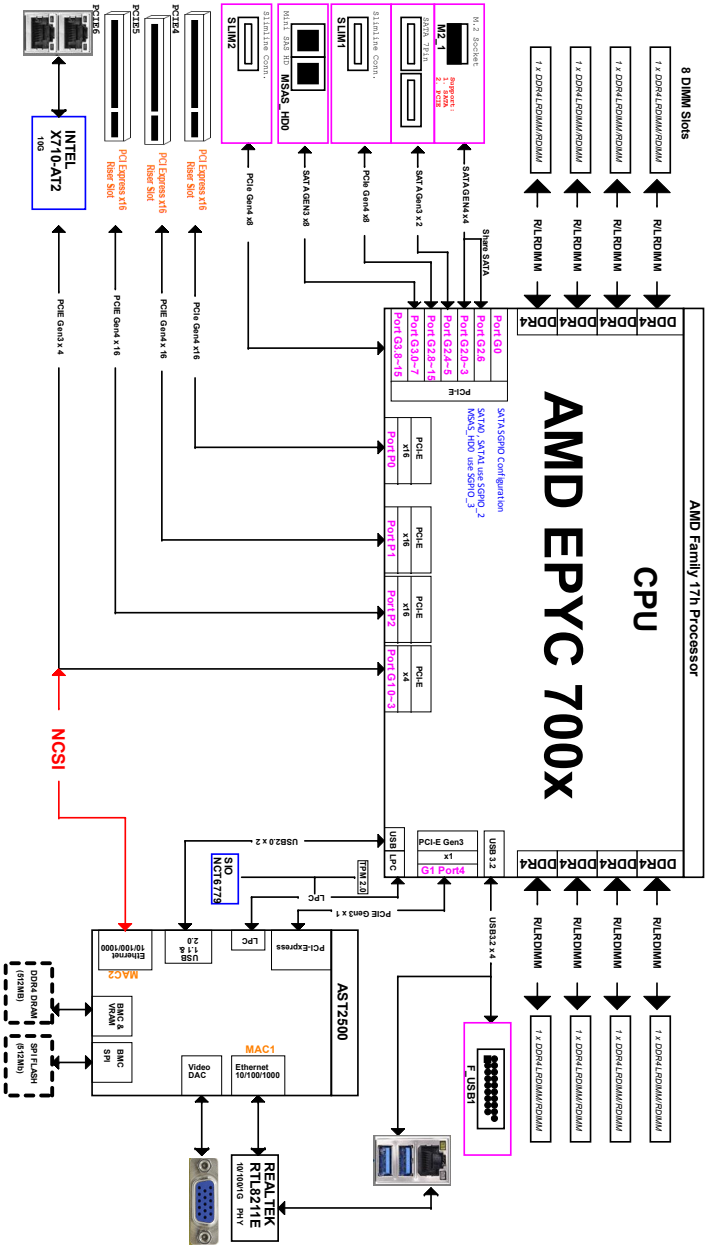
Appendix C

Block Diagrm (ROMED8QM-2T)



English

Block Diagrm (ROMED8U-2T)



Block Diagrm (SPC621D8U-2T)