OPEN
Industry Standard, Flexible Architecture

GREEN
Less Heat, Less Power Consumption

STABLE
Robust Design, Quality Parts

Stable and
Reliable Solution

Server/Workstation
Motherboard

1U2N2G Series

User Manual

English

Version 1.0
Published November 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 1U2N2G Series, a reliable barebone system produced under our consistently stringent quality control. It delivers excellent performance with robust design conforming to our 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.

System	ASRock Rack Server Board
1U2N2G-B550	B550D4ID/CG
1U2N2G-B550/N	B550D4ID/CG
1U2N2G-ROME/2T	ROMED4ID-2T

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 you purchase.

If you require technical support related to this system, please visit our website for specific information about the model you are using.
http://www.asrockrack.com/support/

1.1 Shipping Box Contents

Item	Quantity		
	B550/N	B550	ROME-2T
1U2N2G Barebone (1U form factor)	1	1	1
Power Supply Unit	2	2	2
System Fan	6	8	8
Power Distribution Board (PDB) (1U2N2G_PDB)	1	1	1
System Boards (MB) (per node)	1	1	1
Front Panel Board (FPB) (N19_FB_B) (per node)	1	1	1
Riser Card (1U2G-RB1U2SL-G4) (per node)	1	1	0
Riser Card (1U2SL2PX8) (per node)	1	0	0
Riser Card (1U4G_SL2P_L_RDV) (per node)	0	1	1
1U Cooler (per node)	1	1	1
Accessory Box	1	1	1
Slide Rail	1	1	1

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

1.2 Specifications

1U2N2G Series	
System Physical Status	
Form Factor	1U Rackmount
Dimension (D x W x H)	650 x 438 x 43.5 mm (25.6" x 17.2" x 1.7")
Support MB Size	Deep mini-ITX
Front Panel	
Button	• Power button
LED	• System Fail LED
I/O Ports	**1U2N2G-B550/N:** 2 x USB 3.2 Gen1 ports **1U2N2G-B550 / 1U2N2G-ROME/2T:** N/A
System Cooling	
Fan	**1U2N2G-B550/N:** 6 x single-roter 40*56 mm fans **1U2N2G-B550 / 1U2N2G-ROME/2T:** 8 x dual-rotor 40*56 mm fans
Power Supply	
Type	1+1 CRPS
Output Watts	**1U2N2G-B550/N:** 550W **1U2N2G-B550:** 1200W **11U2N2G-ROME/2T:** 1600W
Efficiency	80-PLUS Platinum
AC Input	**1U2N2G-B550/N:**100-240V, 50/60Hz **1U2N2G-B550:** 100-240V, 50/60Hz **11U2N2G-ROME/2T:** 100-240V, 47/63Hz

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

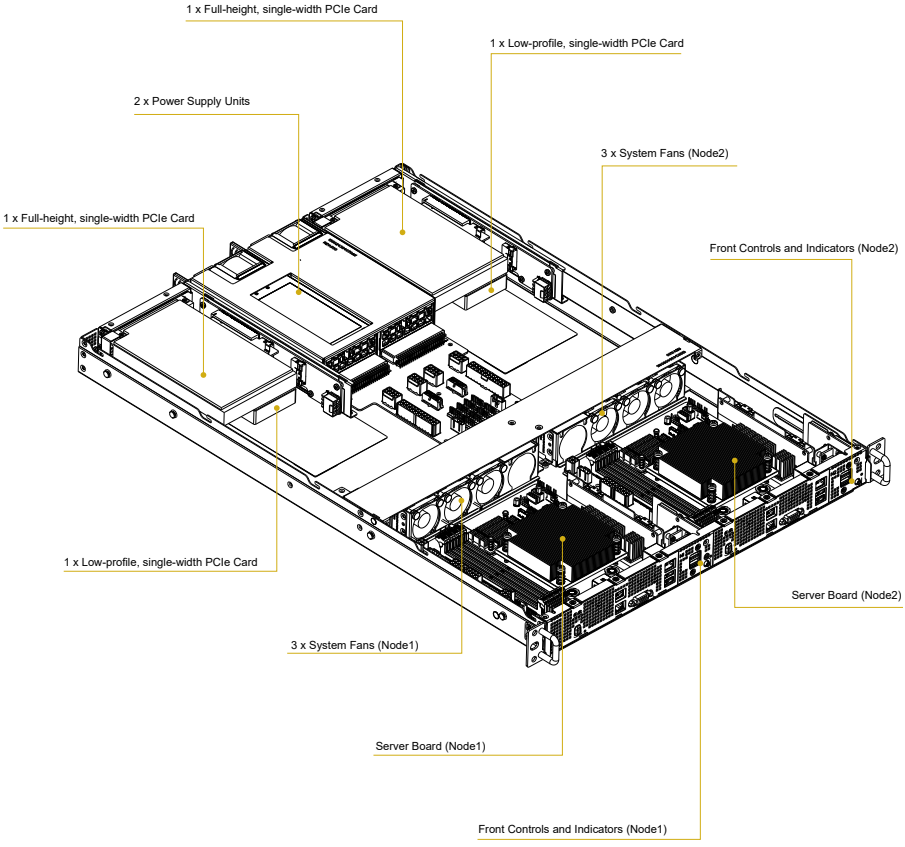
Please refer to the user manual of the motherboard you use for detailed information about motherboard components and features.

Chapter 2 Server System Overview

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

2.1 System Components

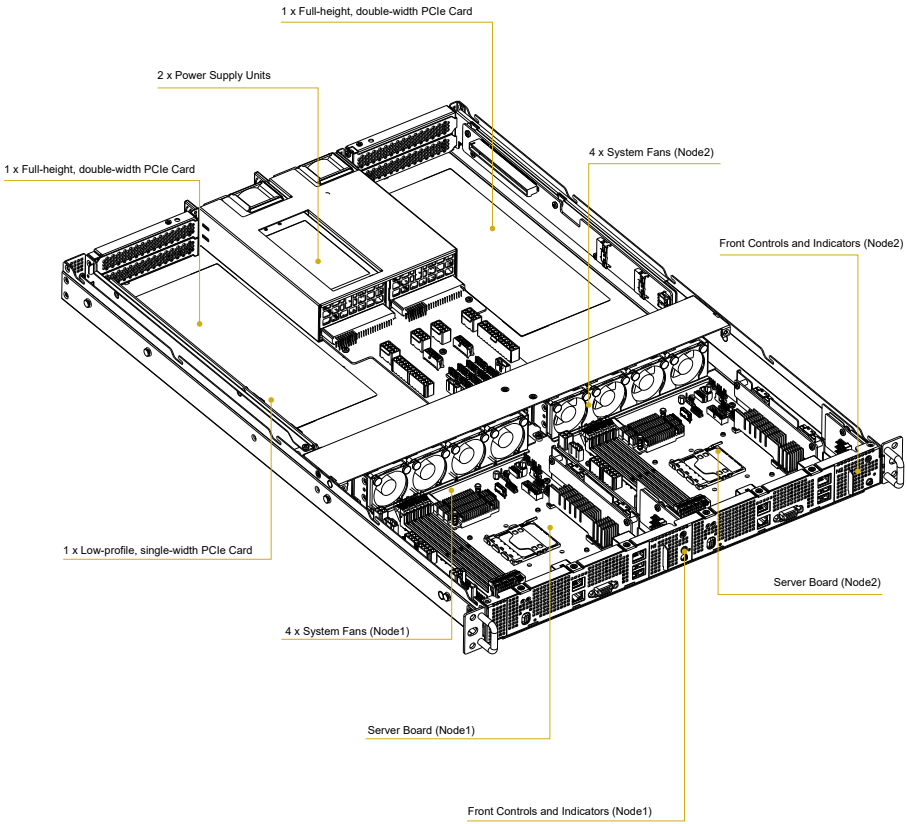
1U2N2G-B550/N



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

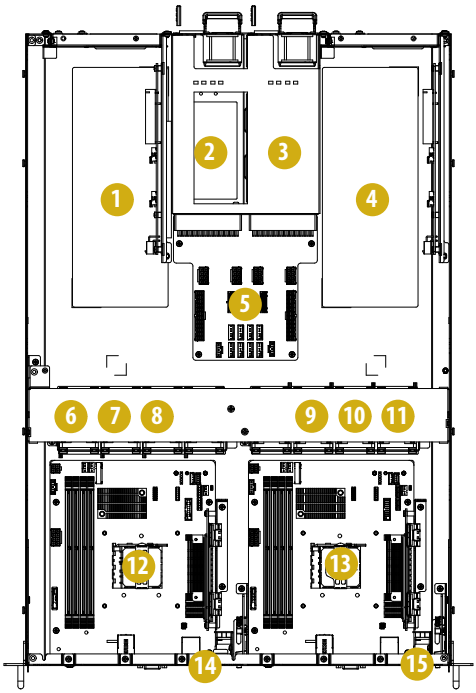
English

1U2N2G-B550 / 1U2N2G-ROME/2T



2.2 Internal Features

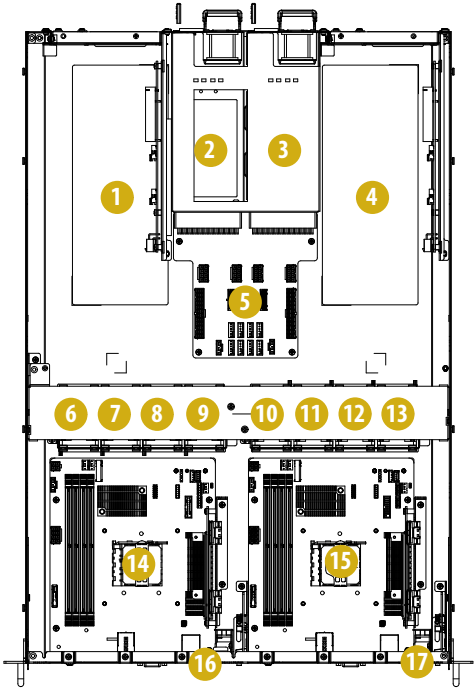
1U2N2G-B550/N



No.	From
1	Upper: Full-height, single-width PCIe Card (on the riser card) Lower: Low-profile, single-width PCIe Card (on the riser card)
2	Power Supply Unit (PSU1)
3	Power Supply Unit (PSU2)
4	Upper: Full-height, single-width PCIe Card (on the riser card) Lower: Low-profile, single-width PCIe Card (on the riser card)
5	Power Distribution Board (PDB)
6	System Fan (FAN1)
7	System Fan (FAN2)
8	System Fan (FAN3)
9	System Fan (FAN4)
10	System Fan (FAN5)

No.	From
11	System Fan (FAN6)
12	Serverboard for Node1
13	Serverboard for Node2
14	Front Panel Board (FPB) for Node 1
15	Front Panel Board (FPB) for Node 2

1U2N2G-B550 / 1U2N2G-ROME/2T

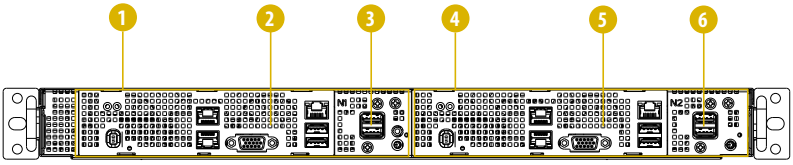


No.	From
1	1 x Full-height, double-width PCIe/GPU Card (on the riser card)
2	Power Supply Unit (PSU1)
3	Power Supply Unit (PSU2)
4	1 x Full-height, double-width PCIe/GPU Card (on the riser card)
5	Power Distribution Board (PDB)
6	System Fan (FAN1)
7	System Fan (FAN2)
8	System Fan (FAN3)
9	System Fan (FAN4)
10	System Fan (FAN5)
11	System Fan (FAN6)
12	System Fan (FAN7)

No.	From
13	System Fan (FAN8)
14	Serverboard for Node1
15	Serverboard for Node2
16	Front Panel Board (FPB) for Node 1
17	Front Panel Board (FPB) for Node 2

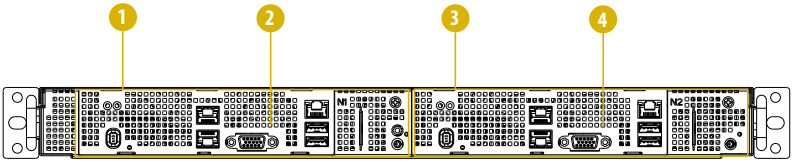
2.3 System Front Panel

1U2N2G-B550/N



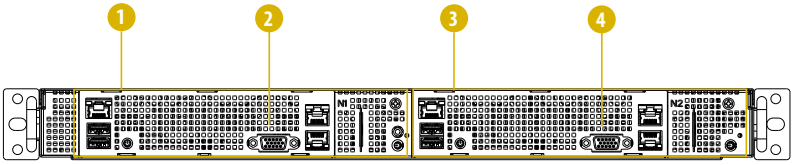
No.	Description
1	I/O Shield for Node1 (depends on the specification of the server board)
2	Front Vent for Node1
3	2 x USB 3.2 Gen1 Ports for Node1
4	I/O Shield for Node2 (depends on the specification of the server board)
5	Front Vent for Node2
6	2 x USB 3.2 Gen1 Ports for Node2

1U2N2G-B550



No.	Description
1	I/O Shield for Node1 (depends on the specification of the server board)
2	Front Vent for Node1
3	I/O Shield for Node2 (depends on the specification of the server board)
4	Front Vent for Node2

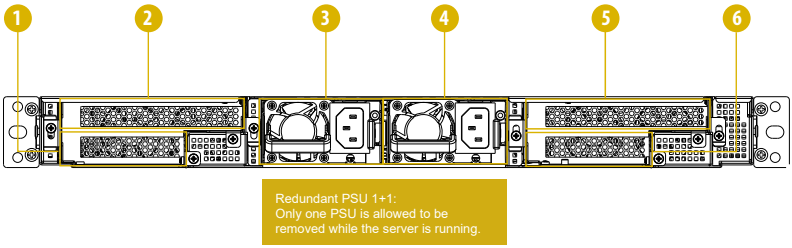
1U2N2G-ROME/2T



No.	Description
1	I/O Shield for Node1 (depends on the specification of the server board)
2	Front Vent for Node1
3	I/O Shield for Node2 (depends on the specification of the server board)
4	Front Vent for Node2

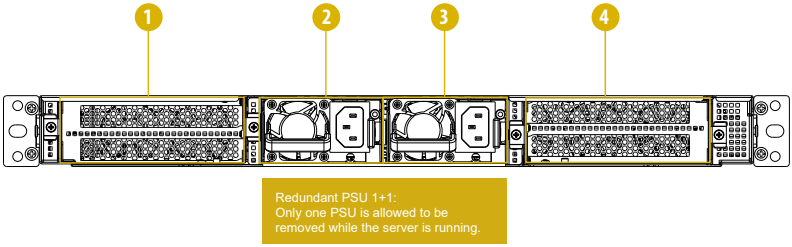
2.4 System Rear Panel

1U2N2G-B550/N



No.	Description
1	1 x Low-profile, single-width PCIe Card (on the riser card)
2	1 x Full-height, single-width PCIe Card (on the riser card)
3	1 x Power Supply Unit (PSU2)
4	1 x Power Supply Unit (PSU1)
5	1 x Full-height, single-width PCIe Card (on the riser card)
6	1 x Low-profile, single-width PCIe Card (on the riser card)

1U2N2G-B550 / 1U2N2G-ROME/2T

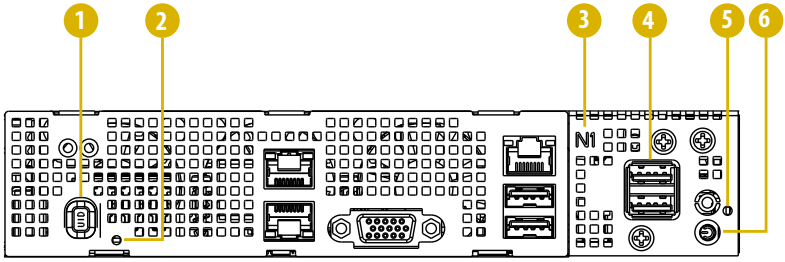


No.	Description
1	1 x Full-height, double-width PCIe Card / GPU Card (on the riser card)
2	1 x Power Supply Unit (PSU2)
3	1 x Power Supply Unit (PSU1)
4	1 x Full-height, double-width PCIe Card / GPU Card (on the riser card)

2.5 Front Control Panel Buttons and LEDs

Front Control Panel

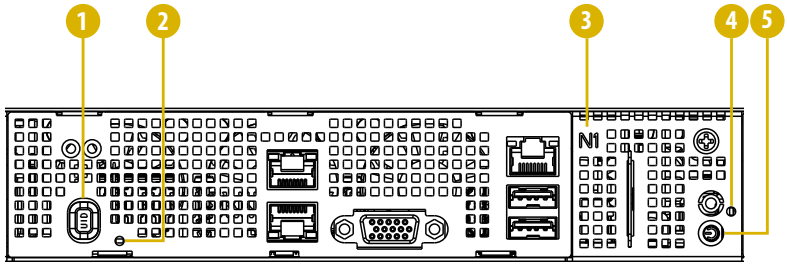
1U2N2G-B550/N



No.	Description
1	UID Button
2	UID LED
3	Node Number
4	USB 3.2 Gen1 Ports
5	System Fail LED
6	Power Button

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

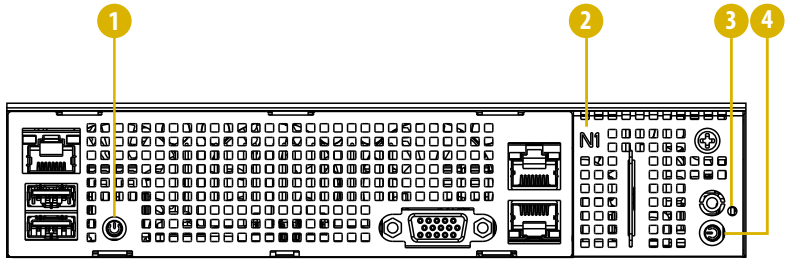
1U2N2G-B550



No.	Description
1	UID Button
2	UID LED
3	Node Number
4	System Fail LED
5	Power Button

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

1U2N2G-ROME/2T



No.	Description
1	UID Button & LED
2	Node Number
3	System Fail LED
4	Power Button

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

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 ID button to toggle the front panel UID LED and the baseboard UID LED on and off. You are able to locate the server you're working on from behind a rack of servers.

Status LED Definitions

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

UID LED	
Status	**Description**
Blue	System identification is active.
Off	System identification is 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 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 you press 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 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.

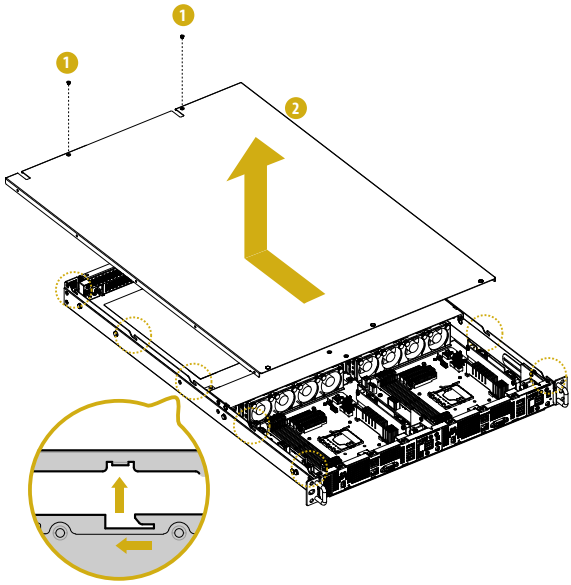
- Power Supply Units (Pre-installed)
- System Fans (Pre-installed)
- Server Board (Pre-installed)
- Power Distribution Board (Pre-installed)
- Front Panel Board (Pre-installed)

> 1. *Some components are already pre-installed. Simply properly connect the required 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

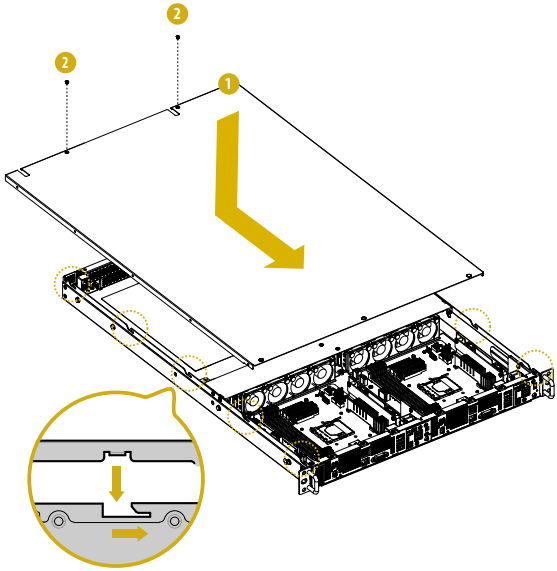
Removing the Server Top Cover

> 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. Remove the screws that secure the top cover to the chassis.
2. Push the top cover toward the rear side 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 side
2. Secure the top cover with the screws.

3.2 Power Supply

The system can accommodate four AC or two DC power supplies in the bay at the rear of the chassis. One power supply is required for full load operation, with the other power supply purely as a redundant, load-sharing backup. It can be removed without affecting system operation.

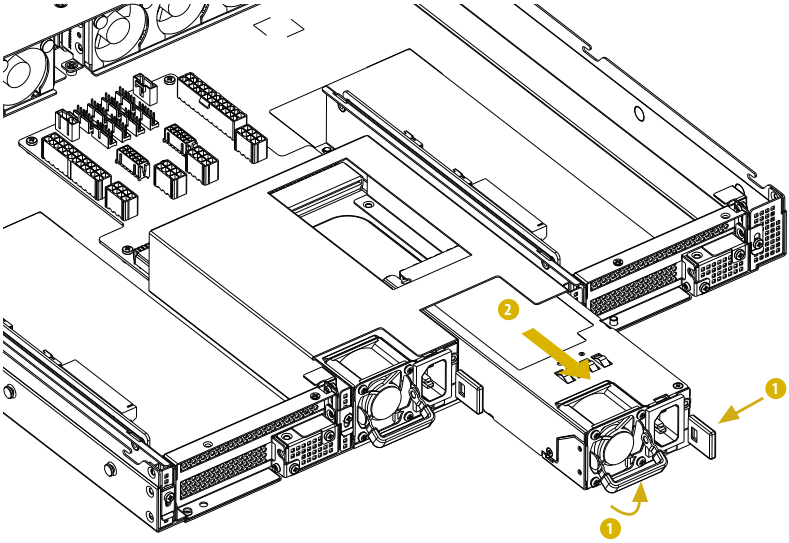
Replacing the Power Supply

> ⚠ *Before replacing the power supply, power off the server, unplug the power cord, and disconnect all wiring from the power supply.*

Removing the Power Supply Unit

To remove a failed power supply, identify the failed power supply by checking the power supply LED on the PSU.

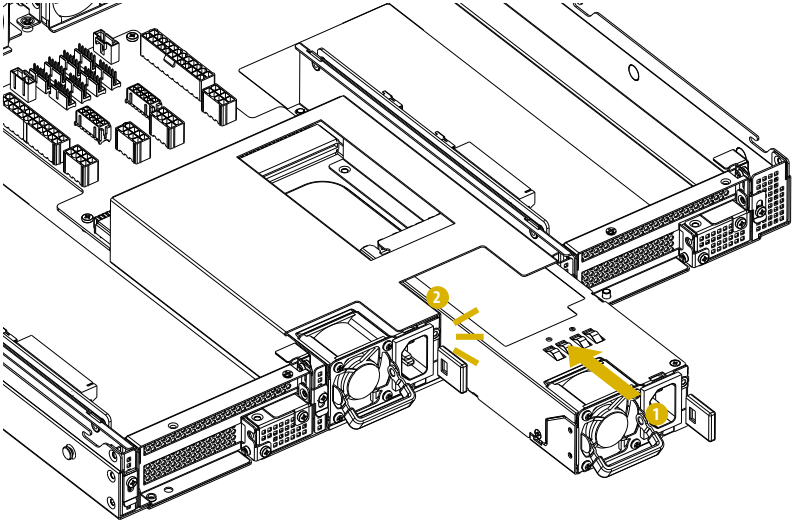
1. Hold onto the power supply handle while pressing the locking lever towards the power supply handle.
2. Pull to remove the power supply from the chassis.



Installing the Power Supply Unit

To install a new power supply, please follow the steps below.

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



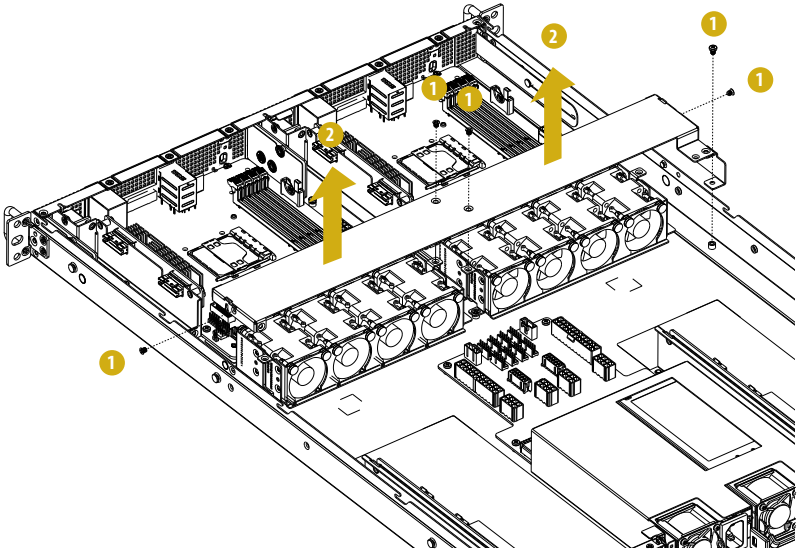
3.3 System Fan

The system supports dual-rotor system fans.

For the 1U2N2G-B550 and 1U2N2G-ROME/2T systems, please remove the riser-card bracket before replacing any system fans. Please refer to the section entitled "3.5 Add-on Card *(1U2N2G-B550 / 1U2N2G-ROME/2T only)*" for the instructions on how to remove the riser-card bracket from the chassis.

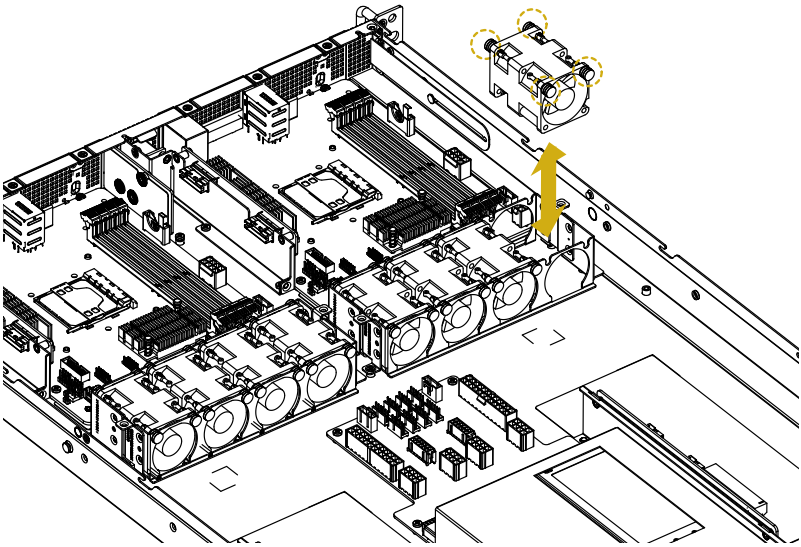
Removing the Fan Cover

1. Release the screws that secure the cover on the fans to the chassis.
2. Lift up and remove the cover.



Replacing the System Fan

1. Lift to remove the failed fan.
2. Align the mounting holes on the replacement fan corners with the fan mounts on the fan bracket.
3. Gently place the fan onto the mounts.
4. Make sure the fan is well seated.

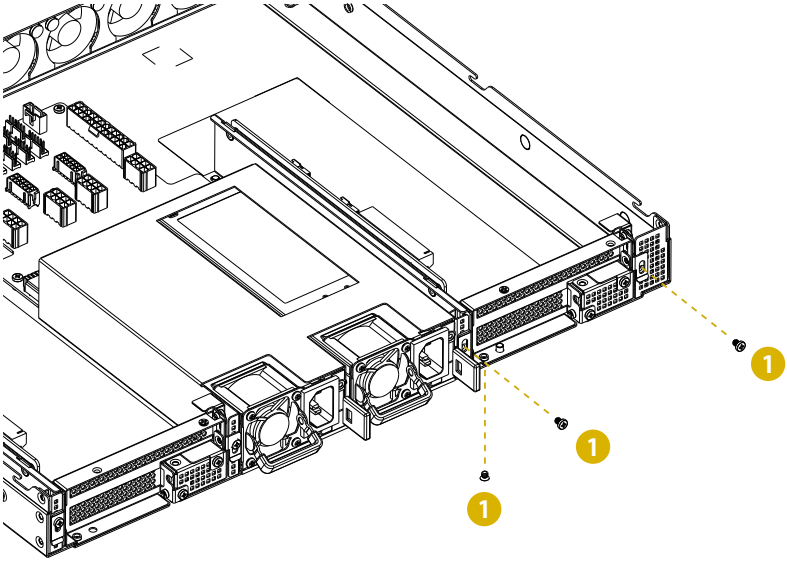


3.4 Add-on Card *(1U2N2G-B550/N only)*

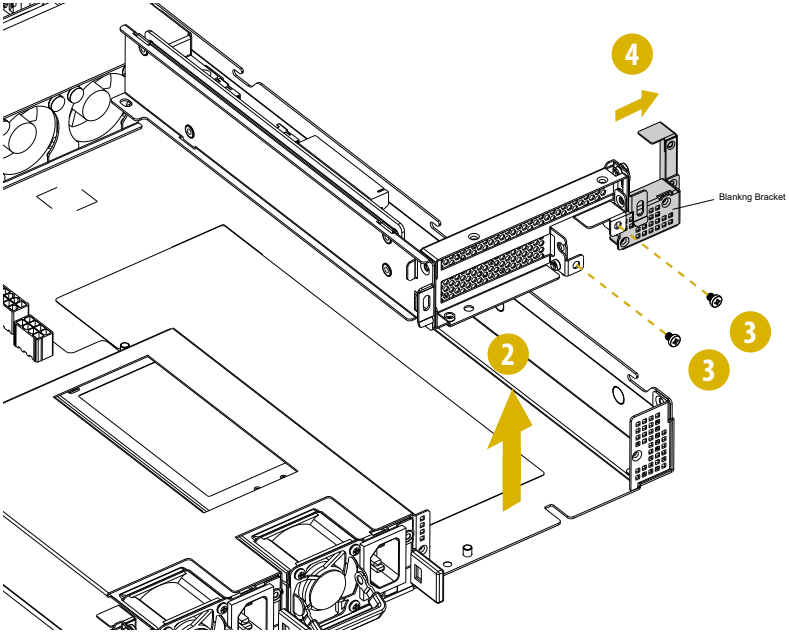
1. *You can install an add-on card to the chassis only when you have a riser card installed on the server board.*
2. *Before installing the add-on card, power off the server and unplug the power cord.*

Removing the Riser-Card Bracket from the Chassis

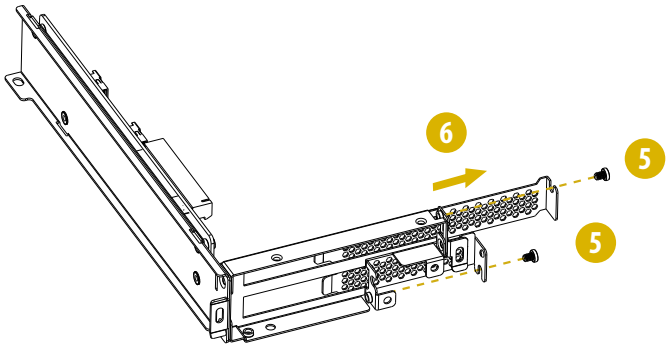
1. Release the screws that secure the riser-card bracket on the chassis.



2. Lift up the riser-card bracket.
3. Release the screws that secure the blanking bracket. Put it aside for later use.
4. Pull out and remove the blanking bracket from the riser-card bracket.

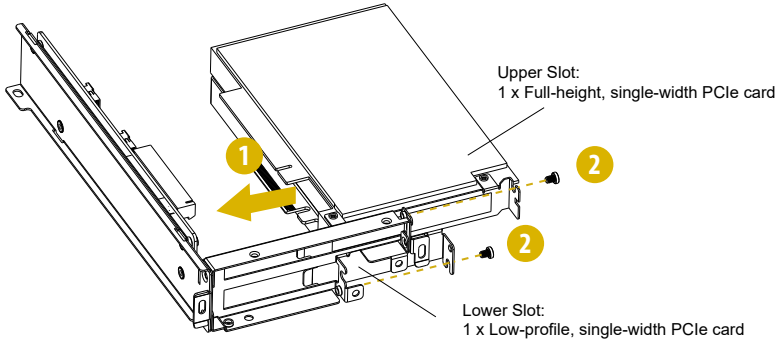


5. Remove the screws securing the blanking plates on the riser-card bracket.
6. Slide the blanking plates out sideways.

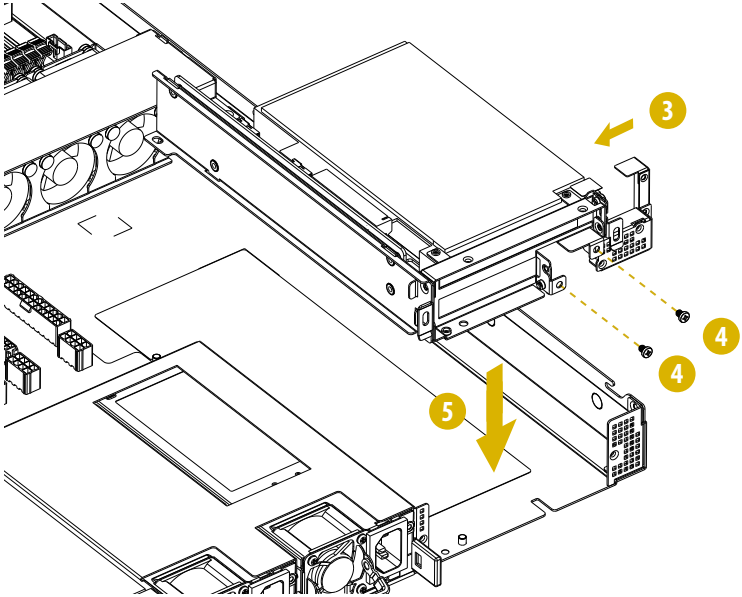


Installing the Add-on Card

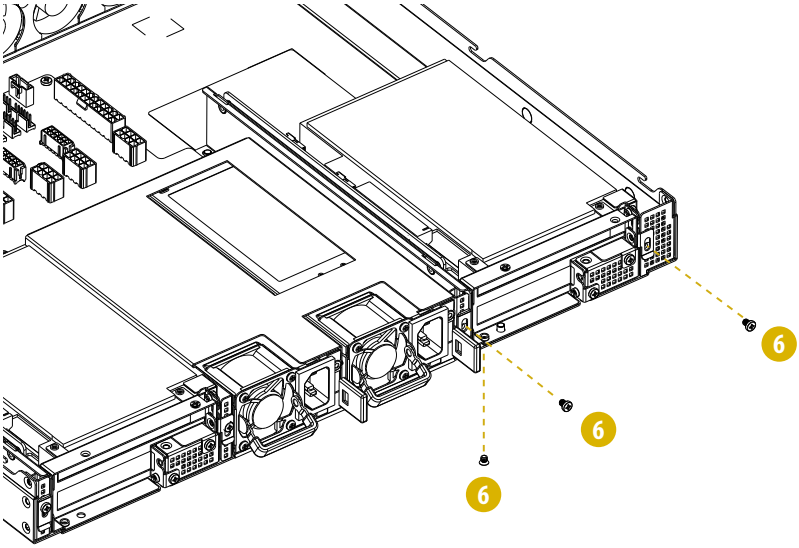
1. Install the add-on card to the riser-card bracket.
2. Secure the add-on card to the bracket with a screw.



3. After one or both add-on cards are well installed on the riser card, put the blanking bracket back to the riser-card assembly.
4. Tighten the screws to secure the blanking bracket.
5. Align the riser-card assembly with the opening of the chassis.



6. Tighten the screws to secure the assembly to the chassis.

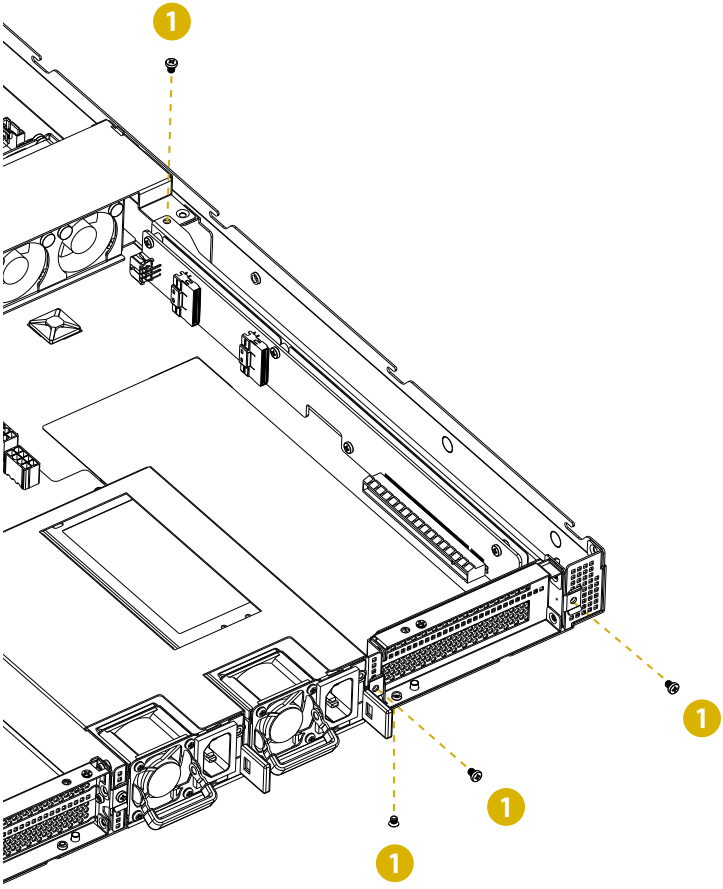


3.5 Add-on Card *(1U2N2G-B550 / 1U2N2G-ROME/2T only)*

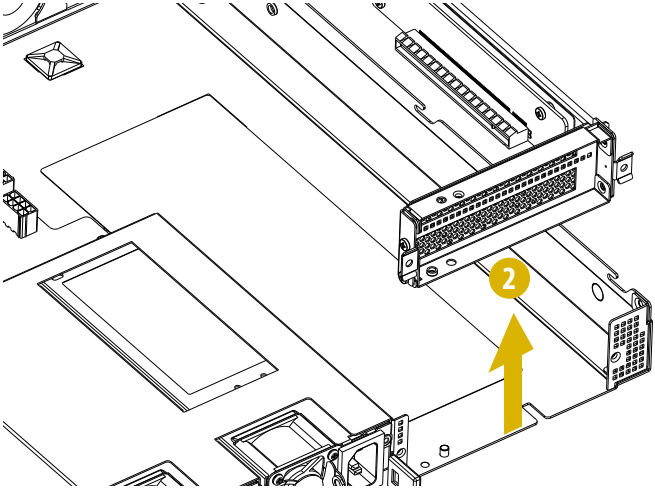
1. *You can install an add-on card to the chassis only when you have a riser card installed on the server board.*
2. *Before installing the add-on card, power off the server and unplug the power cord.*

Removing the Riser-Card Bracket from the Chassis

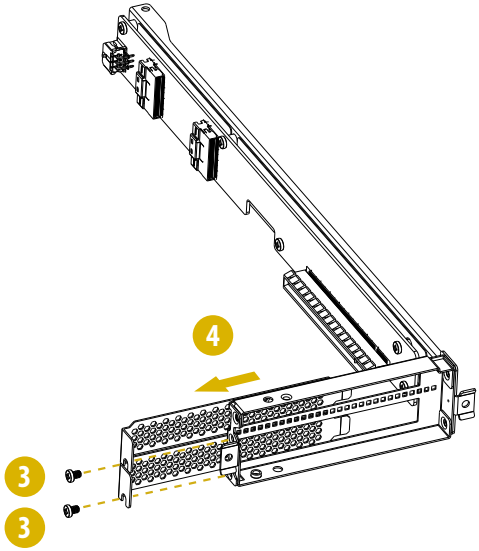
1. Release the screws that secure the riser-card bracket on the chassis. Put them aside for later use.



2. Lift up the riser-card bracket.

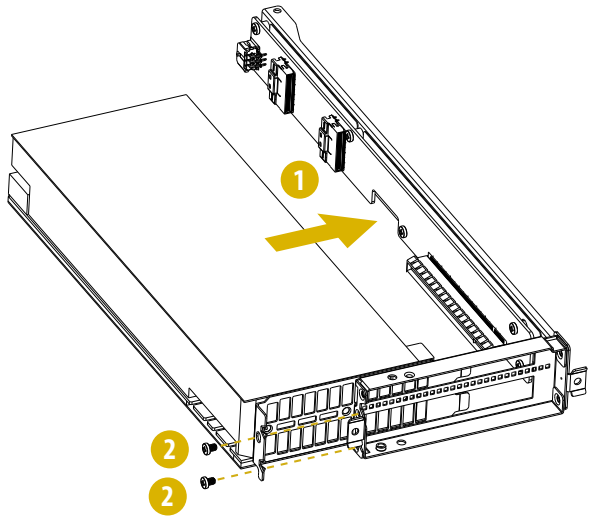


3. Remove the screws securing the blanking plates on the riser-card bracket.
4. Slide the blanking plates out sideways.

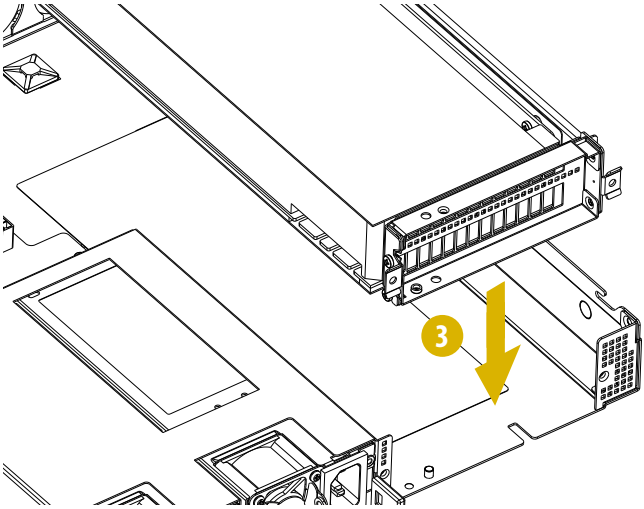


Installing the Add-on Card

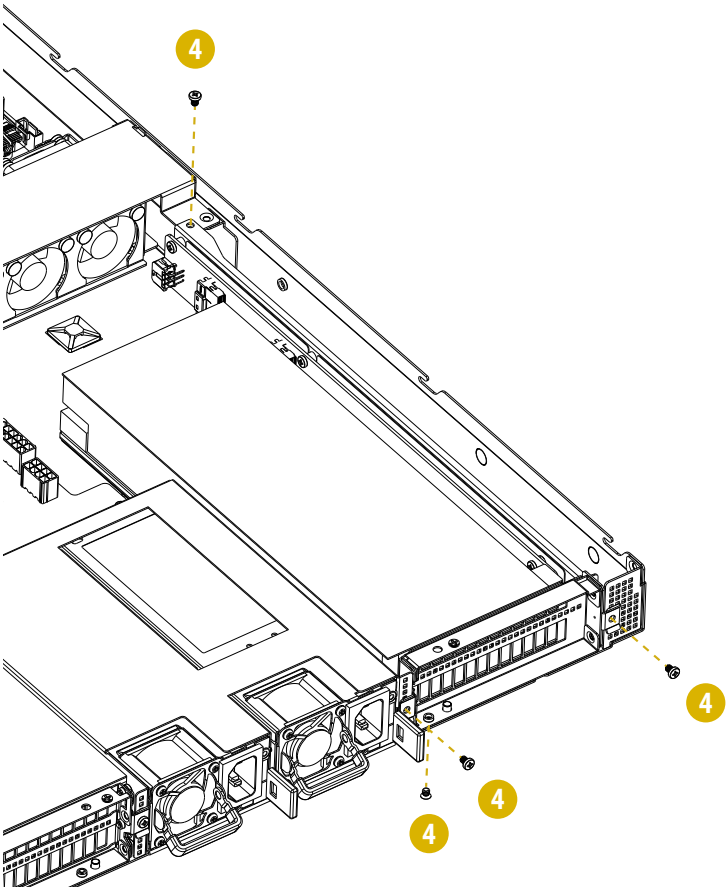
1. Install the add-on card to the riser-card bracket.
2. Secure the add-on card to the bracket with two screws.



3. After the add-on card is well installed on the riser-card, align the riser-card assembly with the opening of the chassis.



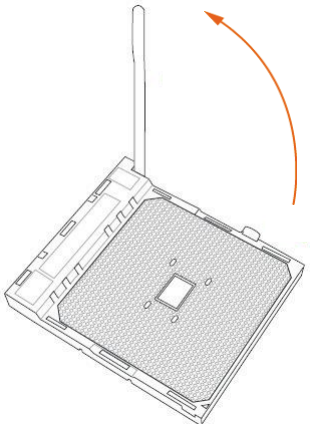
4. Tighten the screws to secure the assembly to the chassis.



Appendix A

Installing the CPU (AM4 PGA 1331 Socket)

1



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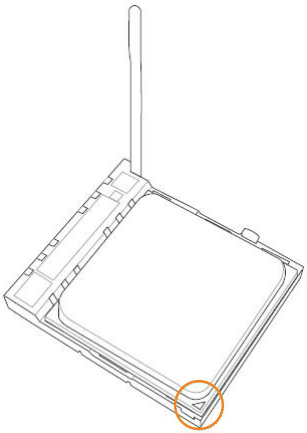
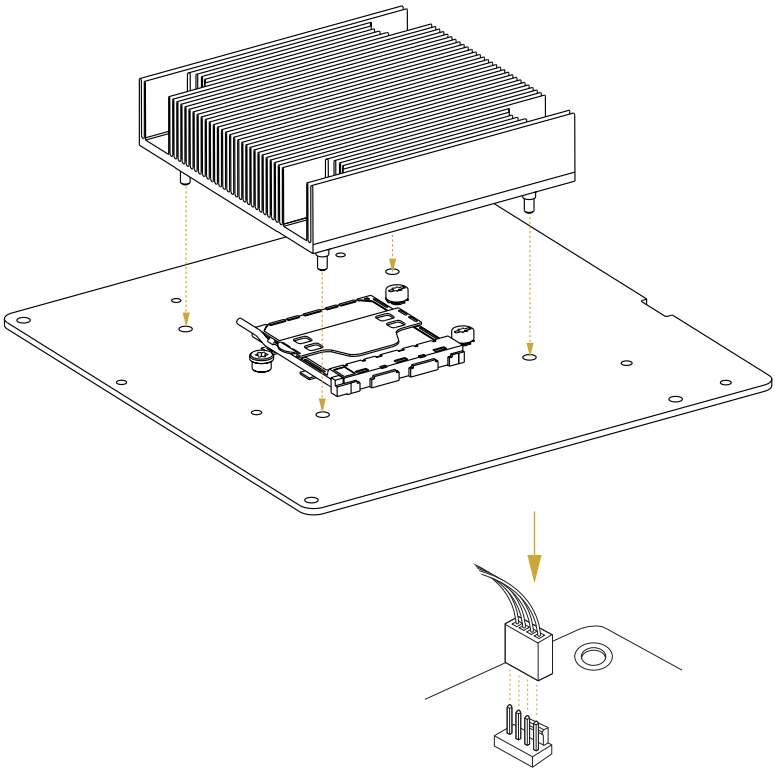


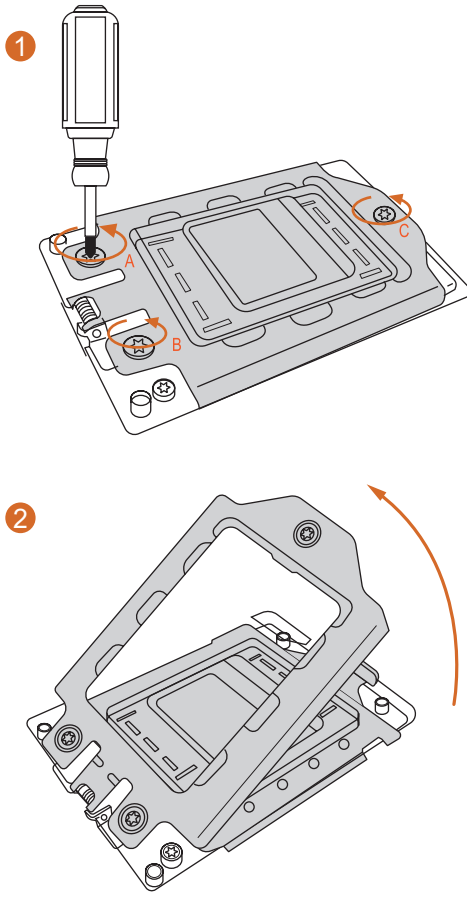
3

Installing the CPU Heatsink



Installing the CPU (SP3 LGA 4094 Socket)

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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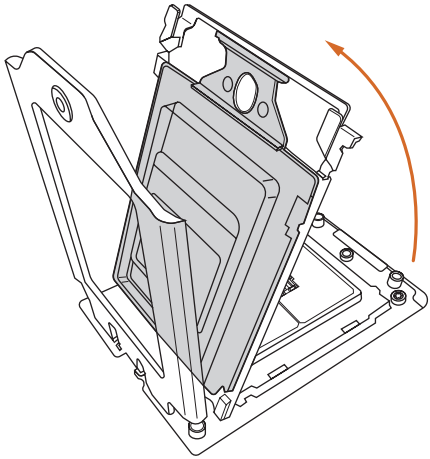

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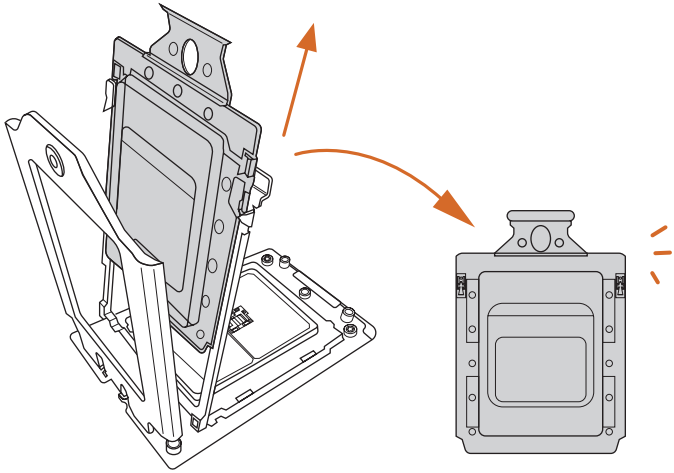

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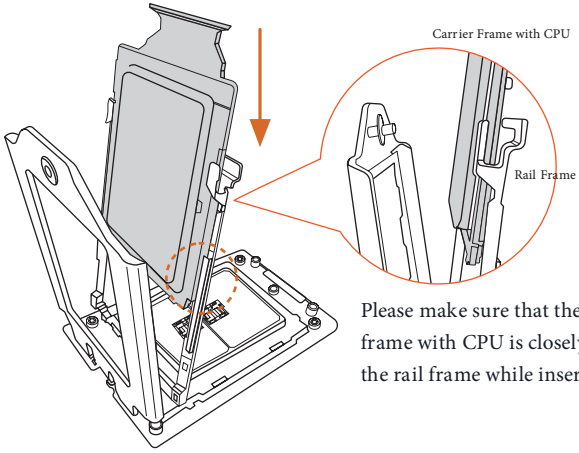
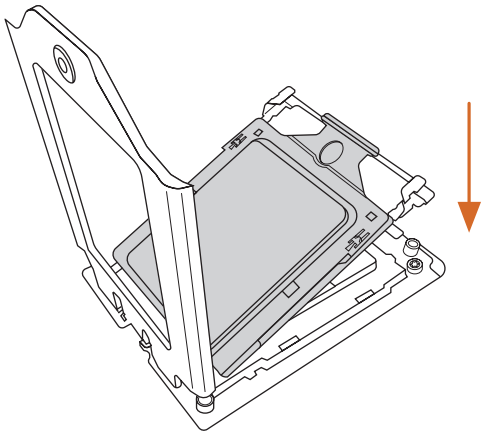


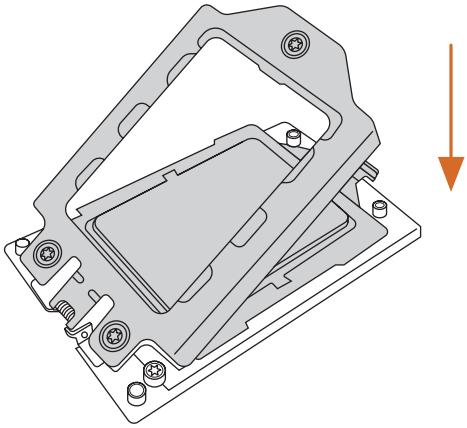
Please make sure that the carrier frame with CPU is closely attached to the rail frame while inserting it.

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

6



7



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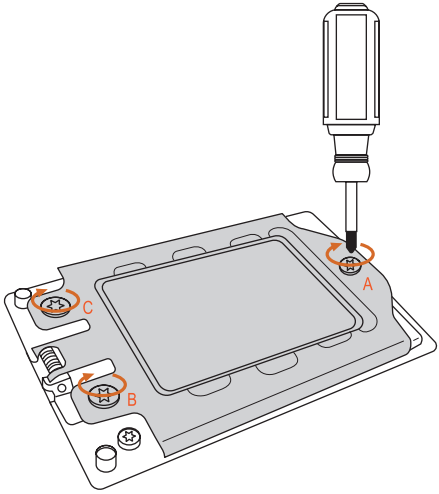
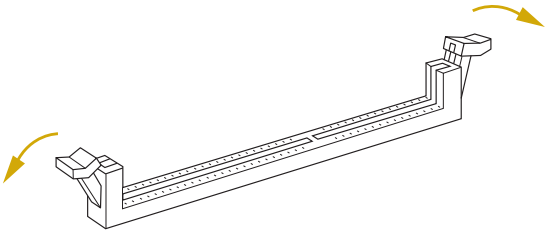


Installation of Memory Modules (DIMM)

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 serverboard you use.

1



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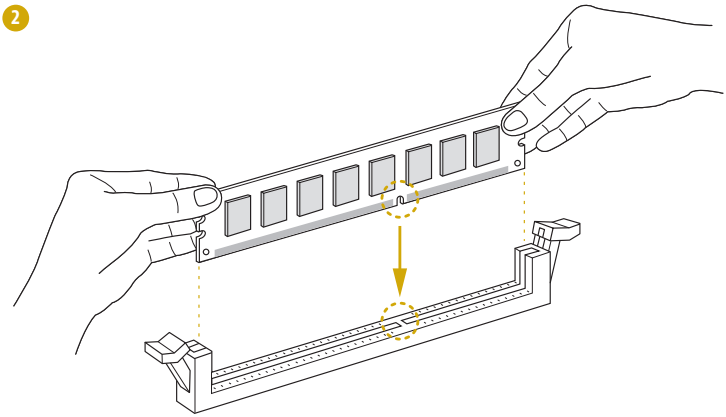

3