OPEN

Industry Standard, Flexible Architecture

GREEN

Less Heat, Less Power Consumption

STABLE

Robust Design, Quality Parts

Stable and
Reliable Solution

Server/Workstation
Motherboard

1U8S4E Series

User Manual

English

Version 1.0
Published Aug 2023

Copyright Notice:

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 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

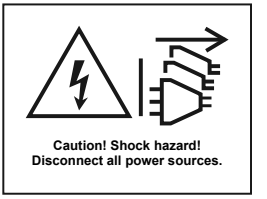
RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

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 1U8S4E 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.

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
1U8S4E-GENOA/2T	GENOAD8UD-2T/X550
1U8S4E-EGS/2T	SPC741D8UD-2T/X550

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	
1U8S4E-	GENOA/2T	EGS/2T
1U8S4E Series (1U Barebone)	1	1
System Board (MB)	1	1
Power Supply Unit	2	2
System Fan	6	6
HDD Backplane (BPB)	1	1
Front Panel Board (FPB)	1	1
Riser Board (PCIe x16)	1	1
Accessory Box	1	1
1U Cooler/Heatsink	1	1
Slide Rail	1	1

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

English

1.2 Specifications

1U8S4E Series	
System Physical Status	
Form Factor	1U Rackmount
Dimension (D x W x H)	676.5 x 438 x 43.4 mm (26.6'' x 17.2'' x 1.7'')
Support MB	**1U8S4E-GENOA/2T :** GENOAD8UD-2T/X550 **1U8S4E-EGS/2T :** SPC741D8UD-2T/X550
Front Panel	
Buttons	• Power button w/ LED • ID button w/ LED • System reset • NMI button
LEDs	• HDD Activity • LAN 1/2 • System Event
I/O Ports	**1U8S4E-GENOA/2T :** 1 Type-A (USB3.2 Gen1) **1U8S4E-EGS/2T :** 1 Type-A (USB2.0)
External Drive Bay / Storage	
Front Side Drive Bay	• 4 hot-swap 2.5" NVMe (PCIe5.0 x4) drive bays • 8 hot-swap 2.5" SATA drive bays
Internal Side	**1U8S4E-GENOA/2T:** 2 M-key (PCIe5.0 x4); support 2280/2260/2242/2230 form factor **1U8S4E-EGS/2T:** 1 M-key (PCIe3.0 x4); support 2280 form factor
System Fan	
Fan	6 PWM Easy-swap 40x56 mm fans
Power Supply	
Type	1 + 1 Slim PSU
Output Watts	750W
Efficiency	80-PLUS Platinum

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

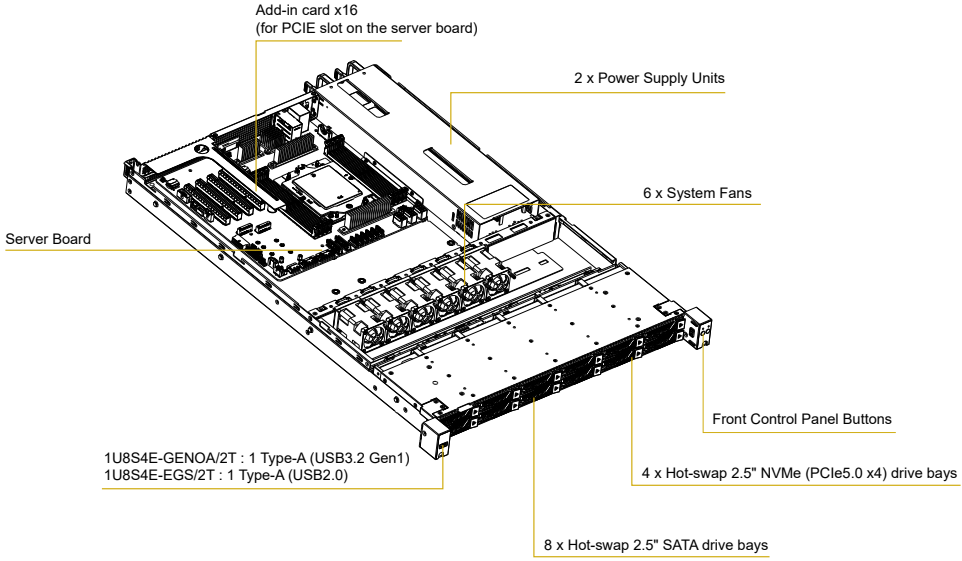
Please refer to the user manual of the motherboard you use for detailed information about motherboard components and features.

English

Chapter 2 Server System Overview

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

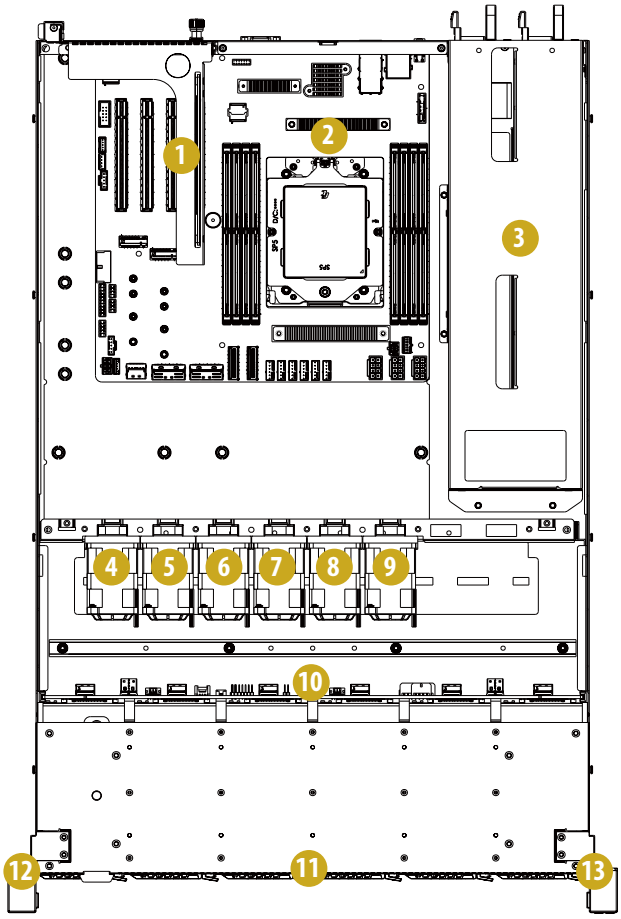
2.1 System Components



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

English

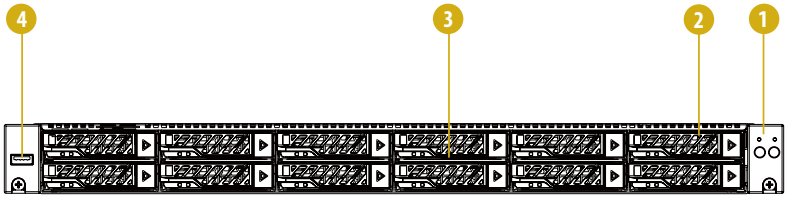
2.2 Internal Features



No.	From
1	Add-in card x16(for PCIE slot on the server board)
2	Server Board
3	2 x Power Supply Units (PSU)
4	**1U8S4E-GENOA/2T :** System Fan 1 **1U8S4E-EGS/2T :** System Fan 6

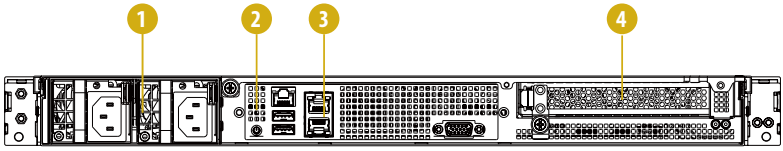
No.	From
5	**1U8S4E-GENOA/2T :** System Fan 2 **1U8S4E-EGS/2T :** System Fan 5
6	**1U8S4E-GENOA/2T :** System Fan 3 **1U8S4E-EGS/2T :** System Fan 4
7	**1U8S4E-GENOA/2T :** System Fan 4 **1U8S4E-EGS/2T :** System Fan 3
8	**1U8S4E-GENOA/2T :** System Fan 5 **1U8S4E-EGS/2T :** System Fan 2
9	**1U8S4E-GENOA/2T :** System Fan 6 **1U8S4E-EGS/2T :** System Fan 1
10	2.5" Drive Backplane Board
11	12 x 2.5" Hot-Swap Drive Trays
12	**1U8S4E-GENOA/2T :** 1 Type-A (USB3.2 Gen1) **1U8S4E-EGS/2T :** 1 Type-A (USB2.0)
13	Front Control Panel Buttons

2.3 System Front Panel



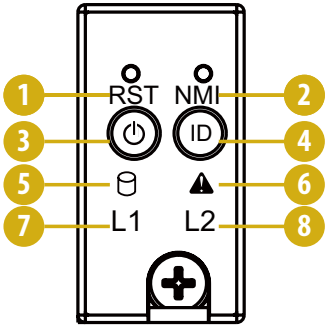
No.	Description
1	Control Panel (depends on the specification of the server board)
2	4 x Hot-swap 2.5" NVMe (PCIe5.0 x4) drive bays
3	8 x Hot-swap 2.5" SATA drive bays
4	**1U8S4E-GENOA/2T :** 1 Type-A (USB3.2 Gen1) **1U8S4E-EGS/2T :** 1 Type-A (USB2.0)

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	1 x Add-in card x16 (for PCIE slot on the server board)

2.5 Front Control Panel Buttons and LEDs



No.	Description
1	System Reset Button
2	NMI (Nonmaskable Interrupt) Button
3	Power Button and LED
4	ID Button and LED
5	Hard Drive Status LED
6	System Status LED
7	LAN1 Activity LED
8	LAN2 Activity LED

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

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.

ID Button

Press the ID button to toggle the front panel ID LED and the baseboard ID LED on and off. This allows user to locate the server that working on from behind a rack of servers.

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.

Status LED Definitions

LAN LED	
Status	**Description**
Blinking Green	Network access
Solid Green	LAN is present
Off	No LAN is present

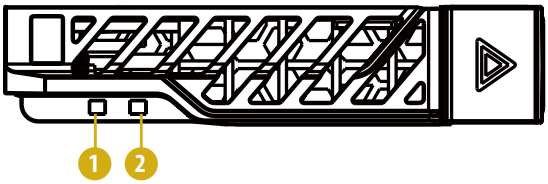
Hard Drive Status LED	
Status	**Description**
Amber	Hard Drive access
Off	Hard Drive idle

System Status LED	
Status	**Description**
Green	System process fault
Off	Running or normal operation

ID LED	
Status	**Description**
Blue	System identification is active
Off	System identification is disabled

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

2.6 Hard Drive Tray LEDs

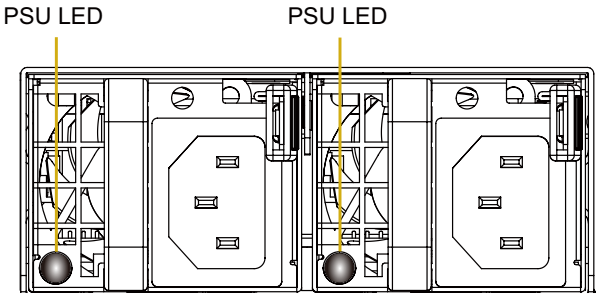


No.	Description
1	Hard Drive Tray Status LED
2	Hard Drive Tray Activity LED

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

2.7 PSU LED



PSU Status LED	
Status	**Description**
Green	Output ON and OK
OFF	No AC power to all power supplies
Green blinking at 1Hz	AC present / Only AUX on (PS off) or PSU in Cold redundant state
Amber	AC cord unplugged or AC power lost with a second power supply in parallel still with AC input power
Amber blinking at 1Hz	Power supply warning events where the power supply continues to operate high temp, high power, high current, slow fan
Amber	Power supply critical event causing a shutdown; failure, OCP, OVP, Fan fail

**Note: Blinking frequency: 1sec ON / 1sec OFF*

Chapter 3 Hardware Installation and Maintenance

This chapter helps user to assemble the chassis and install components.

Before You Begin

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

1. 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 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" Hard Drive(s)
- Power Supply Unit(s) (Pre-installed)
- System Fans (Pre-installed)
- Server Board (Pre-installed)
- Fan Board (Pre-installed, if supported)
- Hard Drive Backplane (Pre-installed)

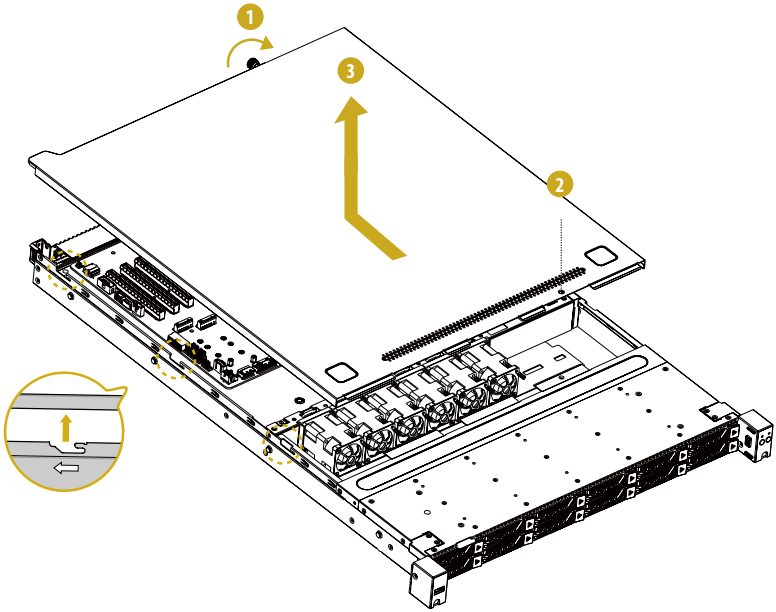
> 1. *Some components are already pre-installed. Simply properly connect the relavant cables before or after installation. See the Quick Installation Guide for more details.*
> 2. *Refer to the user manual of the server board for instructions on how to install server board components.*

3.1 Server Top Covers

Removing the Server Top Covers

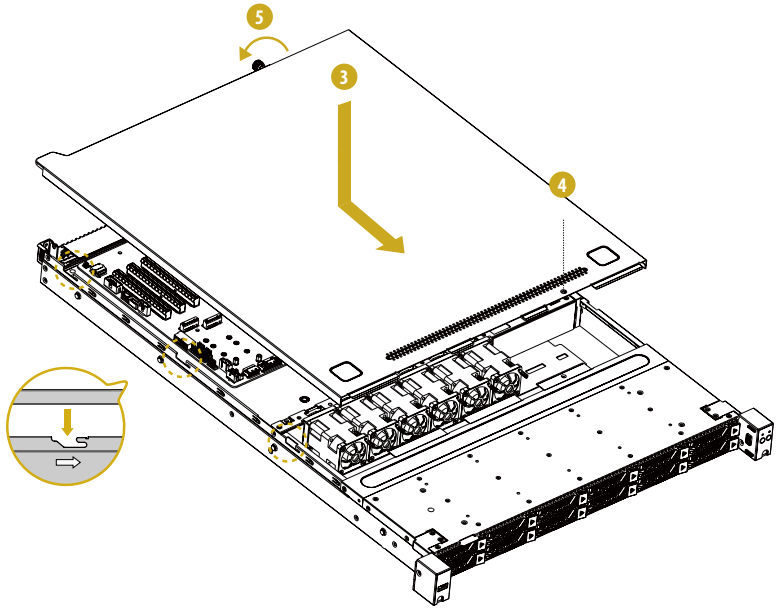
1. Before removing the top covers, power off the server and unplug the power cord.
2. The system must be operated with all the chassis top covers installed to ensure proper cooling.

1. Hand-release the thumbscrew on the rear side of the chassis.
2. Remove the screw that secures the top rear cover to the chassis.
3. Push the top rear cover toward the REAR of the chassis to remove the cover from the locked position. Lift up and remove the top rear cover.



Installing the Server Top Covers

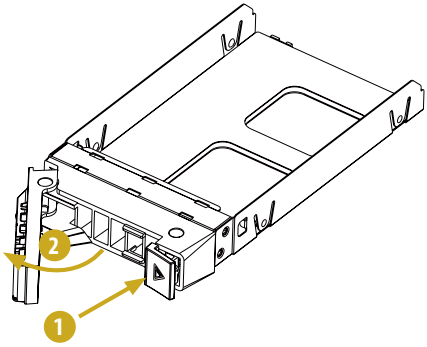
1. Then lower the top rear cover on the chassis, making sure the side latches align with the cutouts. Slide the top rear cover toward the FRONT of the chassis.
2. Secure the top rear cover in place with a screw.
3. Hand-tighten the thumbscrew on the rear side of the chassis.



3.2 Hard Drive

Removing 2.5" Hard Drive

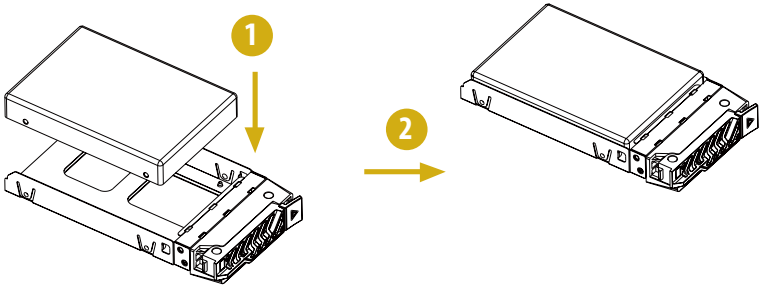
1. Press the locking lever latch on the drive tray to unlock the retention lever.
2. Rotate the lever out and away from the module bay and pull the hard drive out of the Hard Drive tray.



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

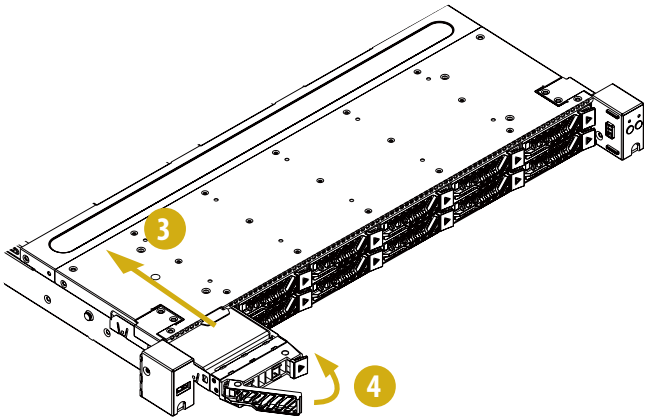
Installing a 2.5" Hard Drive to the Hard Drive Tray

1. Engage the one side of hard drive into the tray by aligning the side bracket.
2. Carefully push down the other side of the hard drive until it is locked into place



Front Panel-Installing the HDD assembly

1. Slide the drive tray into the HDD bay until the drive is fully seated.
2. Push in the locking lever to lock the drive tray into place.



3.3 Power Supply

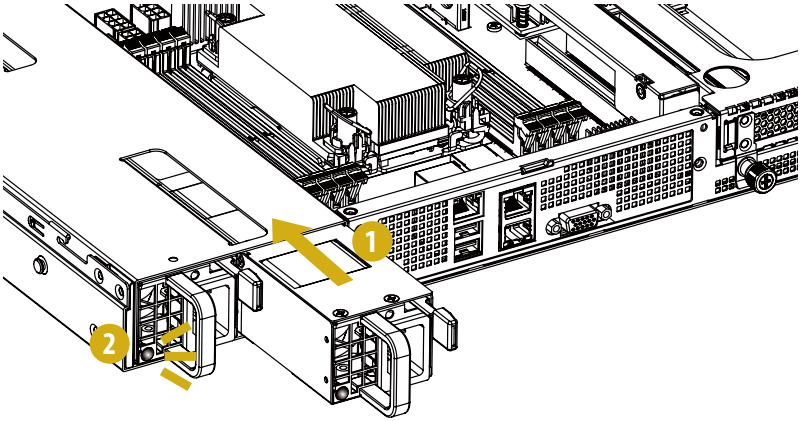
Installing and Removing the Power Supply

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

The 1U8S4E Series system supports single PSU only.
The 1U8S4E Series system can accommodate two AC or two DC power supplies in the bay at the rear of the chassis. Each unit provides up to 750 Watts of power. 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.

Installing the Power Supply Unit

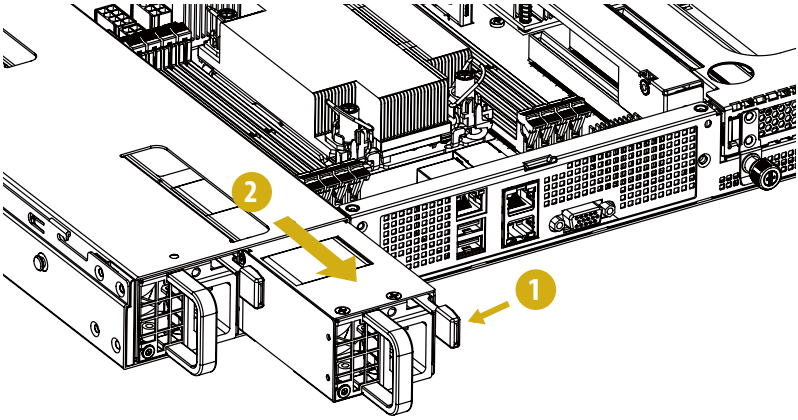
1. Align the power supply unit with the power supply slot. Ensure that the LED appears on the lower left when installing the power supply unit.
2. Carefully slide the PSU all the way into the power supply bay until it clicks into place.



Removing the Power Supply Unit

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

1. Hold onto the power supply handle while pressing the locking lever towards the power supply handle.*
   **The illustration is for references only. The actual PSU type may be slightly differnet by models.*
2. Pull out the power supply from the chassis.

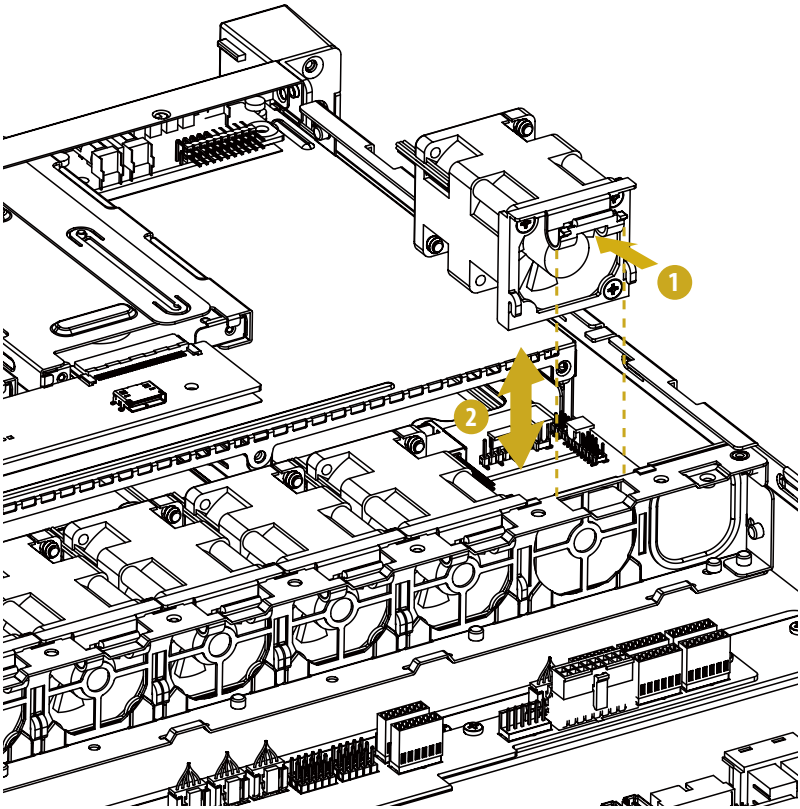


1. Before replacing the power supply, power off the server, unplug the power cord, and disconnect all wiring from the power supply.
2. The redundant system does not require powering down the server.

3.4 System Fan

Replacing the System Fan

1. Press and hold the clip on the fan.
   Align the mounting holes on the fan bar with the fan mount on the replacement fan.
   Please be aware of the mount location of each fan.
2. Gently place the fan on the fan bar. Make sure the fan is well seated.
   Connect the end of the fan cable to the fan connector.

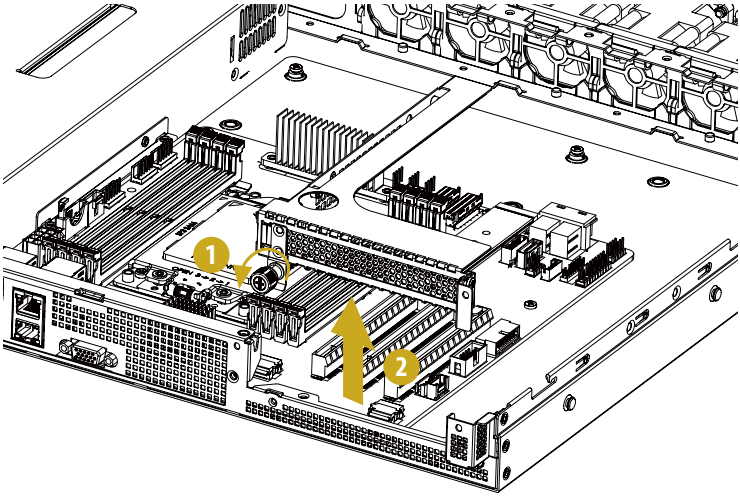


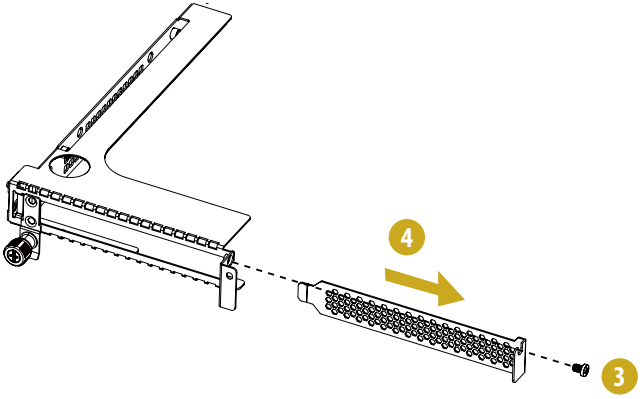
3.5 Add-in Card (Riser Card PCIe x16)

1. *Install an add-in card to the chassis only when having a riser card installed on the server board.*
2. *Before installing the add-in card, power off the server and unplug the power cord.*

Removing the Riser-Card Bracket from the Chassis

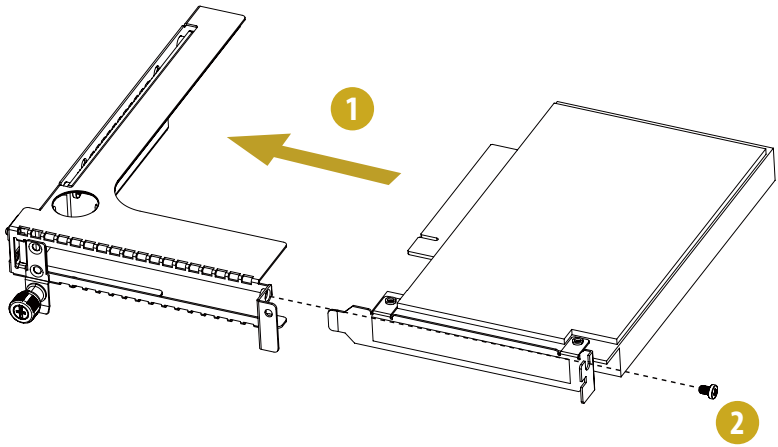
1. Hand-release the thumbscrew that secures the riser-card bracket on the chassis.
2. Lift up the riser-card bracket.
3. Remove the screw securing the blanking plate on the bracket.
4. Slide the blanking plate out sideways.



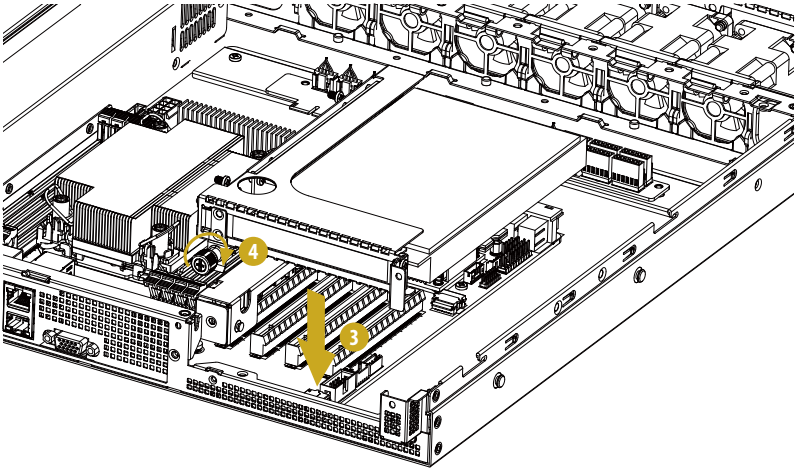


Installing the Add-in Card

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



3. Align the riser-card assembly with the openings of the chassis.
4. Hand-tighten the thumbscrew to secure the assembly to the chassis.



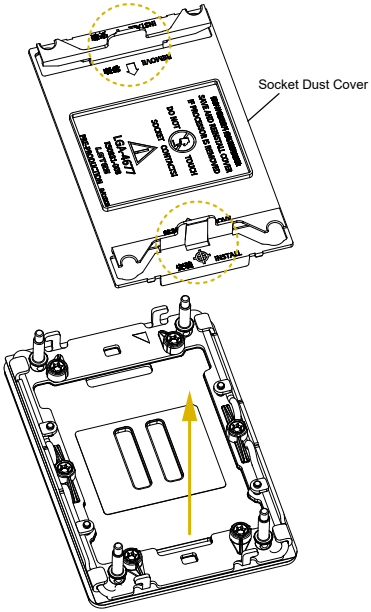
Appendix A

Installing the CPU (LGA 4677 Socket)

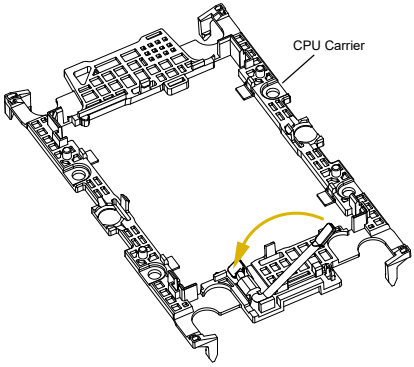
1U8S4E-EGS/2T : SPC741D8UD-2T/X550

Unplug all power cables before installing the CPU.

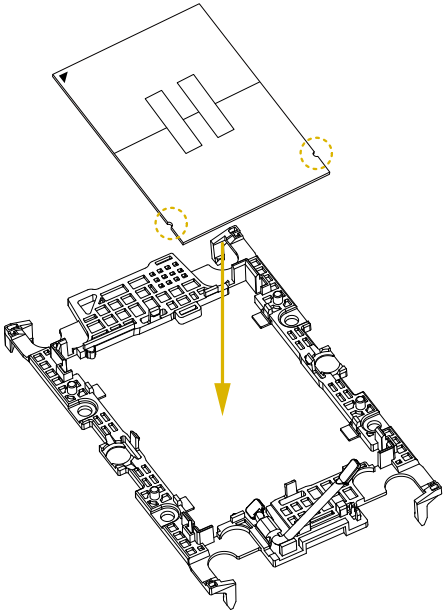
1



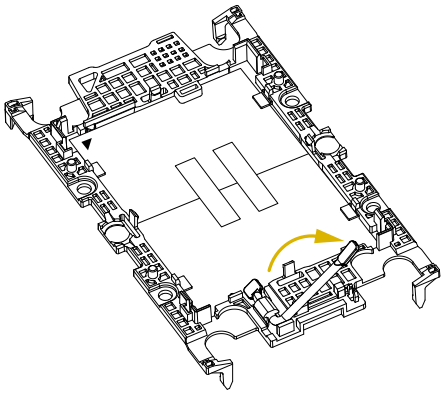
2



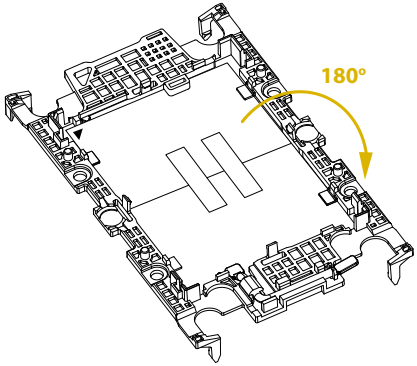
3



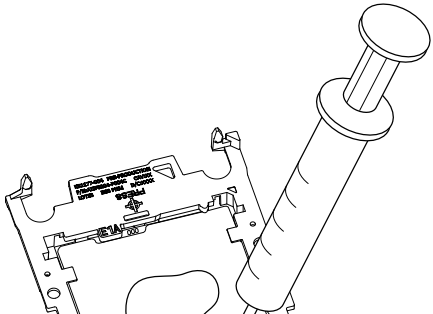
4



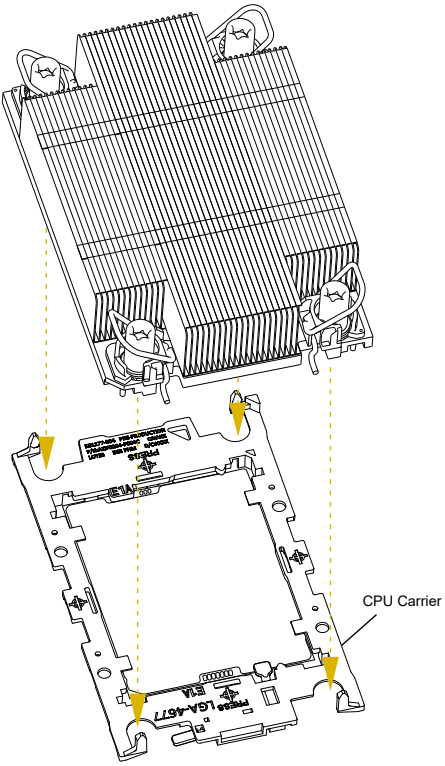
5



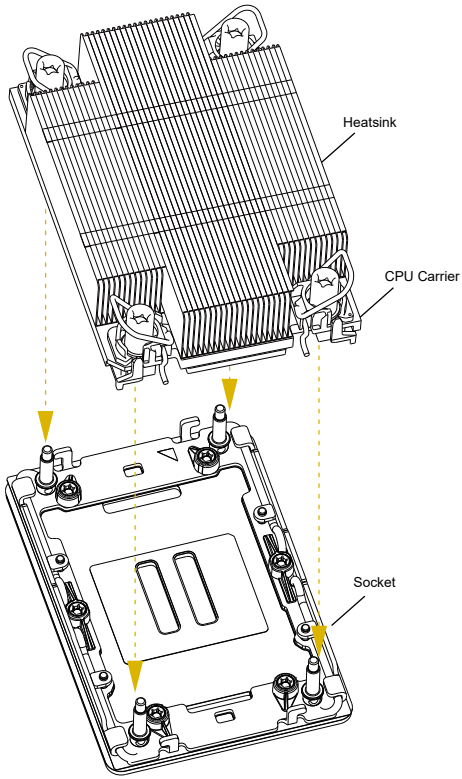
6



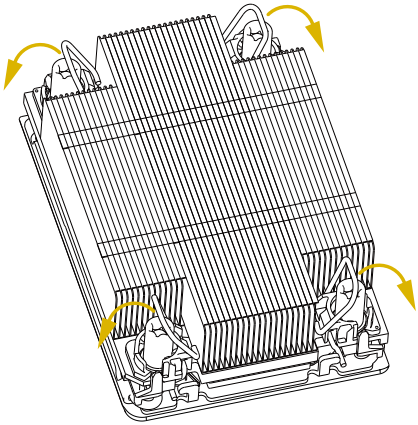
7



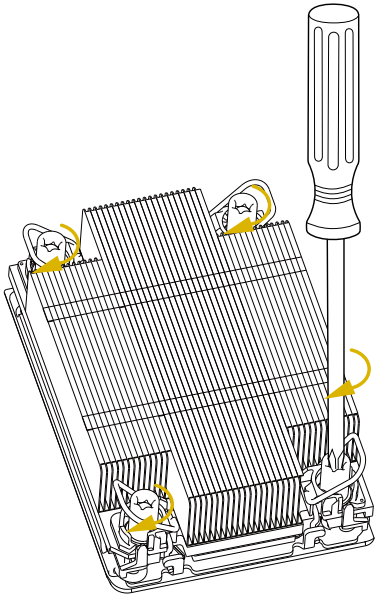
8



9



10

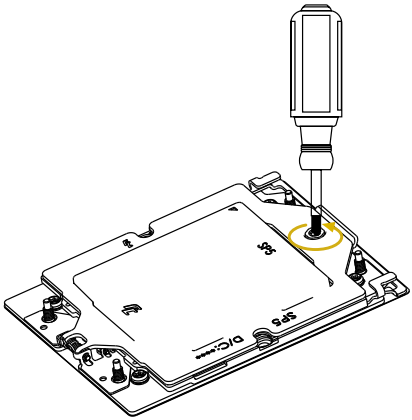


Installing the CPU (LGA 6096 Socket)

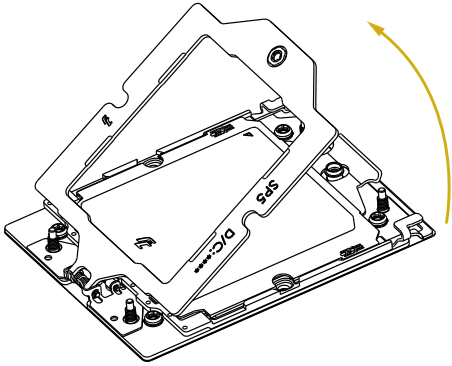
1U8S4E-GENOA/2T : GENOAD8UD-2T/X550

1. *Before inserting 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.*

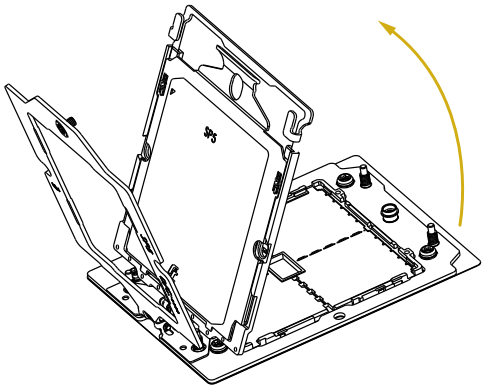
1



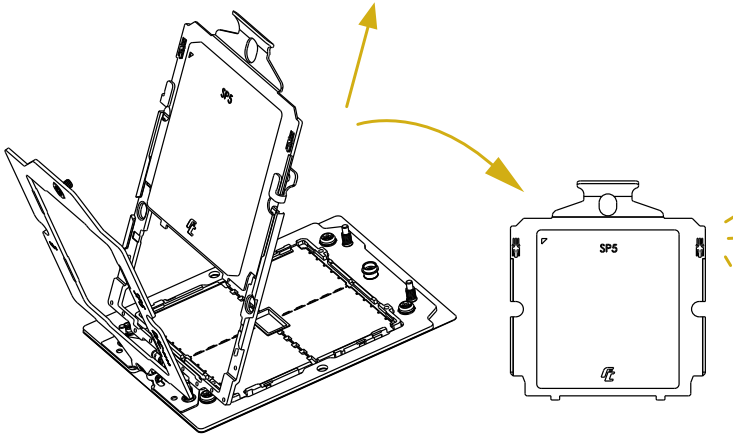
2



3

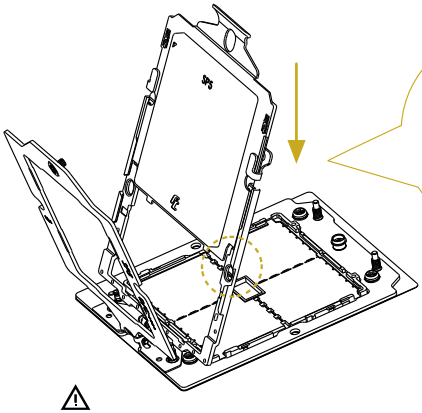


4



English

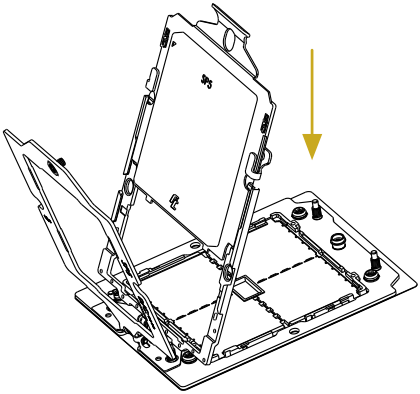
5



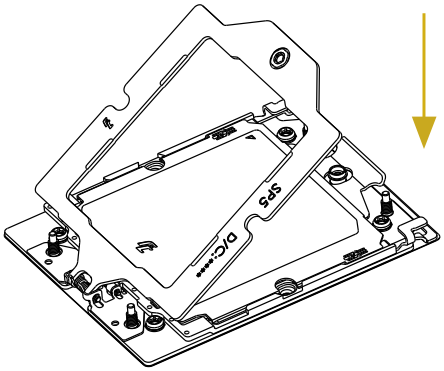
Please make sure that the carrier frame with CPU is closely attached to the rail frame while inserting it.

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

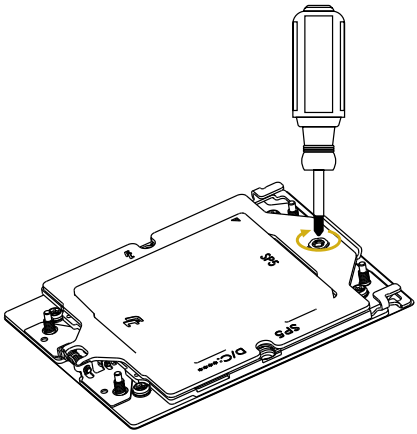
6



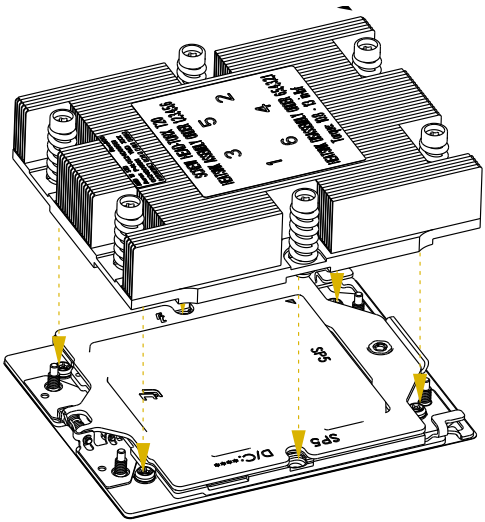
7



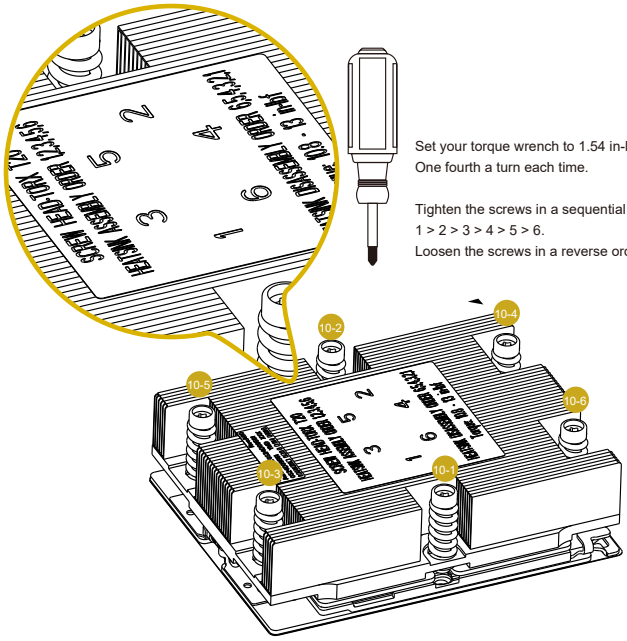
8



9



10



Set 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.

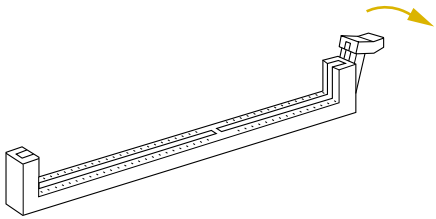
Appendix B

Installation of Memory Modules (DIMM)

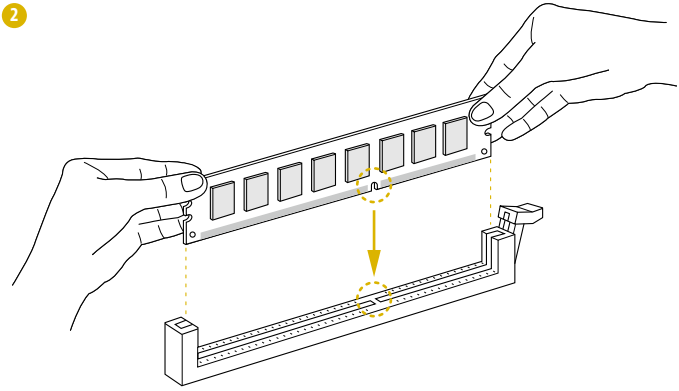
The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation. For more information about DIMM installation, please refer to the User Manual that comes with the server board used.

Type A (Single Clip)

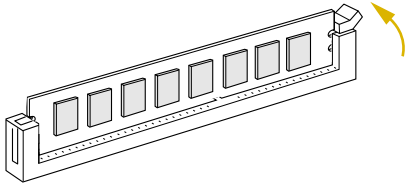
1



2

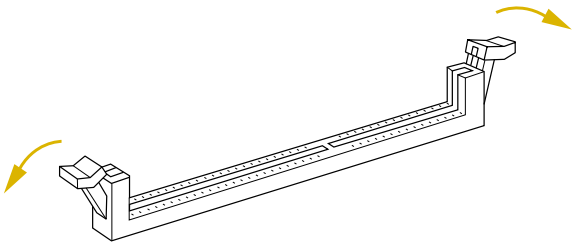


3

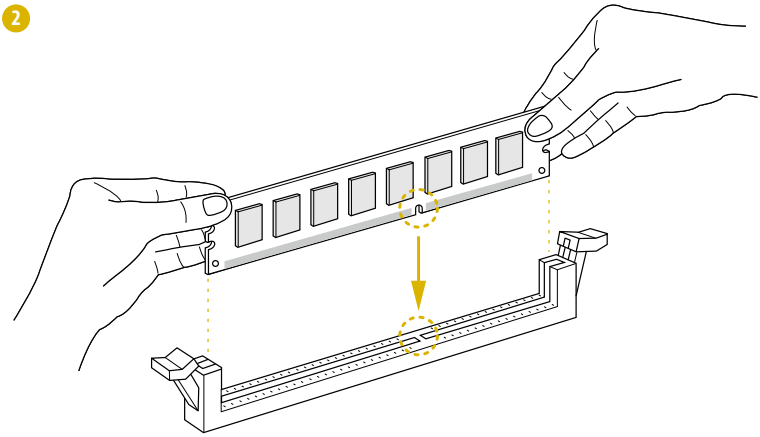


Type B (Two Clips)

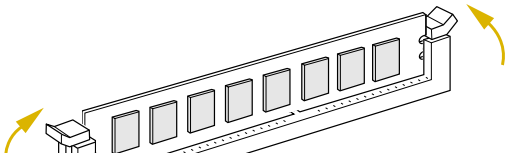
1



2

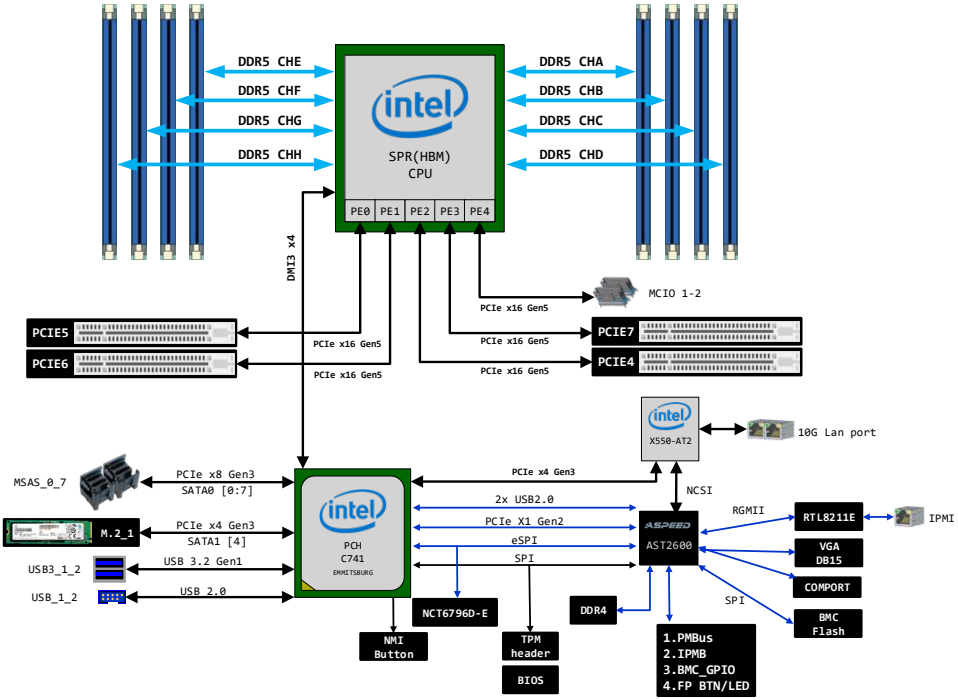


3

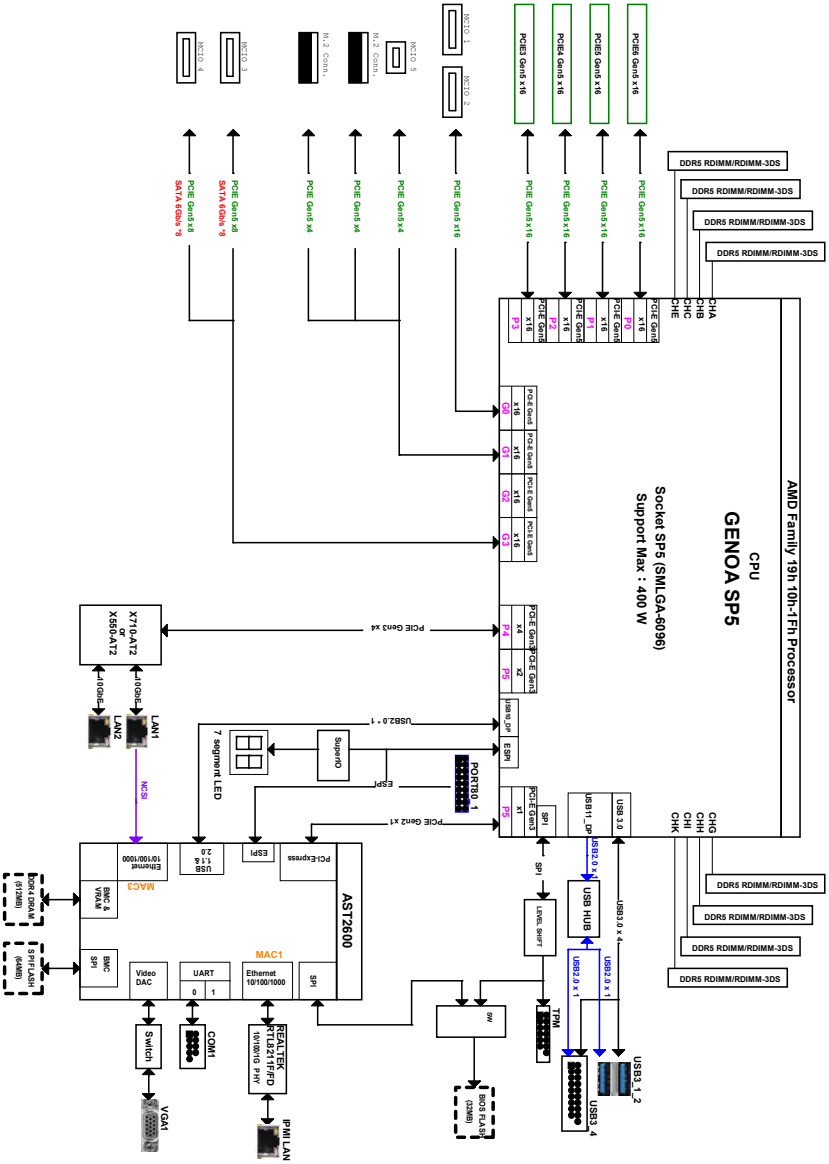


Appendix C

Block Diagram (SPC741D8UD-2T/X550)



Block Diagram (GENOAD8UD-2T/X550)



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.

13848 Magnolia Ave, Chino, CA91710 U.S.A.
Phone: +1-909-590-8308
Fax: +1-909-590-1026