OPEN

Industry Standard, Flexible Architecture

GREEN

Less Heat, Less Power Consumption

STABLE

Robust Design, Quality Parts

Stable and
Reliable Solution

Server/Workstation
Motherboard

# 2U24E-EGS2

# User Manual

English

Version 1.0
Published July 2023
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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**

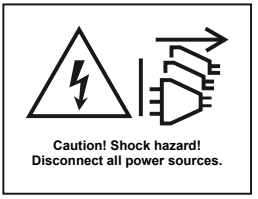
**RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.**

**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.

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# Chapter 1 Introduction

Thank you for purchasing 2U24E-EGS2, 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 |
|---|---|
| 2U24E-EGS2 | SP2C741D32TM3 |

*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 |
|---|---|
| 2U24E-EGS2 (2U Barebone) | 1 |
| System Board (MB)* | 1 |
| Power Supply Unit* | 2 |
| System Fan* | 6 |
| HDD Backplane (BPB)* | 4 |
| Front Panel Board (FPB)* | 2 |
| Riser cable* | 2 |
| Accessory Box | 1 |
| 1U Cooler/Heatsink | 2 |
| Slide Rail | 1 |

** The components are pre-installed.*

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

## 1.2 Specifications

| 2U24E-EGS2 | |
|---|---|
| System Physical Status | |
| Form Factor | 2U Rackmount |
| Dimension (D x W x H) | 800 x 438 x 87.3 mm (31.50" x 17.24" x 3.44") |
| Support MB | SP2C741D32TM3 |
| Front Panel | |
| Buttons | • Power w/ LED<br>• ID w/ LED<br>• System Reset |
| LEDs | System Fault |
| I/O Ports | 2 Type-A (USB3.2 Gen1) |
| External Drive Bay / Storage | |
| Front Side Drive Bay | 24 Hot-swap 2.5" NVMe drive bays |
| Front Side Backplane | three 8-ports NVME passive backplane |
| Rear Side | 2 Hot-swap 2.5" SATA drive bays |
| Rear Side Backplane | one 2-ports SATA backplane |
| Internal | 2 M-key (PCIe4.0 x4), support 22110/2280 form factor |
| System Fan | |
| Fan | 6 PWM fixed 60x56 mm fans |
| Power Supply | |
| Type | 1+1 CRPS |
| Output Watts | 2700W |
| Efficiency | 80-PLUS Platinum |
| AC Input | 100-240V, 60/50Hz |

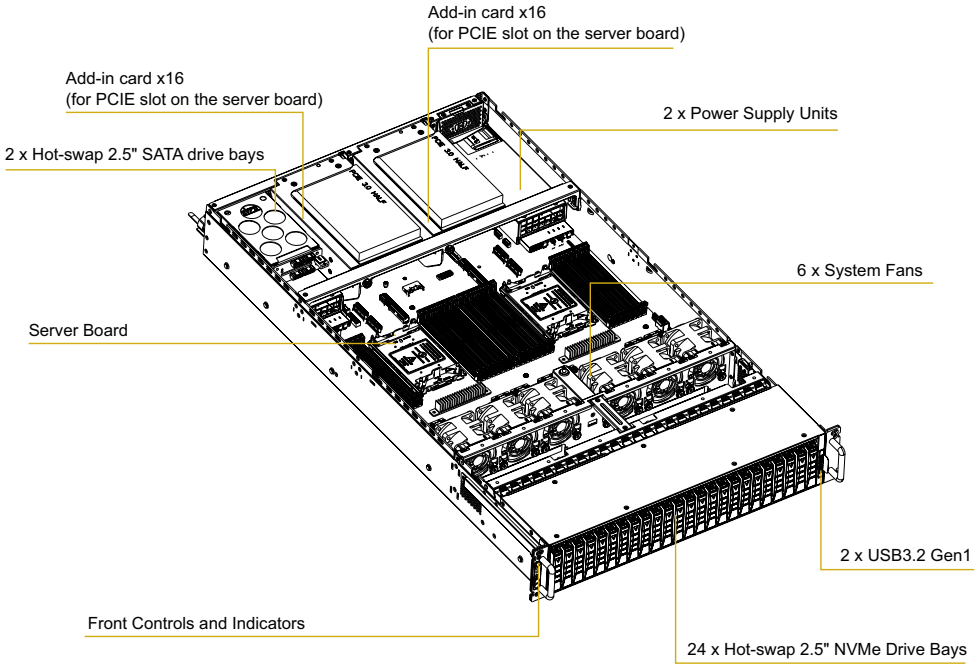
**Please be noted that the functions are supported depending on the type of the server board.*

*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.

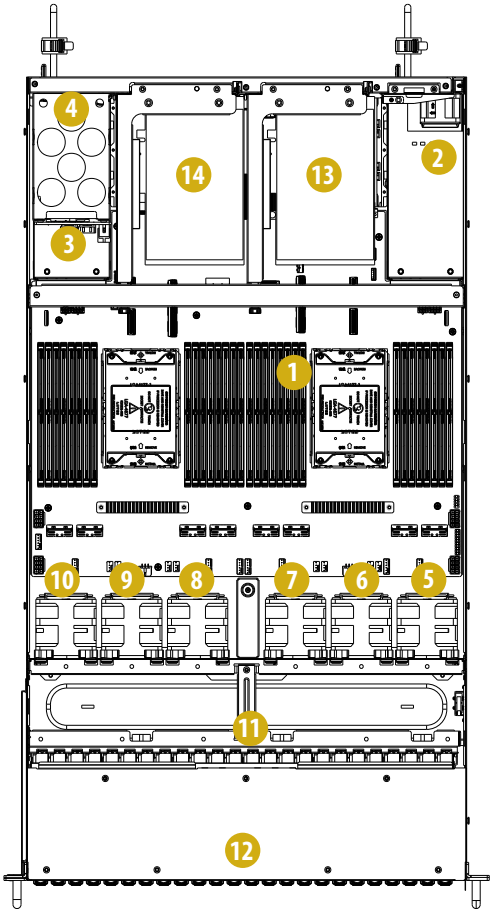
## 2.1 System Components




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

English

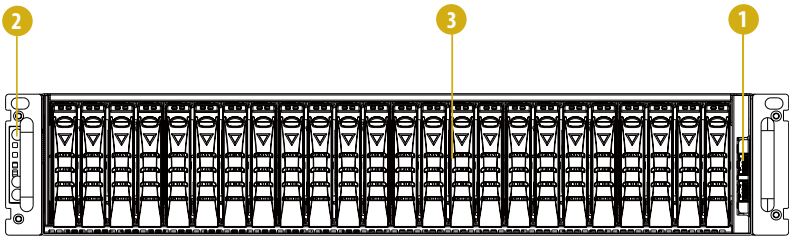
## 2.2 Internal Features




| No. | From |
|---|---|
| 1 | Serverboard |
| 2 | Power Supply Units (PSU1) |
| 3 | Power Supply Units (PSU2) |
| 4 | 2 x 2.5" Hot-swap 2.5" SATA drive bays |

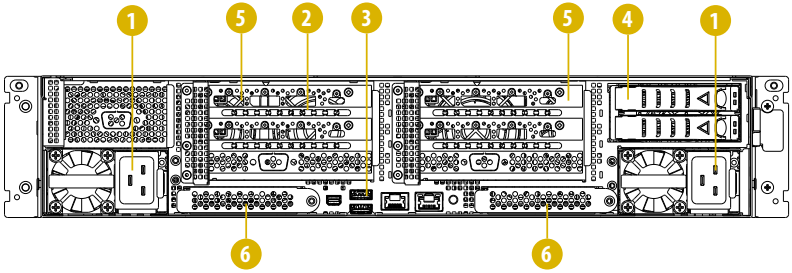
| No. | From |
|---|---|
| 5 | System Fan 6 |
| 6 | System Fan 5 |
| 7 | System Fan 4 |
| 8 | System Fan 3 |
| 9 | System Fan 2 |
| 10 | System Fan 1 |
| 11 | 2.5" Drive Backplane Board |
| 12 | 24 x Hot-swap 2.5" NVMe Drive Bays |
| 13 | Add-in card 1 x16 (for PCIE slot on the server board) |
| 14 | Add-in card 2 x16 (for PCIE slot on the server board) |

## 2.3 System Front Panel



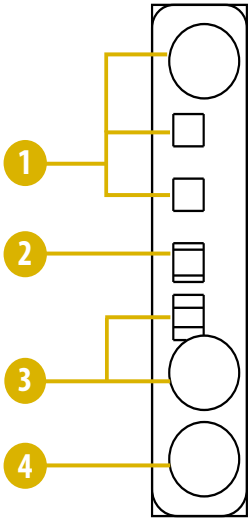

| No. | Description |
|---|---|
| 1 | 2 x USB3.2 Gen1 |
| 2 | Control Panel (depends on the specification of the server board) |
| 3 | 24 x Hot-swap 2.5" NVMe Drive Bays |

## 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 Hot-swap 2.5" SATA drive bays |
| 5 | 2 x Add-in card x16 (for PCIE slot on the server board) |
| 6 | 2 x OCP 3.0 |

## 2.5 Front Control Panel Buttons and LEDs




| No. | Description |
|---|---|
| 1 | Power Button and LED |
| 2 | System Status LED |
| 3 | ID Button and LED |
| 4 | System Reset Button |

**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 |

| HDD Status LED | |
|---|---|
| **Status** | **Description** |
| Blinking Green | HDD access |
| Off | HDD idle |

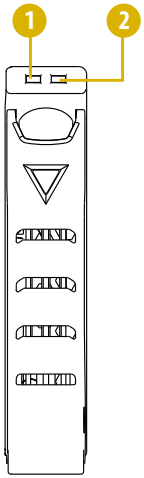
| System Status LED | |
|---|---|
| **Status** | **Description** |
| Red | System process fault |
| Off | Running or normal operation |

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

| Power LED | |
|---|---|
| **Status** | **Description** |
| Blue | Power on |
| Blinking Blue | Standby(Sleep) mode |
| Off | Power off |

## 2.6 Drive Tray LEDs

### 3.5" Drive Tray



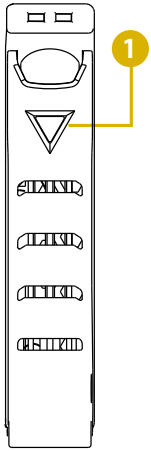

| No. | Description |
|---|---|
| 1 | HDD Power LED |
| 2 | HDD Activity LED |

### Status LED Definitions

| HDD Power LED | |
|---|---|
| **Status** | **Description** |
| Solid Blue | HDD powered-on |
| Off | No power to HDD |

| HDD Activity LED | |
|---|---|
| **Status** | **Description** |
| Solid Green | HDD active |
| Blinking Green | HDD accessing or reading |
| Solid Red | HDD failed |
| Off | HDD powered-off |

## 2.5" Drive Tray

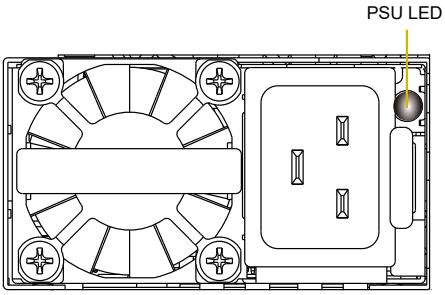



| No. | Description |
|---|---|
| 1 | HDD LED |

## Status LED Definitions

| HDD LED | |
|---|---|
| **Status** | **Description** |
| Solid Green | HDD active |
| Blinking Green | HDD accessing or reading |
| Solid Red | HDD failed |
| Blinking Red (4Hz) | HDD positioning |
| Blinking Red (1Hz) | HDD reconnection |
| Off | HDD powered-off |

## 2.7 PSU LED




| PSU Status LED | |
|---|---|
| **Status** | **Description** |
| Green | Normal work; output ON and OK |
| Amber | Module fault/protection in operating mode<br>(failure, OCP, OVP, Fan Fail, OTP, UVP)<br>AC cord unplugged |
| Amber blinking at 0.5Hz | Warning (high temp, high power, high current, slow fan) |
| Green blinking at 0.5Hz | AC Present Only 12VSB on (PS off) or PS in Smart Redundant state |

# 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.

- 3.5" or 2.5" HDD(s)
- Power Supply Unit(s) (Pre-installed)
- System Fans (Pre-installed)
- Server Board (Pre-installed)
- Fan Board (Pre-installed, if supported)
- HDD Backplane (Pre-installed)

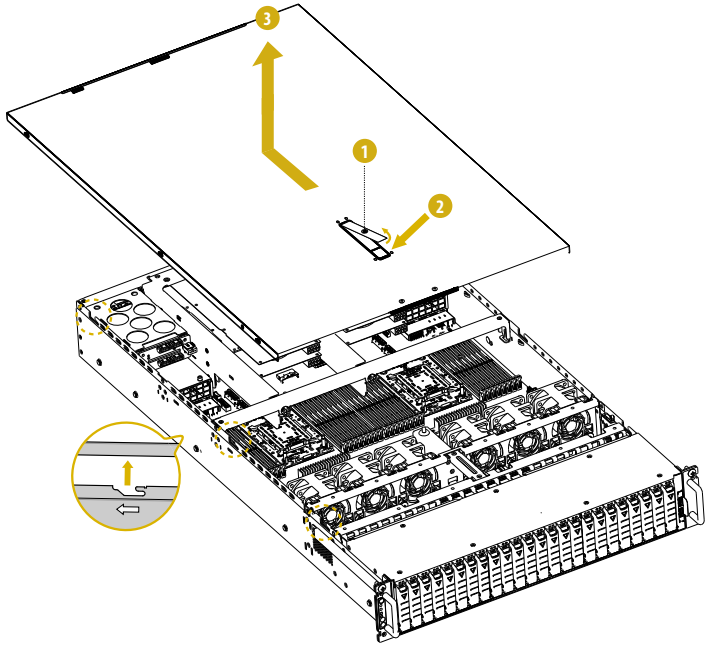
> 1. *Some components are already pre-installed. Simply properly connect the relavant cables before or after installation. See the Quick Installation Guide for more details.*
> 2. *Refer to the user manual of the server board for instructions on how to install server board components.*

## 3.1 Server Top Covers

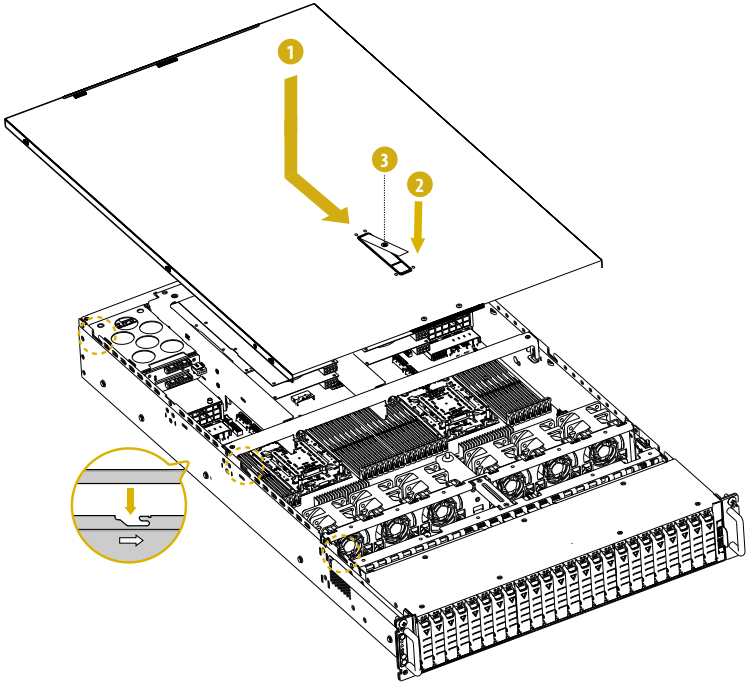
### Removing the Server Top Covers

*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. Release the mortise lock on the rear top cover of the chassis.
2. Press the cover latch button on the top cover.
3. Push the top cover toward the REAR of the chassis to remove the cover from the locked position.



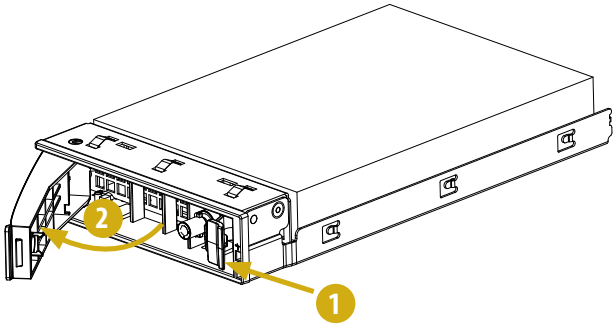
1. Lower the top rear cover on the chassis, making sure the side latches align with the cutouts. Slide the top rear cover toward the FRONT of the chassis.
2. Secure the top rear cover until it is locked in place.
3. Press down the spring button to confirm the top cover is locked with the chassis.
4. Secure the front cover to the chassis with screws.



## 3.2 Hard Drive

### Removing 2.5" and 3.5" Hard Drive

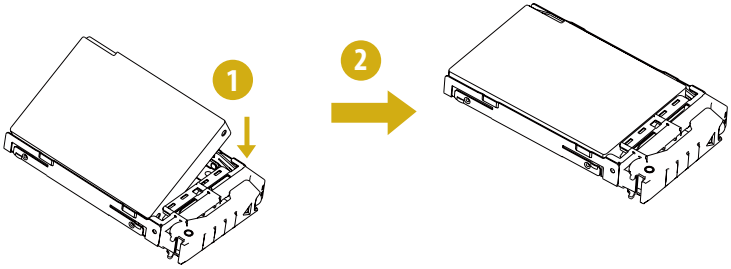
1. Press the locking lever latch on the drive tray to unlock the retention lever.
2. Rotate the lever out and away from the module bay and pull the hard drive out of the drive tray.




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

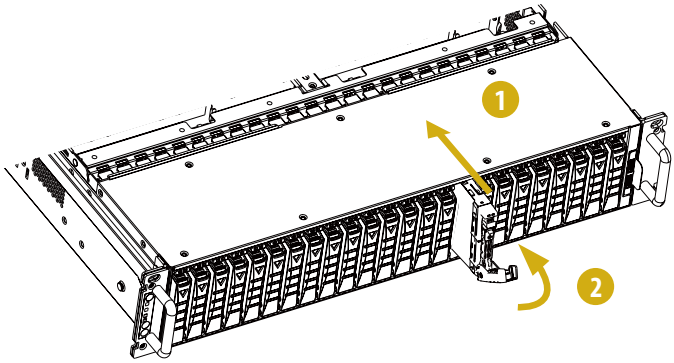
### Installing a 2.5" Hard Drive to the Hard Drive Tray

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.



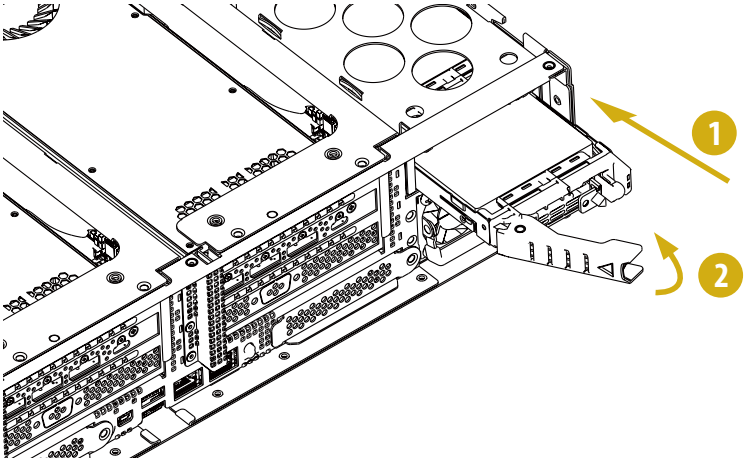

### Front Panel-Installing the HDD assembly

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.



**Rear Panel-Installing the HDD assembly**

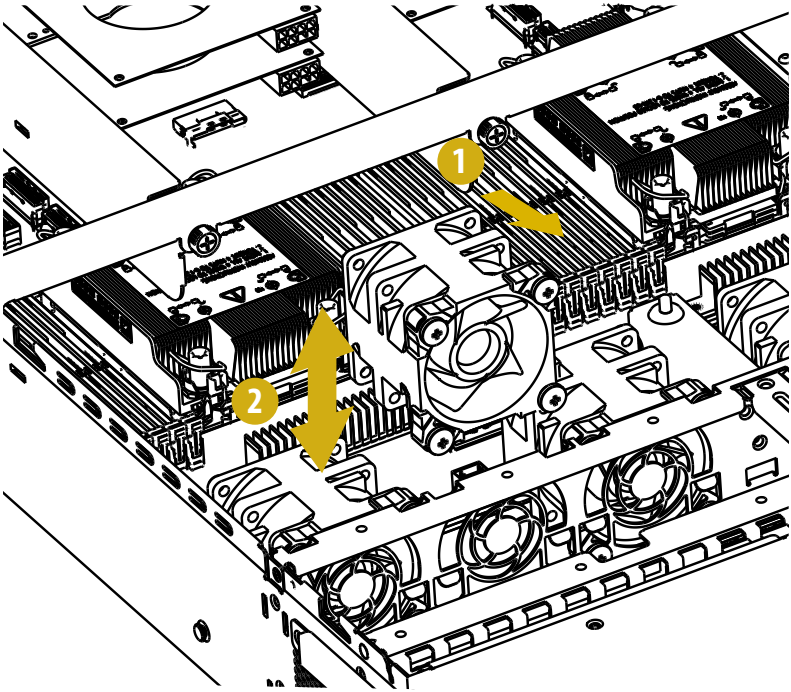
1. Slide the drive tray into the HDD bay until the drive is fully seated.
2. Push in the locking lever to lock the drive tray into place.



## 3.3 System Fan

### Replacing the System Fan

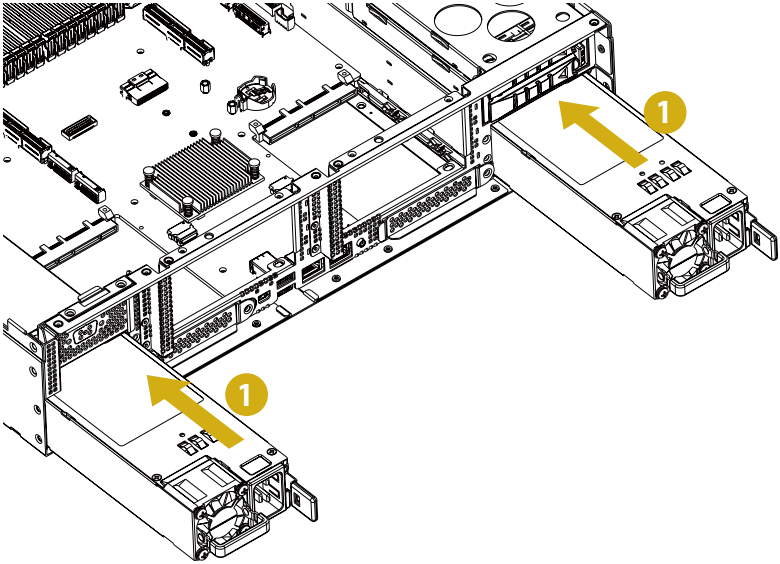
1. Align the mounting holes on the fan bar with the fan mount on the replacement fan.
2. Please be aware of the mount location of each fan.
3. Gently place the fan on the fan bar. Make sure the fan is well seated.
4. Connect the end of the fan cable to the fan connector.



## 3.4 Power Supply

**Installing the Power Supply Unit**

Carefully slide the PSU all the way into the power supply bay until it clicks into place.

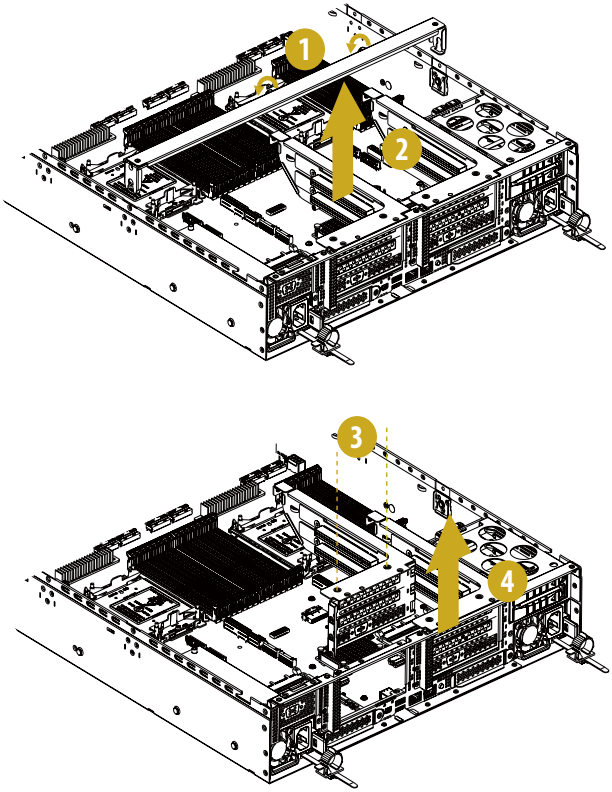


## 3.5 Add-in Card

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.*

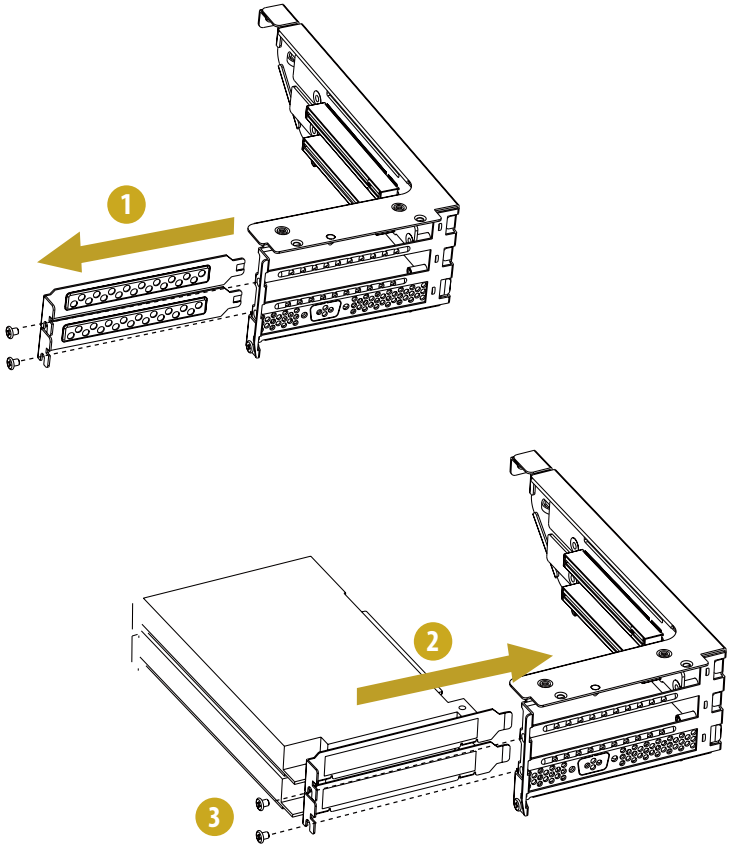
### Replace Add-in Card

1. Loosen the screws on the riser-card by hand.
2. Lift up the riser-card bracket.
3. Loosen the screws on blanking plate.
4. Slide the blanking plate out.

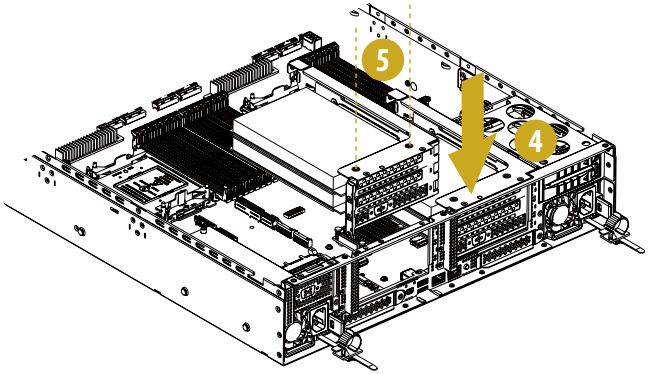


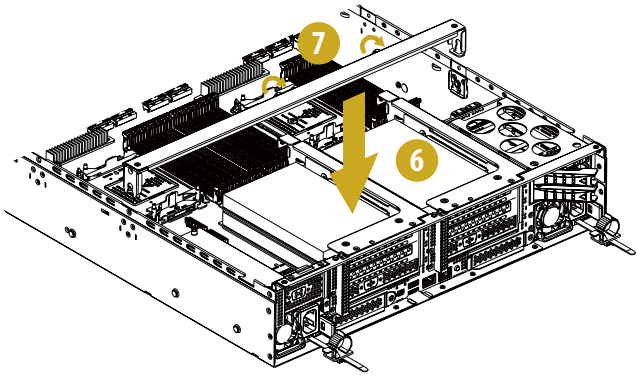
## Installing the Add-in Card

1. Remove the screws and plate.
2. Install the add-in card to the riser-card bracket blanking.
3. Secure the add-in card to the assembly with screws.



4. Secure the assembly to the chassis.
5. Lock the screws.
6. Install the duct bracket over the duct assembly and lock it in place with the chassis.
7. Lock the screws by hand.

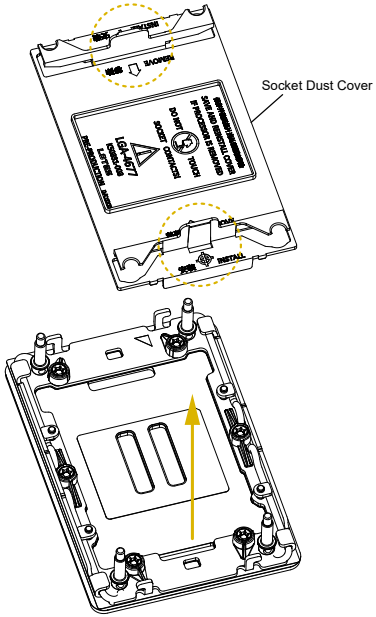


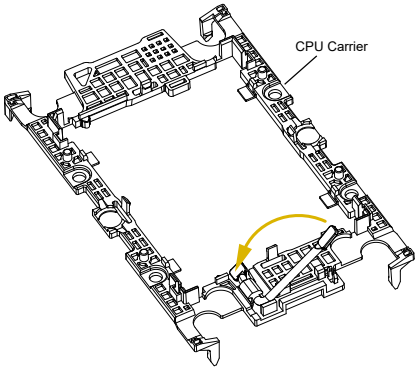
## Installing the CPU (LGA 4677 Socket)

*Unplug all power cables before installing the CPU.*

1

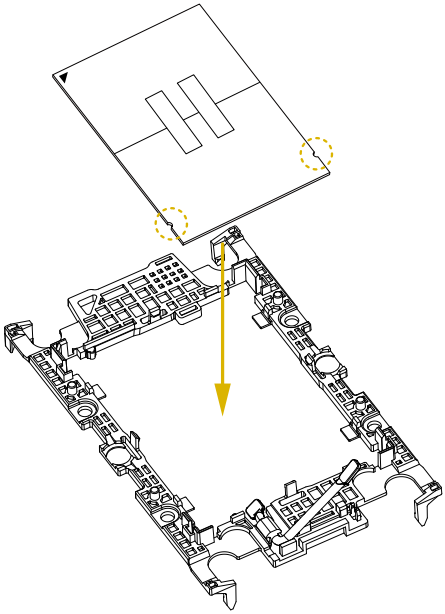



2




English

3



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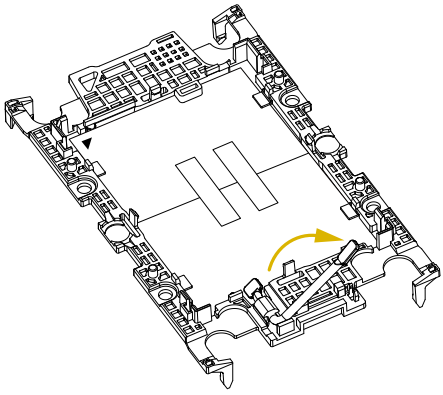

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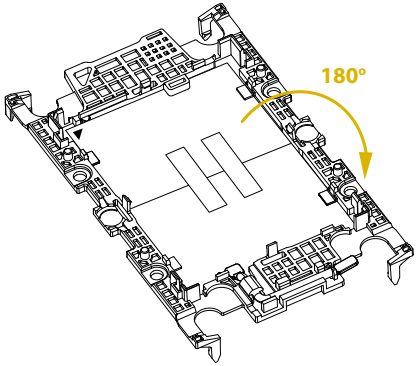


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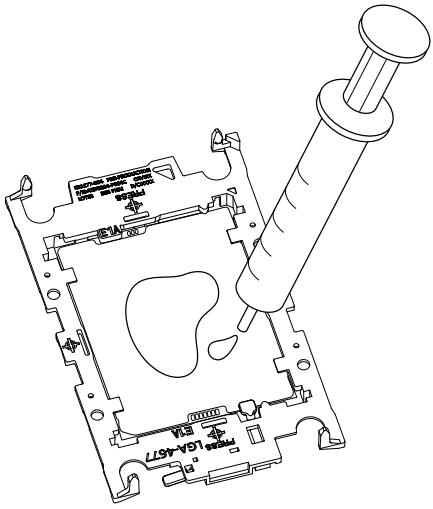

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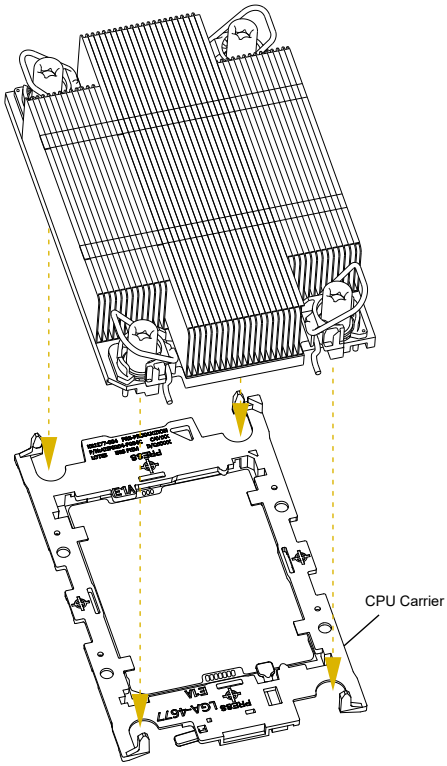

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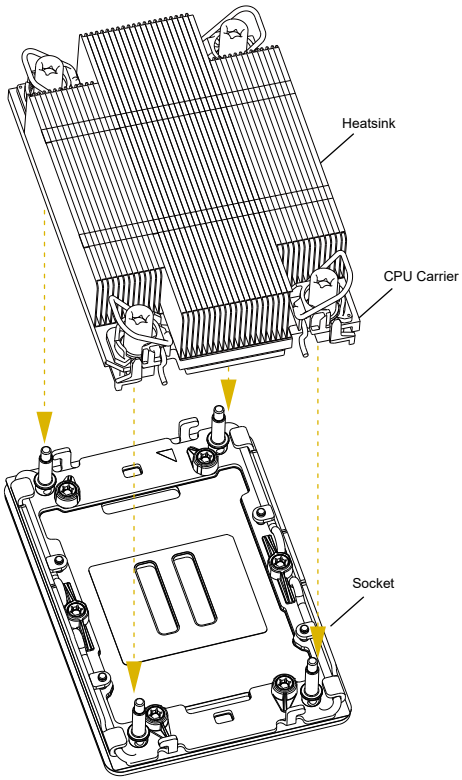


English

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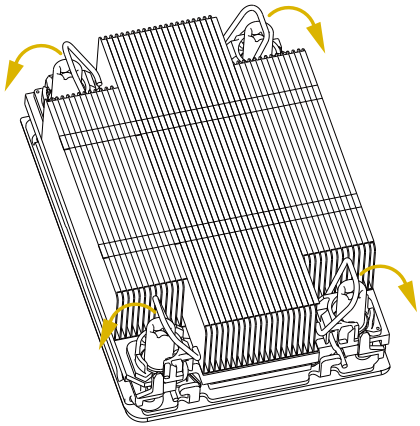

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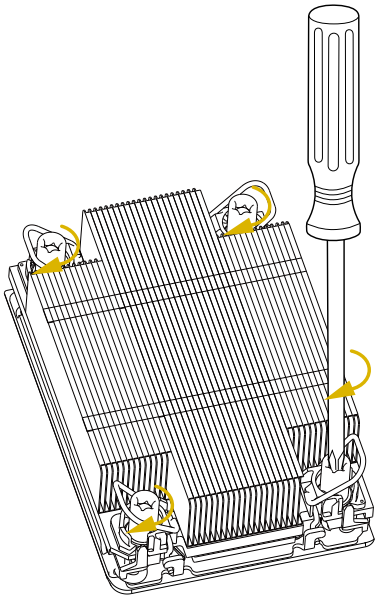


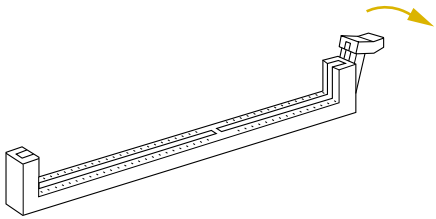
# Appendix

## 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



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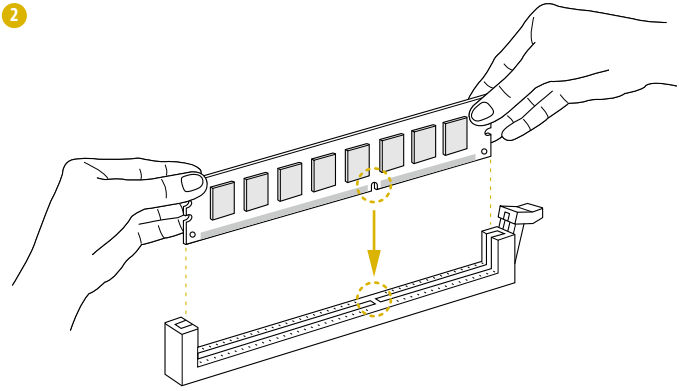

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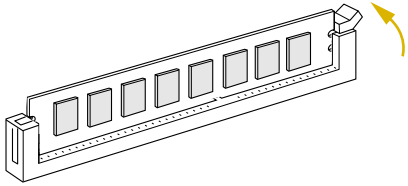
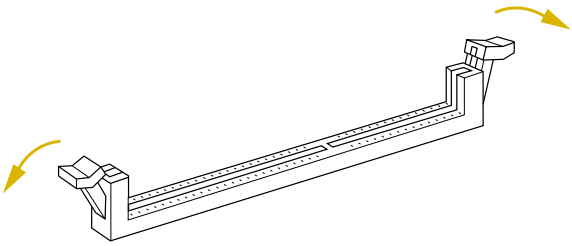


Type B (Two Clips)

1



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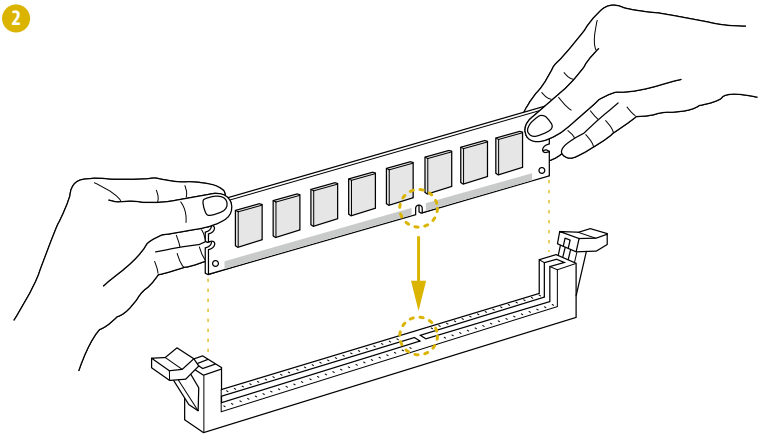

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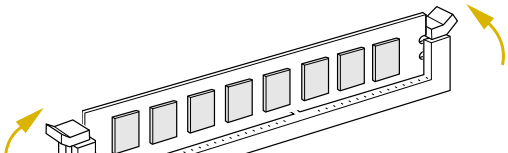
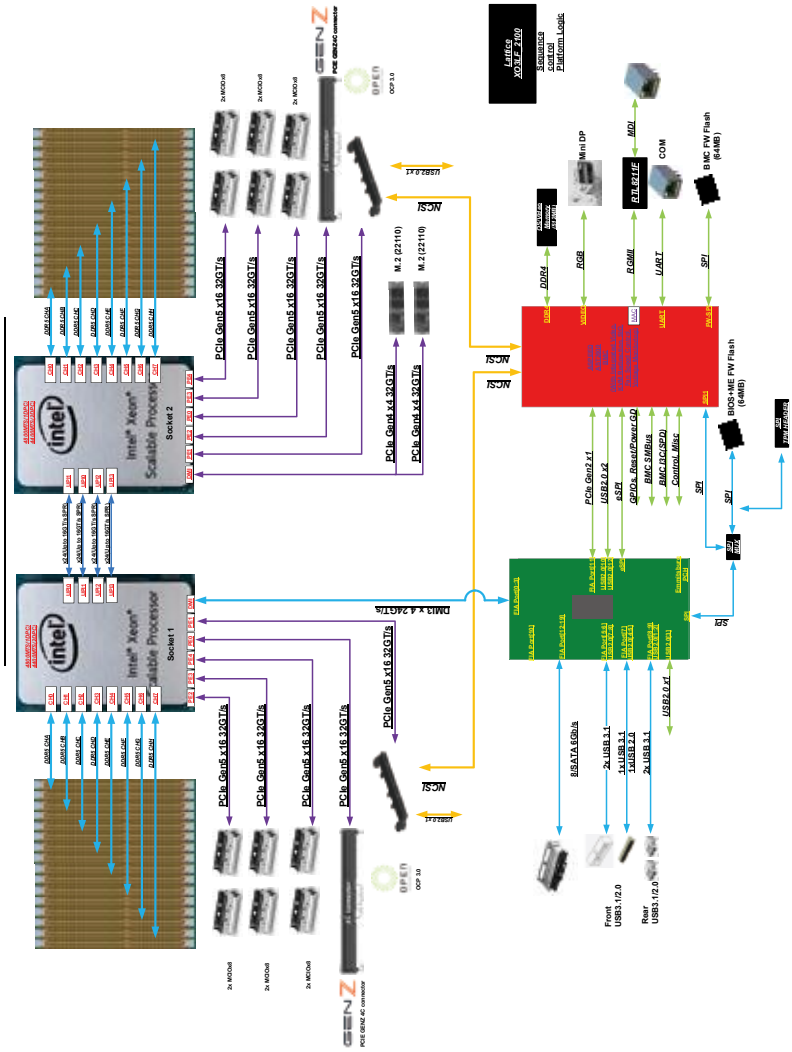


# Appendix C

## Block Diagram (SP2C741D32TM3)



## 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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