SUPERSERVER®
SYS-621C-TN12R

USER'S MANUAL

Revision 1.1c

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Manual Revision 1.1c

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Preface

About this Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of this server. Installation and maintenance should be performed by certified service technicians only.

Please refer to the SYS-621C-TN12R server specifications page on our website for updates on supported memory, processors and operating systems (https://www.supermicro.com).

Notes

For your system to work properly, please follow the links below to download all necessary drivers/utilities and the user's manual for your server.

- Supermicro product manuals: https://www.supermicro.com/support/manuals/
- Product drivers and utilities: https://www.supermicro.com/wdl
- Product safety info: https://www.supermicro.com/about/policies/safety_information.cfm

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This manual may be periodically updated without notice. Please check the Supermicro website for possible updates to the manual revision level.

Warnings

Special attention should be given to the following symbols used in this manual.

Warning! Indicates important information given to prevent equipment/property damage or personal injury.

Warning! Indicates high voltage may be encountered when performing a procedure.

Warning! Indicates hazardous moving parts may be encountered while handling a fan or components near a fan.

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Chapter 1

Introduction

1.1 Overview

This chapter provides an outline of the functions and features of the SuperServer SYS-621C-TN12R. The following provides an overview of the specifications and capabilities.

System Overview	
Motherboard	X13DDW-A
Chassis	CSE-LA26TS-R1K23AWP1
Processors	Dual 4th and 5th Gen Intel Xeon Scalable processors in E (LGA-4677) sockets with four UPIs (16 GT/s max.) and a Thermal Design Power (TDP) of up to 350 W (Support conditions apply to certain CPUs.)
Memory	Supports up to 4 TB 3DS RDIMM/RDIMM DDR5 ECC memory - 4th Gen: speeds of up to 4800 MT/s in 16 slots - 5th Gen: speeds of up to 5600 MT/s in 16 slots
Storage	Twelve 2.5/3.5" hot-swap NVMe, SAS, SATA hybrid front drive bays Two hot-swappable 2.5" rear drive bays (*optional*) Two M.2 NVMe SSDs
Expansion Slots	Six PCIe 5.0 full-height interchangeable x8/x16 half-length/full-length (For details, see Section 3.10 in this manual)
I/O Ports	Two AIOM network modules, PCIe 5.0 x16 (OCP 3.0 NIC) One dedicated BMC LAN port (rear) Two USB 3.0 ports (rear) One VGA port (rear) One serial port (rear)
System Cooling	Three heavy duty fans with optimal fan speed control One air shroud
Power	Two redundant power supplies, default is 1200 W, 80Plus Titanium level *(Optional)* 1600 W, 80Plus Titanium level
Form Factor	2U; 17.2” x 3.5” x 25.5” (depth) (43.7 x 8.9 x 64.7 cm)

A Quick Reference Guide can be found on the following page of the Supermicro website: https://www.supermicro.com/en/products/system/Cloud/2U/SYS-621C-TN12R.

The following safety models associated with the SYS-621C-TN12R have been certified as compliant with UL and CSA: LA26-R12X13, LA26-12, LA26-R16X13, LA26-16.

Network Connection Options

The system accepts many different advanced input/output modules (AIOMs) that provide network connectivity. It supports OCP 3.0 specifications using PCIe Gen 5.0 x16. Options include RJ45, SFP+, OSFP, etc. at 1/10/25/100/200 GbE capabilities, with two or four ports per module, up to two modules. See the product page above for the current options. At https://www.supermicro.com, search for the product by model number.

1.2 System Features

The following views of the system display the main features. Refer to Appendix B for additional specifications.

Front View

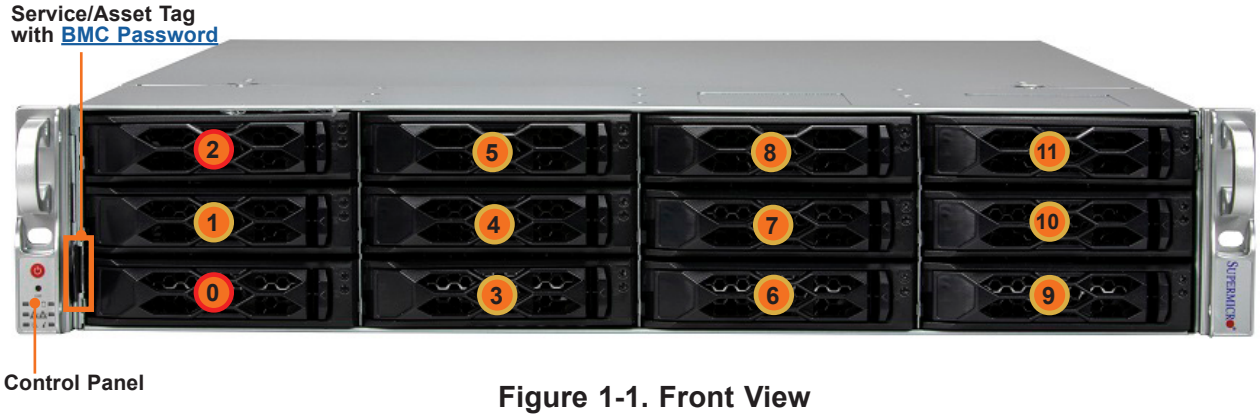


Figure 1-1. Front View

Logical Storage Drive Numbers	
Item	**Description**
0, 2	2.5/3.5-inch front drive bays (NVME**/SAS/SATA)* (see limitation below)
1, 3–11	2.5/3.5-inch front drive bays (NVME/SAS/SATA)*

* Additional parts needed depending on drive type; see the optional parts list

**Following Intel documentation 648608, if using four UPI processors in the server, there is a limitation on PE3 relating to support for PCIe Gen5. For such configurations, the NVMe drive in bay #0 (for 8 or less drives) or #2 (for 9 or more drives) is limited to PCIe 4.0.

Drive Carrier Indicators

Each drive carrier has two LED indicators: an activity indicator and a status indicator. For RAID configurations using a controller, the meaning of the status indicator is described in the table below. For OS RAID or non-RAID configurations, some LED indications are not supported, such as hot spare. For VROC configurations, refer to Section 6.5 in this manual.

Drive Carrier LED Indicators			
	Color	**Blinking Pattern**	**Behavior for Device**
Activity LED	Blue	Solid On	Idle SAS/NVMe drive installed
	Blue	Blinking	I/O activity
	Off		Idle SATA drive installed
Status LED	Red	Solid On	Failure of drive with RSTe support
	Red	Blinking at 1 Hz	Rebuild drive with RSTe support
	Red	Blinking with two blinks and one stop at 1 Hz	Hot spare for drive with RSTe support
	Red	On for five seconds, then off	Power on for drive with RSTe support
	Red	Blinking at 4 Hz	Identify drive with RSTe support
	Green	Solid on	Safe to remove NVMe drive
	Amber	Blinking at 1 Hz	Do not remove NVMe drive

Control Panel

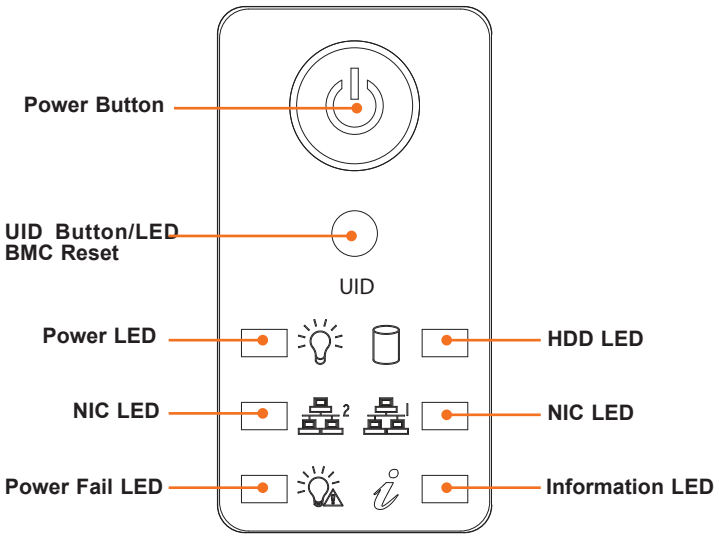


Figure 1-2. Control Panel

Control Panel Features	
Features	**Description**
Power Button	The main power switch applies or removes primary power from the power supply to the server but maintains standby power.
UID button/LED BMC button	The unit identification (UID) button turns on or off the blue light function of the Information LED and a blue LED on the rear of the chassis. This button can also be used to reset the BMC; for details, refer to Section 7.8 in this manual.
Power LED	Steady on – Power on Blinking at 4 Hz – Checking BIOS/BMC integrity Blinking at 4 Hz and "i" LED is blue – BIOS firmware updating Two blinks at 4 Hz, one pause 2 Hz and "i" LED blue – BMC firmware updating Blinking at 1 Hz and "i" LED red – Fault detected
NIC LEDs	Indicates network activity on AIOMs when flashing. NIC LED 1 for odd ports and NIC LED 2 for even ports on both AIOM slots.
Power Fail LED	Indicates a power supply module has failed.
HDD LED	Indicates activity on the storage drives when flashing.
Information LED	Alerts operator to several states (noted in the table below).

Information LED	
Color, Status	**Description**
Red, solid	An overheating condition has occurred
Red, blinking at 1 Hz	Fan failure, check for an inoperative fan
Red, blinking at 0.25 Hz	Power failure, check for a non-operational power supply
Red, blinking at 10 Hz	CPLD recovery mode error

(Table continued on next page)

Information LED	
Color, Status	**Description**
Blue, solid	Unit ID has been activated by switch
Blue, blinking at 1 Hz	Unit ID has been activated using the BMC
Blue, blinking at 2 Hz, and BMC Heartbeat LED on the motherboard is green	BMC is resetting
Blue, blinking at 4 Hz	BMC is setting factory defaults
Blue, blinking at 10 Hz	BIOS/BMC is recovering or updating
Red, blinking at 10 Hz and the rear UID LED is blue, blinking at 10 Hz	CPLD recovery or update is in progress

Rear View

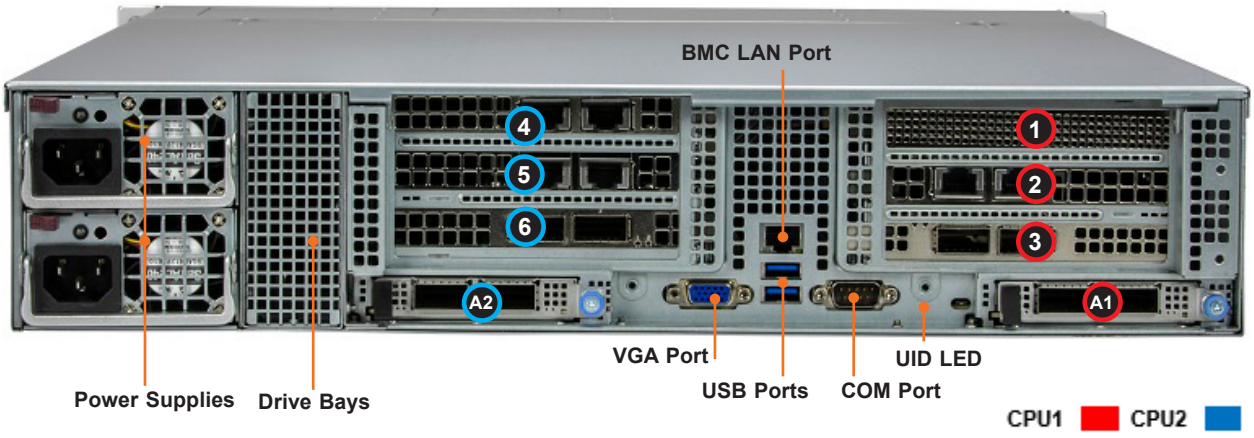


Figure 1-3. System: Rear View

System Features: Rear	
Feature	**Description**
Power Supplies	Two redundant power supply modules
Drive Bays	(*optional*) Rear drive kit for two 2.5" drive bays. See optional parts list on the product page at https://www.supermicro.com/en/products/system/Cloud/2U/SYS-621C-TN12R.
VGA Port	Video port
USB Ports	Two USB 3.0 ports
BMC LAN Port	Dedicated port to access the BMC; for indicator details, refer to Section 4.5 in this manual.
COM Port	Serial port
UID LED	The unit identifier (UID) indicator light

Expansion Slot Locations	
Slot	**Description**
1	PCIe 5.0 x8 full-height, half-length (CPU1); *configurable to x16 by merging slot 2 into slot 1, full-length supported with 1U heatsink*
2	PCIe 5.0 x8 full-height, half-length (CPU1), *full-length supported with 1U heatsink*
3	PCIe 5.0 x16 full-height, half-length (CPU1)
4	PCIe 5.0 x8 full-height, half-length (CPU2), *full-length supported with 1U heatsink*
5	PCIe 5.0 x8 full-height, half-length (CPU2); *configurable to x16 by merging slot 4 into slot 5, full-length supported with 1U heatsink*
6	PCIe 5.0 x16 full-height, half-length (CPU2)
A1	PCIe 5.0 x16 OCP 3.0 AIOM slot (CPU1)
A2	PCIe 5.0 x16 OCP 3.0 AIOM slot (CPU2)

Note: The expansion slot capabilities are affected by your storage drive configuration. For details, refer to Section 3.10 in this manual.

Power Supply Indicator

Power Supply Indicator	
LED Color and State	**Power Supply Condition**
Solid Green	Indicates that the power supply is on and working
Solid Amber	Indicates system is off (in S5 state) or power supply failure has occurred. For the latter case, the system might need servicing. Contact Supermicro technical support.
Off	No AC power to module

Top View

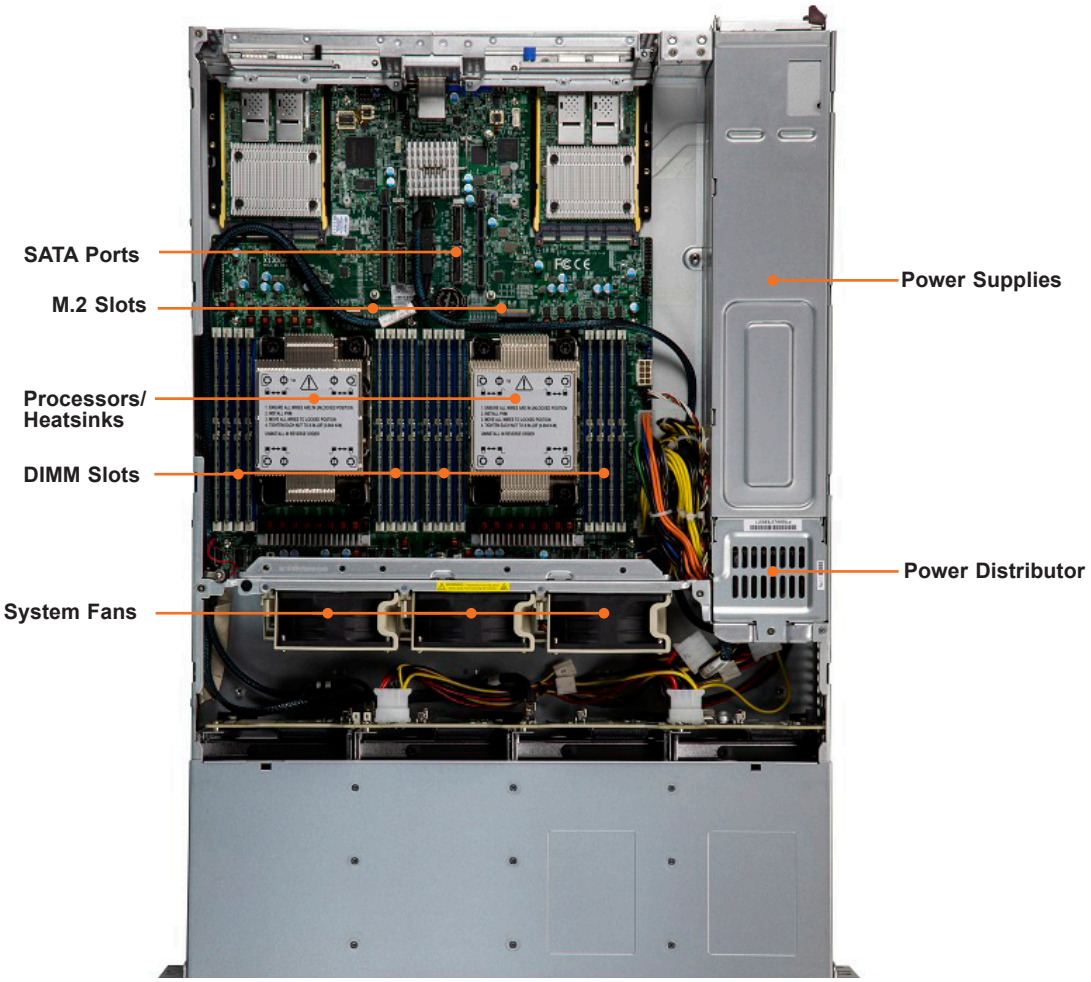


Figure 1-4. System: Top View

System Features: Top	
Feature	**Description**
SATA Ports	Two SATA ports for up to 12 onboard SATA drives
Power Supplies	Dual redundant modules
M.2 Slots	Two slots for PCIe 5.0 x4 M.2 NVMe (both CPU1)
Processors	Dual 4th and 5th Gen Intel Xeon Scalable with heatsinks
DIMM Slots	Sixteen memory slots
System Fans	Three 8-cm heavy-duty fans with optimal fan speed control

1.3 System Architecture

This section shows the locations of the main components of the system.

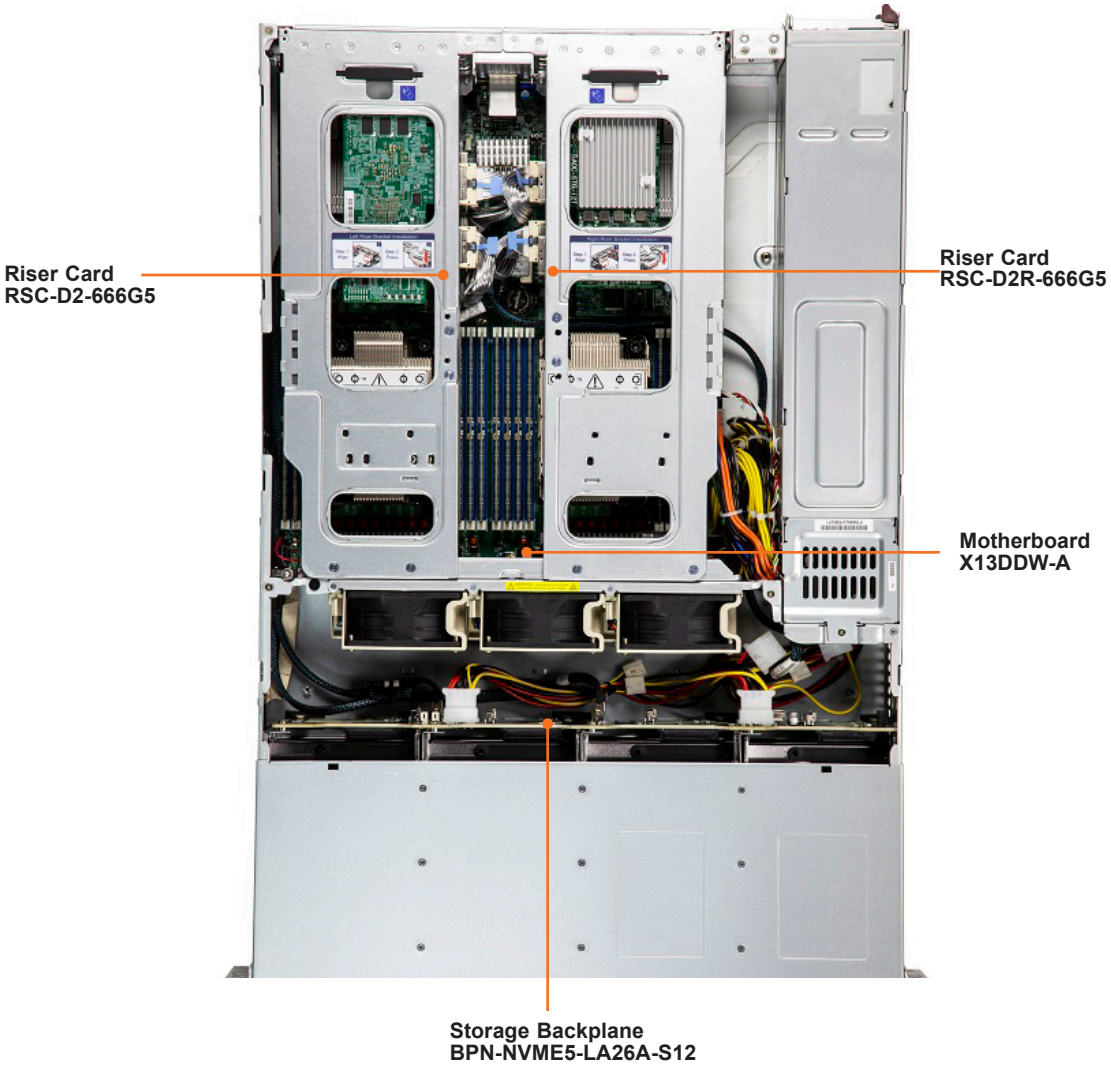


Figure 1-5. Main Component Locations

1.4 Motherboard Layout

Below is a layout of the X13DDW-A motherboard with jumper, connector and LED locations shown. See the table on the following page for descriptions. For detailed descriptions, pinout information and jumper settings, refer to Chapter 4 in this manual or to the motherboard manual at the following URL: https://www.supermicro.com/en/products/motherboard/X13DDW-A.

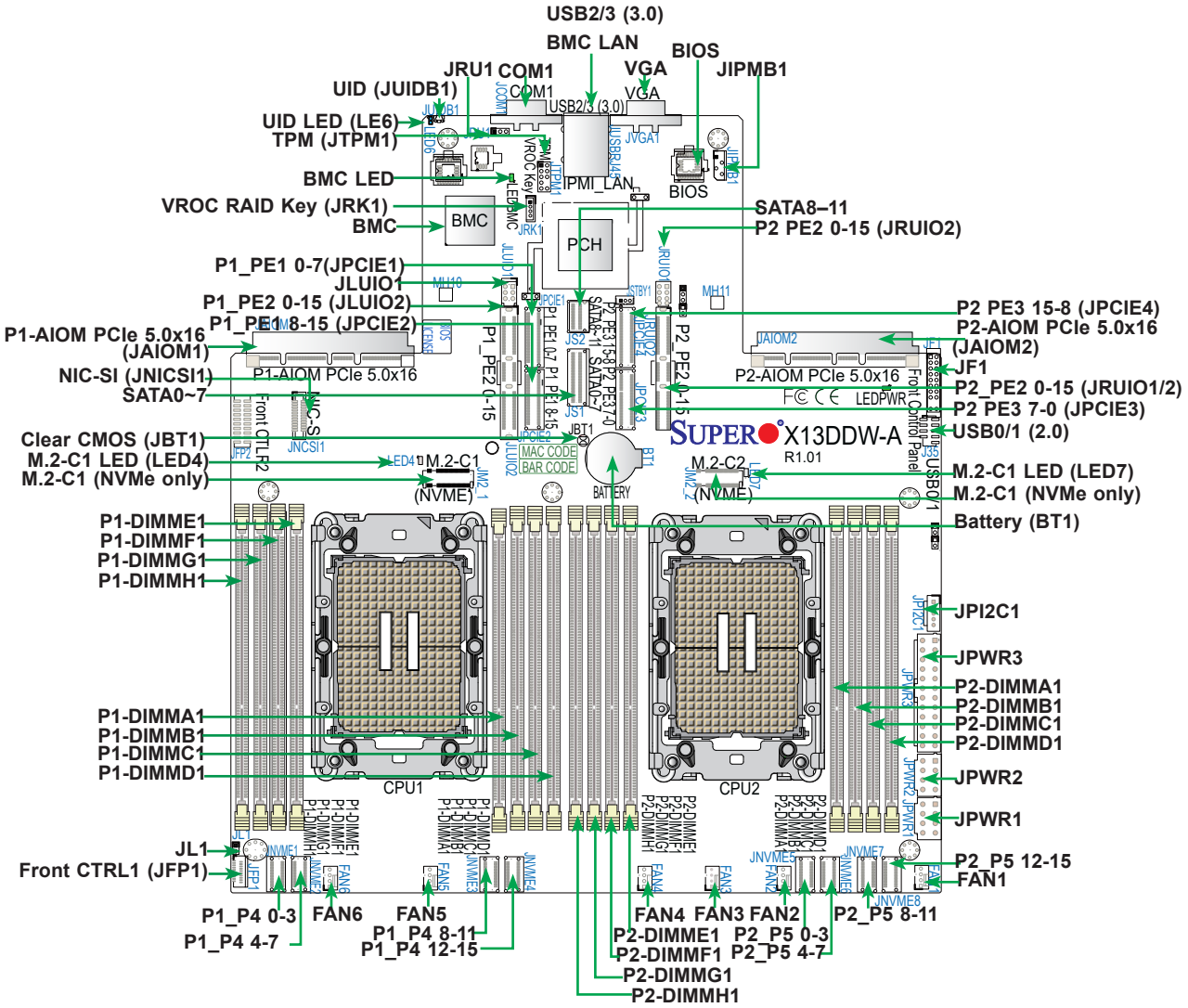


Figure 1-7. Motherboard Layout

Quick Reference

Jumper	Description	Default Setting
JBT1	CMOS Clear	Open (Normal)
JRU1	Front Power Signal/Front UID Select	Pins 2–3 (Front UID Use)

Connector	Description
Battery (BT1)	Onboard battery
COM1 (JCOM1)	COM Port 1 on the rear I/O panel
FAN1–FAN6	4-pin cooling fan headers (FAN1–FAN 6)
IPMI_LAN (JUSBRJ45)	BMC LAN connector on the rear I/O panel
JF1	Front Control Panel header (not used in this system)
JFP1	Front Control Panel header1
JIPMB1	4-pin BMC SMbus header
JL1	Chassis Intrusion header
JNCSI1	NC-SI (Network Controller Sideband Interface) connector (See the note below)
JPWR1/JPWR2	8-pin power connectors
JPWR3	24-pin power connector
JRK1 (VROC RAID Key)	Intel VROC RAID key header for NVMe RAID support
JSTBY1	5 V Standby power header
JTPM1	Trusted Platform Module/Port 80 connector
JUIDB1	Unit Identifier (UID) switch/button
M.2-C1/M.2-C2 (JM2_1/JM2_2)	M.2 slots for NVMe use only (with support of M-Key 2280)
MH10/MH11	Mounting holes for M.2 SSDs (MH10: for M.2-C1, MH11 for M.2-C2)
P1-AIOM PCIe 5.0 x16 (JAIOM1)	Supermicro Advanced Input/Output Module (AIOM) PCIe 5.0 x 16 rear I/O connector supported by CPU1
P2-AIOM PCIe 5.0 x16 (JAIOM2)	Supermicro Advanced Input/Output Module (AIOM) PCIe 5.0 x 16 rear I/O connector supported by CPU2
P1_PE2 0-15 (JLUIO1/JLUIO2)	PCIe 5.0 x16 left add-on card slot supported by CPU1
P2_PE2 0-15 (JRUIO1/ JRUIO2)	PCIe 5.0 x16 right add-on card slot supported by CPU2
P1_PE1 0-7 (JPCIE1)	PCIe 5.0 x8 MCIO connector supported by CPU1
P1_PE1 8-15(JPCIE2)	PCIe 5.0 x8 MCIO connector supported by CPU1
P2_PE3 7-0 (JPCIE3)	PCIe 5.0 x8 MCIO connector supported by CPU2
P2_PE3 15-8 (JPCIE4)	PCIe 5.0 x8 MCIO connector supported by CPU2
P1_PE4 0-3 (JNVME1)	PCIe 5.0 x4 MCIO connector used for NVMe devices supported by CPU1
P1_PE4 4-7 (JNVME2)	PCIe 5.0 x4 MCIO connector used for NVMe devices supported by CPU1
P1_PE4 8-11 (JNVME3)	PCIe 5.0 x4 MCIO connector used for NVMe devices supported by CPU1
P1_PE4 12-15 (JNVME4)	PCIe 5.0 x4 MCIO connector used for NVMe devices supported by CPU1
P2_PE5 0-3 (JNVME5)	PCIe 5.0 x4 MCIO connector used for NVMe devices supported by CPU2
P2_PE5 4-7 (JNVME6)	PCIe 5.0 x4 MCIO connector used for NVMe devices supported by CPU2
P2_PE5 8-11 (JNVME7)	PCIe 5.0 x4 MCIO connector used for NVMe devices supported by CPU2
P2_PE5 12-15 (JNVME8)	PCIe 5.0 x4 MCIO connector used for NVMe devices supported by CPU2
PWR I2C (JPI2C1)	Power I²C SMBus (System Management Bus) header
SATA 0–7 (JS1)	SATA 0–7 ports supported by PCH

Connector	Description
SATA 8–11 (JS2)	SATA 8–11 ports supported by PCH
USB 0/1 (USB 2.0) (J35)	USB 2.0 header with support of USB Port1/USB Port2
USB 2/3 (USB 3.0) (JUSBRJ45)	Rear USB 3.0 connector with support for two USB 3.0 connections (USB Port2/USB Port3)
VGA (JVGA1)	Rear VGA connector

LED	Description	State: Status
LED4	M.2-C1 LED	On: M.2-C1 Active
LED6 (UID-LED)	Unit Identifier (UID) LED	Solid Blue: Unit Identified
LED7	M.2-C2 LED	On: M.2-C2 Active
LEDBMC	BMC Heartbeat LED	Blinking Green: BMC Normal (Active) Solid Green: (During BMC Reset or during a Cold Reboot)
LEDPWR	Power LED	On: Onboard Power On

Motherboard Block Diagram

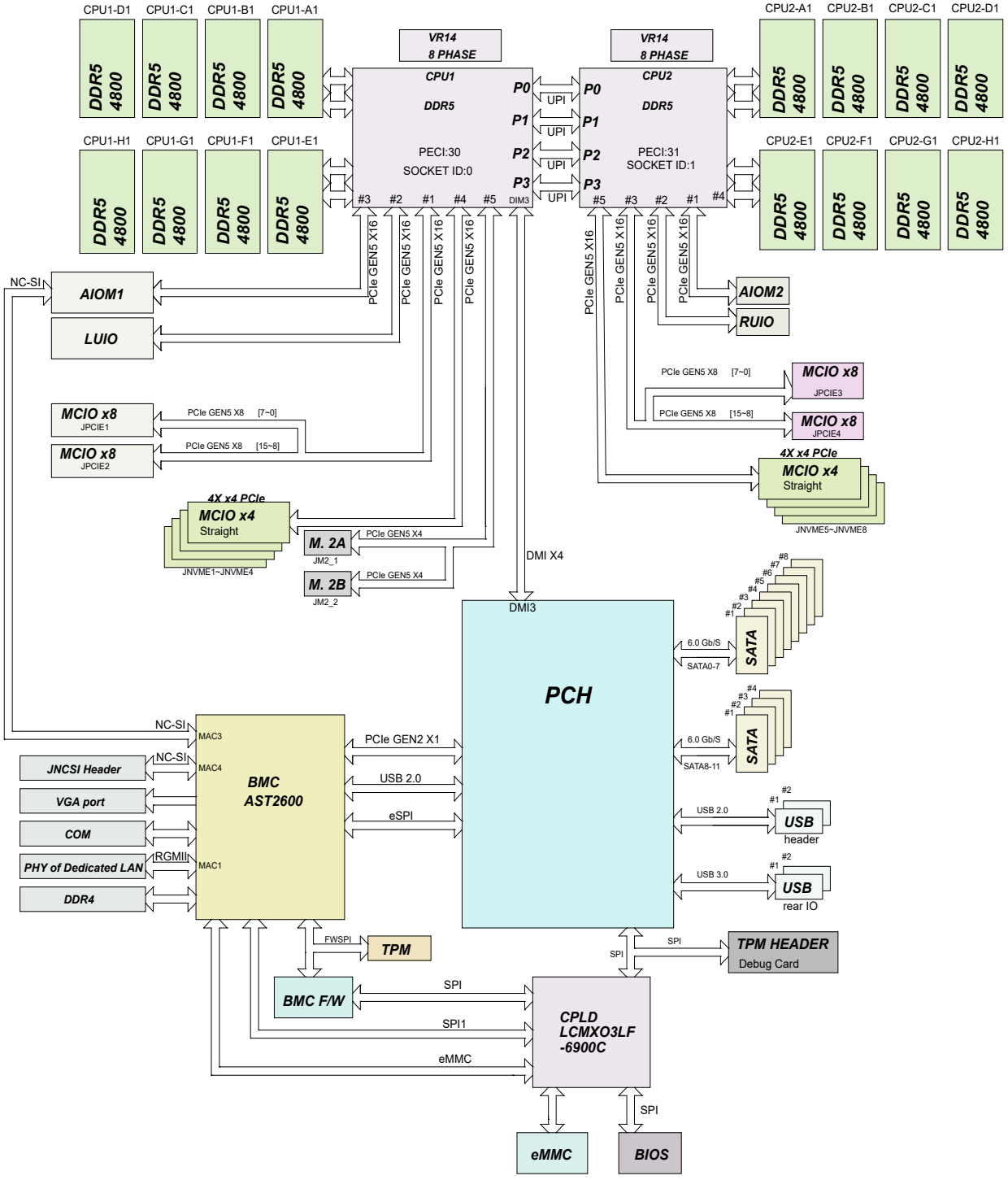


Figure 1-8. Motherboard Block Diagram

System Block Diagram

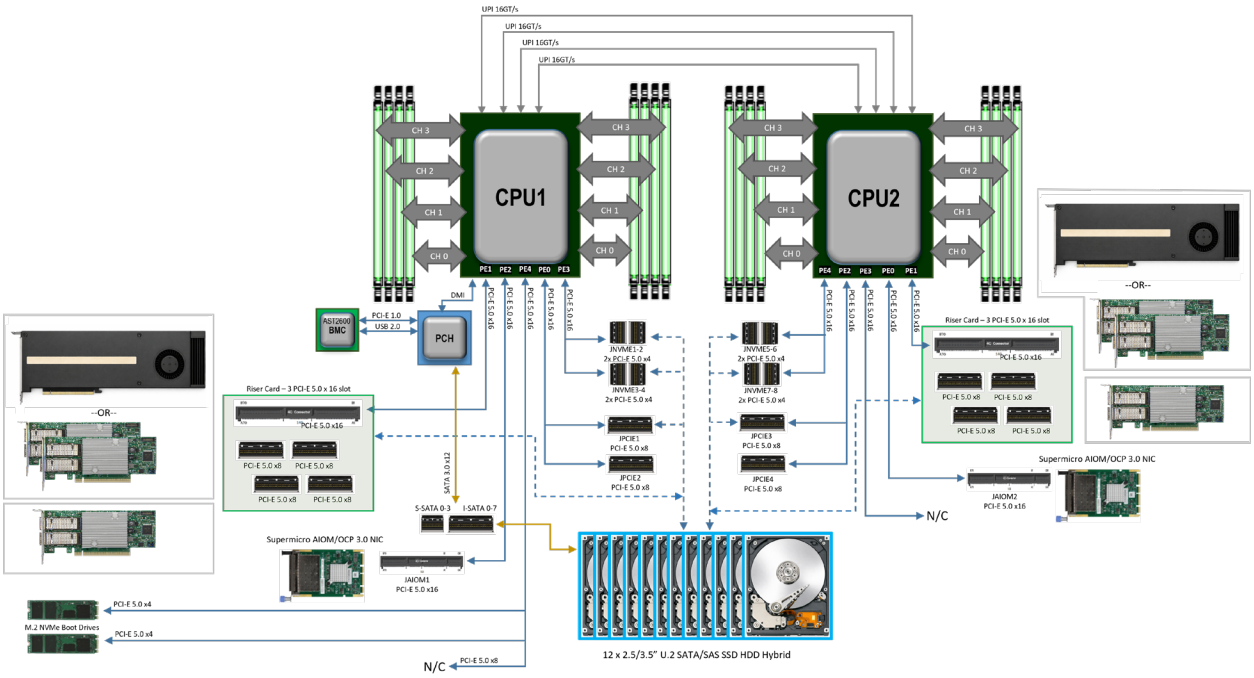


Figure 1-9. System Block Diagram

Chapter 2

Server Installation

2.1 Overview

This chapter provides advice and instructions for mounting your system in a server rack. If your system is not already fully integrated with processors, system memory, etc., refer to Chapter 3 of this manual for details on installing those specific components.

Caution: Electrostatic Discharge (ESD) can damage electronic components. To prevent such damage to PCBs (printed circuit boards), it is important to use a grounded wrist strap, handle all PCBs by their edges and keep them in anti-static bags when not in use.

2.2 Unpacking the System

Inspect the box in which the SuperServer was shipped, and note if it was damaged in any way. If any equipment appears damaged, file a damage claim with the carrier who delivered it.

Decide on a suitable location for the rack unit that will hold the server. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. It will also require a grounded AC power outlet nearby. Be sure to read the precautions and considerations noted in Appendix A of this manual.

2.3 Preparing for Setup

The box in which the system was shipped should include the rackmount hardware needed to install it into the rack. Please read this section in its entirety before you begin the installation.

Choosing a Setup Location

- The system should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.
- Leave enough clearance in front of the rack so that you can open the front door completely (~25 inches) and approximately 30 inches of clearance in the back of the rack to allow sufficient space for airflow and access when servicing.
- This product should be installed only in a Restricted Access Location (dedicated equipment rooms, service closets, etc.).
- This product is not suitable for use with visual display workplace devices according to §2 of the German Ordinance for Work with Visual Display Units.

Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are extended to the floor so that the full weight of the rack rests on them.
- In single rack installations, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a server or other component from the rack.
- You should extend only one server or component at a time. Extending two or more simultaneously may cause the rack to become unstable.

Server Precautions

- Review the electrical and general safety precautions in Appendix A of this manual.
- Determine the placement of each component in the rack *before* you install the rails.
- Install the heaviest server components at the bottom of the rack first and then work your way up.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges and voltage spikes and to keep your system operating in case of a power failure.
- Allow any drives and power supply modules to cool before touching them.
- When not servicing, always keep the front door of the rack and all covers/panels on the servers closed to maintain proper cooling.

Rack Mounting Considerations

Important! To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.
- Slide rail mounted equipment is not to be used as a shelf or a work space.

Warning!

Stability hazard. The rack may tip over causing serious personal injury. Before extending the rack to the installation position, read the installation instructions. Do not put any load on the slide-rail mounted equipment in the installation position. Do not leave the slide-rail mounted equipment in the installation position..

Avertissement!

Danger d'instabilité. Le rack peut basculer et provoquer des blessures corporelles graves. Avant d'étendre le rack en position d'installation, lire les instructions d'installation. Ne pas charger l'équipement monté sur rail de glissière en position d'installation.

Ambient Operating Temperature

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the room's ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (TMRA).

Airflow

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

Mechanical Loading

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

Circuit Overloading

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Ground

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).

2.4 Installing the Rails

There are a variety of rack units on the market, which may require a slightly different assembly procedure. This rail set fits a rack between 26.8" and 36.4" deep.

The following is a basic guideline for installing the system into a rack with the rack mounting hardware provided. You should also refer to the installation instructions that came with the specific rack you are using.

Identifying the Rails

The chassis comes with two sets of rack rails, one set for the right side of the chassis and one for the left. Each set consists of an inner rail that is pre-attached to the chassis, an outer rail that attaches to the rack, and a middle rail that slides forward in the outer rail.

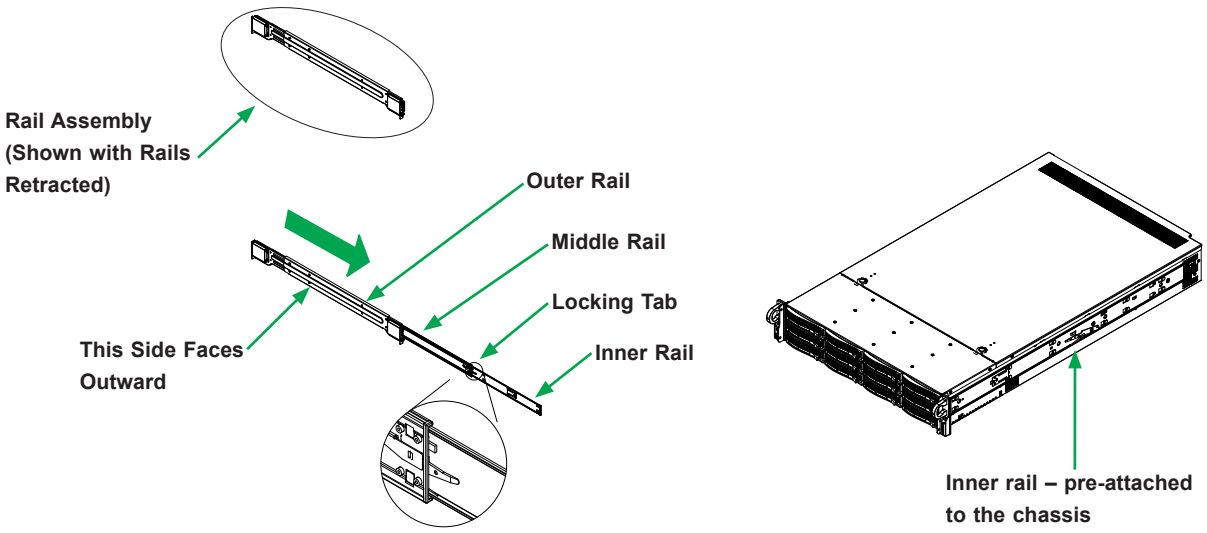


Figure 2-1. Identifying the Sections of the Rack Rails
(Figure on Left is Left Rail Assembly Shown)

Note: The front chassis rails and the rack rails both have a locking tab. The locking tabs hold the server in place when fully installed and pushed into the rack (its normal operating position). The tabs also lock the server in place when extended from the rack to prevent the server from completely coming out of the rack when pulled out for servicing.

Releasing the Inner Rail

Each inner rail has a locking latch. This latch prevents the server from coming completely out of the rack when when the chassis is pulled out for servicing.

To mount the rail onto the chassis, first release the inner rail from the outer rails.

Releasing Inner Rail from the Outer Rails

1. Pull the inner rail out of the outer rail until it is fully extended as illustrated below.
2. Press the locking tab down to release the inner rail.
3. Pull the inner rail all the way out.

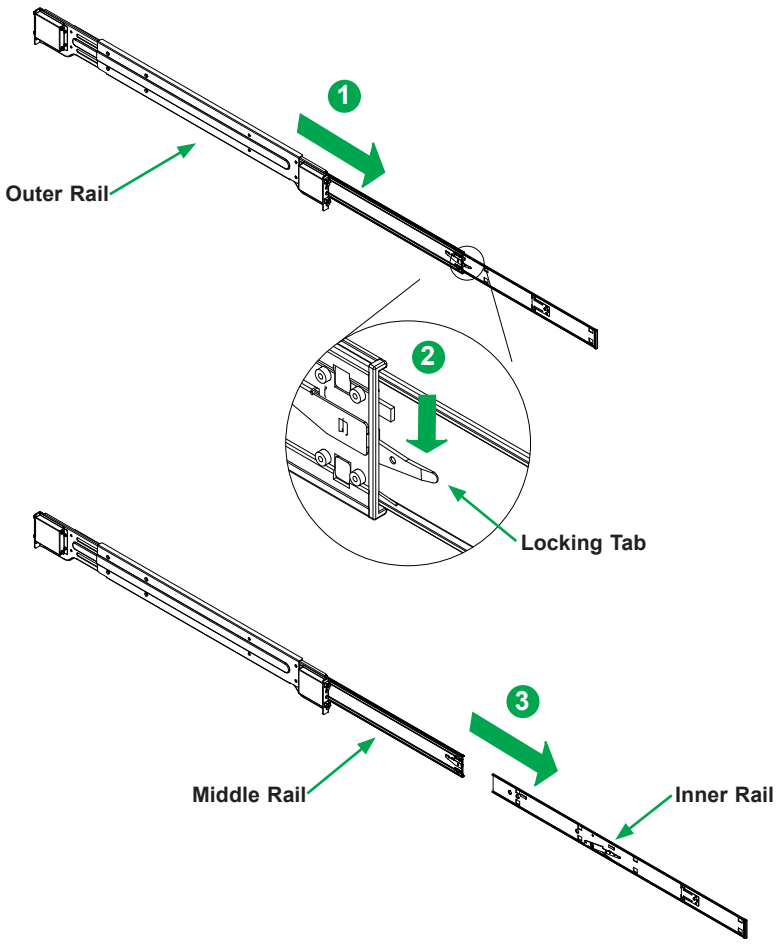


Figure 2-2. Extending and Releasing the Inner Rail

Installing the Inner Rails on the Chassis

Installing the Inner Rails

1. Identify the left and right inner rails. They are labeled.
2. Place the inner rail firmly against the side of the chassis, aligning the hooks on the side of the chassis with the holes in the inner rail.
3. Slide the inner rail forward toward the front of the chassis until the quick release bracket snaps into place, securing the rail to the chassis.
4. Optionally, you can further secure the inner rail to the chassis with a screw.
5. Repeat for the other inner rail.

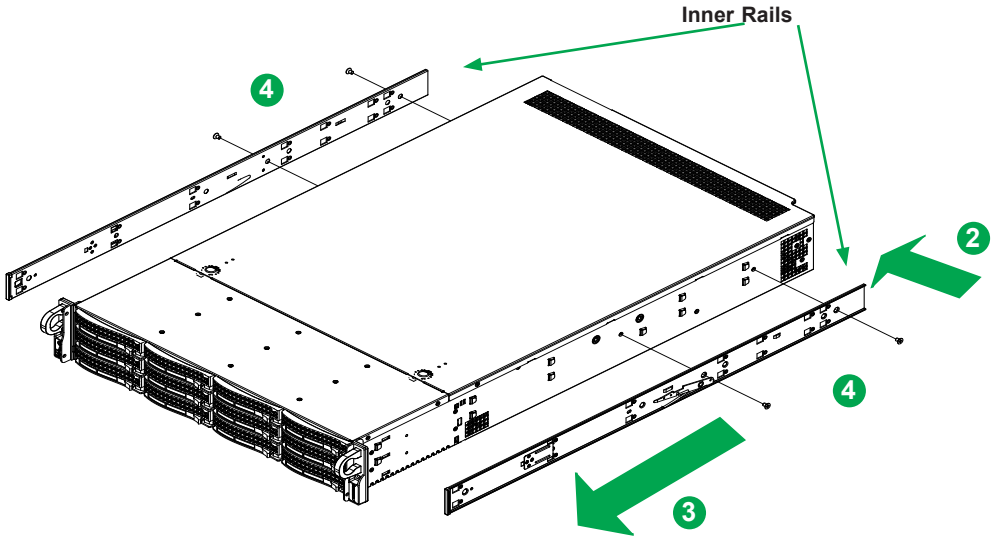


Figure 2-3. Installing the Inner Rails

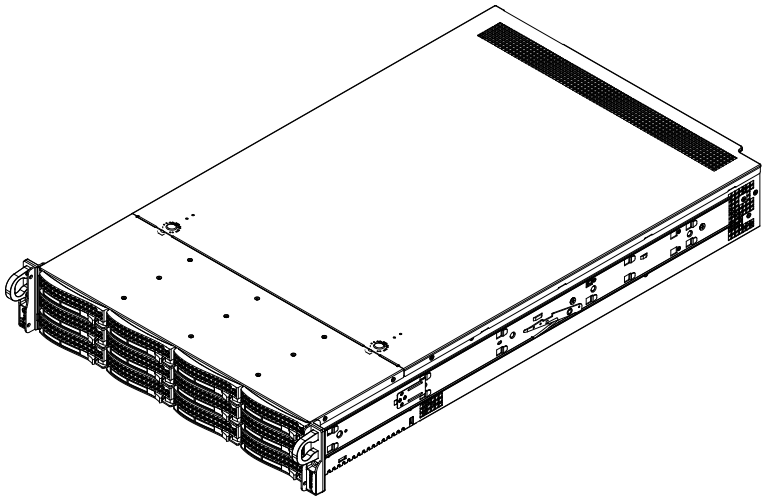


Figure 2-4. Inner Rails Installed on the Chassis

Installing the Outer Rails onto the Rack

1. Press upward on the locking tab at the rear end of the middle rail.
2. Push the middle rail back into the outer rail.
3. Hang the hooks on the front of the outer rail onto the square holes on the front of the rack. If desired, use screws to secure the outer rails to the rack.
4. Pull out the rear of the outer rail, adjusting the length until it just fits within the posts of the rack.
5. Hang the hooks of the rear section of the outer rail onto the square holes on the rear of the rack. Take care that the proper holes are used so the rails are level. If desired, use screws to secure the rear of the outer rail to the rear of the rack.

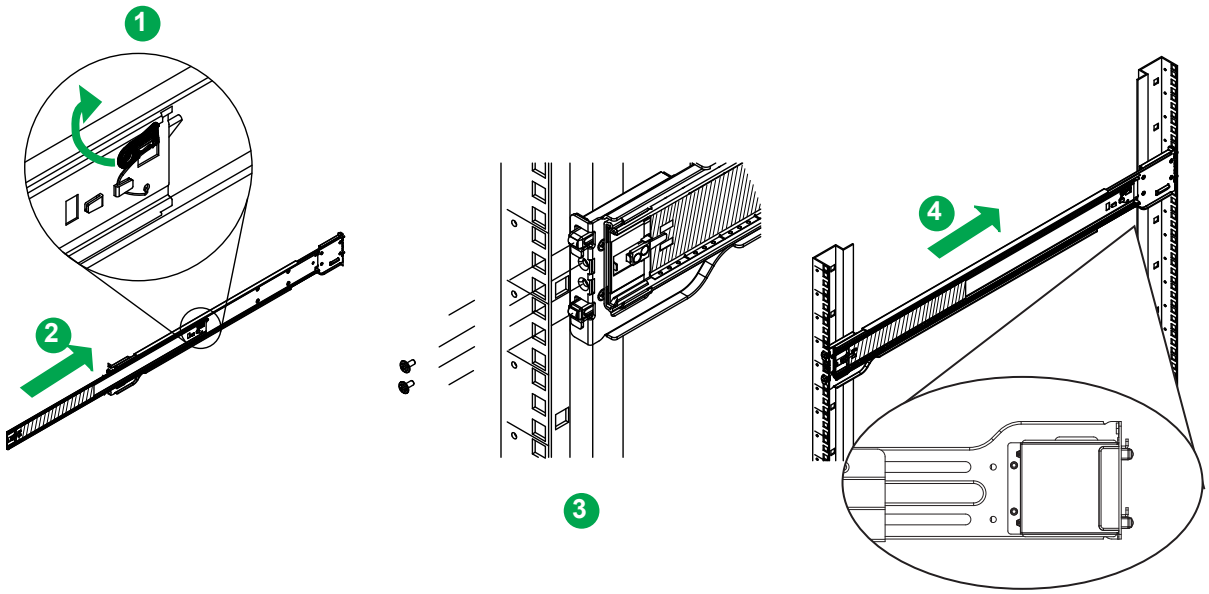


Figure 2-5. Extending and Mounting the Outer Rails

Note: The figure above is for illustrative purposes only. Always install servers at the bottom of the rack first.

2.5 Installing the Server into the Rack

Once rails are attached to the chassis and the rack, you can install the server.

1. Pull the middle rail out of the front of the outer rail and make sure that the ball bearing shuttle is locked at the front of the middle rail.
2. Align the rear of the chassis rails with the middle rails and then push evenly on both sides of the chassis until it clicks into the fully extended position.
3. Depress the locking tabs on both sides of the chassis and push the it fully into the rack. The locking tabs should click.
4. Optional screws may be used to hold the front of the chassis to the rack.

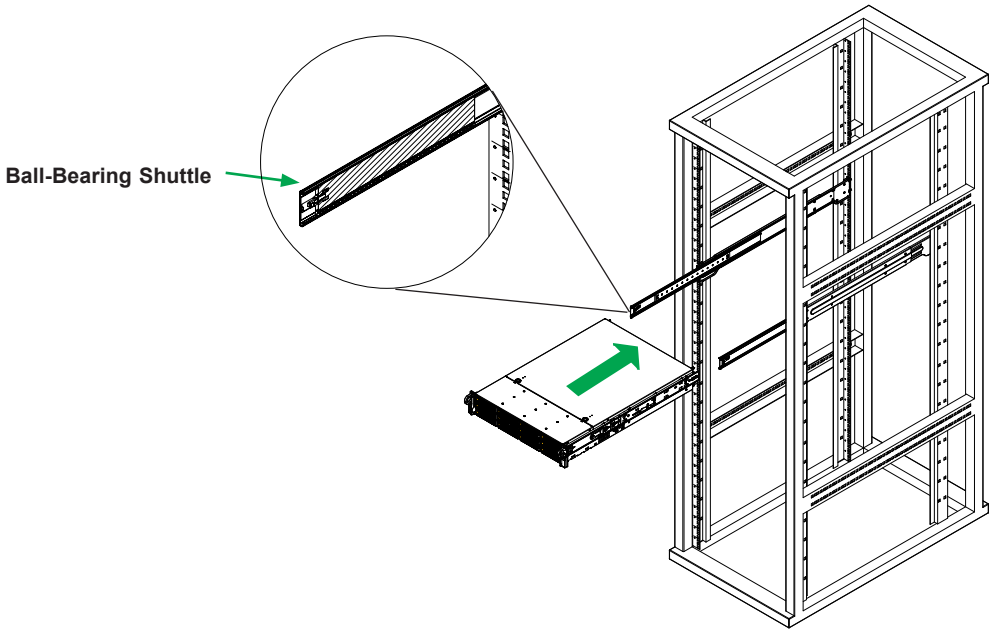


Figure 2-6. Installing into a Rack

Note: Keep the ball bearing shuttle locked at the front of the middle rail during installation. Figure is for illustrative purposes only. Always install servers to the bottom of a rack first.

Important: Do not pick up the server with the front handles. They are designed to pull the system from a rack only.

Removing the Chassis from the Rack

Caution! It is dangerous for a single person to off-load the heavy chassis from the rack without assistance. Be sure to have sufficient assistance supporting the chassis when removing it from the rack. Use a lift.

1. Pull the chassis forward out the front of the rack until it stops.
2. Press the release latches on each of the inner rails downward simultaneously and contiue to pull the chassis forward and out of the rack.

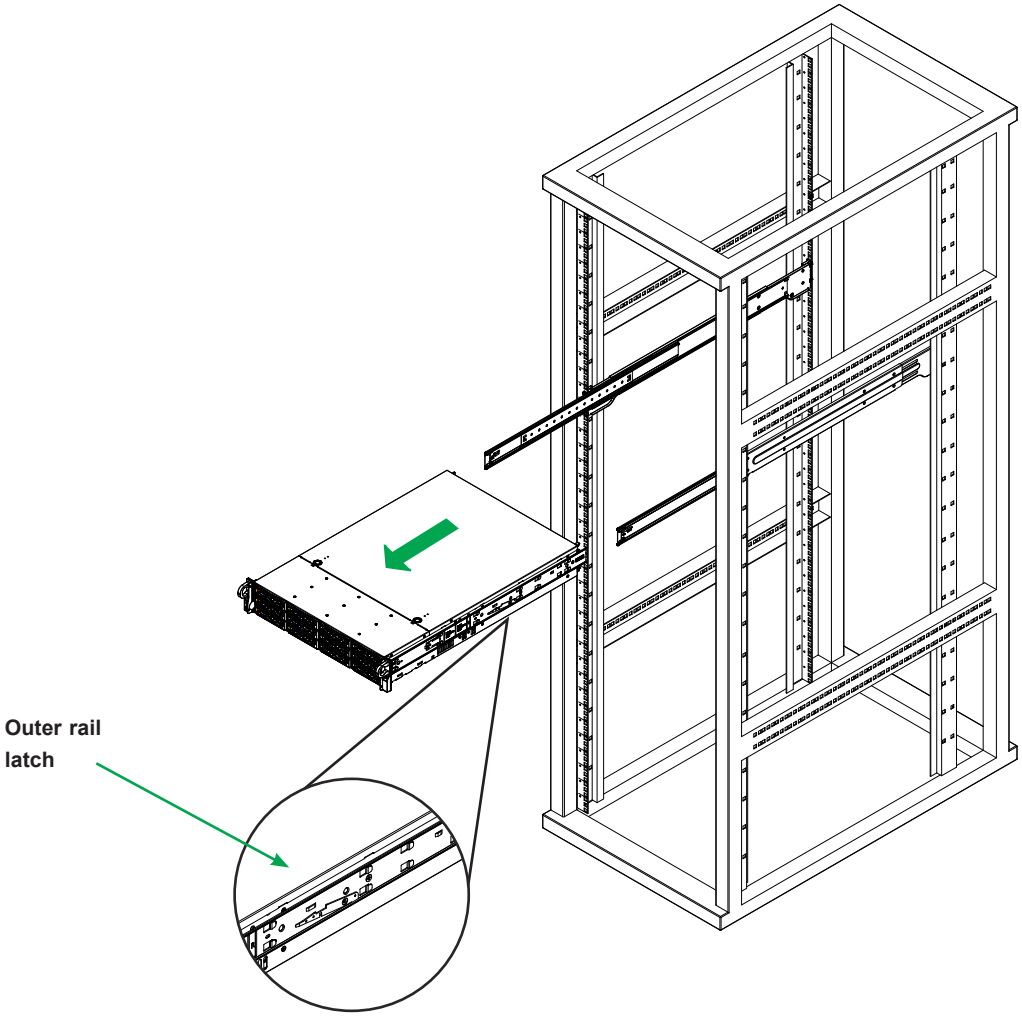


Figure 2-7. Removing the Chassis From the Rack

Chapter 3

Maintenance and Component Installation

This chapter provides instructions on installing and replacing main system components. To prevent compatibility issues, only use components that match the specifications and/or part numbers given.

Installation or replacement of most components require that power first be removed from the system. Please follow the procedures given in each section.

3.1 Removing Power

Use the following procedure to ensure that power has been removed from the system. This step is necessary when removing or installing non hot-swap components or when replacing a non-redundant power supply.

1. Use the operating system to power down the system.
2. After the system has completely shut-down, disconnect the AC power cord(s) from the power strip or outlet. (If your system has more than one power supply, remove the AC power cords from all power supply modules.)
3. Disconnect the power cord(s) from the power supply module(s).

Note: This caution statement applies when changing any component or subsystem that is not hot-swappable/hot-plug.

3.2 Accessing the System

The system features a removable top cover, which allows access to the inside of the system.

Removing the Top Cover

1. Press the two release buttons and slide the cover toward the rear.
2. Lift the top cover up.

Check that all ventilation openings on the top cover and the top of the system are clear and unobstructed.

Caution: Except for short periods of time, do not operate the server without the cover in place. The system cover must be in place to allow for proper airflow and to prevent overheating.

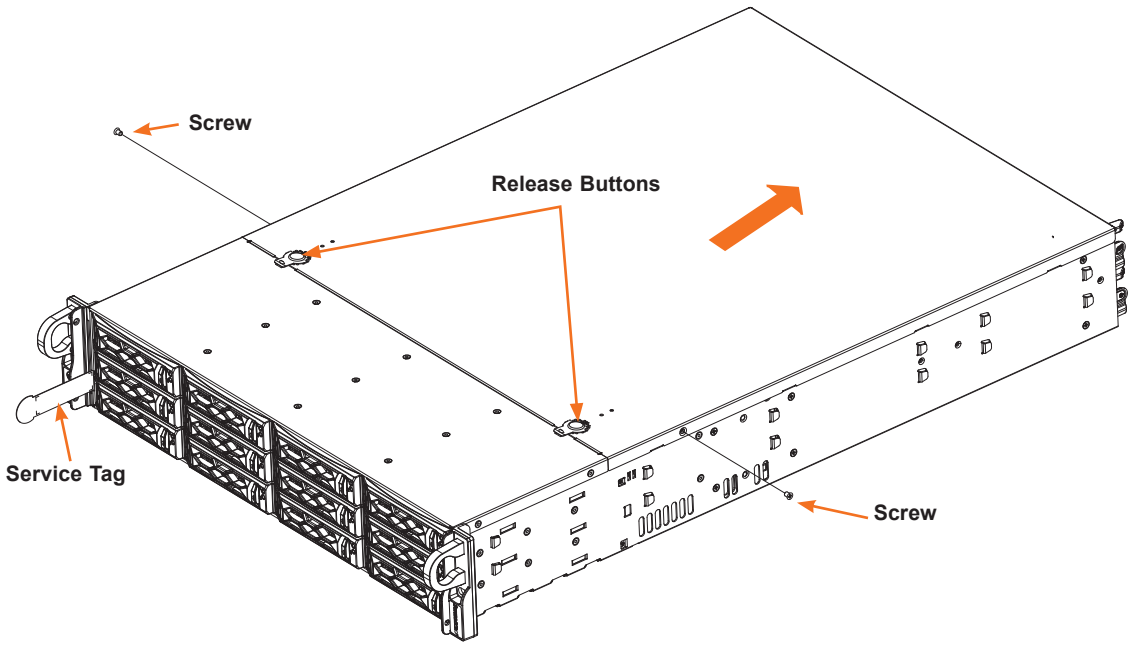
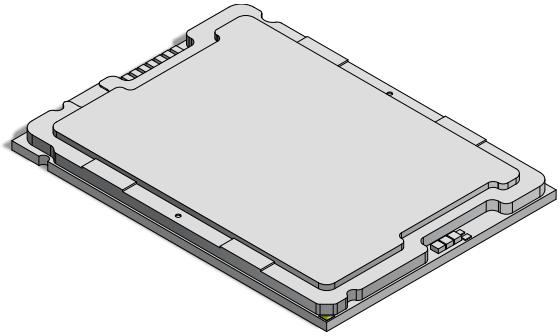


Figure 3-1. Removing the System Cover

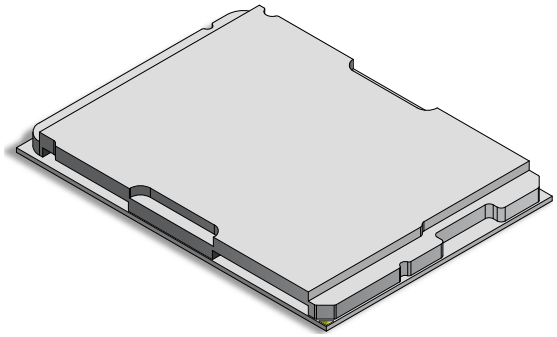
3.3 Processor and Heatsink

Processor Overview

The motherboard supports two versions of the 4th Gen Intel Xeon Scalable processors. They differ in the number of cores, and each requires a different CPU carrier. The XCC version supports up to 60 cores, and the MCC version supports up to 32 cores. The CPU carriers differ by the presence or absence of shims and levers.



SP XCC
(84xx/64xx/54xx)



SP MCC
(84xx/64xx/54xx/44xx)

CPU and Carrier Type					
CPU Type	**Cores**	**Carrier Type**	**Lever**	**Shim**	**Carrier Part Number**
XCC	60	E1A	Yes	No	SKT-1333L-0000-FXC (alt: SKT-1333L-0001-LTS)
MCC	32	E1B	Yes	Yes	SKT-1424L-001B-FXC (alt: SKT-1424L-001B-LTS)

Installation Overview

The processor (CPU) and processor carrier should be assembled together first to form the processor carrier assembly. This will be attached to the heatsink to form the processor heatsink module (PHM) before being installed onto the CPU socket.

Notes:

- Use ESD protection.
- The sytem power cords must be removed from all power supplies.
- Check that the plastic protective cover is on the CPU socket and none of the socket pins are bent. If they are, contact your retailer.
- When handling the processor, avoid touching or placing direct pressure on the LGA lands (gold contacts). Improper installation or socket misalignment can cause serious damage to the processor or socket, which may require manufacturer repairs.
- Refer to the Supermicro website for updates on processor support.

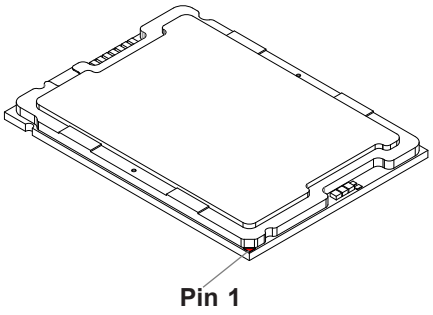
Installation Procedure Overview

After preparing the system, and following ESD precautions, there are four steps to installing the processor and heatsink onto the motherboard.

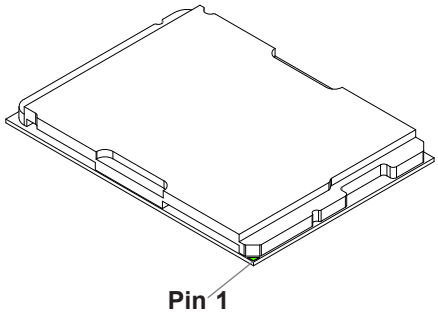
1. Attach the processor to a plastic carrier to create the processor carrier assembly.
2. Attach the processor carrier assembly to the heatsink to create the processor heatsink module (PHM).
3. Remove the socket cover.
4. Install the PHM.

Assembling the Processor Carrier Assembly

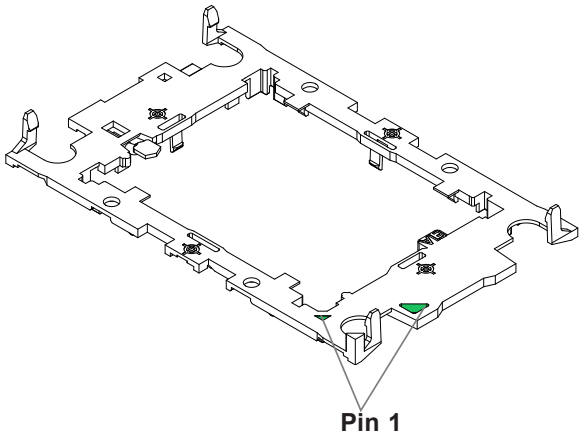
1. Hold the processor with the gold pins (LGA lands) facing down. Locate the gold triangle at the corner of the processor and the corresponding hollowed triangle on the processor carrier as shown below. These triangles indicate the location of pin 1.



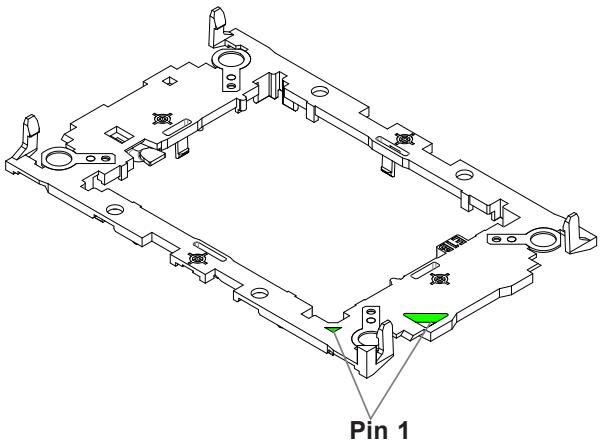
SP XCC



SP MCC

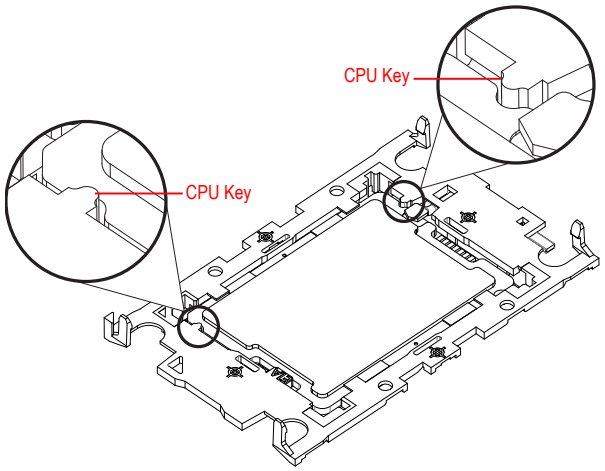


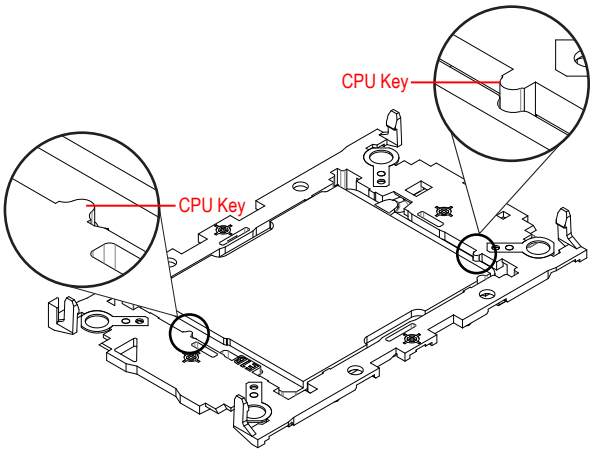
Carrier E1A

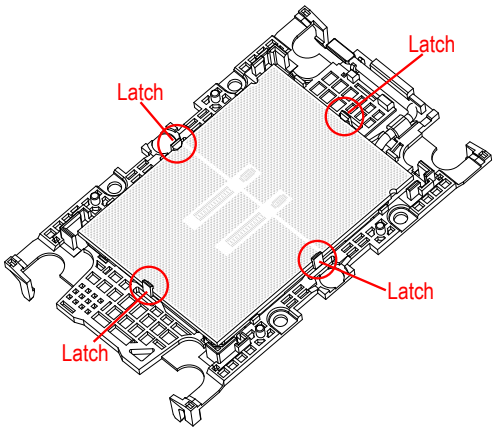


Carrier E1B

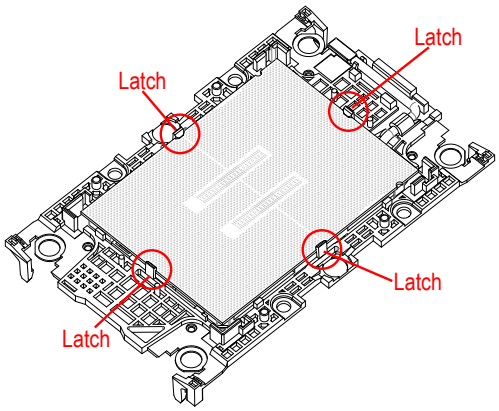
2. Turn the processor over (with the gold pins up). Locate the CPU keys on the processor and the four latches on the carrier.





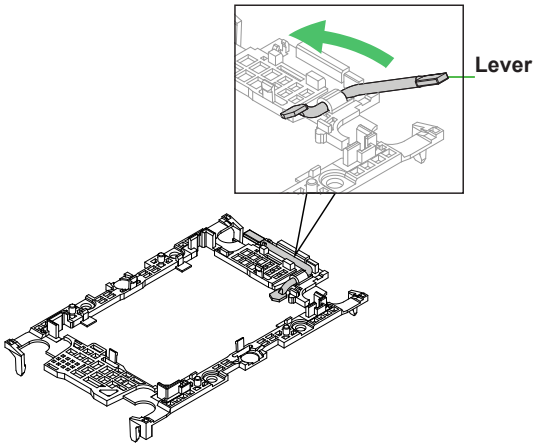


SP XCC

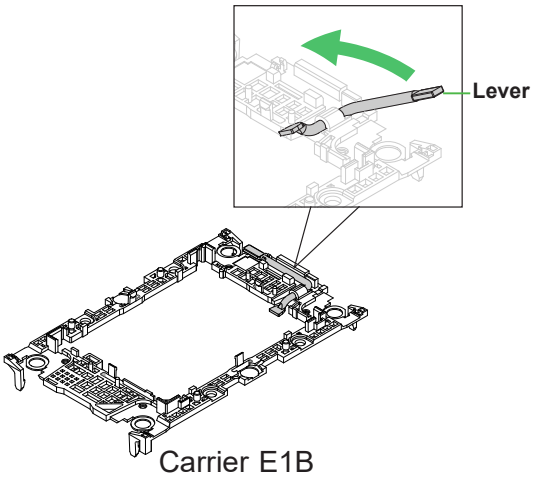


SP MCC

3. Locate the lever on the processor carrier and press it down.

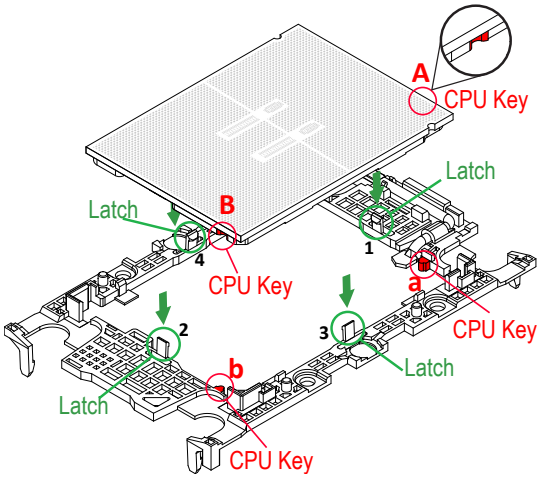


Carrier E1A

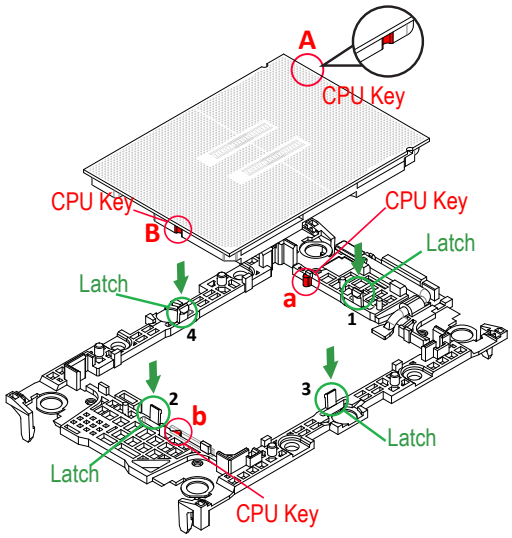


Carrier E1B

4. Using pin 1 as a guide, carefully align the CPU keys on the processor (A & B) with those on the carrier (a & b).



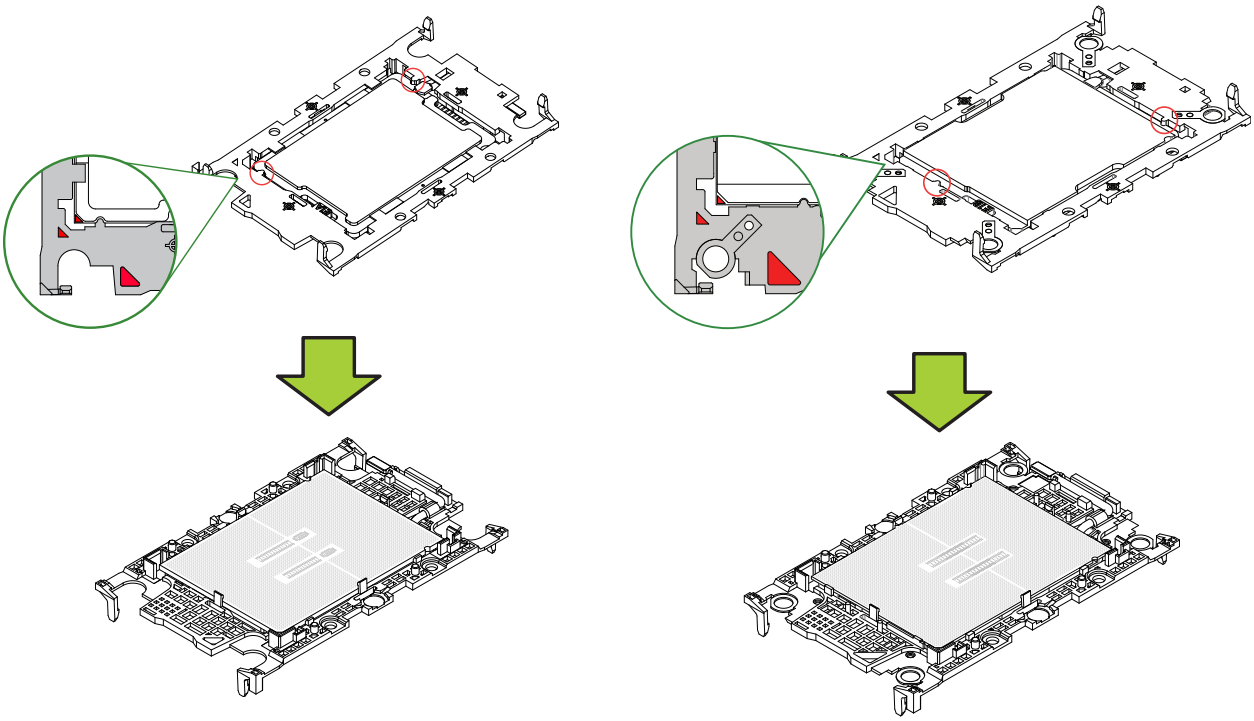
SP XCC



SP MCC

5. Once aligned, carefully insert the CPU into the carrier, making sure that the CPU is secured by latches 1, 2, 3, and 4.

Processor Carrier Assembly
(Top View)



SP XCC

SP MCC

Processor Carrier Assembly
(Component Side)

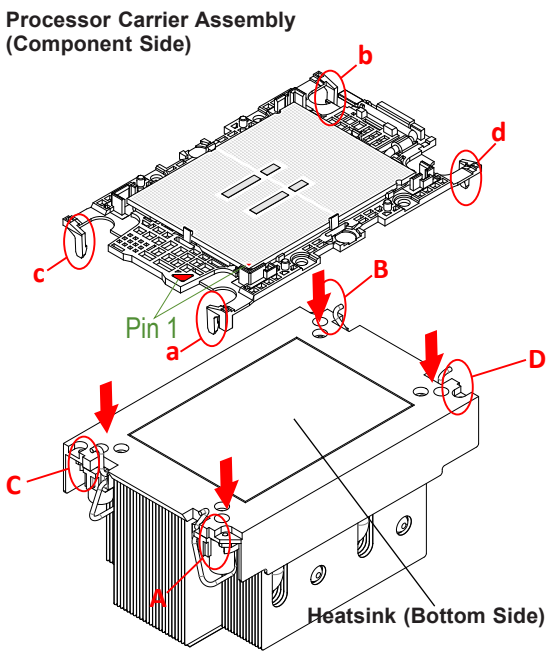
Assembling the Processor Heatsink Module

Thermal grease is pre-applied on a new heatsink. No additional thermal grease is needed. If this is a re-installation, apply the proper amount of thermal grease to the underside of the heatsink.

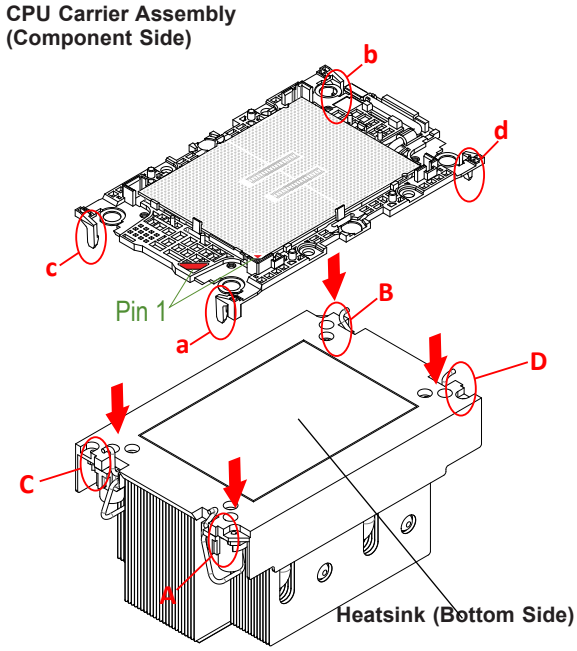
Assembling the Processor Heatsink Module (PHM)

1. Turn the heatsink over with the thermal grease facing up. Pay attention to the two triangle cutouts (A, B) located at the diagonal corners of the heatsink as shown in the drawing below.

2. Hold the processor carrier assembly upside-down to locate the triangles on the processor and the carrier, which indicate pin 1.



SP XCC



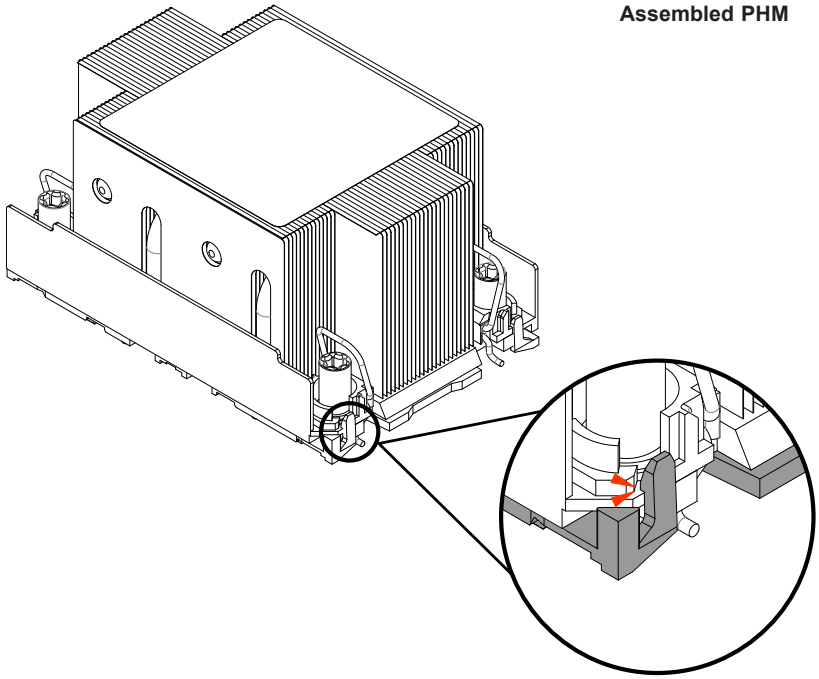
SP MCC

3. Turn the processor carrier assembly over so that the gold pins are facing up. Locate the two pin 1 locations ("A" on the processor and "a" on the processor carrier assembly).

4. Align "a" on the processor carrier assembly with the triangular cutout "A" on the heatsink along with "b", "c", "d" on the processor assembly with "B", "C", "D" on the heatsink.

5. Once properly aligned, place the heatsink on the processor carrier assembly with all corners matched up, making sure that the four clips are properly securing the heatsink.

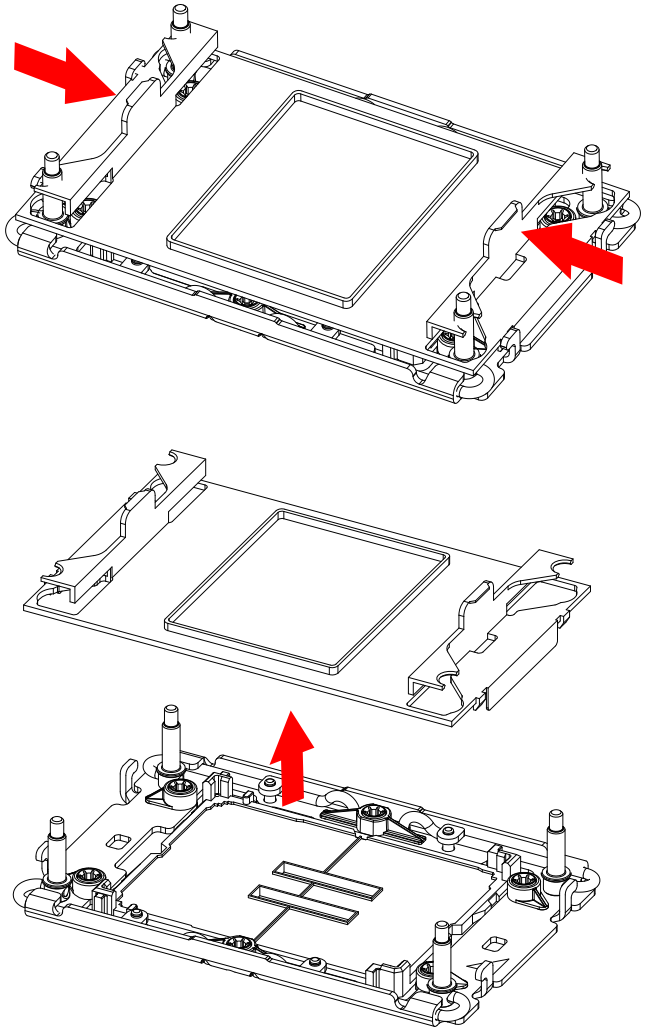
Assembled PHM



Removing the Socket Cover

Remove the plastic protective cover from the socket by gently squeezing the grip tabs and pulling the cover off.

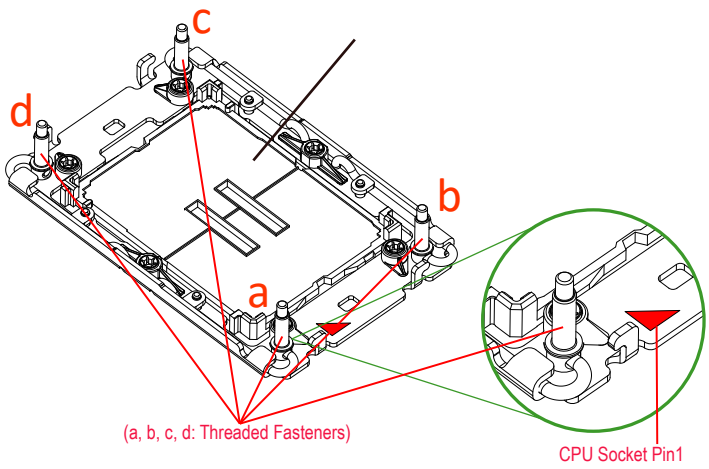
CPU Socket with Plastic Protective Cover



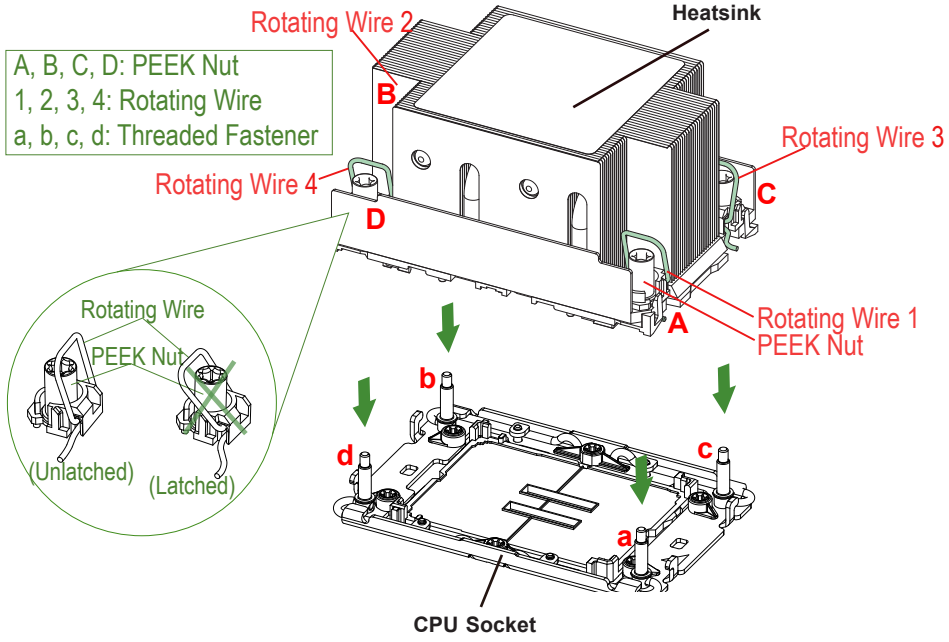
Installing the PHM

To install the PHM into the CPU socket, follow these steps.

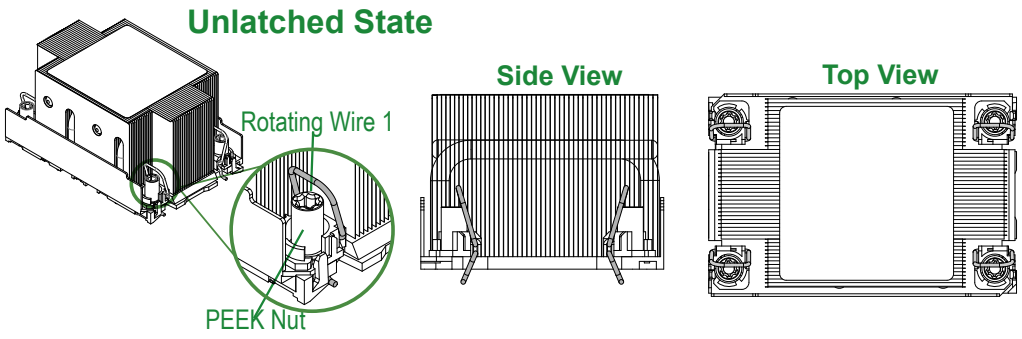
1. Locate four threaded fasteners (a, b, c, d) and Pin 1 on the CPU socket.



2. Locate four PEEK nuts (A, B, C, D) and four rotating wires (1, 2, 3, 4) on the heatsink.

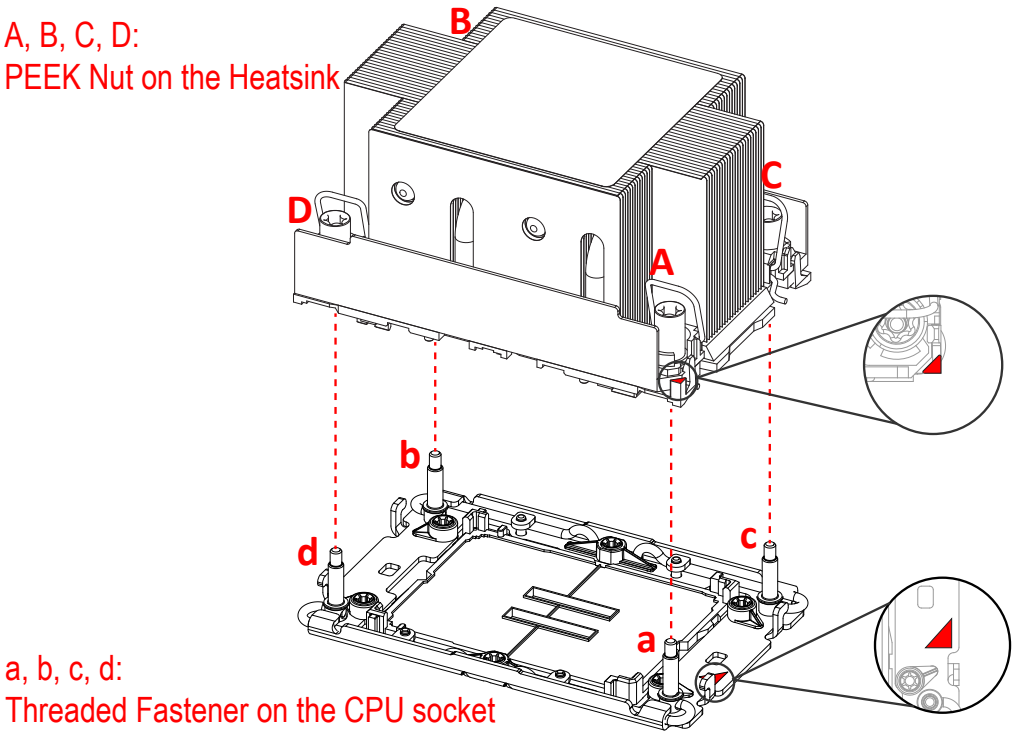


3. Check the rotating wires (1, 2, 3, 4) to make sure that they are in the unlatched position.

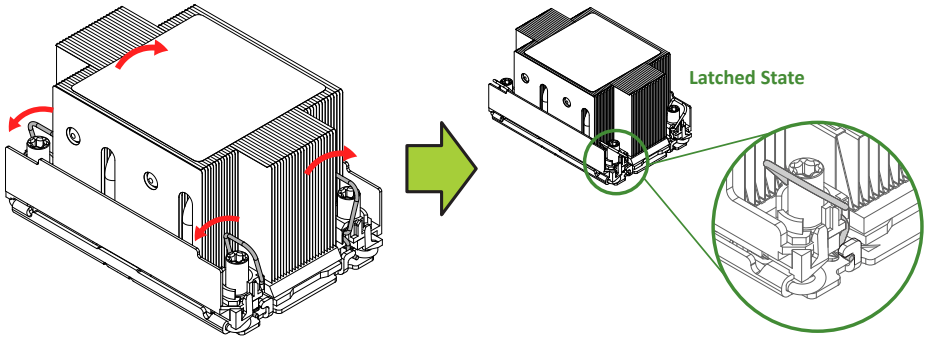


4. Align PEEK nut "A" (next to the trianglular pin 1 on the heatsink) with threaded fastener "a" on the CPU socket. Then align PEEK nuts "B", "C", "D" on the heatsink with threaded fasteners "b", "c", "d" on the CPU socket.

5. Once aligned, gently place the PHM on the CPU socket, making sure that each PEEK nut is properly attached to its corresponding threaded fastener.

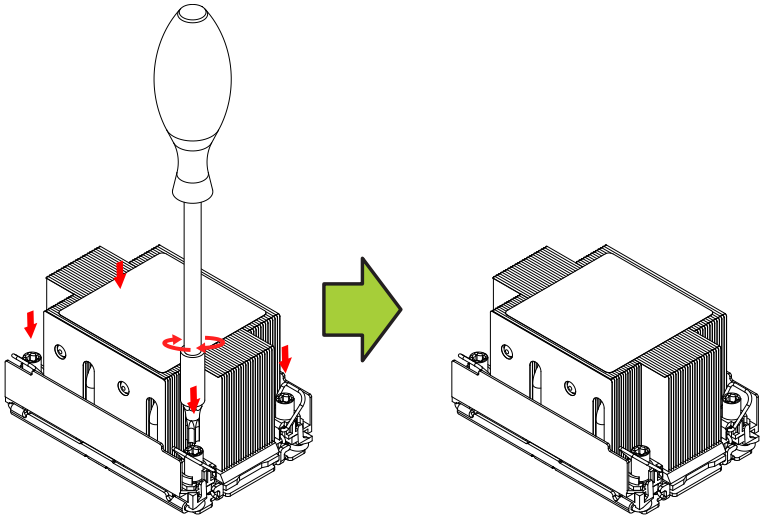


6. Press all four rotating wires outward and make sure that the heatsink is securely latched into the CPU socket.



7. With a T30-bit screwdriver, tighten all PEEK nuts in the sequence of "A", "B", "C", and "D" with even pressure. Note the torque specifications written on the heatsink, and do not exceed them when tightening the screws.

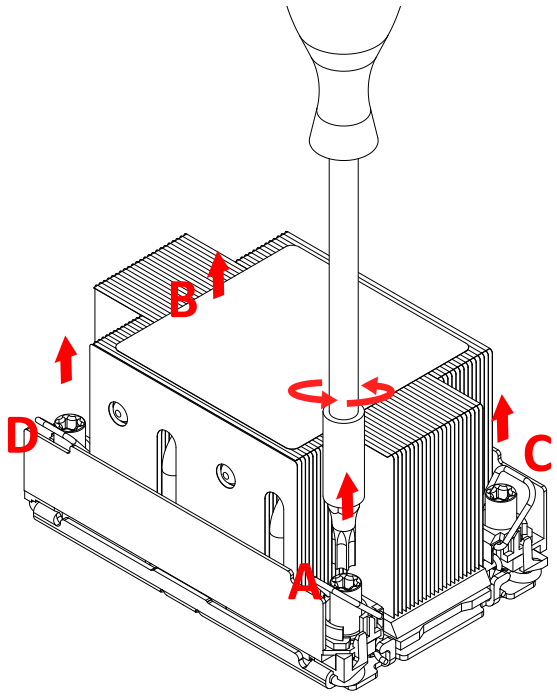
8. Examine all corners of the heatsink to ensure that the PHM is firmly attached to the CPU socket.



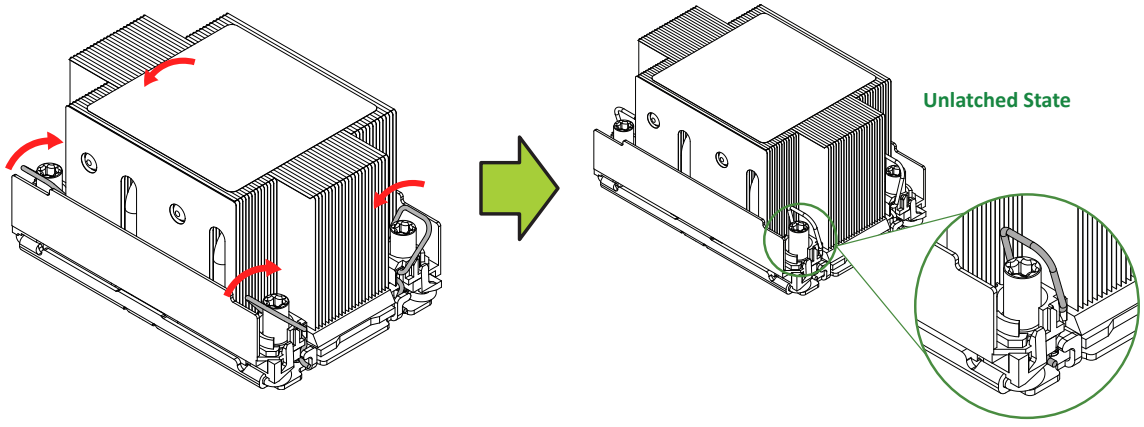
Removing the PHM

To remove the processor heatsink module (PHM) from the motherboard, follow these steps.

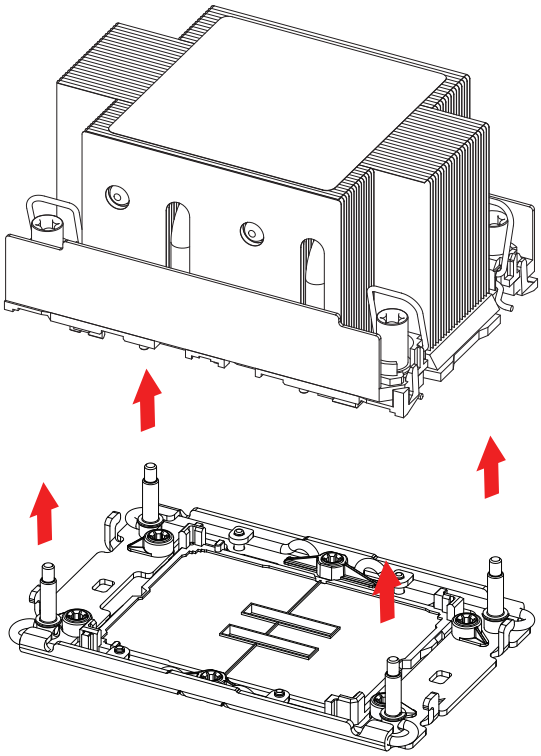
1. Shut down the system and unplug the AC power cord from all power supplies.
2. Use a T30-bit screwdriver to loosen the four PEEK nuts on the heatsink in the sequence of A, B, C, and D.



3. Press the rotating wires inward to unlatch the PHM from the socket as shown below.



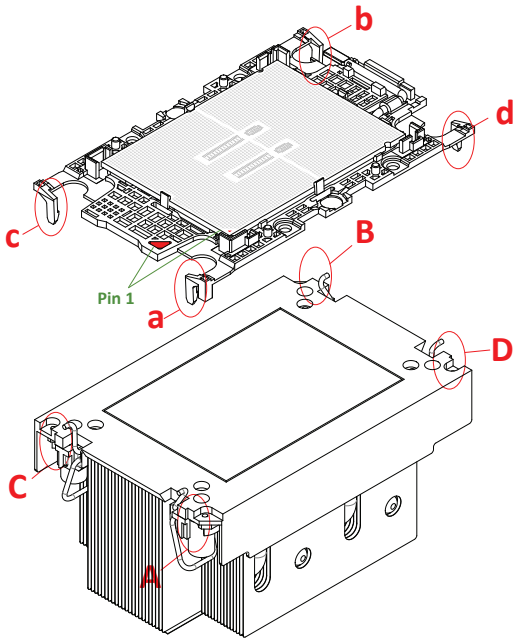
4. Gently lift the PHM upward to remove it from the CPU socket.



Removing the Carrier Assembly from the Heatsink

To remove the processor carrier assembly from the PHM, follow these steps:

1. Detach the four plastic clips (marked a, b, c, d) on the processor carrier assembly from the four corners of the heatsink (marked A, B, C, D) as shown below.

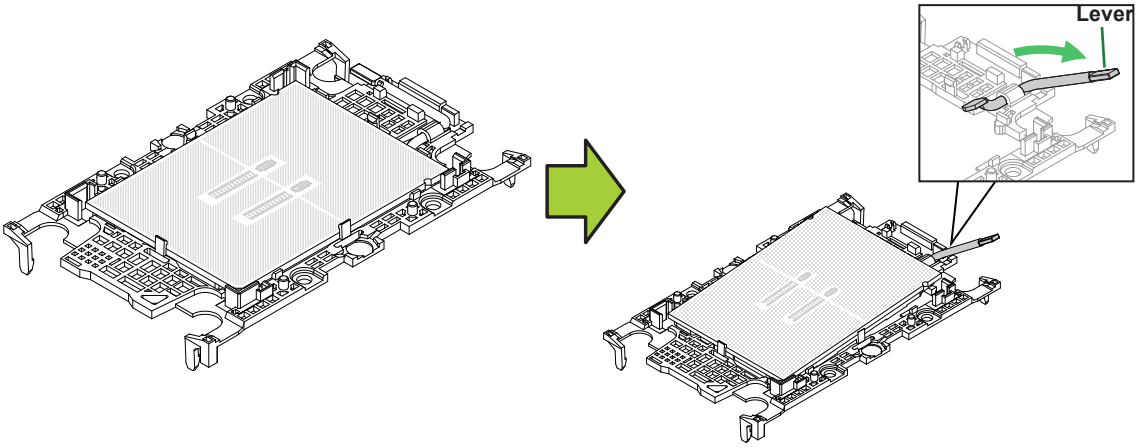


2. When all plastic clips have been detached from the heatsink, remove the processor carrier assembly from the heatsink.

Removing the Processor from the Carrier Assembly

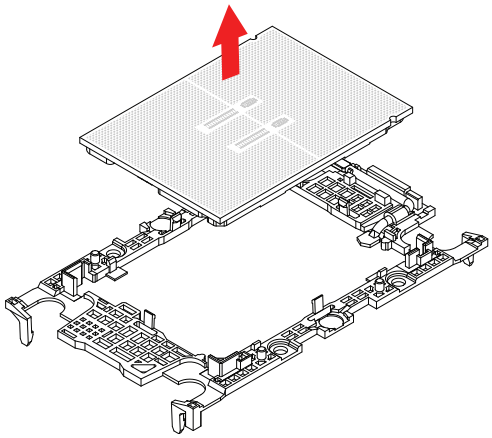
To remove the processor from the processor carrier, follow these steps.

1. Unlock the lever from its locked position and push it upwards to disengage the processor from the processor carrier as shown below right.



2. Once the processor has been loosened from the carrier, carefully remove the processor from the carrier.

Note: Handle the processor with care.



3.4 Memory

Memory Support

This motherboard supports up to 4 TB 3DS RDIMM/RDIMM DDR5 (288-pin) ECC memory 16 DIMM slots, one DIMM per channel. LRDIMM/LRDIMM-3DS is not supported. For validated memory, use the following page:

https://www.supermicro.com/en/support/resources/resource_links.cfm

DDR5 Memory Support for the 4th Gen Intel Xeon Scalable Processors-SP					
Type	**Ranks Per DIMM and Data Width (Stack)**	**DIMM Capacity (GB)**		**Speed (MT/s)**	
				One DIMM per Channel [1]	**Two DIMMs per Channel**
		16 Gb Chip	**24 Gb Chip [2]**	**1.1 Volts**	
RDIMM	SRx8 (RC D)	16 GB	24 GB	4800*	4400*
	SRx4 (RC C)	32 GB	48 GB		
	SRx4 (RC F) 9x4	32 GB	NA		
	DRx8 (RC E)	32 GB	48 GB		
	DRx4 (RC A)	64 GB	96 GB		
	DRx4 (RC B) 9x4	64 GB	NA		
RDIMM 3DS	(4R/8R) x4 (RC A)	2H-128 GB 4H-256 GB	NA		

*Memory speed and capacity support depends on the processors used in the system.

Note 1: 1DPC applies to 1SPC or 2SPC implementations (SPC - sockets per channel).

Note 2: 24 Gb XCC only with limited configs: 1DPC all DIMM types, 2DPC 96 GB only. Only 8 and 16 DIMM configs, no failbacks.

DDR5 Memory Support for the 5th Gen Scalable Processors-SP					
Type	**Ranks Per DIMM and Data Width (Stack)**	**DIMM Capacity (GB)**		**Speed (MT/s)**	
				One DIMM per Channel [1]	**Two DIMMs per Channel**
		Memory Density 16 Gb	**Memory Density 24 Gb [2]**	**1.1 Volts**	
RDIMM	SRx8 (RC D)	16 GB	24 GB	5600*	4400*
	SRx4 (RC C)	32 GB	48 GB		
	SRx4 (RC F) 9x4	NA	NA		
	DRx8 (RC E)	32 GB	48 GB		
	DRx4 (RC A)	64 GB	96 GB		
	DRx4 (RC B) 9x4	NA	NA		
RDIMM 3DS	(4R/8R) x4 (RC A)	2H-128 GB 4H-256 GB	NA		

*Memory speed and capacity support depends on the processors used in the system.

Note 1: 1DPC applies to 1SPC or 2SPC implementations (SPC - sockets per channel).

Note 2: 24 Gb XCC only with limited configs: 1DPC all DIMM types, 2DPC 96 GB only. Only 8 and 16 DIMM configs, no failbacks.

Note 3: Memory speed will be 5600 MT/s 1DPC or 4400 MT/s 2DPC.

Note 4: For 1DPC 5600 MT/s speed, DDR5-5600 DIMMs are required

Note 5: Mixing DRAM density (16 Gb/24 Gb) and/or frequency is not allowed.

Use the DIMM slots listed below for memory modules. This memory population table is based on guidelines provided by Intel to support Supermicro motherboards.

Memory Population for the X13 DP Motherboard, 16 DIMM Slots	
CPUs/DIMMs	**DIMM Slots**
1 CPU & 1 DIMM	A1 or B1 or E1 or F1
1 CPU & 2 DIMMs	A1, G1 or C1, E1
1 CPU & 4 DIMMs	A1, C1, E1, G1
1 CPU & 6 DIMM	A1, C1, D1, E1, F1, G1 or A1, B1, C1, E1, G1, H1 or B1, C1, D1, E1, F1, H1 or A1, B1, D1, F1, G1, H1
1 CPU & 8 DIMMs	A1, B1, C1, D1, E1, F1, G1, H1
2 CPUs & 2 DIMMs	CPU1: A1; CPU2: A1 or CPU1: B1; CPU2: B1 or CPU1: E1; CPU2: E1 or CPU1: F1; CPU2: F1
2 CPUs & 4 DIMMs	CPU1: A1, G1; CPU2: A1, G1 or CPU1: C1, E1; CPU2: C1, E1
2 CPUs & 8 DIMMs	CPU1: A1, C1, E1, G1, CPU2: A1, C1, E1, G1
2 CPUs & 12 DIMMs	CPU1: A1, C1, D1, E1, F1, G1; CPU2: A1, C1, D1, E1, F1, G1 or CPU1: A1, B1, C1, E1, G1, H1; CPU2: A1, B1, C1, E1, G1, H1 or CPU1: B1, C1, D1, E1, F1, H1; CPU2: B1, C1, D1, E1, F1, H1 or CPU1: A1, B1, D1, F1, G1, H1; CPU2: A1, B1, D1, F1, G1, H1
2 CPUs & 16 DIMMs	CPU1: A1, B1, C1, D1, E1, F1, G1, H1; CPU2: A1, B1, C1, D1, E1, F1, G1, H1

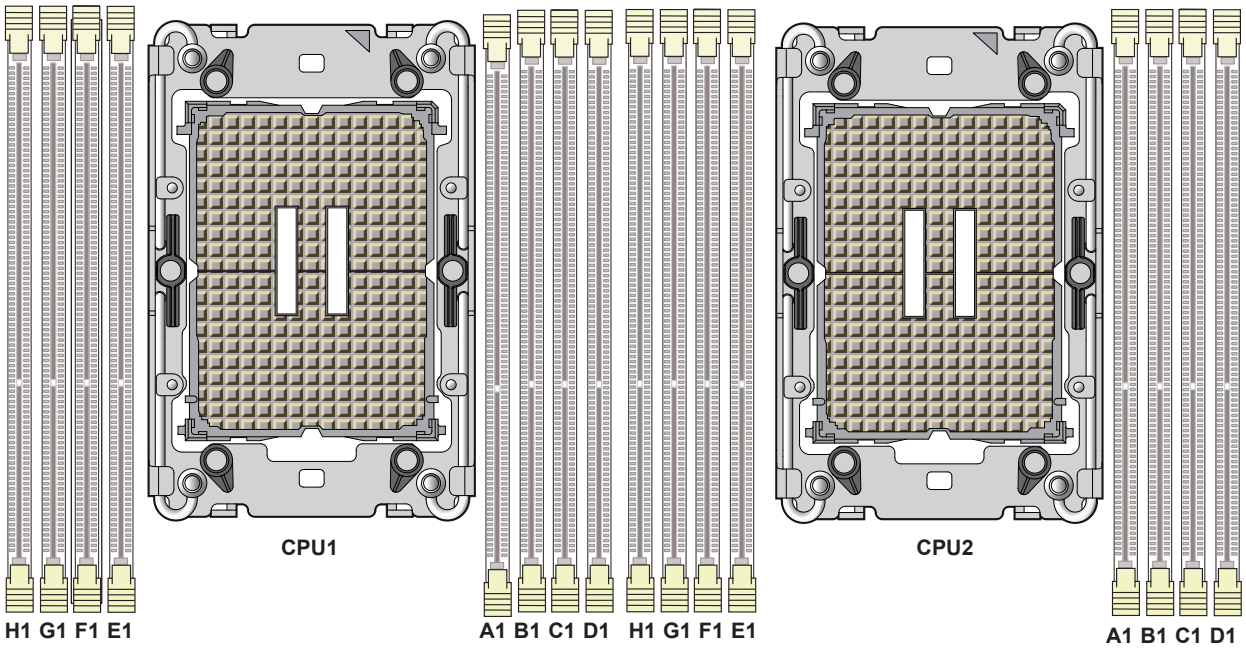


Figure 3-3. Memory Slots

Memory Population Guidelines

- All DIMMs must be DDR5.
- Balance memory. Using unbalanced memory topology, such as populating two DIMMs in one channel while populating one DIMM in another channel, reduces performance. It is not recommended for Supermicro systems.
- In dual-CPU configurations, memory must be installed in the slots associated with the installed CPUs.

Guidelines Regarding Mixing DIMMs

- Mixing memory modules of different types, speeds, ranks and vendors is very likely to cause performance issues, and therefore not recommended.
- Populating slots with a pair of DIMM modules of the same type and size results in interleaved memory, which improves memory performance.
- x4 and x8 DIMMs can be mixed in the same channel.
- LRDIMMs are not supported.

DIMM Construction

- RDIMM (*non-3DS*) Raw Cards: A/B (2Rx4), C (1Rx4), D (1Rx8), E (2Rx8)
- 3DS RDIMM Raw Cards: A/B (4Rx4)

Key Parameters for DIMM Configurations	
Parameters	**Possible Values**
Number of Channels per Socket	1, 2, 4, 6, 8
Number of DIMMs per Channel	1DPC (1 DIMM Per Channel)
DIMM Type	RDIMM, 3DS RDIMM, and 9x4 RDIMMs
DIMM Construction	non-3DS RDIMM Raw Cards: A (2Rx4), C (1Rx4), D (1Rx8), E (2Rx8) 3DS RDIMM Raw Cards: A (4Rx4, 8Rx4) 9x4 RDIMM Raw Cards: B (2Rx4), F (1Rx4)

Installing Memory

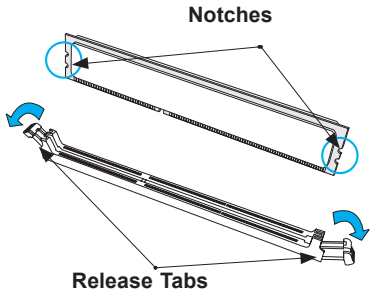
Electrostatic Discharge (ESD) can damage electronic components including memory modules. To avoid damaging DIMM modules, it is important to handle them carefully. The following measures are generally sufficient.

- Use a grounded wrist strap designed to prevent static discharge.
- Handle the memory module by its edges only.
- Put the memory modules into the antistatic bags when not in use.

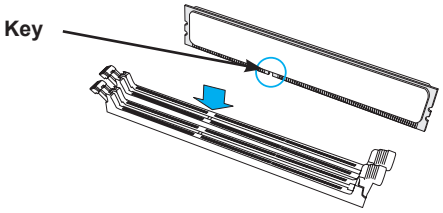
Installing Memory

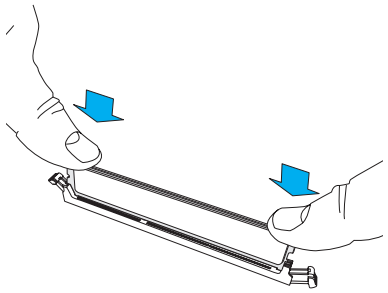
Begin by removing power from the system as described in Section 3.1. Follow the memory population sequence in the table above.

1. Push the release tabs outwards on both ends of the DIMM slot to unlock it.



2. Align the key of the DIMM with the receptive point on the memory slot and with your thumbs on both ends of the module, press it straight down into the slot until the module snaps into place.





3. Press the release tabs to the locked position to secure the DIMM module into the slot.

Caution: Exercise extreme caution when installing or removing memory modules to prevent damage to the DIMMs or slots.

Removing Memory

To remove a DIMM, unlock the release tabs then pull the DIMM from the memory slot.

3.5 Motherboard Battery

The motherboard uses non-volatile memory to retain system information when system power is removed. This memory is powered by a lithium battery residing on the motherboard.

Replacing the Battery

Begin by removing power from the system as described in Section 3.1.

1. Push aside the small clamp that covers the edge of the battery. When the battery is released, lift it out of the holder.
2. To insert a new battery, slide one edge under the lip of the holder with the positive (+) side facing up. Then push the other side down until the clamp snaps over it.

Note: Handle used batteries carefully. Do not damage the battery in any way; a damaged battery may release hazardous materials into the environment. Do not discard a used battery in the garbage or a public landfill. Please comply with the regulations set up by your local hazardous waste management agency to dispose of your used battery properly.

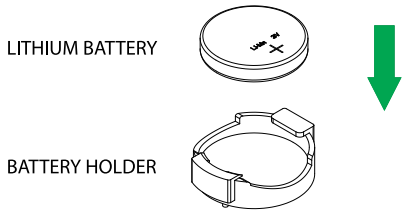


Figure 3-5. Installing the Onboard Battery

Important! There is a danger of explosion if the onboard battery is installed upside down (which reverses its polarities). This battery must be replaced only with the same or an equivalent type recommended by the manufacturer (CR2032).

3.6 Storage Drives

The system supports up to twelve hot-swap 3.5"/2.5" NVMe/SAS/SATA storage drives in hybrid bays. An optional controller card kit is required to support SAS.

Note: For NVMe, if more than eight drives are enabled, one or two PCIe expansion card slots are disabled. See Section 3.10 for details.

The drives are mounted in tool-less drive carriers that simplify their removal from the chassis. These carriers also help promote proper airflow. Each carrier has a small space on the front to receive a label, orange or purple, to help distinguish NVMe or SAS/SATA.

Note: Enterprise-level hard disk drives are recommended for use in Supermicro servers. For compatible storage drives, see the system web page at:

https://www.supermicro.com/en/products/system/Cloud/2U/SYS-621C-TN12R

Installing Drives

Figure 3-6. Logical Drive Numbers

To install drives, first remove the drive carrier from the system.

Removing a Hot-Swap Drive Carrier

1. Press the release button on the drive carrier, which will extend the drive carrier handle.
2. Use the drive carrier handle to pull the drive out of the chassis.

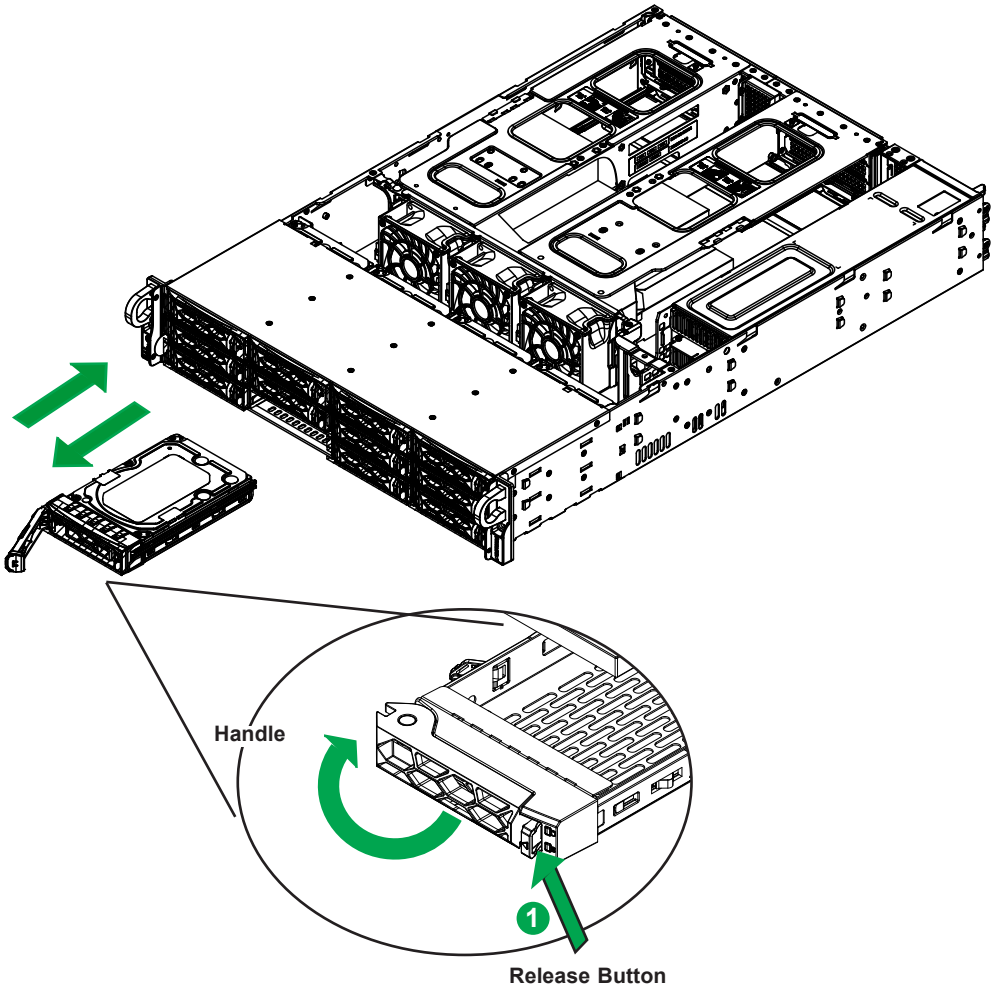


Figure 3-7. Removing a Drive Carrier

Installing a 3.5" Drive

1. Remove the dummy drive, which comes pre-installed in the drive carrier. Pull out the two locking clasps on the right outside of the carrier and lift out the dummy drive.

2. Position the drive above the carrier with the PCB side facing down and the connector end toward the rear of the carrier.

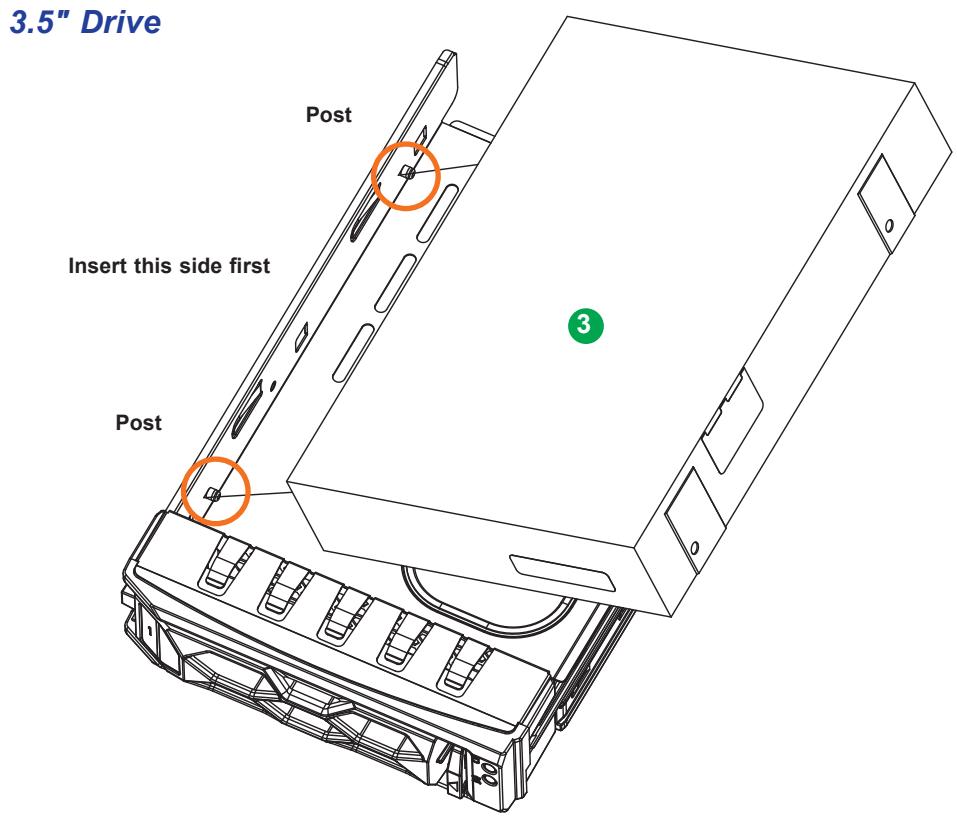


Figure 3-8. Installing a 3.5" Drive into a Carrier

3. Tilt the drive to insert it onto the two posts on the left inside of the carrier.

4. Push the right side of the drive fully into the carrier and allow the two spring locking clasps to secure the drive.

5. Insert the drive carrier into its bay, keeping the release button on the right. When the carrier reaches the rear of the bay, the release handle will retract.

6. Push the handle in until it clicks into its locked position

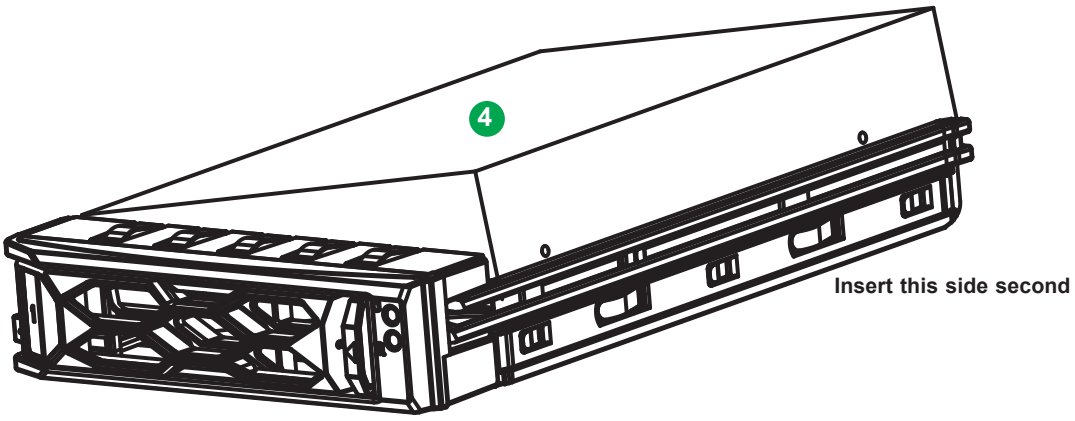


Figure 3-9. Installing a 3.5" Drive into a Carrier

Installing a 2.5" Drive

1. Remove the dummy drive, which comes pre-installed in the drive carrier. Pull out the two locking clasps on the left outside of the carrier and lift out the dummy drive.
2. Install the drive directly into the tray with four screws underneath.
3. Insert the drive carrier into its bay, keeping the release button on the right. When the carrier reaches the rear of the bay, the release handle will retract.
4. Push the handle in until it clicks into its locked position

2.5" Drive

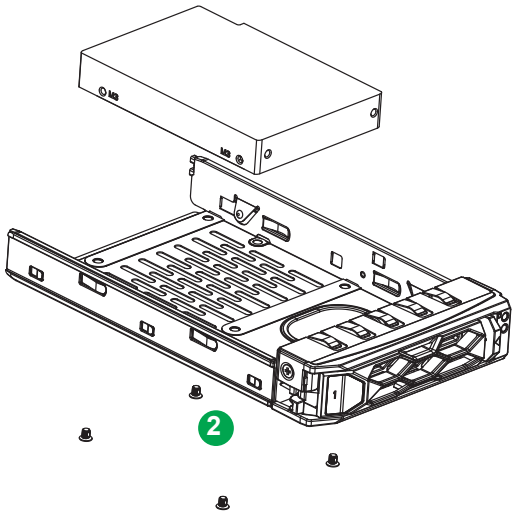


Figure 3-10. Installing a 2.5" Drive into a Carrier

Installing M.2 Solid State Drives

The motherboard has two M.2 slots for 80-mm NVMe SSDs. The M.2 SSDs are held in place by a plastic pin inserted in the designated hole in the motherboard.

Installing M.2 Drives

1. Power down the system and remove the top cover as described in Sections 3.1 and 3.2.
2. Find the designated hole in the motherboard (MH10 or MH11) with the securing plastic pin.
3. Insert the M.2 SSD into the slot (M.2-C1 or M.2-C2) so that it lays flat, then secure it to the motherboard with the plastic pin.
4. Replace the cover and restore power to the system.

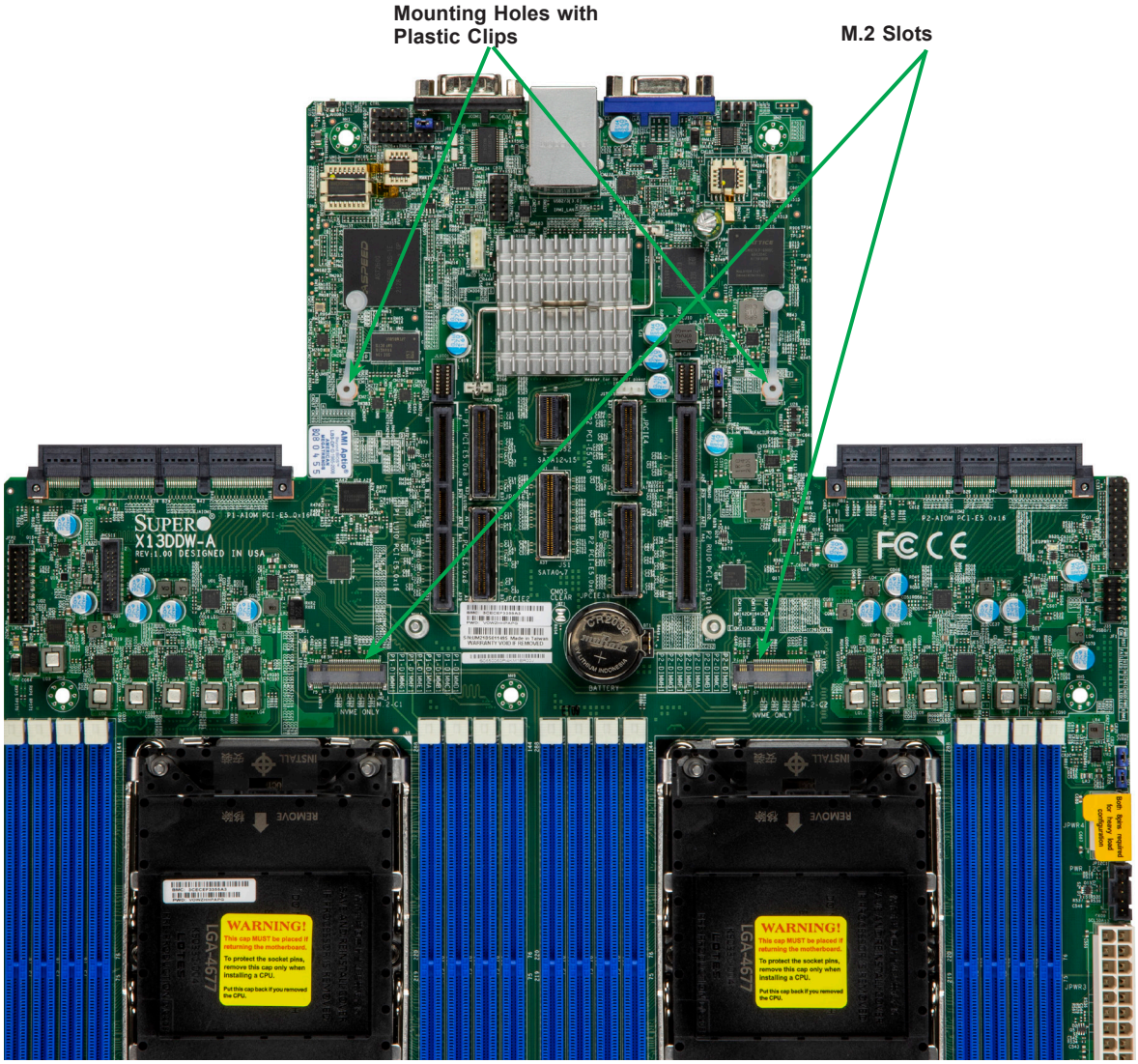


Figure 3-11. Installing the M.2 SSDs

Hot-Swap for NVMe Drives

Supermicro servers support NVMe surprise hot-swap. For even better data security, NVMe orderly hot-swap is recommended. NVMe drives can be ejected and replaced remotely using the BMC Dashboard.

Ejecting a Drive

1. **BMC Dashboard > Server Health > NVMe SSD**
2. Select Device, Group and Slot, and click **Eject**. After ejecting, the drive Status LED indicator turns green.
3. Remove the drive.

Note that *Device* and *Group* are categorized by the CPLD design architecture.

Slot is the slot number on which the NVMe drives are mounted.

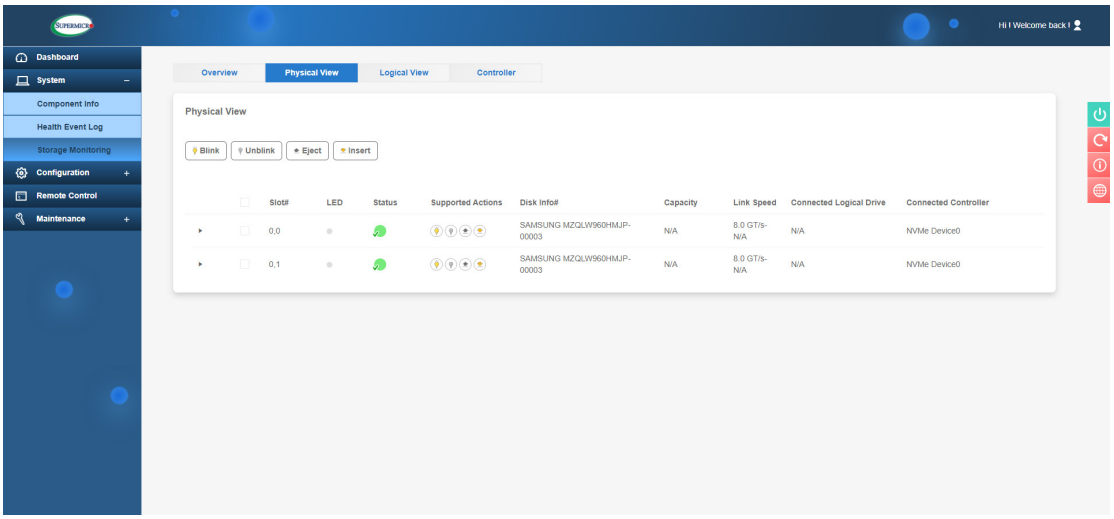


Figure 3-12. BMC Dashboard Screenshot

Replacing the Drive

1. Insert the replacement drive.
2. **BMC Dashboard > Server Health > NVMe SSD**
3. Select Device, Group and slot and click **Insert**. The drive Status LED indicator flashes red, then turns off. The Activity LED turns blue.

Checking the Temperature of an NVMe Drive

There are two ways to check using the BMC Dashboard.

Checking a Drive

- **BMC Dashboard > Server Health > NVMe SSD –** Shows the temperatures of all NVMe drives.
- **BMC Dashboard > Server Health > Sensor Reading > NVME_SSD –** Shows the single highest temperature among all the NVMe drives.

3.7 System Cooling

Three 8-cm fans provide the cooling for the system. Fan speed is controlled by the BMC. If a fan fails, the remaining fans will ramp up to full speed (100% duty) to compensate the cooling loss. In addition, the front control panel LED will blink at 1 Hz to indicate fan failure. Replace any failed fan at your earliest convenience with the same type and model.

Make sure the chassis top cover makes a good seal so the cooling air circulates properly through the chassis

Changing a System Fan

1. Determine which fan is failing. If possible, use the BMC. Remove the chassis lid to examine the fans.
2. Push the release latch, and lift the fan up from the housing and out of the chassis.
3. Push the fan up from the bottom and out of the top of the housing.
4. Place the replacement fan into the vacant space in the housing while checking the proper orientation. Push the until the latch clicks and the fan is secure.
5. Confirm the fans are working properly before closing the chassis lid.

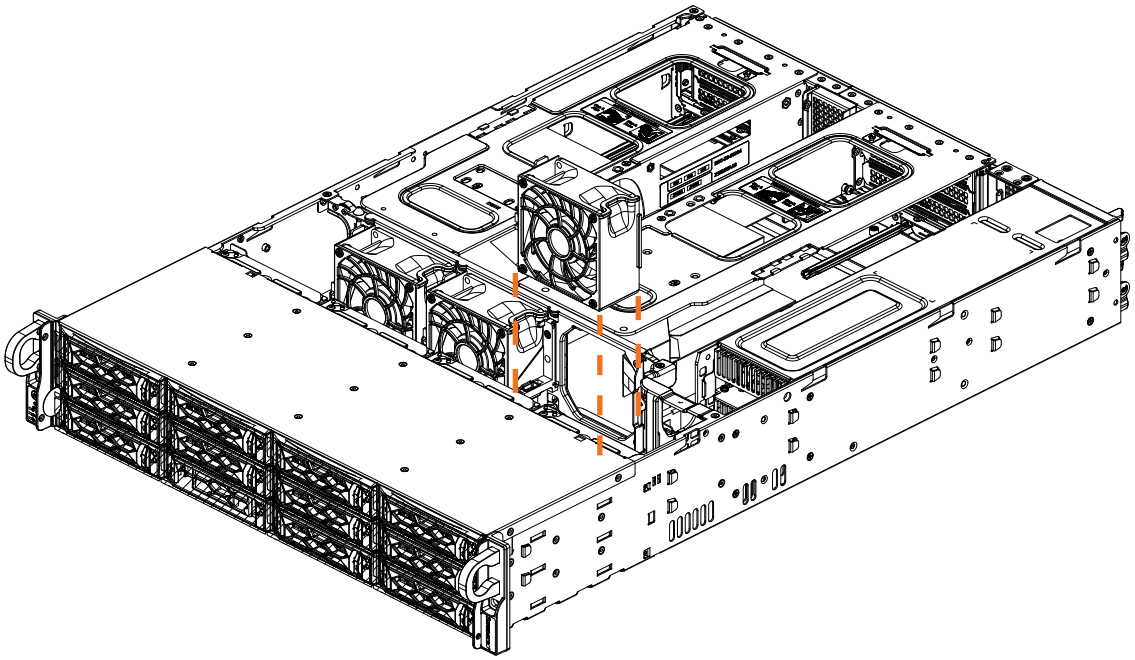


Figure 3-13. Replacing the fan

Air Shroud

Air shrouds concentrate airflow to maximize fan efficiency. It covers the processors and heatsinks.

Installing an Air Shroud

The air shroud fits behind the fans. Align the pins and nest the air shroud into the chassis.

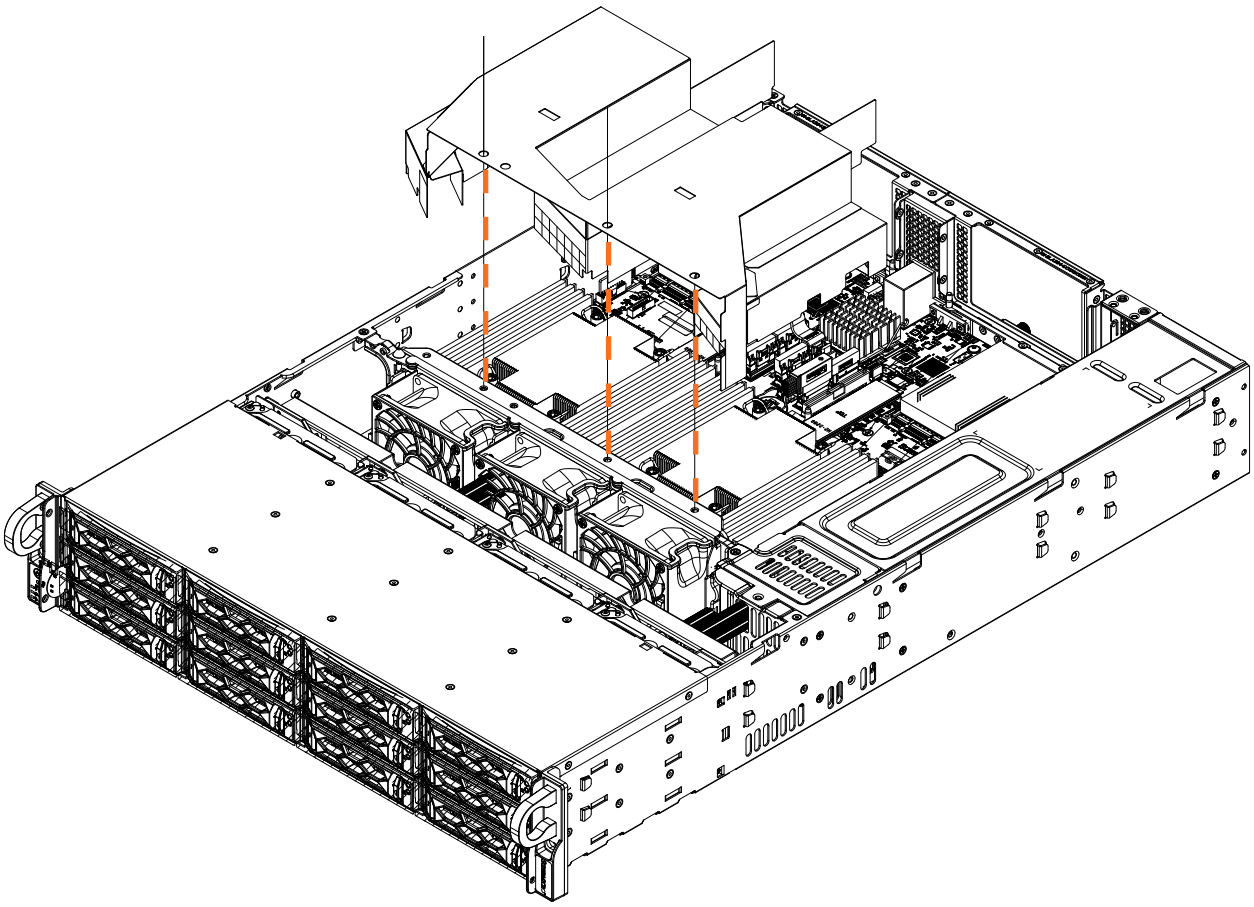


Figure 3-14. Installing the Air Shroud

3.8 Power Supply

The chassis features redundant power supplies. The power modules can be changed without powering down the system. New units can be ordered directly from Supermicro or authorized distributors.

These power supplies are auto-switching capable. This feature enables them to automatically sense the input voltage and operate at 100–120 V or 180–240 V.

Power Supply LEDs

On the rear of the power supply module, an LED displays the status.

Power Supply Indicator	
LED Color and State	**Power Supply Condition**
Solid Green	Indicates that the power supply is on and working
Solid Amber	Indicates system is off (in S5 state) or power supply failure has occurred. For the latter case, the system might need servicing. Contact Supermicro technical support.
Off	No AC power to module

Replacing the Power Supply

1. Unplug the AC cord from the module to be replaced.
2. Push the release tab on the back of the power supply as illustrated.
3. Pull the power supply out using the handle.
4. Replace the failed power module with the same model.
5. Push the new power supply module into the power bay until it clicks.
6. Plug the AC power cord back into the module.

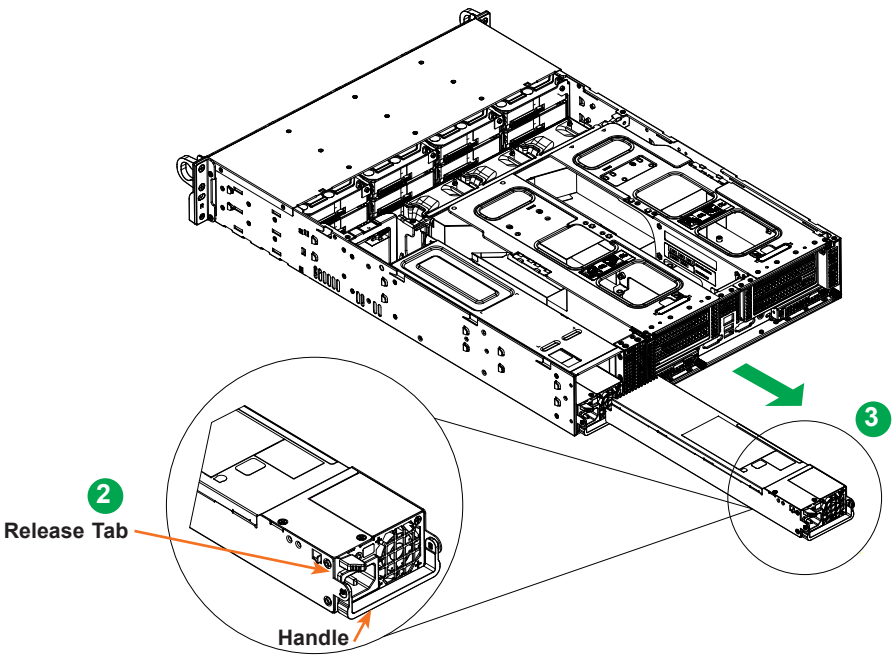


Figure 3-15. Installing a Power Supply Module

3.9 AIOM Network Cards

The system provides network connection by means of two advanced I/O modules (AIOMs).

Figure 3-16. AIOM Chassis Slots

AIOM Slots		
Slot	**Mechanical**	**Electrical**
A1	Small Form Factor, OCP 3.0	x16 (CPU1)
A2	Small Form Factor, OCP 3.0	x16 (CPU2)

Installing AIOM Cards

1. Remove the blank cover plate (A1 or A2), unscrewing the thumbscrew.
2. Slide the AIOM card in the opening until it seats in the motherboard slot.
3. Secure with the thumbscrew.

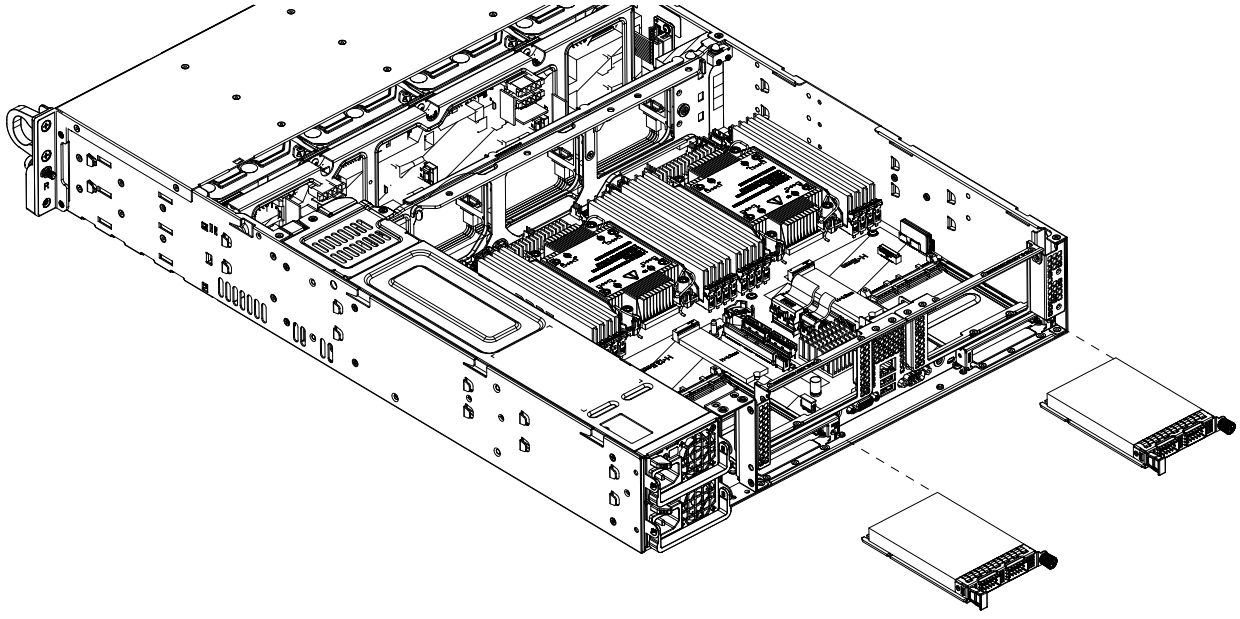


Figure 3-17. Installing AIOMs

3.10 PCIe Expansion Cards

The system can accommodate six PCIe cards or two double-width GPUs and two PCIe cards.

Limitations on Slots 1, 2, 4, and 5

The expansion card capability varies depending on your NVMe storage drive configuration. Riser card slots 1 and 2 are connected by cable to JCPIE1 and JCPIE2, and slots 4 and 5 are connected by cable to JCPIE3 and JCPIE4 headers on the motherboard. The PCIe headers can be used for NVMe storage drive connection or expansion cards, but not both. Additionally, JNVME1–8 can connect to the riser cards to provide more PCIe lanes to the riser slots.

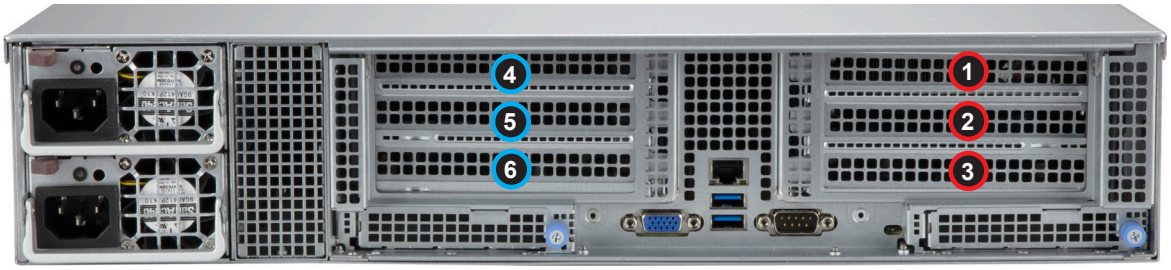


Figure 3-18. Expansion Card Slots in the Chassis

Expansion Slot Locations	
Slot	**Description**
1	PCIe 5.0 x8 full-height, half-length (CPU1); *configurable to x16 by merging slot 2 into slot 1, full-length supported with 1U heatsink*
2	PCIe 5.0 x8 full-height, half-length (CPU1), *full-length supported with 1U heatsink*
3	PCIe 5.0 x16 full-height, half-length (CPU1)
4	PCIe 5.0 x8 full-height, half-length (CPU2), *full-length supported with 1U heatsink*
5	PCIe 5.0 x8 full-height, half-length (CPU2); *configurable to x16 by merging slot 4 into slot 5, full-length supported with 1U heatsink*
6	PCIe 5.0 x16 full-height, half-length (CPU2)

Full-height = 4.2", Low-profile = 2.5", Full-length = 10.5", Half-length = 6.6"

Configurations of PCIe Connections

Slots 1 and 2 on riser card, RSC-D2-666G5 (see picture below), can be connected for use in several ways using motherboard headers JCPIE1 and JCPIE2.

- To enable slot 1 as x16, both headers are connected to the riser card at CN3 and CN4. This applies for a GPU using slot 1. Slot 2 is disabled. (More details on GPU in section 6.1).
- To enable slot 1 as x8 and slot 2 as x8, headers are connected to CN1 and CN3.
- To enable slot 1 and 2 as x16, JPCIE 1 and 2 connect to CN1 and 2, JNVME1-2 and 3-4 connect to CN4 and 3.
- If JCPIE1 or JCPIE2 are used for NVMe storage connections, that header cannot be used for riser card connections, and slots 1 and 2 are unavailable.

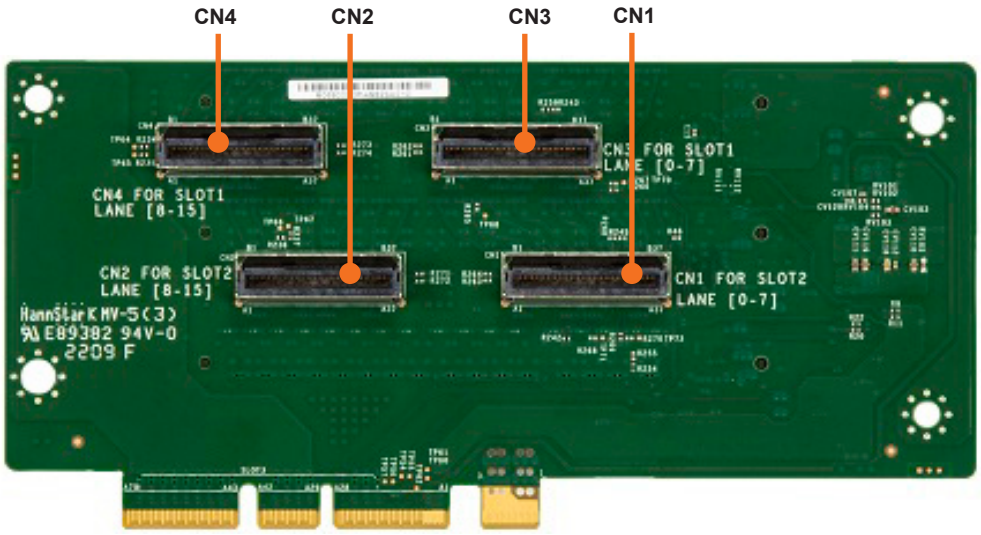


Figure 3-19. Rear View of Riser Card RSC-D2-666G5

The same relationships apply for slots 4 and 5, and headers JCPIE3 and JCPIE4.

Slots 4 and 5 on riser card, RSC-D2R-666G5 (see picture below), can be connected for use in several ways using motherboard headers JCPIE3 and JCPIE14.

- To enable slot 5 as x16, both headers are connected to the riser card at CN1 and CN2. This applies for a GPU using slot 5. Slot 4 is disabled. (More details on GPU in section 6.1).
- To enable slot 4 as x8 and slot 5 as x8, headers are connected to CN2 and CN4.
- To enable slot 4 and 5 as x16, JPCIE 3 and 4 connect to CN1 and 2, JNVME5-6 and 7-8 connect to CN4 and 3.
- If JCPIE3 or JCPIE4 are used for NVMe storage connections, that header cannot be used for riser card connections, and slots 4 and 5 are unavailable.

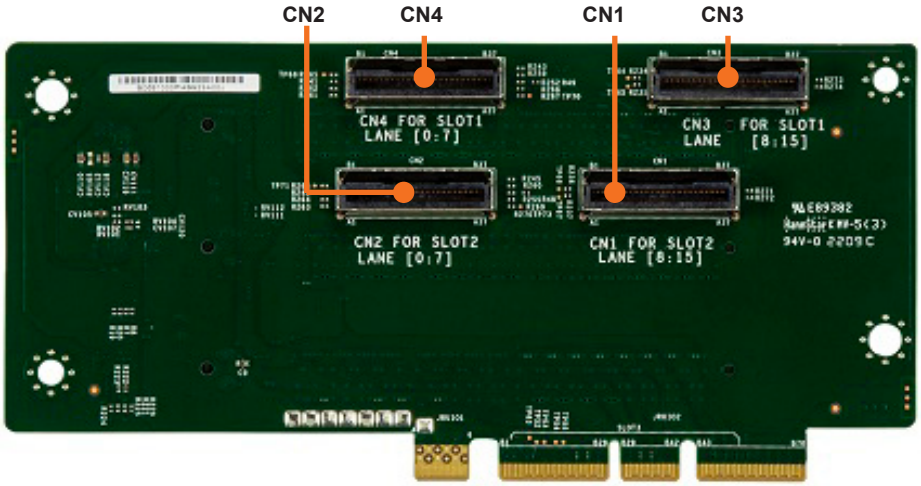


Figure 3-20. Rear View of Riser Card RSC-D2R-666G5

Installing Expansion Cards

1. Power down the system and remove the cover.
2. Lift the riser card bracket(s) out of the chassis using the pull-tabs.
3. In the rear of the chassis, remove the blank PCI shields that covers the chassis slot.

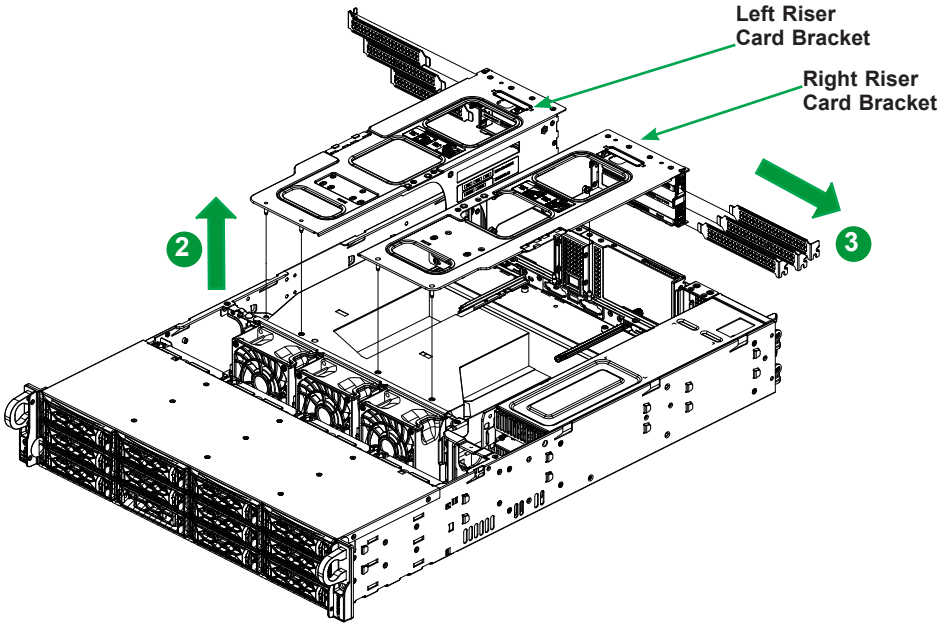


Figure 3-21. Removing Riser Card Brackets and Shields

4. Mount the riser card onto the bracket (if not already mounted) using four screws.
5. Slide the expansion card into the expansion slot on the riser card.
6. Slide the riser card into the slot on the motherboard while aligning the bracket with the chassis. There are two guide pins on the fan housing and one guide pin on the chassis rear.

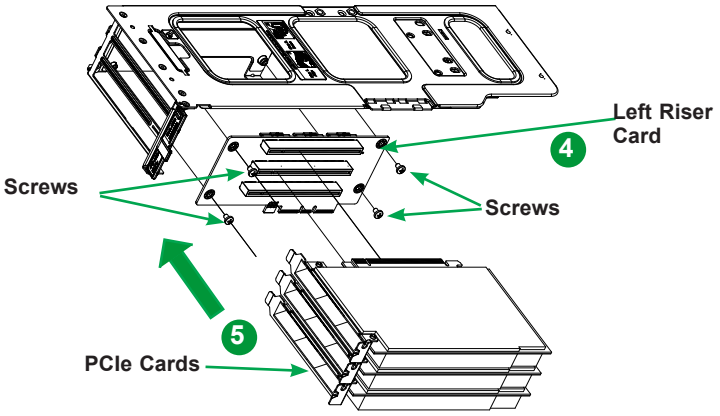


Figure 3-22. Installing Left Expansion Cards

PCIe Bifurcation Settings

By default, the BIOS will set bifurcation according to the detected PCIe card. Bifurcation settings can be found in the BIOS under **Advanced > Chipset Configuration > North Bridge > IIO Configuration > CPU1/CPU2 Configuration**. Before modifying bifurcation settings, verify that the riser card cables (if any) are connected correctly, as described in the riser card cable routing table.

Motherboard connectors JPCIE1 to 4 can provide PCIe lanes to the riser cards or support more NVMe drives. For NVMe, refer to the data cable routing table in Section 3.11.

If the system configuration deviates from the standard supported setup (for example, different riser cards or NVMe routing), bifurcation may need to be set manually.

BIOS IIO Mapping to Motherboard			
CPU	**PCIe Port**	**Motherboard Connectors**	**To**
CPU1	IOU0	JPCIE1 and 2	RSC-D2-666G5 (rear slots 1, 2); or additional NVMe
	IOU1	JLUIO2	RSC-D2-666G5 (rear slot 3)
	IOU2	JAIOM1	AIOM slot P1 AIOM
	IOU3	JNVME1 to 4	Four NVME ports from CPU 1; or additional PCIe
	IOU4	M.2-C1 and C2	Two M.2 80 mm from CPU 1
CPU2	IOU0	JAIOM2	AIOM slot P2-AIOM
	IOU1	JRUIO2	RSC D2R 666G5 (rear slot 6)
	IOU2	JPCIE3 and 4	RSC-D2R-666G5 (rear slots 4, 5) or additional NVME
	IOU3	No connection	No connection
	IOU4	JVNME5 to 8	Four NVMe ports from CPU 2; or additional PCIe

3.11 Cable Routing

Use this section to route or reroute cables. Proper routing is important to maintain airflow through the system.

Cable part numbers and descriptions are available at the Online Cable Matrix on the following page: https://www.supermicro.com/en/support/resources/cable.

Data Cables Routing			
No. of Drives	**Motherboard Connection**	**To Backplane**	**Drive Bay Slot #**
NVMe, 8 or less	JNVME1 + JNVME2 JNVME3 + JNVME4 JNVME5 + JNVME6 JNVME7 + JNVME8	NVME1 NVME2 NVME3 NVME4	0–1 2–3 4–5 6–7
NVMe, 9 or more	JPCIE2 JNVME1 + JNVME2 JNVME3 + JNVME4 JPCIE3 JNVME5 + JNVME6 JNVME7 + JNVME8	NVME1 NVME2 NVME3 NVME4 NVME5 NVME6	0–1 2–3 4–5 6–7 8–9 10–11
SATA, 12	JS1 JS2	CN1 + CN2 CN3 Set backplane jumper JP1 to 2–3; JP2 to 2–3	0–7 8–11
Storage Card SATA/SAS, 12	Storage card: CN0 Storage card: CN1	CN1 + CN2 CN3 Set backplane jumper JP1 to 1–2; JP2 to 1–2	0–7 8–11

Note: Bifurcation may need to change in the BIOS settings if cable connections are customized.

The riser cards offer several configuration options. For details on PCI expansion cards, see Section 3.10. A diagram on the following page illustrates the cable connections.

Riser Card Cable Routing		
AOC Slot No. and PCIe Electrical Lanes	**Riser Card**	**Motherboard Connections to Riser Card**
(Default) Slots 1, 2, 4, and 5 => x8 Slots 3 and 6 => x16	RSC-D2-666G5	JPCIE1 to CN3 JPCIE2 to CN1
	RSC-D2R-666G5	JPCIE3 to CN4 JPCIE4 to CN2
(Optional) Slots 1, 3, 5, and 6 => x16	RSC-D2-666G5	JPCIE1 to CN3 JPCIE2 to CN4
	RSC-D2R-666G5	JPCIE3 to CN1 JPCIE4 to CN2

Note: Bifurcation may need to change in the BIOS settings if cable connections are customized.

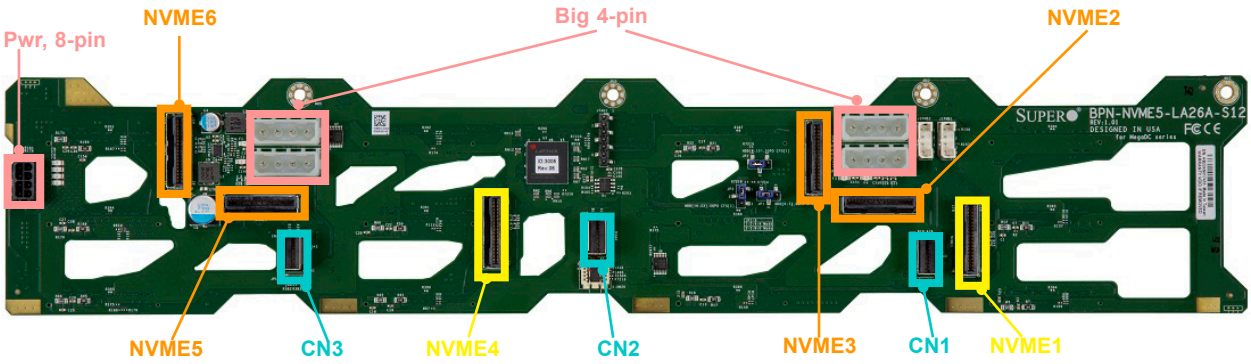


Figure 3-23. Backplane Cable Routing Diagram

Backplane BPN-NVME5-LA26A-S12

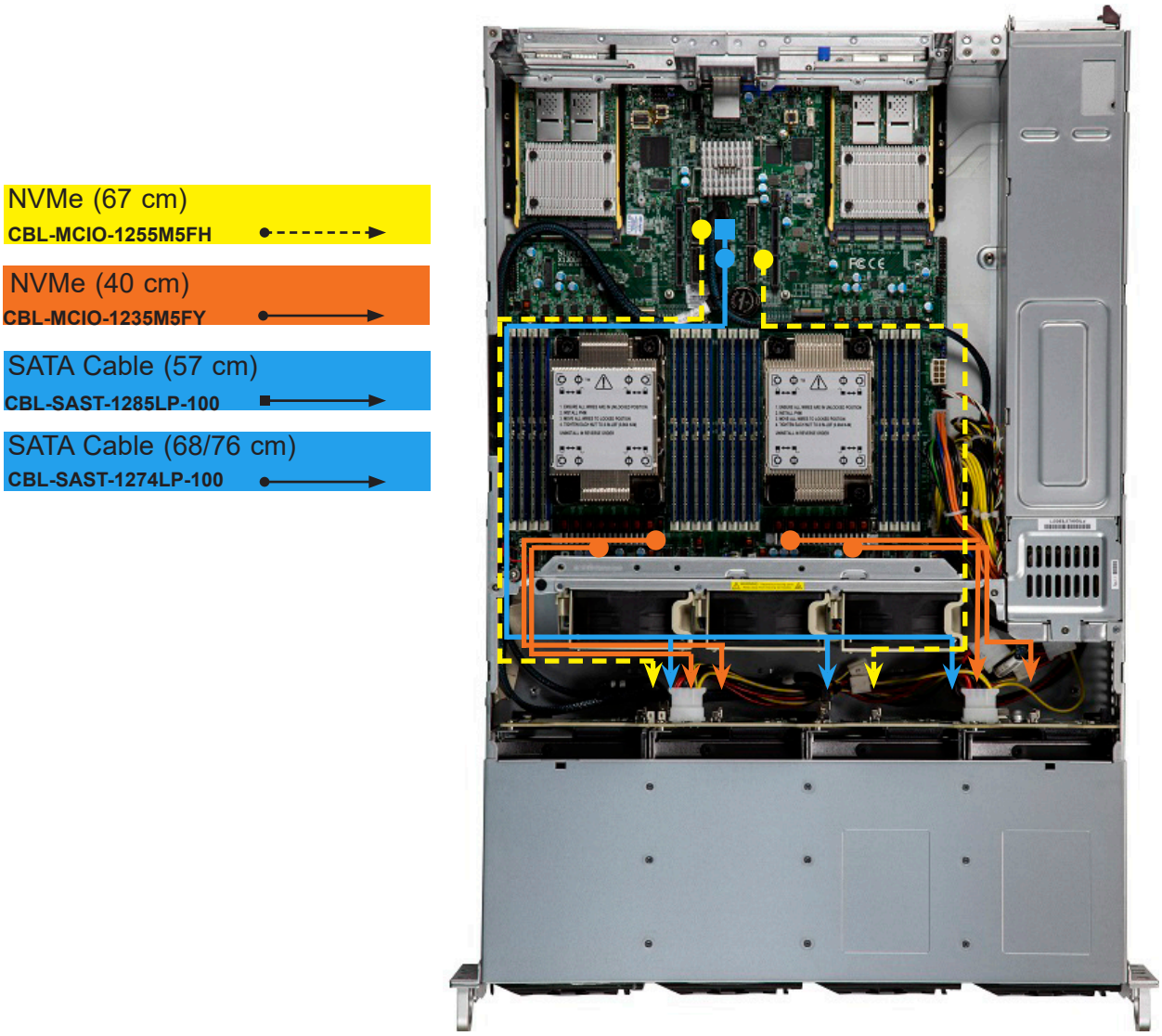


Figure 3-24. Storage Cable Routing Diagram (12 NVMe)

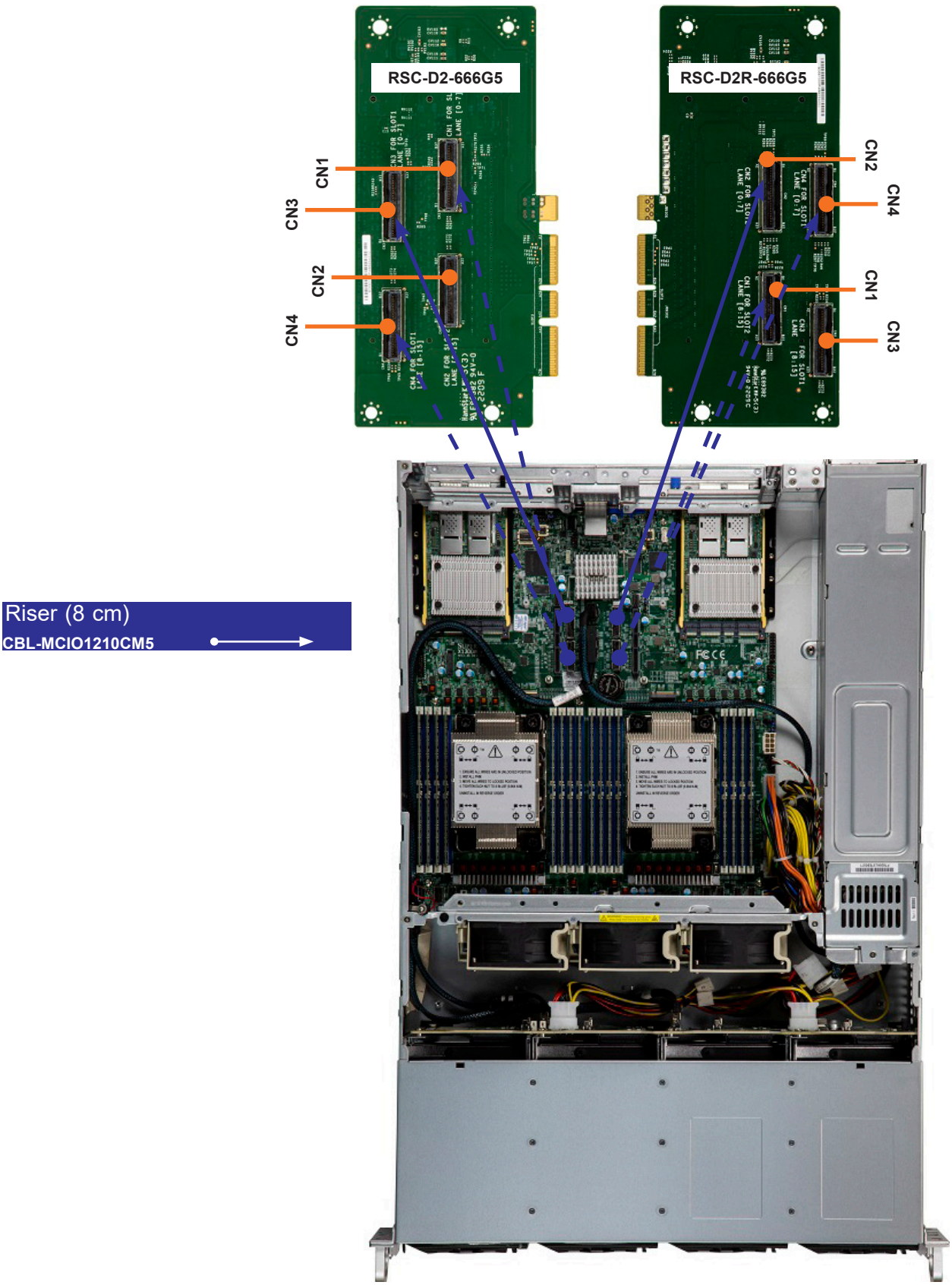


Figure 3-25. Riser Card Cable Routing Diagram

MB Power Cables, 24 and 8-pin

Backplane Power Cable, 4-pin

PMBus Cable, 5-pin

Fan Cable, 4-pin

Front Panel Control Cable, 16-pin

Chassis Intrusion Cable, 2-pin

Figure 3-26. Non-Storage Cable Routing Diagram

Chapter 4

Motherboard Connections

This section describes the jumpers, connections and LEDs on the motherboard and provides pinout definitions. Some connections might not be used in this system. A motherboard layout indicating component locations may be found in Chapter 1. More detail can be found in the motherboard manual: https://www.supermicro.com/en/products/motherboard/X13DDW-A.

4.1 Power Connections

Two power connections supply the motherboard and several more supply for onboard devices.

Main Power Connector

The 24-pin power supply connector (JPWR3) meets the ATX SSI EPS 12 V specification. You must also connect the 8-pin 12 VDC power connectors (JPWR1/JPWR2).

Important: To provide adequate power to the motherboard, connect both the main power connector and 8-pin power connectors to the power supply. Failure to do so may void the manufacturer's warranty on your power supply and motherboard.

ATX Power 24-pin Connector Pin Definitions

Pin#	Definition	Pin#	Definition
13	+3.3 V	1	+3.3 V
14	NC	2	+3.3 V
15	Ground	3	Ground
16	PS_ON	4	+5 V
17	Ground	5	Ground
18	Ground	6	+5 V
19	Ground	7	Ground
20	Res (NC)	8	PWR_OK
21	+5 V	9	5 VSB
22	+5 V	10	+12 V
23	+5 V	11	+12 V
24	Ground	12	+3.3 V

Required Connection

12 V 8-pin Power Pin Definitions

Pin#	Definition
1–4	Ground
5–8	+12 V

Required Connection

4.2 Headers and Connectors

Fan Headers

There are six 4-pin fan headers (FAN1–FAN6) on the motherboard. Fan speed control for these fans is supported by Thermal Management via BMC 2.0 interface.

Fan Header Pin Definitions

Pin#	Definition
1	Ground (Black)
2	+12 V (Red)
3	Tachometer
4	PWM Control

TPM Header

The JTPM1 header is used to connect a Trusted Platform Module (TPM)/Port 80, which is available from Supermicro. A TPM/Port 80 connector is a security device that supports encryption and authentication in hard drives. It allows the motherboard to deny access if the TPM associated with the storage drive is not installed in the system. For more information on the TPM, refer to the following page: https://www.supermicro.com/manuals/other/TPM.pdf.

Trusted Platform Module/Port 80 Header Pin Definitions

Pin#	Definition	Pin#	Definition
1	+3.3 V	2	SPI_CS#
3	RESET#	4	SPI_MISO
5	SPI_CLK#	6	Ground
7	SPI_MOSI	8	No connection
9	+3.3 V Standby	10	SPI_IRQ#

Standby Power

The 5 V Standby Power header is located at JSTBY1. You must have a card with a Standby Power connector and a cable to use this feature.

Standby Power Pin Definitions

Pin#	Definition
1	+5 V Standby
2	Ground
3	No Connection

BMC External I²C Header

A System Management Bus 6-pin header for BMC is located at JIPMB1. Connect a cable to this header to use the IPMB I²C connection on your system.

Power SMB (I²C) Header

The Power System Management Bus (I²C) connector (JPI²C1) monitors the power supply, fan, and system temperatures.

Power SMB Header Pin Definitions	
Pin#	**Definition**
1	Clock
2	Data
3	PMBUS_Alert
4	Ground
5	+3.3 V

Chassis Intrusion

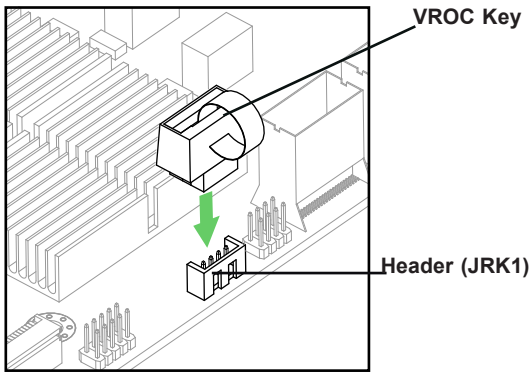
A Chassis Intrusion header is located at JL1. Attach the appropriate cable from the chassis to the header to alert when the chassis is opened.

Chassis Intrusion Pin Definitions	
Pins	**Definition**
1	Intrusion Input
2	Ground

RAID Key Header

An Intel VROC RAID Key header is located at JRK1. It supports VMD used in creating optional advanced NVMe RAID configurations.

RAID Key Header Pin Definitions	
Pin#	**Definition**
1	Ground
2	RAID_KEY_PU
3	Ground
4	PCH_RAID_KEY



Note: This drawing is for illustration only. Your motherboard may look different.

M.2 Slots

The motherboard has two M.2 SSD slots, supported by CPU1. They support PCIe 5.0 x4 M.2 NVMe SSDs in the 2280 form factors. Note the mounting holes located at MH10/MH11.

Note: M.2 slots are intended to be used only for boot devices. Write-intensive workloads may result in the SSD overheating.

NCSI Connector

Use the Network Controller SideBand Interface (NCSI) connector, JNSCI1, to connect a Network Interface Controller (NIC) to the motherboard, and allow the onboard Baseboard Management Controler (BMC) to communincate with a network.

Note: For detailed instructions on how to configure Network Interface Card (NIC) settings, please refer to the Network Interface Card Configuration User's Guide posted on the web page under the link: https://www.supermicro.com/support/manuals/.

MCIO NVMe Connectors

MCIO NVMe connectors, located at JNVME1–JNVME4 and JNVME5–JNVME8, provide eight PCIe 5.0 x4 or four PCIe 5.0 x8 MCIO NVMe connections on the motherboard. JNVME1–4 connections are supported by CPU1, and JNVME5–8 connections, CPU2. Use these MCIO connectors to support high-speed PCIe NVMe storage devices.

When installing an NVMe device on a motherboard, connect the first NVMe port (JNVME1) first.

Note: This motherboard supports eight 5.0 x4, four 5.0 x8 MCIO NVMe connections, and it also supports up to 12 NVMe connectors if an S12 (12" x 3.5") backplane is used.

SATA 3.0 Ports

Two SATA 3.0 headers, located at JS1 and JS2, support 12 SATA connections (SATA0–7/ SATA8–11). These SATA 3.0 ports are supported by the Intel PCH chip.

Control Panel

JFP1 contains header pins for the front control panel connections. All JFP1 wires have been bundled into a single cable to simplify this connection. Make sure the red wire plugs into pin 1 as marked on the motherboard. The other end connects to the control panel PCB board.

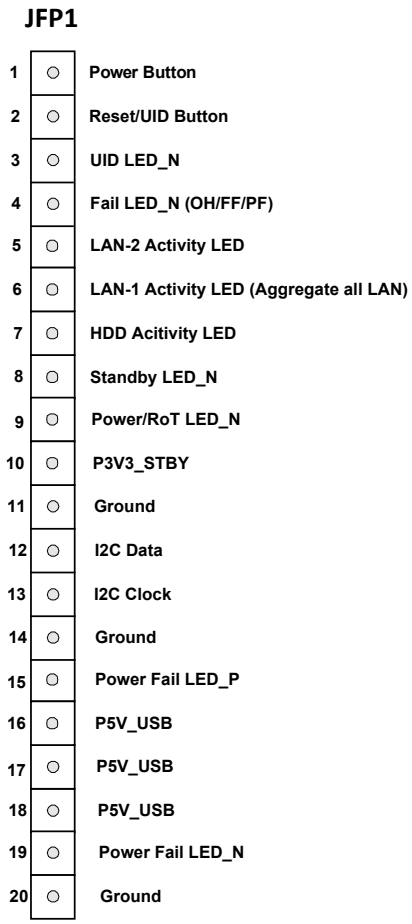


Figure 4-1. JFP1 Control Panel Pins

Power Button and BMC/BIOS Status LED Button

The Power On and BMC/BIOS Status LED button is connected to Pin 1 of the header JFP1. Momentarily contacting Pin 1 will power on/off the system, or display the BMC/BIOS status. The LED is described in Chapter 1.

Reset Button/Front UID Switch

The Reset button/Front UID switch is configured in conjunction with the jumper, JRU1. Depending on the JRU1 settings, the button either resets the BMC or toggles the UID LED. For details on JRU1, see Section 4.4. The button is connected to Pin 2 of JFP1.

UID LED

The unit identifier LED connection is located on Pin 3.

Fail LED (Information LED)

The Fail LED connection is Pin 4 of JFP1. It provides stimulus to the Information LED that indicates overheating, fan failure, and power failure. The LED is described in Chapter 1.

LAN1/LAN2 (NIC1/NIC2) LED

The NIC (Network Interface Controller) LED connection for LAN Port 1 is Pin 6, and for LAN Port 2 is Pin 5. When this LED is blinking green, it indicates LAN activity.

HDD Activity LED

The HDD activity LED connection is Pin 7. When this LED is blinking green, it indicates storage drive activity.

Standby Power LED

The LED indicator for standby power is Pin 8. If this LED is on, standby power is on.

RoT (Root of Trust) Power LED

The Power LED for RoT (Root of Trust) connection is Pin 9. If this LED is on, power for the RoT chip is on.

Standby Power

A Standby Power (I2C) connections are Pins 10 through Pin 14 to provide power to the system when it is in standby mode.

Power Fail LED Indicators

Power Failure LED Indicators are Pin 15 and Pin 19.

Front Panel USB Power

Front Panel USB power connections are Pins 16 through Pin 18 to provide power to front USB devices.

4.3 Input/Output Ports

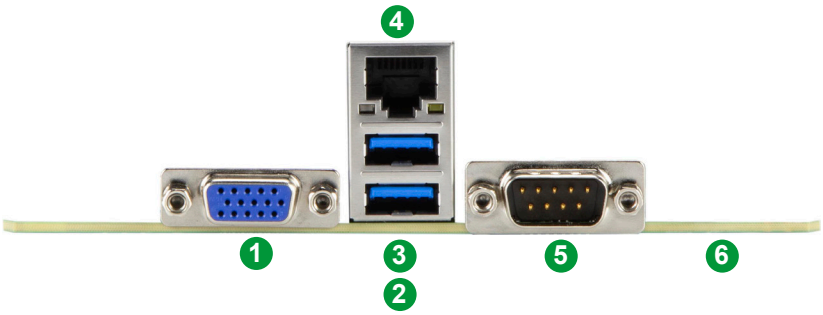


Figure 4-2. Rear I/O Ports

Rear I/O Ports			
#	Description	#	Description
1	VGA	4	Dedicated BMC LAN
2	USB (3.1)	5	COM Port
3	USB (3.1)	6	UID Switch

LAN Ports

There is a dedicated BMC LAN port on the I/O back panel.

There can also be two or more network LAN ports depending on the AIOM you purchased.

Unit Identifier Switch/UID LED Indicator

A Unit Identifier (UID) switch and a UID LED indicator are located on the rear of the system. When you press the UID switch, both front and rear UID LED indicators are toggled on or off. The UID can also be triggered using the BMC. The UID indicators provide easy identification of a system in a rack.

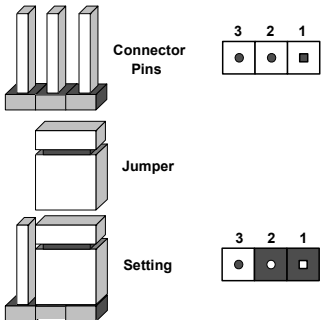
The same switch can be used to reset the BMC; for details, refer to Sections 4.4 and 7.8 in this manual.

4.4 Jumpers

Explanation of Jumpers

To modify the operation of the motherboard, jumpers are used to choose between optional settings. Jumpers create shorts between two pins to change the function associated with it. Pin 1 is identified with a square solder pad on the printed circuit board. See the motherboard layout page for jumper locations.

Note: On a two-pin jumper, "Closed" means the jumper is on both pins and "Open" indicates the jumper is either on only one pin or has been completely removed.



CMOS Clear

JBT1 is used to clear CMOS. For details, refer to Section 7.7 in this manual.

UID and BMC Reset Button Select Jumper

Jumper JRU1 is used to configure the function of the Control Panel UID button (Pin 2 of JFP1). To set the button to toggle the UID LEDs (in a chassis that supports front UID), close Pins 2 and 3 of jumper JRU1. To set the button to reset the BMC, close Pins 1 and 2 of jumper JRU1.

Front UID Switch/BMC Reset Button Select Jumper (JRU1) Jumper Settings	
State	**Description**
Close Pin 1 and Pin 2	Button BMC reset support
Close Pin 2 and Pin 3	Button UID support (Default)

4.5 LED Indicators

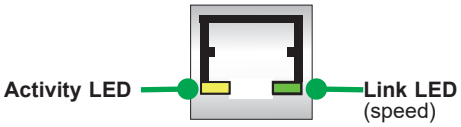
Network LAN LEDs

The Ethernet ports each have two LEDs. One LED indicates activity when flashing green. The other may be green, amber or off to indicate the speed of the connection.

BMC-Dedicated LAN LEDs

A dedicated BMC LAN port provided a connection to the BMC. The Link LED indicates the speed of the connection. The other LED indicates activity.

BMC Link LED	
Color	**Definition**
Off	No Connection
Green	100 Mb/s
Amber	1 Gb/s



Unit ID LED

A rear unit identifier (UID) indicator at LE6 is located near the UID switch on the I/O back panel. It provides easy identification of a unit that may need service.

Onboard Power LED

The Onboard Power LED is LEDPWR. When this LED is on, the system power is connected.

BMC Heartbeat LED

LEDM1 is the BMC heartbeat LED. When the LED is blinking green, BMC is functioning normally. When the LED is solid green, the BMC is resetting.

M.2 Heartbeat LEDs

When LE4 and LE7 are blinking, M.2-C1 and M.2-C2, respectively, are functioning normally.

Chapter 5

Software

After the hardware has been installed, you can install the Operating System (OS), configure RAID settings and install the drivers.

5.1 Microsoft Windows OS Installation

If you will be using RAID, you must configure RAID settings before installing the Windows OS and the RAID driver. Refer to the RAID Configuration User Guides posted on our website at https://www.supermicro.com/support/manuals/.

Installing the OS

1. Create a method to access the MS Windows installation ISO file. That can be a USB flash or media drive.

2. Boot from a bootable device with Windows OS installation. You can see a bootable device list by pressing **F11** during the system startup.

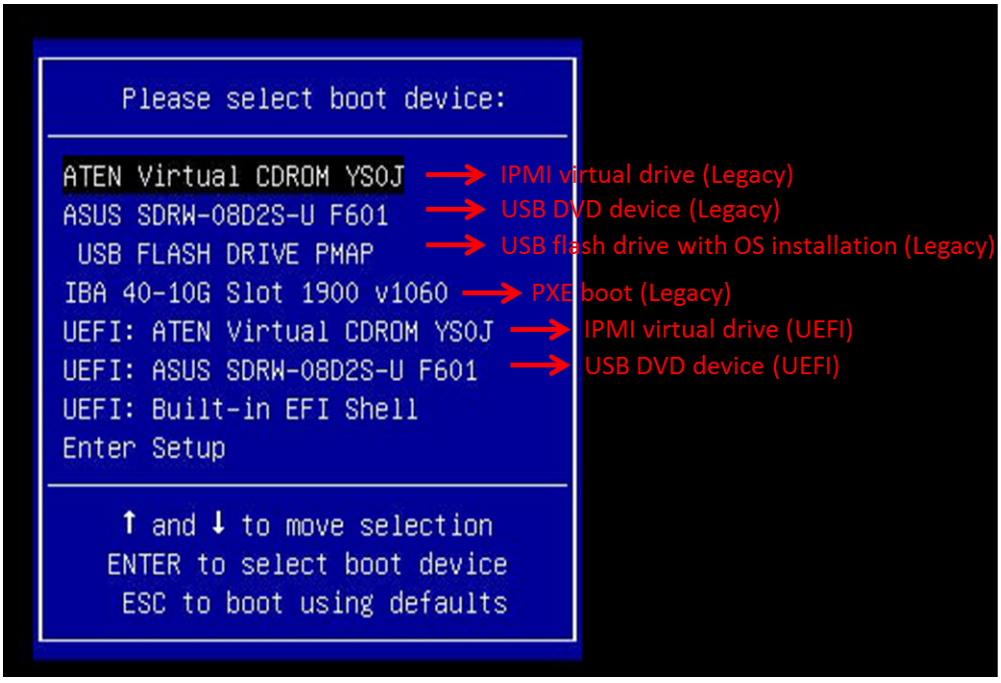


Figure 5-1. Select Boot Device

3. During Windows Setup, continue to the dialog where you select the drives on which to install Windows. If the disk you want to use is not listed, click the “Load driver” link at the bottom left corner.

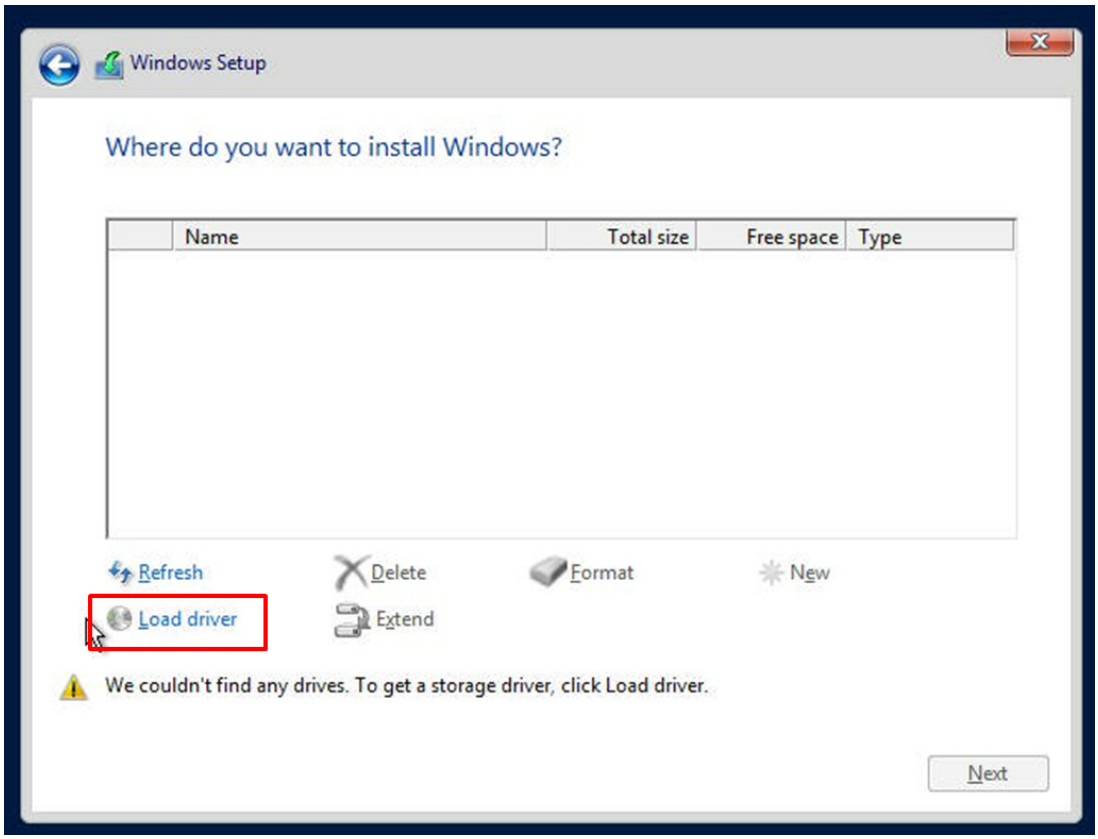


Figure 5-2. Load Driver Link

To load the driver, browse the USB flash drive for the proper driver files.

- For RAID, choose the SATA/sSATA RAID driver indicated then choose the storage drive on which you want to install it.
- For non-RAID, choose the SATA/sSATA AHCI driver indicated then choose the storage drive on which you want to install it.

4. Once all devices are specified, continue with the installation.
5. After the Windows OS installation has completed, the system will automatically reboot multiple times.

5.2 Driver Installation

The Supermicro website contains drivers and utilities for your system at https://www.supermicro.com/wdl/driver. Some of these must be installed, such as the chipset driver.

After accessing the website, go into the CDR_Images (in the parent directory of the above link) and locate the ISO file for your motherboard. Download this file to to a USB flash or media drive. You may also use a utility to extract the ISO file if preferred.

Another option is to go to the Supermicro website at https://www.supermicro.com/products/. Find the product page for your motherboard, and "Download the Latest Drivers and Utilities".

Insert the flash drive or disk and the screenshot shown below should appear.

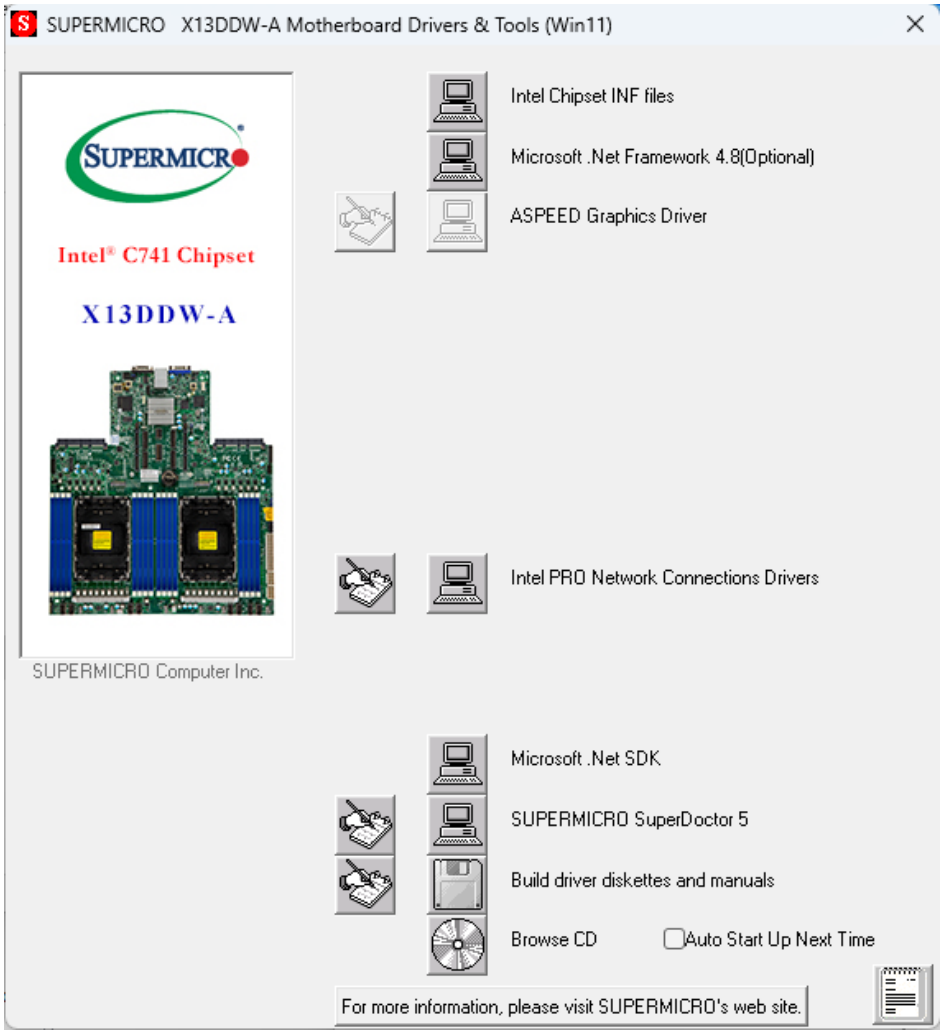


Figure 5-3. Driver & Tool Installation Screen

Note: Click the icons showing a hand writing on paper to view the readme files for each item. Click the computer icons to the right of these items to install each item (from top to the bottom) one at a time. **After installing each item, you must reboot the system before moving on to the next item on the list.** The bottom icon with a CD on it allows you to view the entire contents.

5.3 BMC

The motherboard provides remote access, monitoring and management through the baseboard management controller (BMC) and other management controllers distributed among different system modules. There are several BIOS settings that are related to BMC. For general documentation and information on BMC, visit our website at:

https://www.supermicro.com/en/solutions/management-software/bmc-resources

BMC ADMIN User Password

For security, each system is assigned a unique default BMC password for the ADMIN user. This can be found on a sticker on the chassis and a sticker on the motherboard. The sticker also displays the BMC MAC address.

Figure 5-5. BMC Password Label

See Chapter 1 for the locations of the labels.

Chapter 6

Optional Components

This chapter describes optional system components and installation procedures.

Optional Parts
Storage Control Cards
GPU Support
Cable Management Arm
TPM Security Module
Intel Virtual RAID on CPU (VROC)

6.1 Storage Control Cards

Supermicro offers controller cards for some storage options. Refer to the following system web page for a list of configurable RAID & HBA cards and associated cables:

https://www.supermicro.com/en/products/system/Cloud/2U/SYS-621C-TN12R.

Storage Protocols Supported

The storage drive bays can support SATA, SAS, and NVMe.

SATA: Additional cables are required.

SAS: An add-on controller card can support up to SAS (or SATA) drives. Additional cables are required.

NVMe: Additional cables are required.

6.2 GPU Support

The system can accommodate up to two FHFL double-width GPUs, four FHFL single-width GPUs, or six FHHL single-width GPUs.

GPU Support	
Quantity	Two to six
Available Slots for x16 GPU	Available slots for FHFL double-width GPU: Slot 1, 5 Available slots for FHFL single-width GPU: Slot 1, 2, 4, 5 Available slots for FHHL single-width GPU: Slot 1, 2, 3, 4, 5, 6
Thermal Kit	When using FHFL GPUs: GPU air shroud: one MCP-310-82621-0N 1U heatsink: two SNK-P0087P
Conditions	GPU support conditions depend on CPU TDP and server configuration. Please check the GPU matrix on the product page or contact Supermicro representative for details.

6.3 Cable Management Arm

The system supports a cable management arm (CMA), which keeps the rear cables organized and clear of the rail mechanisms when the system is extended out the front of the rack for maintenance. The kit includes six fabric Velcro cable ties.

The CMA attaches to the rack mounting rails by means of four connectors. They are labeled on the connectors 1, 2, 3, and 4.

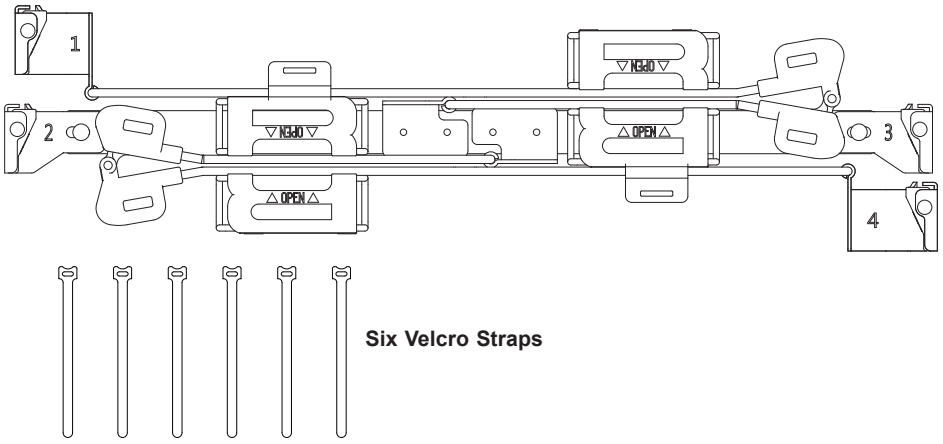


Figure 6-1. Cable Management Arm and Velcro Straps

Installing the Cable Management Arm

1. Slide CMA connector #1 forward onto the two posts on the rear of the right inner rail (right side when viewed from the front). It snaps into place.
2. Slide CMA connector #2 forward onto the two posts on the rear of the right middle rail. It snaps into place.

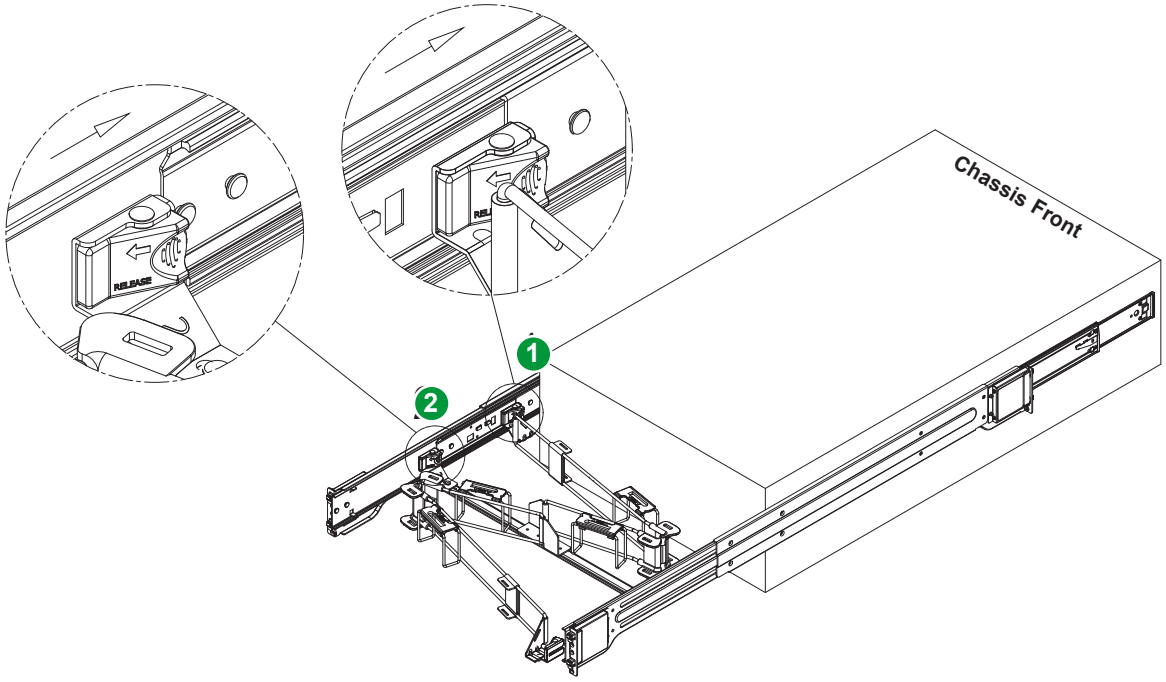


Figure 6-2. Installing the Connectors 1 and 2

3. Slide CMA connector #3 forward onto the two posts on the rear of the left middle rail. It snaps into place.

4. For CMA connector #4, align the metal tabs with the slots on the rear of the left outer rail and push it forward. It snaps into place.

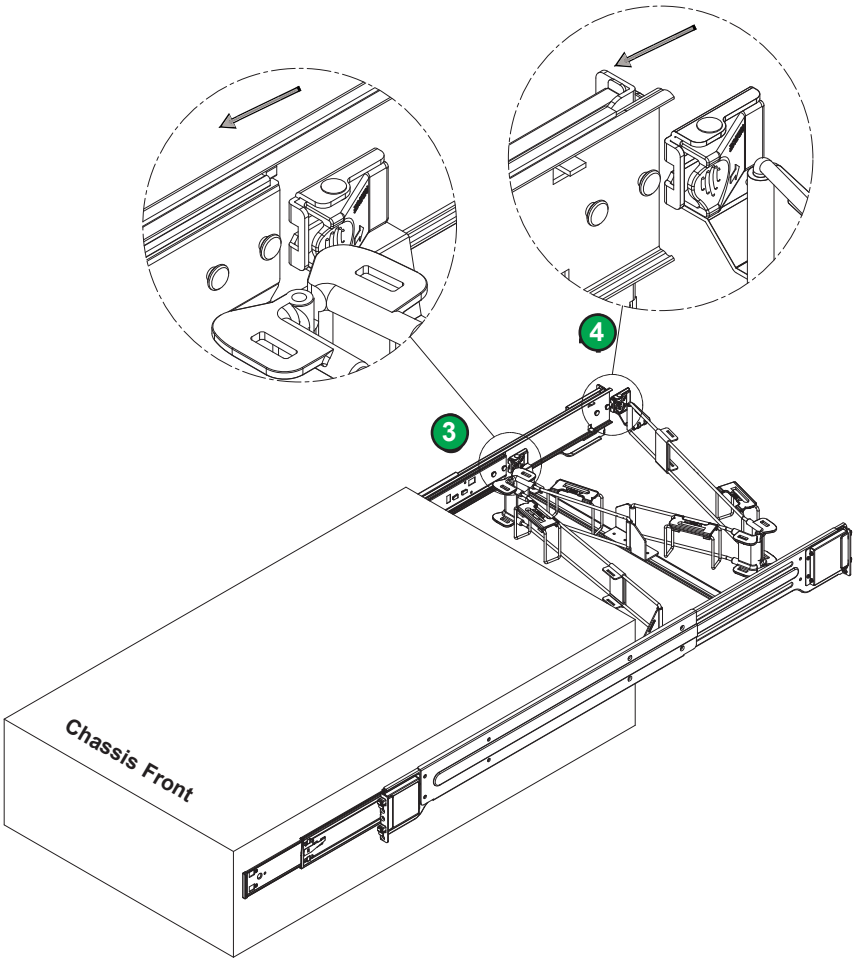


Figure 6-3. Installing the Connectors 3 and 4

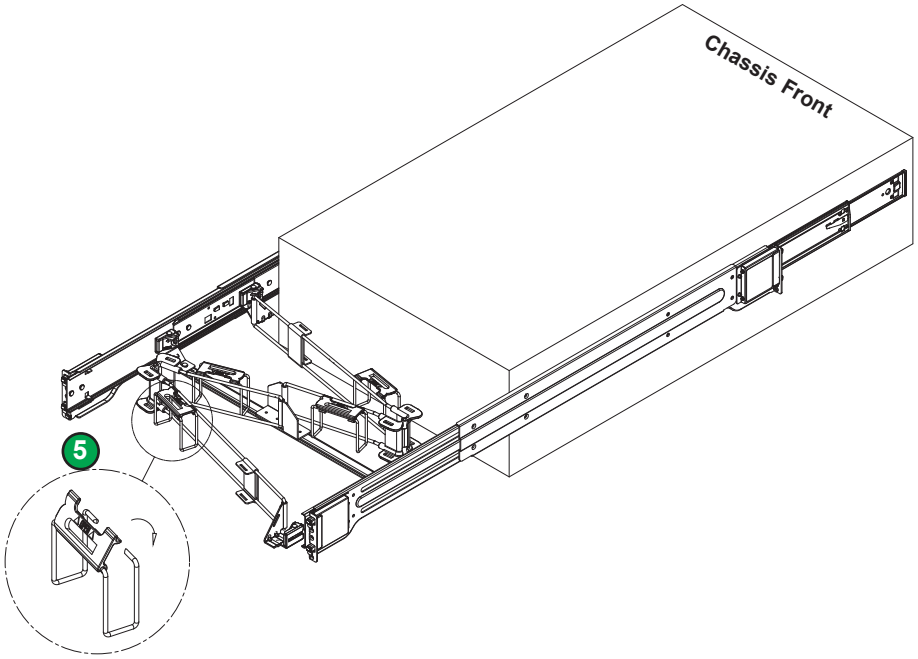


Figure 6-4. Routing the Cables

5. Open the four red plastic caps and route the cables into the wire carrier.
6. If necessary, adjust the U-brackets to clear chassis components.

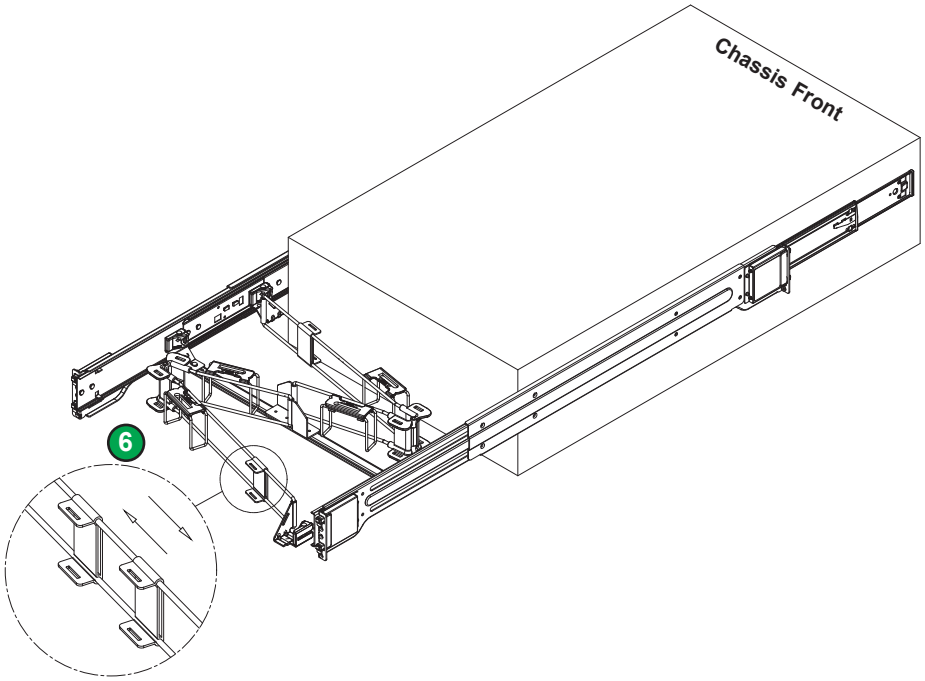


Figure 6-5. Adjusting the U-Brackets

7. Use the six Velcro straps to secure the cables to the CMA. Use a strap on either side of each joint and one on each U-bracket, inserting it through the slot on the bracket.
8. Slide the chassis forward and backward in the rack to confirm that the cable management arm is operating smoothly. If necessary, loosen the straps for smoother movement.

If at some time you must remove the cable management arm, follow this procedure.

Removing the Cable Management Arm

1. Remove cables from the CMA, releasing the Velcro straps and the red plastic caps.
2. For CMA connector #4, pull the metal release tab toward the center of the rack and slide the connector toward the rear to release it.
3. For CMA connectors #3, #2, and #1, depress the front edge of the yellow plastic rocker lock, and slide the connector toward the rear to release it.

6.4 TPM Security Module

SPI capable TPM 2.0 with Infineon 9670 or 9672 controller, horizontal form factor.

The JTPM1 header is used to connect a Trusted Platform Module (TPM). A TPM is a security device that supports encryption and authentication in hard drives. It enables the motherboard to deny access if the TPM associated with the hard drive is not installed in the system.

TPM details and installation procedures: https://www.supermicro.com/manuals/other/TPM.pdf

- AOM-TPM-9670V
- AOM-TPM-9672V

6.5 Intel Virtual RAID on CPU (VROC)

Intel® Virtual RAID on CPU (Intel VROC) is an enterprise RAID solution for NVMe SSDs directly attached to Intel Xeon Scalable processors. Intel Volume Management Device (VMD) is an integrated controller inside the CPU PCIe root complex.

- A single processor supports up to 12 NVMe SSDs and up to 6 RAID arrays.
- A dual processor system supports up to 24 NVMe SSDs and 12 RAID arrays.

Stripe sizes are 4K, 8K, 16K, 32K, 64K, 128K.

Requirements and Restrictions

- **Intel VROC is only available when the system is configured for UEFI boot mode.**
- To enable the **mdadm** command and support for RSTe, install the patch from:
  - Linux: https://downloadcenter.intel.com/download/28158/Intel-Virtual-RAID-on-CPU-Intel-VROC-and-Intel-Rapid-Storage-Technology-enterprise-Intel-RSTe-Driver-for-Linux-
  - Windows: https://downloadcenter.intel.com/download/28108/Intel-Virtual-RAID-on-CPU-Intel-VROC-and-Intel-Rapid-Storage-Technology-enterprise-Intel-RSTe-Driver-for-Windows-
- To enable Intel VROC, a hardware key must be inserted on the motherboard, and the appropriate processor's Virtual Management Devices must be enabled in the BIOS setup.
- It is possible to enable Intel VROC without a hardware key installed, but only RAID0 will be enabled.
- Intel VROC is not compatible with secure boot. This feature must be disabled.
- When creating bootable OS RAID1 devices, you must have both devices on the same CPU, and a VMD on that CPU.
- Spanning drives when creating RAID devices is not recommended due to performance issues, even though it is supported.

Supported SSDs and Operating Sytems

To see the latest support information, refer to the following page: https://www.intel.com/content/www/us/en/support/articles/000030310/memory-and-storage/ssd-software.html

Additional Information

Additional information is available on the product page for the Supermicro add-on card and the linked manuals:

https://www.supermicro.com/en/products/accessories/addon/AOC-VROCxxxMOD.cfm

Hardware Key

The Intel VROC hardware key is a license key that detects the Intel VROC SKU and activates the function accordingly. The key must be plugged into the Supermicro motherboard (connector JRK1). The key options are:

Intel® VROC Keys			
VROC Package	**Description**	**Part Number**	**Intel MM Number**
Standard	RAID 0, 1, 10 Supports 3rd party SSDs	AOC-VROCSTNMOD	951605
Premium	RAID 0, 1, 5, 10 Supports 3rd party SSDs	AOC-VROCPREMOD	951606
Intel SSD only	RAID 0, 1, 5, 10 Supports Intel SSDs only	AOC-VROCINTMOD	956822

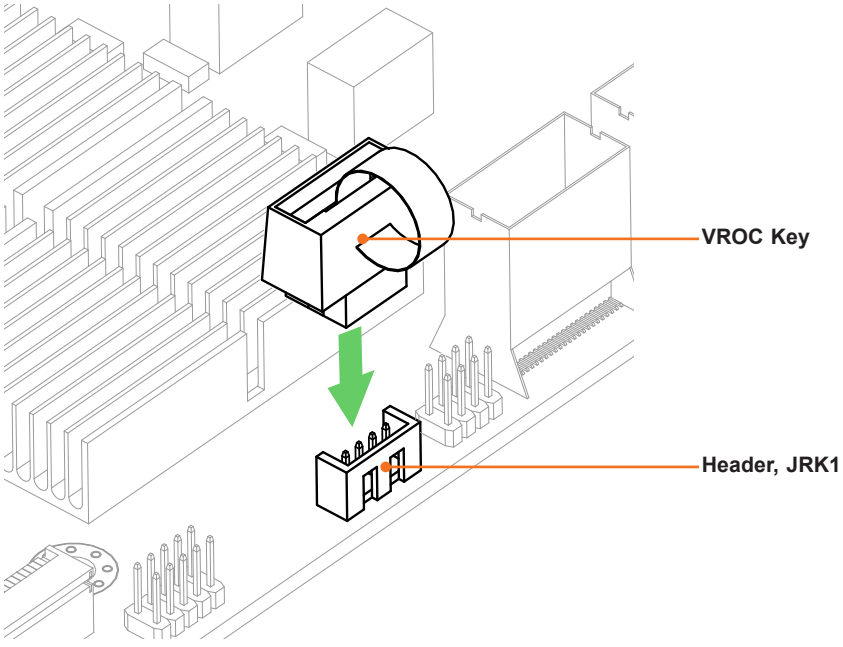


Figure 7-1. Intel VROC RAID Key and Motherboard Connector JRK1

Configuring Intel VMD

VMD must be enabled on PCIe ports which have NVMe drives attached to them in order for those drives to be added to a VROC RAID configuration. The default BIOS setting for the NVMe Mode Switch is **Auto** which automatically enables VMD on all installed NVMe drives.

NVMe Mode Switch:

- **Auto** Enables VMD for all NVMe ports if VROC Key is installed.
- **VMD** Enables VMD for all NVMe ports despite the lack of the VROC Key.
- **Manual** Allows the user to select specific NVMe ports on which to enable VMD.

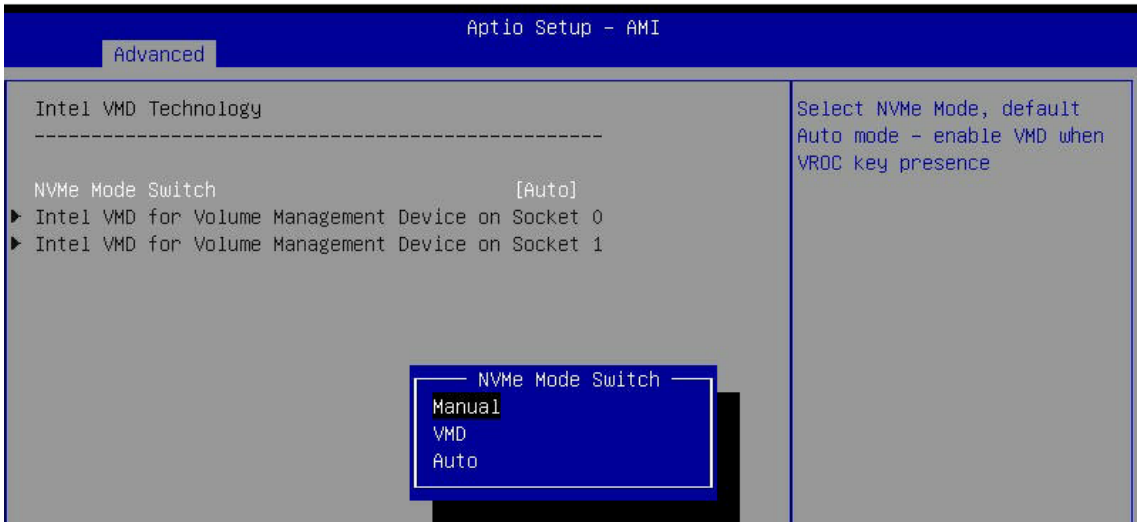
The NVMe Mode Switch can be viewed or selected at **BIOS > Advanced > Chipset Configuration > North Bridge > IIO Configuration > Intel® VMD Technology**.

Note: Without a VROC Key, there is no RAID support with the **Auto** switch. Only RAID 0 is supported with the **VMD** and **Manual** switches.

Configuring VMD Manually

The steps for manually configuring VMD on specific NVMe ports in UEFI BIOS are shown below. This example shows different but similar system with 12 NVMe. Yours will look different.

1. Reboot the server and press [DEL] key to access the BIOS options.
2. Switch to **Advanced > Chipset Configuration > North Bridge > IIO Configuration > Intel® VMD Technology**.
3. Select **VMD Mode Switch**, then select **Manual**.



Note that Socket 0 contains CPU1; Socket 1 contains CPU2.

Figure 6-7. BIOS, Selecting VMD Mode

Caution: VMD must only be enabled on NVMe port resources. If VMD is enabled on other PCIe ports, the functionality of those ports will be impacted. See the table below.

4. Select “Intel VMD for Volume Management Device on” on Socket 0 (CPU1) or Socket 2 (CPU2) to enable VMD for devices under the respective CPU.

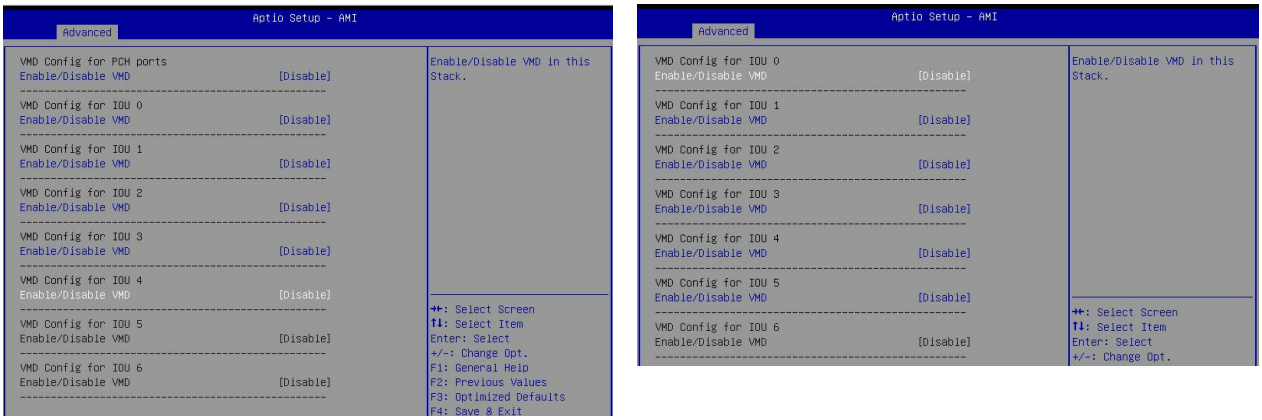


Figure 6-8. Intel VMD for Volume Management Device on Socket 0 and Socket 1

5. Choose Enable for “Enable/Disable VMD” for IOU 3 to list the available devices under IOU 3.

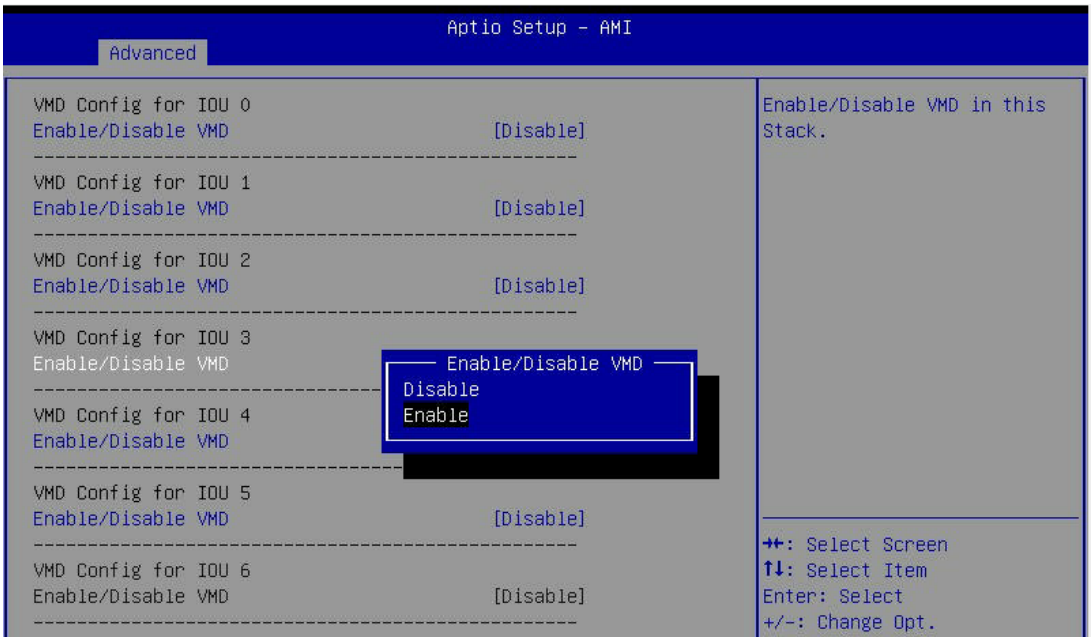


Figure 6-9. BIOS, Enabling VMD on Socket 1 (CPU2) (Example)

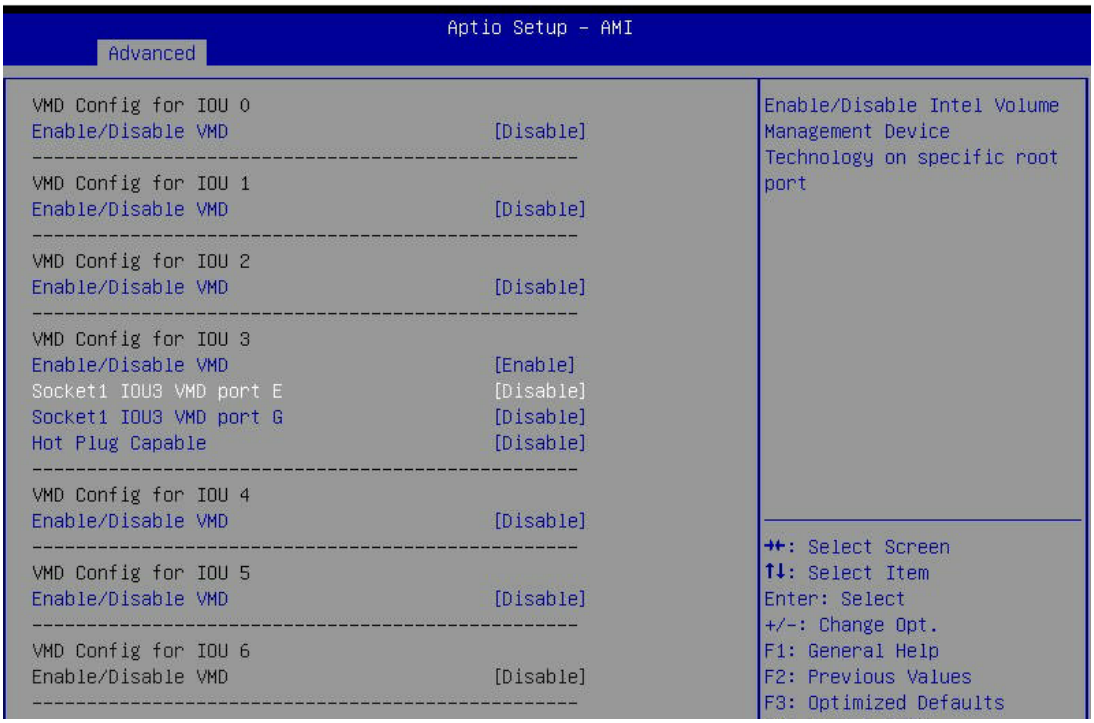


Figure 6-10. BIOS, Enabling VMD on Socket 1 (Example)

6. Enable the NVMe port resource according to table above for the NVMe drives that will be used in a RAID configuration.

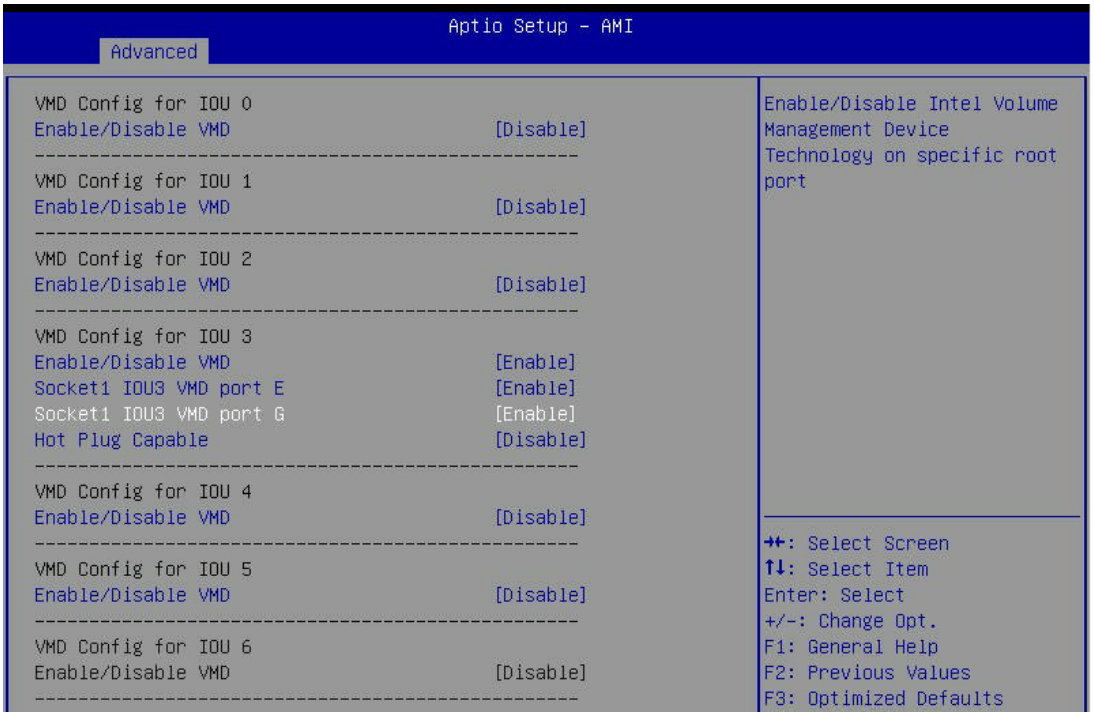


Figure 6-11. BIOS, Enabling Socket 1 (Example)

7. Choose whether to make the NVMe drives in this IOU **Hot Plug Capable** by selecting Enabled or Disabled.

8. Repeat steps 4 through 7 for each IOU # on each CPU to enable VMD on the desired NVMe ports.

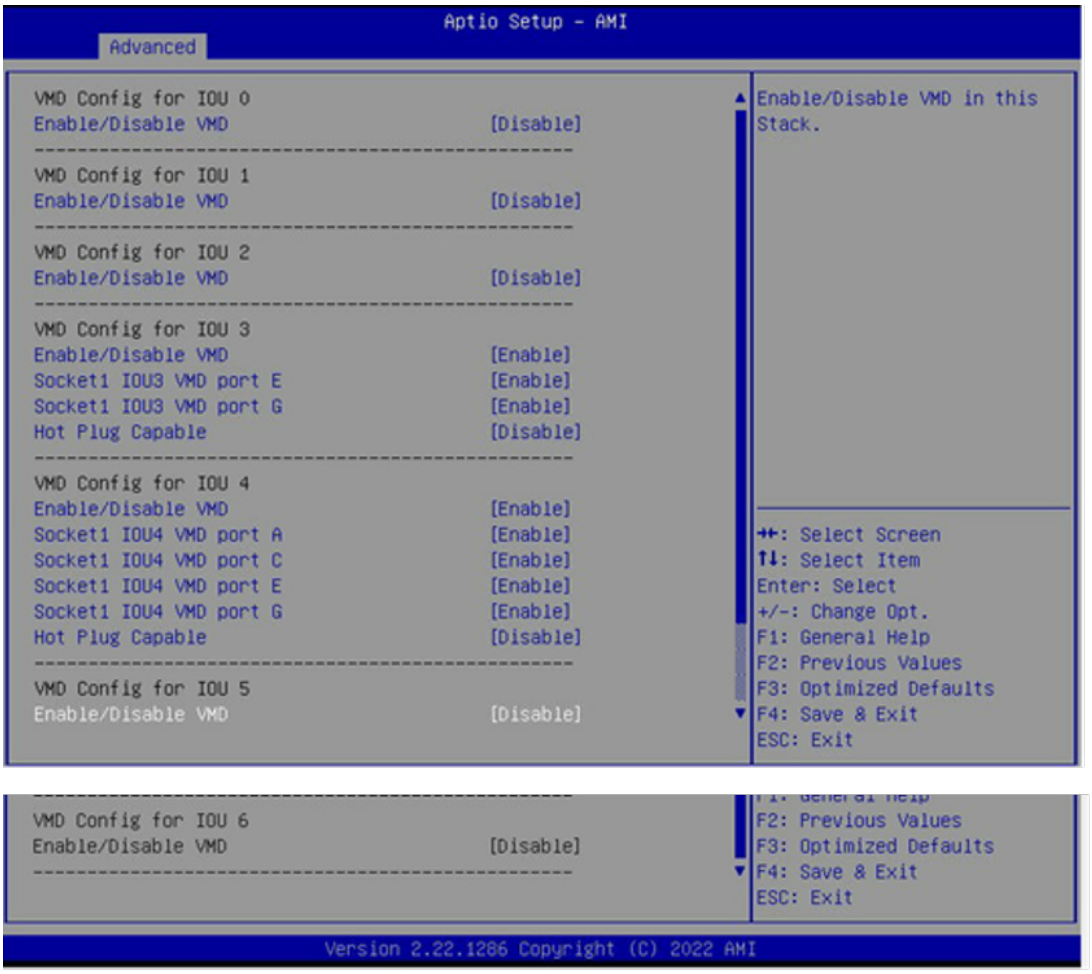


Figure 6-12. BIOS, Enabling Socket 1 Completed (Example)

9. Press [F4] to save the configuration and reboot the system.

Note: If there is an existing RAID configuration, delete the RAID volume associated with the VMD controller before disabling the controller. Failure to do so may lead to unexpected behavior.

Note: The effects of physically changing or swapping a CPU on the VMD controller have not been thoroughly tested or documented.

Creating NVMe RAID Configurations

1. Open **Advanced > Intel(R) Virtual RAID on CPU > All Intel VMD Controllers > Create RAID Volume**.

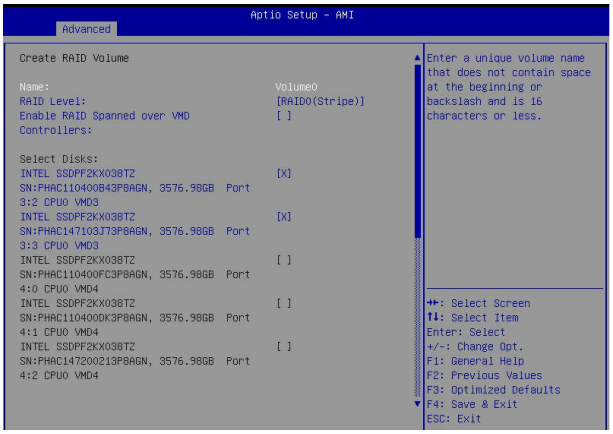


Figure 6-13. Created Volume *without* enabling RAID spanned over VMD controller

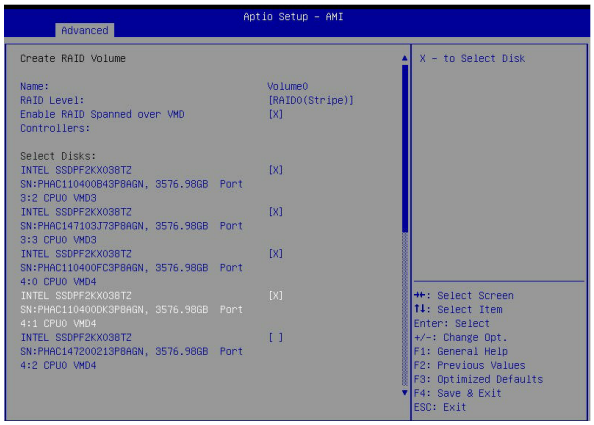


Figure 6-14. Created Volume *with* enabling RAID spanned over VMD controller

2. Set **Name**.
3. Set **RAID Level**.
4. If cross-controller RAID is required, select **Enable RAID spanned over VMD Controller**.
5. Select specific disks for RAID with an [X].
   - RAID0: Select at least two [2–24] disks
   - RAID1: Select only two disks
   - RAID5: Select at least three [3–24] disks
   - RAID10: Select only four disks
6. Select **Strip Size** (Default 64KB).
7. Select **Create Volume**.
8. If another RAID is needed, start again at step 1.

Status Indications

An LED indicator on the drive carrier shows the RAID status of the drive.

Drive Carrier Status LED Indicator	
Status	**State (red)**
Normal function	Off
Locating	4 Hz Blink
Fault	Solid On
Rebuilding	1 Hz Blink

IBPI SFF 8489 Defined Status LED States

Hot-Swap Drives

Intel VMD enables hot-plug and hot-unplug for NVMe SSDs, whether from Intel or other manufacturers. Under vSphere ESXi, several steps are necessary to avoid potential stability issues. See the information at the link [1] below.

Hot-unplug

1. Prevent devices from being re-detected during rescan:

```
esxcli storage core claiming autoclaim --enabled=false
```

2. Unmount the VMFS volumes on the device. Check [2] for details.
3. Detach the device. Check [3] for details.
4. Physically remove the device.

Hot-plug

- Physically install the device.

ESXi will automatically discover NVMe SSDs, but a manual scan may be required in some cases.

Related Information Links

[1] https://kb.vmware.com/s/article/2151404

[2] https://docs.vmware.com/en/VMware-vSphere/6.5/com.vmware.vsphere.storage.doc/GUID-1B56EF97-F60E-4F21-82A7-8F2A7294604D.html

[3] https://docs.vmware.com/en/VMware-vSphere/6.5/com.vmware.vsphere.storage.doc/GUID-F2E75F67-740B-4406-9F0C-A2D99A698F2A.html

Chapter 7

Troubleshooting and Support

7.1 Information Resources

Website

A great deal of information is available on the Supermicro website. From the top menu of the Supermicro home page at https://www.supermicro.com:

- Specifications for servers and other hardware are available by clicking **Products**.
- The **Support** option offers downloads (manuals, BIOS/BMC, drivers, etc.), FAQs, RMA, warranty, and other service extensions.

Direct Links for the SYS-621C-TN12R System

System specifications page:

https://www.supermicro.com/en/products/system/Cloud/2U/SYS-621C-TN12R

Motherboard page for links to the Quick Reference Guide, User Manual, validated storage drives, etc: https://www.supermicro.com/en/products/motherboard/X13DDW-A

Direct Links for General Support and Information

Frequently Asked Questions: https://www.supermicro.com/FAQ/index.php

Add-on card descriptions https://www.supermicro.com/UIO/

TPM User Guide: https://www.supermicro.com/manuals/other/TPM.pdf

General Memory Configuration Guide: https://www.supermicro.com/support/resources/memory/X13_memory_config_guide.pdf

BMC User Guide: https://www.supermicro.com/manuals/other/BMC_Users_Guide_X12_H12.pdf

SuperDoctor5 Large Deployment Guide: https://www.supermicro.com/manuals/other/UserGuide_Large_Deployment_of_SD5_on_Windows.pdf

Product Resources Page for validated memory: https://www.supermicro.com/support/resources/mem.cfm

Product Matrices page: links to summary tables for systems, motherboards, power supplies, riser cards, add-on cards, etc: https://www.supermicro.com/en/support/product-matrices

Security Center for recent notices: https://www.supermicro.com/en/support/security_center

Supermicro phone and addresses at https://www.supermicro.com/en/about/contact

7.2 BMC Interface

The system supports a Baseboard Management Controller (BMC) interface. It provides remote access, monitoring and management. There are several BIOS settings related to the BMC.

For general documentation and information on the BMC, please visit our website at: https://www.supermicro.com/manuals/other/BMC_Users_Guide_X13.pdf.

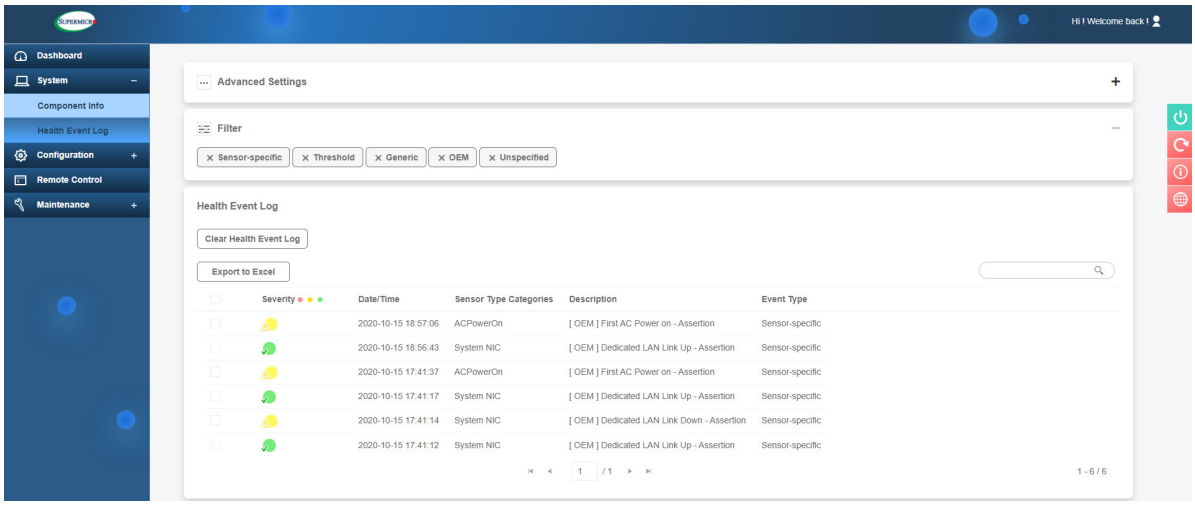


Figure 7-2. BMC Dashboard Sample

7.3 Troubleshooting Procedures

Use the following procedures to troubleshoot your system. If you have followed all of the procedures below and still need assistance, refer to Section 7.10 in this chapter. Power down the system as described in Section 3.1 in this manual before changing any non hot-swap hardware components.

General Technique

If you experience unstable operation or get no boot response, try:

1. With power off, remove all but one DIMM and other added components, such as add-on cards, from the motherboard. Make sure the motherboard is not shorted to the chassis.
2. Set all jumpers to their default positions.
3. Power up. If the system boots, check for memory errors and add-on card problems.

No Power

- Check that the power LED on the motherboard is on.

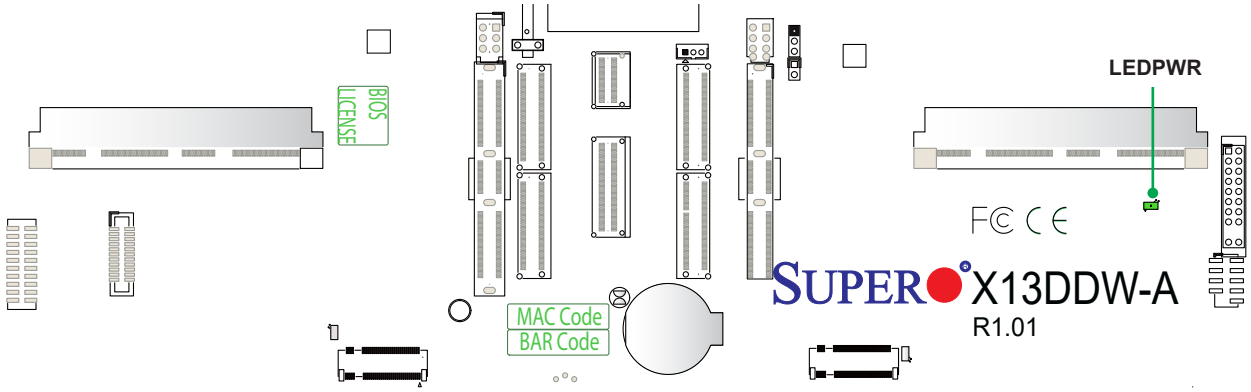


Figure 7-3. Location of the MB Power LED

- Make sure that the power connector is connected to the power supply.
- Check that the motherboard battery still supplies approximately 3 VDC. If it does not, replace it.
- Check that the system input voltage is 100–120 V or 180–240 V.
- Turn the power switch on and off to test the system.

No Video

If the power is on but you have no video, remove all add-on cards and cables.

System Boot Failure

If the system does not display Power-On-Self-Test (POST) or does not respond after the power is turned on, try the following:

- Turn on the system with only one DIMM module installed. If the system boots, check for bad DIMM modules or slots by following the Memory Errors Troubleshooting procedure below.

Memory Errors

- Make sure that the DIMM modules are properly and fully installed.
- Confirm that you are using the correct memory. Also, it is recommended that you use the same memory type and speed for all DIMMs in the system. See Section 3.3 for memory details.
- Check for bad DIMM modules or slots by swapping modules between slots and noting the results.

Losing the System Setup Configuration

- Always replace power supplies with the exact same model that came with the system. A poor quality power supply may cause the system to lose the CMOS setup configuration.
- Check that the motherboard battery still supplies approximately 3 VDC. If it does not, replace it.

If the above steps do not fix the setup configuration problem, contact your vendor for repairs.

When the System Becomes Unstable

If the system becomes unstable during or after OS installation, check the following:

- CPU/BIOS support: Make sure that your CPU is supported and that you have the latest BIOS installed in your system.
- Memory: Make sure that the memory modules are supported. Refer to the system product page at https://www.supermicro.com/en/products/system/Cloud/2U/SYS-621C-TN12R. Test the modules using **memtest86** or a similar utility.
- Storage drives: Make sure that all drives work properly. Replace if necessary.

- System cooling: Check that all heatsink fans and system fans work properly. Check the hardware monitoring settings in the BMC to make sure that the CPU and system temperatures are within the normal range. Also check the Control panel Overheat LED.
- Adequate power supply: Make sure that the power supply provides adequate power to the system. Make sure that all power connectors are connected. Refer to the Supermicro website for the minimum power requirements.
- Proper software support: Make sure that the correct drivers are used.

If the system becomes unstable before or during OS installation, check the following:

- Source of installation: Make sure that the devices used for installation are working properly, including boot devices.
- Cable connection: Check to make sure that all cables are connected and working properly.
- Use the minimum configuration for troubleshooting: Remove all unnecessary components (starting with add-on cards first), and use the minimum configuration (but with a CPU and a memory module installed) to identify the trouble areas.
- Identify a bad component by isolating it. Check and change one component at a time.
  - Remove a component in question from the chassis, and test it in isolation. Replace it if necessary.
  - Or swap in a new component for the suspect one.
  - Or install the possibly defective component into a known good system. If the new system works, the component is likely not the cause or the problem.

7.4 BIOS Error Beep (POST) Codes

During the POST (Power-On Self-Test) routines, which are performed each time the system is powered on, errors may occur.

Non-fatal errors are those which, in most cases, allow the system to continue the boot-up process. The error messages normally appear on the screen.

Fatal errors are those which will not allow the system to continue the boot-up procedure. If a fatal error occurs, you should consult with your system manufacturer for possible repairs.

These fatal errors are usually communicated through a series of audible beeps. The table below lists some common errors and their corresponding beep codes encountered by users.

BIOS Error Beep (POST) Codes		
Beep Code	**Error Message**	**Description**
1 short	Refresh	Circuits have been reset (Ready to power up)
5 short, 1 long	Memory error	No memory detected in system
5 long, 2 short	Display memory read/write error	Video adapter missing or with faulty memory
1 long continuous	System OH	System overheat condition

Additional BIOS POST Codes

The AMI BIOS supplies additional checkpoint codes, which are documented at the following page: https://www.supermicro.com/manuals/ ("AMI BIOS POST Codes User's Guide").

When BIOS performs the Power On Self Test, it writes checkpoint codes to I/O port 0080h. If the computer cannot complete the boot process, a diagnostic card can be attached to the computer to read I/O port 0080h (Supermicro p/n AOC-LPC80-20).

For information on AMI updates, please refer to https://www.ami.com/products/.

7.5 Crash Dump Using the BMC Dashboard

In the event of a processor internal error (IERR) that crashes your system, you may want to provide information to support staff. You can download a crash dump of status information using the BMC Dashboard. The BMC manual is available at the following page:

https://www.supermicro.com/manuals/other/BMC_Users_Guide_X12_H12.pdf

Check Error Log

1. Access the BMC web interface.
2. Click the **Server Health** tab, then **Event Log** to verify an IERR error.

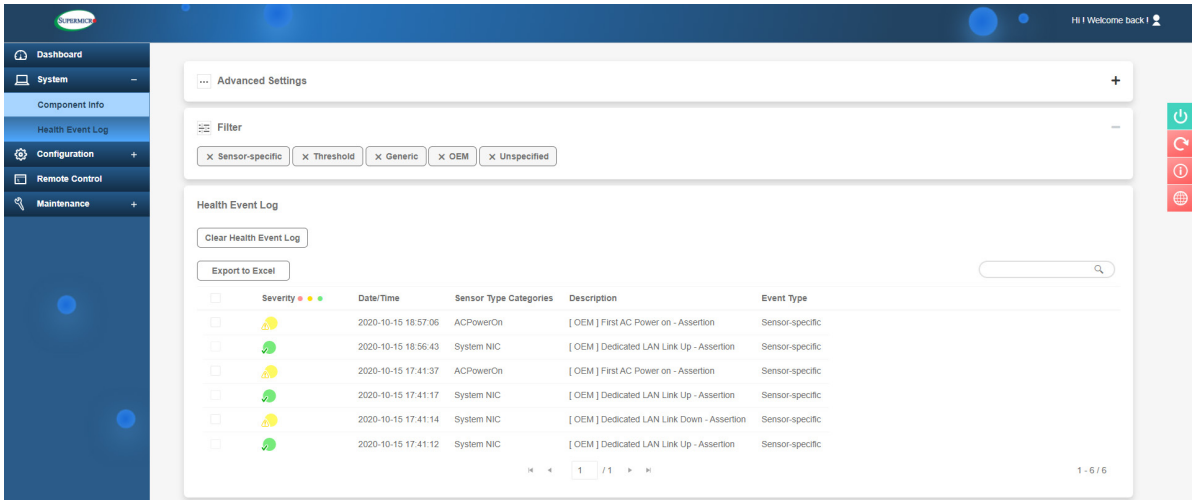


Figure 7-4. BMC Event Log

In the event of an IERR, the BMC executes a crash dump. You must download the crash dump and save it.

7.6 UEFI BIOS Recovery

Warning: Do not upgrade the BIOS unless your system has a BIOS-related issue. Flashing the wrong BIOS can cause irreparable damage to the system. In no event shall Supermicro be liable for direct, indirect, special, incidental, or consequential damages arising from a BIOS update. If you do update the BIOS, do not shut down or reset the system while the BIOS is updating to avoid possible boot failure.

Overview

The Unified Extensible Firmware Interface (UEFI) provides a software-based interface between the operating system and the platform firmware in the pre-boot environment. The UEFI specification supports an architecture-independent mechanism that will allow the UEFI OS loader stored in an add-on card to boot the system. The UEFI offers clean, hands-off management to a computer during system boot.

Recovering the UEFI BIOS Image

A UEFI BIOS flash chip consists of a recovery BIOS block and a main BIOS block (a main BIOS image). The recovery block contains critical BIOS codes, including memory detection and recovery codes for the user to flash a healthy BIOS image if the original main BIOS image is corrupted. When the system power is turned on, the recovery block codes execute first. Once this process is complete, the main BIOS code will continue with system initialization and the remaining POST (Power-On Self-Test) routines.

Note 1: Follow the BIOS recovery instructions below for BIOS recovery when the main BIOS block crashes.

Note 2: When the BIOS recovery block crashes, you will need to follow the procedures to make a Returned Merchandise Authorization (RMA) request. Also, you may use the Supermicro Update Manager (SUM) Out-of-Band (https://www.supermicro.com.tw/products/nfo/SMS_SUM.cfm) to reflash the BIOS.

Recovering the Main BIOS Block with a USB Device

This feature allows the user to recover the main BIOS image using a USB-attached device without additional utilities used. A USB flash device such as a USB Flash Drive, or a USB CD/DVD ROM/RW device can be used for this purpose. However, a USB Hard Disk drive cannot be used for BIOS recovery at this time.

The file system supported by the recovery block is FAT (including FAT12, FAT16, and FAT32) which is installed on a bootable or non-bootable USB-attached device. However, the BIOS might need several minutes to locate the SUPER.ROM file if the media size becomes too large due to the huge volumes of folders and files stored in the device.

To perform UEFI BIOS recovery using a USB-attached device, follow the instructions below.

1. Using a different machine, copy the "Super.ROM" binary image file into the Root "\" directory of a USB device or a writable CD/DVD.

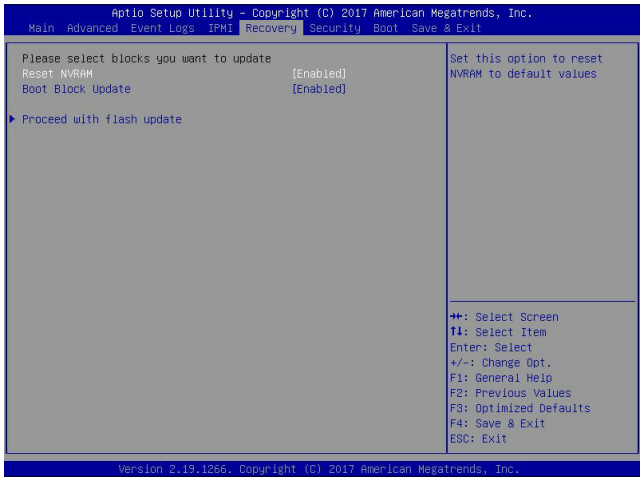
   Note 1: If you cannot locate the "Super.ROM" file in your drive disk, visit our website at https://www.supermicro.com to download the BIOS package. Extract the BIOS binary image into a USB flash device and rename it "Super.ROM" for the BIOS recovery use.

   Note 2: Before recovering the main BIOS image, confirm that the "Super.ROM" binary image file you download is the same version or a close version meant for your motherboard.

2. Insert the USB device that contains the new BIOS image ("Super.ROM") into your USB drive and reset the system when the following screen appears.

3. After locating the healthy BIOS binary image, the system will enter the BIOS Recovery menu as shown below.

Note: At this point, you may decide if you want to start the BIOS recovery. If you decide to proceed with BIOS recovery, follow the procedures below.

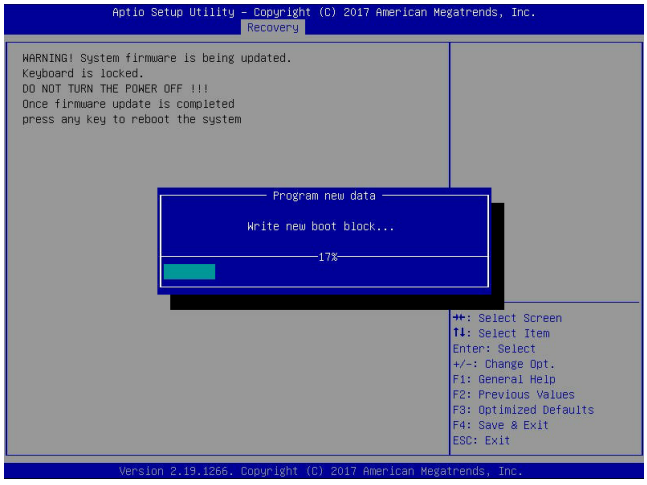


4. When the screen as shown above displays, use the arrow keys to select the item "Proceed with flash update" and press the <Enter> key. You will see the BIOS recovery progress as shown in the screen below.

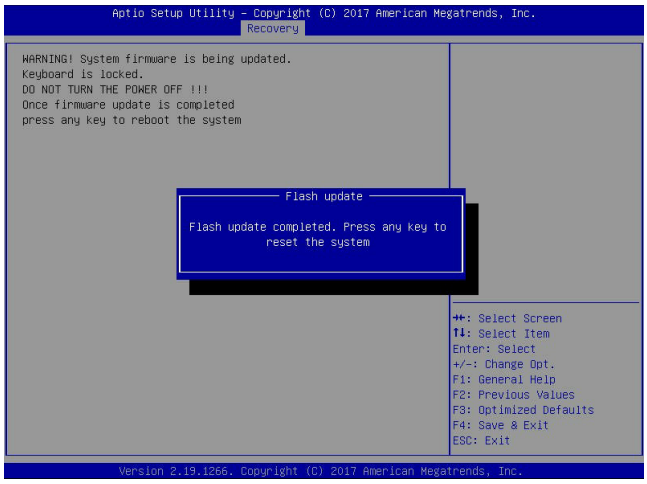
   Note: *Do not interrupt the BIOS flashing process until it has completed*.

5. After the BIOS recovery process is complete, press any key to reboot the system.

6. Using a different system, extract the BIOS package into a USB flash drive.

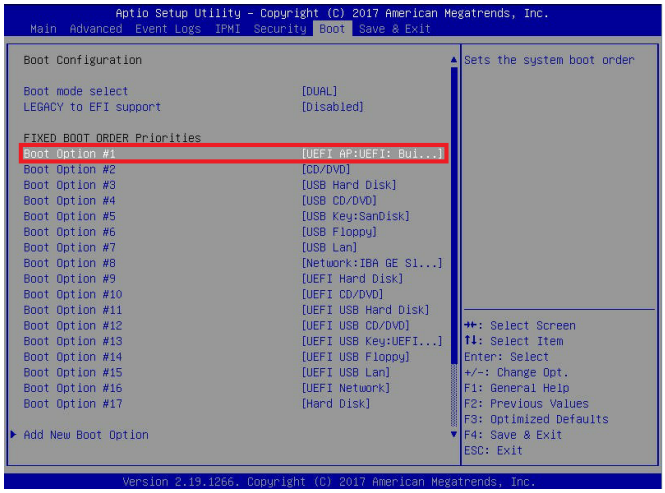


7. Press <Del> continuously during system boot to enter the BIOS Setup utility. From the top of the tool bar, select Boot to enter the submenu. From the submenu list, select Boot

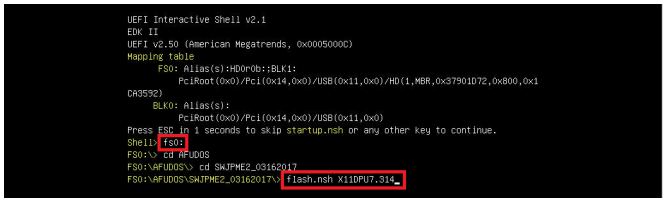


Option #1 as shown below. Then, set Boot Option #1 to [UEFI AP:UEFI: Built-in EFI Shell]. Press <F4> to save the settings and exit the BIOS Setup utility.

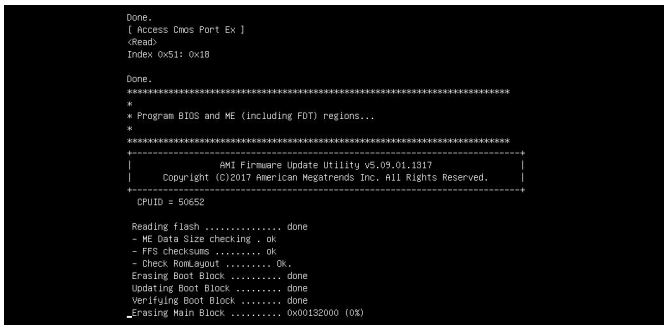
8. When the UEFI Shell prompt appears, type fs# to change the device directory path. Go to the directory that contains the BIOS package you extracted earlier from Step 6. Enter flash.nsh BIOSname.### at the prompt to start the BIOS update process.



Note: *Do not interrupt this process* until the BIOS flashing is complete.

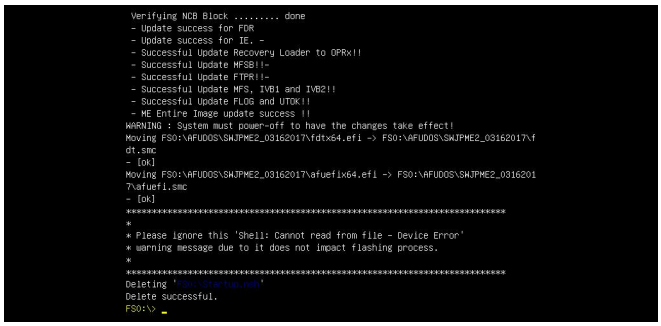


9. The screen above indicates that the BIOS update process is complete. When you see the screen above, unplug the AC power cable from the power supply, clear CMOS, and plug



the AC power cable in the power supply again to power on the system.

10. Press <Del> continuously to enter the BIOS Setup utility.



11. Press <F3> to load the default settings.

12. After loading the default settings, press <F4> to save the settings and exit the BIOS Setup utility.

7.7 CMOS Clear

JBT1 is used to clear CMOS, which will also clear any passwords. Instead of pins, this jumper consists of contact pads to prevent accidentally clearing the contents of CMOS.

To Clear CMOS

1. First power down the system completely as described in Section 3.1.
2. Remove the cover of the chassis to access the motherboard as described in Section 3.2.
3. Remove the onboard battery from the motherboard as described in Section 3.5.
4. Short the CMOS pads with a metal object such as a small screwdriver for at least four seconds.

JBT1 contact pads

5. Remove the screwdriver or shorting device.
6. Replace the onboard battery and chassis cover, and reconnect the power cords, then power on the system.

Notes: Clearing CMOS will also clear all passwords.

Do not use the PW_ON connector to clear CMOS.

7.8 BMC Reset

The BMC can be reset using the UID button. First, move the JRU1 jumper to pins 1/2 (for details, see Section 4.4).

- Reset: Press and hold the UID button. After six seconds, the LED blinks at 2 Hz. The BMC resets and the reset duration is approximately 250 ms. Then the BMC starts to boot.
- Restore factory default configuration: Hold the button for twelve seconds. The LED blinks at 4 Hz while defaults are configured. **Note**: All BMC settings including username and password will be removed except the FRU and network settings.
- Firmware update: When the BMC firmware is being updated, the UID LED blinks at 10 Hz.

BMC Reset Options		
Event	**UID LED**	**BMC Heartbeat LED**
Reset	Blue, Blinks at 2 Hz	Green, solid
Restore Defaults	Blue, Blinks at 4 Hz	Off
Update	Blue, Blinks at 10 Hz	

7.9 Where to Get Replacement Components

If you need replacement parts for your system, to ensure the highest level of professional service and technical support, purchase exclusively from our Supermicro Authorized Distributors/System Integrators/Resellers. A list can be found at: https://www.supermicro.com. Click the "Where to Buy" tab.

7.10 Reporting an Issue

Technical Support Procedures

Before contacting Technical Support, please take the following steps. If your system was purchased through a distributor or reseller, please contact them for troubleshooting services. They have the best knowledge of your specific system configuration.

1. Please review the Troubleshooting Proedures in Section 7.3 of this manual and the Frequently Asked Questions on our website at https://www.supermicro.com/FAQ/index.php before contacting Technical Support.
2. BIOS upgrades can be downloaded from our website. **Note**: Not all BIOS can be flashed depending on the modifications to the boot block code.
3. If you still cannot resolve the problem, include the following information when contacting us for technical support:
   - System, motherboard, and chassis model numbers and PCB revision number
   - BIOS release date/version (this can be seen on the initial display when your system first boots up)
   - System configuration

An example of a Technical Support form is posted on https://www.supermicro.com. Distributors: For immediate assistance, please have your account number ready when contacting our technical support department by email.

Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online at https://www.supermicro.com/en/support/rma/.

Whenever possible, repack the chassis in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the chassis securely, using packaging material to surround the chassis so that it does not shift within the carton and become damaged during shipping.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Vendor Support Filing System

For issues related to Intel, use the Intel IPS filing system:

https://www.intel.com/content/www/us/en/design/support/ips/training/welcome.html

For issues related to Red Hat Enterprise Linux, since it is a subscription based OS, contact your account representative.

7.11 Feedback

Supermicro values your feedback as we strive to improve our customer experience in all facets of our business. To provide feedback on our manuals, please email us at techwriterteam@supermicro.com.

7.12 Contacting Supermicro

Headquarters

Address:	Super Micro Computer, Inc. 980 Rock Ave. San Jose, CA 95131 U.S.A.
Tel:	+1 (408) 503-8000
Fax:	+1 (408) 503-8008
Email:	marketing@supermicro.com (General Information) Sales-USA@supermicro.com (Sales Inquiries) Government_Sales-USA@supermicro.com (Gov. Sales Inquiries) support@supermicro.com (Technical Support) RMA@supermicro.com (RMA Support) Webmaster@supermicro.com (Webmaster)
Website:	https://www.supermicro.com

Europe

Address:	Super Micro Computer B.V. Het Sterrenbeeld 28, 5215 ML 's-Hertogenbosch, The Netherlands
Tel:	+31 (0) 73-6400390
Fax:	+31 (0) 73-6416525
Email:	Sales_Europe@supermicro.com (Sales Inquiries) Support_Europe@supermicro.com (Technical Support) RMA_Europe@supermicro.com (RMA Support)
Website:	https://www.supermicro.nl

Asia-Pacific

Address:	Super Micro Computer, Inc. 3F, No. 150, Jian 1st Rd. Zhonghe Dist., New Taipei City 235 Taiwan (R.O.C)
Tel:	+886-(2) 8226-3990
Fax:	+886-(2) 8226-3992
Email:	Sales-Asia@supermicro.com.tw (Sales Inquiries) Support@supermicro.com.tw (Technical Support) RMA@supermicro.com.tw (RMA Support)
Website:	https://www.supermicro.com.tw

Appendix A

Standardized Warning Statements for AC Systems

About Standardized Warning Statements

The following statements are industry standard warnings, provided to warn the user of situations which have the potential for bodily injury. Should you have questions or experience difficulty, contact Supermicro's Technical Support department for assistance. Only certified technicians should attempt to install or configure components.

Read this appendix in its entirety before installing or configuring components in the Supermicro chassis.

These warnings may also be found on our website at https://www.supermicro.com/about/policies/safety_information.cfm.

Warning Definition

Warning! This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

警告の定義

この警告サインは危険を意味します。

人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、

電気回路に含まれる危険性に注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危险。

您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾的声明号码找到此设备的安全性警告说明的翻译文本。

此警告符號代表危險。

您正處於可能身體可能會受損傷的工作環境中。在您使用任何設備之前，請注意觸電的危險，並且要熟悉預防事故發生的標準工作程序。請依照每一注意事項後的號碼找到相關的翻譯說明內容。

Warnung

WICHTIGE SICHERHEITSHINWEISE

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES.

IMPORTANTES INFORMATIONS DE SÉCURITÉ

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS.

תקנון הצהרות אזהרה

הצהרות הבאות הן אזהרות על פי תקני התעשייה, על מנת להזהיר את המשתמש מפני חבלה פיזית אפשרית. במידה ויש שאלות או היתקלות בבעיה כלשהי, יש ליצור קשר עם מחלקת תמיכה טכנית של סופרמיקרו. טכנאים מוסמכים בלבד רשאים להתקין או להגדיר את הרכיבים.

יש לקרוא את הנספח במלואו לפני התקנת או הגדרת הרכיבים במארזי סופרמיקרו.

ا كً ف حالة وٌكي أى تتسبب ف اصابة جسد ةٌ هذا الزهز عٌ خطز !تحذ زٌ .
قبل أى تعول على أي هعذات،كي على علن بالوخاطز ال ٌأجوة عي الذوائز
الكهزبائ ةٍ
وكي على درا ةٌ بالووارسات البقائ ةٍ لو عٌ وقع أي حادث
استخذم رقن الب إٍى الو صٌص ف هًا ةٌ كل تحذ زٌ للعشر تزجوتها

안전을 위한 주의사항

경고!

이 경고 기호는 위험이 있음을 알려 줍니다. 작업자의 신체에 부상을 야기 할 수 있는 상태에 있게 됩니다. 모든 장비에 대한 작업을 수행하기 전에 전기회로와 관련된 위험요소들을 확인하시고 사전에 사고를 방지할 수 있도록 표준 작업절차를 준수해 주시기 바랍니다.

해당 번역문을 찾기 위해 각 경고의 마지막 부분에 제공된 경고문 번호를 참조하십시오

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

Dit waarschuwings symbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij een elektrische installatie betrokken risico's en dient u op de hoogte te zijn van de standaard procedures om ongelukken te voorkomen. Gebruik de nummers aan het eind van elke waarschuwing om deze te herleiden naar de desbetreffende locatie.

BEWAAR DEZE INSTRUCTIES

Installation Instructions

Warning! Read the installation instructions before connecting the system to the power source.

設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

警告

将此系统连接电源前,请先阅读安装说明。

警告

將系統與電源連接前，請先閱讀安裝說明。

Warnung

Vor dem Anschließen des Systems an die Stromquelle die Installationsanweisungen lesen.

¡Advertencia!

Lea las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

Attention

Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

Raadpleeg de installatie-instructies voordat u het systeem op de voedingsbron aansluit.

Circuit Breaker

Warning! This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250 V, 20 A.

サーキット・ブレーカー

この製品は、短絡（過電流）保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告

此产品的短路(过载电流)保护由建筑物的供电系统提供,确保短路保护设备的额定电流不大于250V,20A。

警告

此產品的短路(過載電流)保護由建築物的供電系統提供,確保短路保護設備的額定電流不大於250V,20A。

Warnung

Dieses Produkt ist darauf angewiesen, dass im Gebäude ein Kurzschluss- bzw. Überstromschutz installiert ist. Stellen Sie sicher, dass der Nennwert der Schutzvorrichtung nicht mehr als: 250 V, 20 A beträgt.

¡Advertencia!

Este equipo utiliza el sistema de protección contra cortocircuitos (o sobrecorrientes) del edificio. Asegúrese de que el dispositivo de protección no sea superior a: 250 V, 20 A.

Attention

Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifiez que le courant nominal du dispositif de protection n'est pas supérieur à :250 V, 20 A.

מוצר זה מסתמך על הגנה המותקנת במבנים למניעת קצר חשמלי. יש לוודא כי
המכשיר המגן מפני הקצר החשמלי הוא לא יותר מ-250V, 20A

هذا المنتج يعتمد على معداث الحمايت مه الدوائرالقصيرة التي تم تثبيتها في
المبنى
تأكد من أن تقييم الجهاز الوقائي ليس أكثر من : 20A, 250V

경고!

이 제품은 전원의 단락(과전류)방지에 대해서 전적으로 건물의 관련 설비에 의존합니다.
보호장치의 정격이 반드시 250V(볼트), 20A(암페어)를 초과하지 않도록 해야 합니다.

Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw electrische installatie. Controleer of het beveiligde aparaat niet groter gedimensioneerd is dan 250V, 20A.

Power Disconnection Warning

Warning! The system must be disconnected from all sources of power and the power cord removed from the power supply module(s) before accessing the chassis interior to install or remove system components (except for hot-swap components).

電源切断の警告

システムコンポーネントの取り付けまたは取り外しのために、シャーシー内部にアクセスするには、

システムの電源はすべてのソースから切断され、電源コードは電源モジュールから取り外す必要があります。

警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

Warnung

Das System muss von allen Quellen der Energie und vom Netzanschlusskabel getrennt sein, das von den Spg.Versorgungsteilmodulen entfernt wird, bevor es auf den Chassisinnenraum zurückgreift, um Systemsbestandteile anzubringen oder zu entfernen.

¡Advertencia!

El sistema debe ser disconnected de todas las fuentes de energía y del cable eléctrico quitado de los módulos de fuente de alimentación antes de tener acceso el interior del chasis para instalar o para quitar componentes de sistema.

Attention

Le système doit être débranché de toutes les sources de puissance ainsi que de son cordon d'alimentation secteur avant d'accéder à l'intérieur du chassis pour installer ou enlever des composants de systéme.

אזהרה מפני ניתוק חשמלי

!אזהרה

יש לנתק את המערכת מכל מקורות החשמל ויש להסיר את כבל החשמלי מהספק
.לפני גישה לחלק הפנימי של המארז לצורך התקנת או הסרת רכיבים

يجب فصم اننظاو من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد
انطاقت قبم
انصل إنى انمناطق انداخهيت نههيكم نتثبيج أو إزانت مكناث الجهاز

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 섀시 내부에 접근하기 전에 반드시 전원 공급장치로부터 연결되어있는 모든 전원과 전기코드를 분리해주어야 합니다.

Waarschuwing

Voordat u toegang neemt tot het binnenwerk van de behuizing voor het installeren of verwijderen van systeem onderdelen, dient u alle spanningsbronnen en alle stroomkabels aangesloten op de voeding(en) van de behuizing te verwijderen

Equipment Installation

Warning! Only authorized personnel and qualified service persons should be allowed to install, replace, or service this equipment.

機器の設置

トレーニングを受け認定された人だけがこの装置の設置、交換、またはサービスを許可されています。

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

Nur autorisiertes Personal und qualifizierte Servicetechniker dürfen dieses Gerät installieren, austauschen oder warten..

¡Advertencia!

Sólo el personal autorizado y el personal de servicio calificado deben poder instalar, reemplazar o dar servicio a este equipo.

Attention

Seul le personnel autorisé et le personnel de maintenance qualifié doivent être autorisés à installer, remplacer ou entretenir cet équipement..

אזהרה!

יש לאפשר רק צוות מורשה ואנשי שירות מוסמכים להתקין, להחליף או לטפל בציוד זה.

ينبغي السماح فقط للموظفين المعتمدين وأفراد الخدمة المؤهلين بتركيب هذا الجهاز أو استبداله أو صيانته.

경고!

승인된 직원과 자격을 갖춘 서비스 담당자만이 이 장비를 설치, 교체 또는 서비스할 수 있습니다.

Waarschuwing

Alleen geautoriseerd personeel en gekwalificeerd onderhoudspersoneel mag deze apparatuur installeren, vervangen of onderhouden..

Rack Stability Hazard

Warning! Stability hazard. The rack may tip over causing serious personal injury. Before extending the rack to the installation position, read the installation instructions.

ファンの警告

安定性に危険があります。ラックが転倒して、重大な人身事故を引き起こす可能性があります。ラックを設置位置まで伸ばす前に、設置手順をお読みください。設置位置にあるスライド レールに取り付けられた機器に負荷をかけないでください。スライド レールに取り付けられた機器を設置位置に放置しないでください。

警告

稳定性危险。机架可能会翻倒，造成严重的人身伤害。在将机架延伸到安装位置之前，请阅读安装说明。请勿在安装位置对滑轨安装的设备施加任何负载。请勿将滑轨安装的设备留在安装位置。

警告

穩定性危險。機架可能會翻倒，造成嚴重的人身傷害。將機架延伸至安裝位置前，請先閱讀安裝說明。請勿在安裝位置的滑軌安裝設備上放置任何負載。請勿將滑軌安裝設備留在安裝位置。

Warnung

Gefahr der Instabilität. Das Rack kann umkippen und schwere Verletzungen verursachen. Lesen Sie die Installationsanweisungen, bevor Sie das Rack in die Einbauposition ausfahren. Belasten Sie die auf den Gleitschienen montierten Geräte nicht in der Einbauposition. Lassen Sie die auf den Gleitschienen montierten Geräte nicht in der Einbauposition.

¡Advertencia!

Peligro de inestabilidad. El rack podría volcarse y causar lesiones personales graves. Antes de extender el rack a la posición de instalación, lea las instrucciones de instalación. No coloque ninguna carga sobre el equipo montado sobre rieles deslizantes en la posición de instalación. No deje el equipo montado sobre rieles deslizantes en la posición de instalación

Sólo el personal autorizado y el personal de servicio calificado deben poder instalar, reemplazar o dar servicio a este equipo.

Avertissement!

Danger d’instabilité. Le rack peut basculer et provoquer des blessures corporelles graves. Avant d’étendre le rack en position d’installation, lire les instructions d’installation. Ne pas charger l’équipement monté sur rail de glissière en position d’installation. Ne pas laisser l’équipement monté sur rail de glissière en position d’installation.

אזהרה!

סכנת חוסר יציבות

המתלה עלול להתהפך ולגרום לפציעה חמורה

לפני הארכת המתלה למצב ההתקנה, קרא את הוראות ההתקנה

אין להעמיס כל עומס על הציוד המותקן על מסילת ההחלקה במצב ההתקנה

אל תשאיר את הציוד המותקן על מסילת ההחלקה במצב ההתקנה

تحذير.خطر عدم الاستقرار.قد ينقلب الرف مسبباً إصابات جسدية خطيرة.قبل تمديد الرف إلى موضع التركيب،! اقرأ تعليمات التركيب.لا تضع أي حمولة على الجهاز المثبت على سكة الانزلاق في موضع التركيب.لا تترك الجهاز .المثبت على سكة الانزلاق في موضع التركيب

경고!

안정성 위험. 랙이 넘어져 심각한 개인 부상을 입을 수 있습니다. 랙을 설치 위치까지 확장하기 전에 설치 지침을 읽으십시오. 설치 위치에서 슬라이드 레일 장착 장비에 하중을 가하지 마십시오. 슬라이드 레일 장착 장비를 설치 위치에 두지 마십시오.

Waarschuwing

Gevaar voor instabiliteit. Het rek kan kantelen en ernstig persoonlijk letsel veroorzaken. Lees de installatie-instructies voordat u het rek uitschuift naar de installatiepositie. Plaats geen last op de op de glijrail gemonteerde apparatuur in de installatiepositie. Laat de op de glijrail gemonteerde apparatuur niet in de installatiepositie staan.

Restricted Area

Warning! This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. (This warning does not apply to workstations).

アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

アクセス制限区域は、特別なツール、鍵と錠前、その他のセキュリティの手段を用いてのみ出入りが可能です。

警告

此部件应安装在限制进出的场所，限制进出的场所指只能通过使用特殊工具、锁和钥匙或其它安全手段进出的场所。

警告

此裝置僅限安裝於進出管制區域，進出管制區域係指僅能以特殊工具、鎖頭及鑰匙或其他安全方式才能進入的區域。

Warnung

Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Der Zutritt zu derartigen Bereichen ist nur mit einem Spezialwerkzeug, Schloss und Schlüssel oder einer sonstigen Sicherheitsvorkehrung möglich.

¡Advertencia!

Esta unidad ha sido diseñada para instalación en áreas de acceso restringido. Sólo puede obtenerse acceso a una de estas áreas mediante la utilización de una herramienta especial, cerradura con llave u otro medio de seguridad.

Attention

Cet appareil doit être installée dans des zones d'accès réservés. L'accès à une zone d'accès réservé n'est possible qu'en utilisant un outil spécial, un mécanisme de verrouillage et une clé, ou tout autre moyen de sécurité.

אזור עם גישה מוגבלת

אזהרה!

יש להתקין את היחידה באזורים שיש בהם הגבלת גישה. הגישה ניתנת בעזרת
'כלי אבטחה בלבד)מפתח, מנעול וכד.)

تخصيص هذه انحذة نترك بُها ف مناطق محظورة تم .
،مَكن انصبل إن منطقت محظورة فقط من خلال استخذاو أداة خاصت
أو أ وس هُت أخري نلالأمما قفم ومفتاح

경고!

이 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 특수도구, 잠금 장치 및 키, 또는 기타 보안 수단을 통해서만 접근 제한 구역에 들어갈 수 있습니다.

Waarschuwing

Dit apparaat is bedoeld voor installatie in gebieden met een beperkte toegang. Toegang tot dergelijke gebieden kunnen alleen verkregen worden door gebruik te maken van speciaal gereedschap, slot en sleutel of andere veiligheidsmaatregelen.

Battery Handling

CAUTION: There is risk of explosion if the battery is replaced by an incorrect type. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions

電池の取り扱い

バッテリーを間違ったタイプに交換すると爆発の危険があります。交換する電池はメーカーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従って処分して下さい。

警告

如果更换的电池类型不正确，则存在爆炸危险。请只使用同类电池或制造商推荐的功能相当的电池更换原有电池。请按制造商的说明处理废旧电池。

警告

如果更換的電池類型不正確，則有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有電池。請按照製造商的說明指示處理廢棄舊電池。

WARNUNG

Es besteht Explosionsgefahr, wenn die Batterie durch einen falschen Typ ersetzt wird. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

ATTENTION

Il existe un risque d'explosion si la batterie est remplacée par un type incorrect. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

ADVERTENCIA

Existe riesgo de explosión si la batería se reemplaza por un tipo incorrecto. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

!אזהרה

קיימת סכנת פיצוץ אם הסוללה תוחלף בסוג שגוי. יש להחליף

את הסוללה בסוג התואם מחברת יצרן מומלצת.

סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

.هناك خطر الانفجار إذا تم استبدال البطارية بنوع غير صحيح
اسحبذال البطارية
فقط بنفس النع أو ما يعادلها مما أوصث به الشرمة المصنعة
جخلص من البطاريات المسحعملة وفقا لحعليمات الشرمة الصانعة

경고!

배터리를 잘못된 종류로 교체하면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

WAARSCHUWING

Er bestaat explosiegevaar als de batterij wordt vervangen door een verkeerd type. Vervang de batterij slechts met hetzelfde of een equivalent type die door de fabrikant aanbevolen wordt. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften afgevoerd te worden.

Redundant Power Supplies

Warning! This unit might have more than one power supply connection. All connections must be removed to de-energize the unit.

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告

此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告

此裝置連接的電源可能不只一個，必須切斷所有電源才能停止對該裝置的供電。

Warnung

Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein trom zugeführt wird, müssen alle Verbindungen entfernt werden.

¡Advertencia!

Puede que esta unidad tenga más de una conexión para fuentes de alimentación. Para cortar por completo el suministro de energía, deben desconectarse todas las conexiones.

Attention

Cette unité peut avoir plus d'une connexion d'alimentation. Pour supprimer toute tension et tout courant électrique de l'unité, toutes les connexions d'alimentation doivent être débranchées.

אם קיים יותר מספק אחד

אזהרה!

ליחדה יש יותר מחיבור אחד של ספק. יש להסיר את כל החיבורים על מנת לרוקן את היחידה.

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة .

يجب إزالة كافة الاتصالات لعسل الوحدة عن الكهرباء

경고!

이 장치에는 한 개 이상의 전원 공급 단자가 연결되어 있을 수 있습니다. 이 장치에 전원을 차단하기 위해서는 모든 연결 단자를 제거해야만 합니다.

Waarschuwing

Deze eenheid kan meer dan één stroomtoevoeraansluiting bevatten. Alle aansluitingen dienen verwijderd te worden om het apparaat stroomloos te maken.

Backplane Voltage

Warning! Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing.

バックプレーンの電圧

システムの稼働中は危険な電圧または電力が、バックプレーン上にかかっています。

修理する際には注意ください。

警告

当系统正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告

當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

Warnung

Wenn das System in Betrieb ist, treten auf der Rückwandplatine gefährliche Spannungen oder Energien auf. Vorsicht bei der Wartung.

¡Advertencia!

Cuando el sistema está en funcionamiento, el voltaje del plano trasero es peligroso. Tenga cuidado cuando lo revise.

Attention

Lorsque le système est en fonctionnement, des tensions électriques circulent sur le fond de panier. Prendre des précautions lors de la maintenance.

מתח בפנל האחורי

אזהרה!

קיימת סכנת מתח בפנל האחורי בזמן תפעול המערכת. יש להיזהר במהלך העבודה.

هناك خطر مه التيار الكهزبائي أوالطاقة المجبدة على اللحة
عندما يكن النظام يعمل كه حذرا عند خدمة هذا الجهاس

경고!
시스템이 동작 중일 때 후면판 (Backplane)에는 위험한 전압이나 에너지가 발생 합니다. 서비스 작업 시 주의하십시오.

Waarschuwing
Een gevaarlijke spanning of energie is aanwezig op de backplane wanneer het systeem in gebruik is. Voorzichtigheid is geboden tijdens het onderhoud.

Comply with Local and National Electrical Codes

Warning! Installation of the equipment must comply with local and national electrical codes.

地方および国の電気規格に準拠
機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告
设备安装必须符合本地与本国电气法规。

警告
設備安裝必須符合本地與本國電氣法規。

Warnung
Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!
La instalacion del equipo debe cumplir con las normas de electricidad locales y nacionales.

Attention
L'équipement doit être installé conformément aux normes électriques nationales et locales.

תיאום חוקי החשמל הארצי
אזהרה!
התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تركيب المعدات الكهربائية يجب أن يمتثل للقاويه المحلية والبطية المتعلقة
بالكهرباء

경고!
현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing
Bij installatie van de apparatuur moet worden voldaan aan de lokale en nationale elektriciteitsvoorschriften.

Product Disposal

Warning! Ultimate disposal of this product should be handled according to all national laws and regulations.

製品の廃棄
この製品を廃棄処分する場合、国の関係する全ての法律・条例に従い処理する必要があります。

警告
本产品的废弃处理应根据所有国家的法律和规章进行。

警告
本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung
Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

¡Advertencia!
Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention

La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

סילוק המוצר

אזהרה!

סילוק סופי של מוצר זה חייב להיות בהתאם להנחיות וחוקי המדינה.

التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القانين واللائح البطنية عند

경고!

이 제품은 해당 국가의 관련 법규 및 규정에 따라 폐기되어야 합니다.

Waarschuwing

De uiteindelijke verwijdering van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.

Fan Warning

Warning! Hazardous moving parts. Keep away from moving fan blades. The fans might still be turning when you remove the fan assembly from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing.

ファンの警告

警告!回転部品に注意。運転中は回転部(羽根)に触れないでください。シャーシから冷却ファン装置を取り外した際、ファンがまだ回転している可能性があります。ファンの開口部に、指、ドライバー、およびその他のものを近づけないで下さい。

警告!

警告！危险的可移动性零件。请务必与转动的风扇叶片保持距离。 当您从机架移除风扇装置，风扇可能仍在转动。小心不要将手指、螺丝起子和其他物品太靠近风扇

警告

危險的可移動性零件。請務必與轉動的風扇葉片保持距離。 當您從機架移除風扇裝置，風扇可能仍在轉動。小心不要將手指、螺絲起子和其他物品太靠近風扇。

Warnung

Gefährlich Bewegende Teile. Von den bewegenden Lüfterblätter fern halten. Die Lüfter drehen sich u. U. noch, wenn die Lüfterbaugruppe aus dem Chassis genommen wird. Halten Sie Finger, Schraubendreher und andere Gegenstände von den Öffnungen des Lüftergehäuses entfernt.

¡Advertencia!

Riesgo de piezas móviles. Mantener alejado de las aspas del ventilador. Los ventiladores podran dar vuelta cuando usted quite ell montaje del ventilador del chasis. Mandtenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador

Attention

Pieces mobiles dangereuses. Se tenir a l'ecart des lames du ventilateur Il est possible que les ventilateurs soient toujours en rotation lorsque vous retirerez le bloc ventilateur du châssis. Prenez garde à ce que doigts, tournevis et autres objets soient éloignés du logement du bloc ventilateur.

אזהרה!

חלקים נעים מסוכנים. התרחק מלהבי המאוורר בפעולהכאשר מסירים את חלקי
המאוורר מהמארז, יתכן והמאוררים עדיין עובדים. יש להרחיק למרחק בטוח את
האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר

تحذير! أجزاء متحركة خطرة. ابتعد عن شفرات المروحة المتحركة.من الممكن أن
المراوح لا تزال تدورعند إزالة كتلة المروحة من الهيكل يجب إبقاء الأصابع
.ومفكات البراغي وغيرها من الأشياء بعيدا عن الفتحات في كتلة المروحة

경고!

움직이는 위험한 부품. 회전하는 송풍 날개에 접근하지 마세요. 섀시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조림품 외관의 열려있는 부분들로부터 손가락 및 스크류드라이버, 다른 물체들이 가까이 하지 않도록 배치해 주십시오.

Waarschuwing

Gevaarlijk bewegende onderdelen. Houd voldoende afstand tot de bewegende ventilatorbladen. Het is mogelijk dat de ventilator nog draait tijdens het verwijderen van het ventilatorsamenstel uit het chassis. Houd uw vingers, schroevendraaiers en eventuele andere voorwerpen uit de buurt van de openingen in de ventilatorbehuizing.

Power Cable and AC Adapter

Warning! When installing the product, use the provided or designated connection cables, power cables and AC adaptors. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA -certified cables (that have UL/CSA shown on the cord) for any other electrical devices than products designated by Supermicro only.

電源コードとACアダプター

製品を設置する場合、提供または指定および購入された接続ケーブル、電源コードとACアダプターを 該当する地域の条例や安全基準に適合するコードサイズやプラグと共に使用下さい。他のケーブルやアダプタを使用すると故障や火災の原因になることがあります。

電気用品安全法は、ULまたはCSA認定のケーブル(UL/CSAマークがコードに表記)を Supermicroが指定する製品以外に使用することを禁止しています。

警告

安装此产品时,请使用本身提供的或指定的或采购的连接线,电源线和电源适配器，包含遵照当地法规和安全要求的合规的电源线尺寸和插头.使用其它线材或适配器可能会引起故障或火灾。除了Supermicro所指定的产品,电气用品和材料安全法律规定禁止
使用未经UL或CSA认证的线材。(线材上会显示UL/CSA符号)。

警告

安裝此產品時,請使用本身提供的或指定的或採購的連接線,電源線和電源適配器，包含遵照當地法規和安全要求的合規的電源線尺寸和插頭.使用其它線材或適配器可能會引起故障或火災。除了Supermicro所指定的產品,電氣用品和材料安全法律規定禁止
使用未經UL或CSA認證的線材。 (線材上會顯示UL/CSA符號)。

Warnung

Nutzen Sie beim Installieren des Produkts ausschließlich die von uns zur Verfügung gestellten Verbindungskabeln, Stromkabeln und/oder Adapater, die Ihre örtlichen Sicherheitsstandards einhalten. Der Gebrauch von anderen Kabeln und Adapter können Fehlfunktionen oder Feuer verursachen. Die Richtlinien untersagen das Nutzen von UL oder CAS zertifizierten Kabeln (mit UL/CSA gekennzeichnet), an Geräten oder Produkten die nicht mit Supermicro gekennzeichnet sind.

¡Advertencia!

Cuando instale el producto, utilice la conexión provista o designada o procure cables, Cables de alimentación y adaptadores de CA que cumplan con los códigos locales y los requisitos de seguridad, incluyendo el tamaño adecuado del cable y el enchufe. El uso de otros cables y adaptadores podría causar un mal funcionamiento o un incendio. La Ley de Seguridad de Aparatos Eléctricos y de Materiales prohíbe El uso de cables certificados por UL o CSA (que tienen el certificado UL / CSA en el código) para cualquier otros dispositivos eléctricos que los productos designados únicamente por Supermicro.

Attention

Lors de l'installation du produit, utilisez les cables de connection fournis ou désigné ou achetez des cables, cables de puissance et adaptateurs respectant les normes locales et les conditions de securite y compris les tailles de cables et les prises electriques appropries. L'utilisation d'autres cables et adaptateurs peut provoquer un dysfonctionnement ou un incendie. Appareils électroménagers et la Loi sur la Sécurité Matériel interdit l'utilisation de câbles certifies- UL ou CSA (qui ont UL ou CSA indiqué sur le code) pour tous les autres appareils électriques sauf les produits désignés par Supermicro seulement.

AC ימאתמו סיילמשח סילבכ

!הרהזא

ךרוצל ומאתוה וא ושכרנ רשא AC סימאתמו סיקפס ,סילבכב שמתשהל שי ,רצומה תא סיניקתמ רשאכ לכב שומיש . עקתהו לבכה לש הנוכנ הדימ ללוכ ,תוימוקמה תוחיטבה תושירדל ומאתוה רשאו ,הנקתהה למשחה יריש כמב שומישה יקוחל סאתהב .ילמשח רצק וא הלקתל סורגל לולע ,רחא גוסמ סאתמ וא לבכ לש דוק סהילע עיפומ רשאכ) CSA-ב וא UL -ב סיכמסומה סילבכב שמתשהל רוסיא סייק ,תוחיטבה יקוחו .דבלב Supermicro י"ע סאתוה רשא רצומב קר אלא ,רחא ילמשח רצומ לכ רובע UL/CSA)

عند تركيب المنتج، قم باستخدام التوصيلات المتوفرة أو المحددة أو قم بشراء الكابلات الكهربائية ومحولات التيار المتردد مع الالتزام بقوانين ومتطلبات السلامة المحلية بما في ذلك حجم الموصل والقابس السليم. استخدام أي كابلات ومحولات أخرى قد يتسبب في عطل أو حريق. يحظر قانون السلامة للأجهزة الكهربائية والمعدات استخدام الكابلات المعتمدة من قبل UL أو CSA لأي منتجات المعينة والمحددة من قبل Supermicro. والتي تحمل علامة (UL/CSA) مع أي معدات أخرى غير

전원 케이블 및 AC 어댑터

경고! 제품을 설치할 때 현지 코드 및 적절한 굵기의 코드와 플러그를 포함한 안전 요구 사항을 준수하여 제공되거나 지정된 연결 혹은 구매 케이블, 전원 케이블 및 AC 어댑터를 사용하십시오.

다른 케이블이나 어댑터를 사용하면 오작동이나 화재가 발생할 수 있습니다. 전기 용품 안전법은 UL 또는 CSA 인증 케이블 (코드에 UL / CSA가 표시된 케이블)을 Supermicro 가 지정한 제품 이외의 전기 장치에 사용하는 것을 금지합니다.

Stroomkabel en AC-Adapter

Waarschuwing! Bij het aansluiten van het Product uitsluitend gebruik maken van de geleverde Kabels of een andere geschikte aan te schaffen Aansluitmethode, deze moet altijd voldoen aan de lokale voorschriften en veiligheidsnormen, inclusief de juiste kabeldikte en stekker. Het gebruik van niet geschikte Kabels en/of Adapters kan een storing of brand veroorzaken. Wetgeving voor Elektrische apparatuur en Materiaalveiligheid verbied het gebruik van UL of CSA -gecertificeerde Kabels (met UL/CSA in de code) voor elke andere toepassing dan de door Supermicro hiervoor beoogde Producten.

Appendix B

System Specifications

Processors

Dual 4th and 5th Gen Intel Xeon Scalable processors in E (LGA-4677) sockets with four UPIs (16 GT/s max.) and a Thermal Design Power (TDP) of up to 350 W, (Support conditions apply to certain CPUs.)

Chipset

Intel PCH C741

BIOS

AMI SPI BIOS, Super Flash, EFI GUI, SPI dual/quad speed control, riser card auto detection support, RTC (Real Time Clock) wakeup, IPMIView, SMCIPMITOOL, IPMI CFG, SuperDoctor5, Redundatn power supply unit detection, SPM, SUM-OOB/ InBand

Memory

Supports up to 4 TB 3DS RDIMM/RDIMM DDR5 ECC memory
- 4th Gen: speeds of up to 4800 MT/s in 16 slots
- 5th Gen: speeds of up to 5600 MT/s in 16 slots

Storage Drives

Twelve 2.5/3.5" hot-swap hybrid front drive bays
Two hot-swappable 2.5" rear drive bays (*optional*)
Two onboard NVMe M.2 80 mm

PCI Expansion Slots

Six PCIe 5.0 full-height interchangeable x8/x16 half-length/full-length (see Section 3.10 for details)

Input/Output

Network: One or two AIOM modules (OCP 3.0 NIC)
BMC: One dedicated LAN port
USB: Two USB 3.0 ports
Video: One VGA port
COM: One serial port

Motherboard

X13DDW-A; Supermicro proprietary 12.30" (W) x 13.40" (L) (312.42 x 340.36 mm)

Chassis

LA26TS-R1K23AWP1; 2U Rackmount, (WxHxD) 17.2” x 3.5” x 25.5” (43.7 x 8.9 x 64.7 cm)

System Cooling

Three 80 x 80 x 38 mm, 13.5K RPM, middle cooling fans, two CPU heatsinks, one air shroud to direct air flow

Power Supply

(Default) **PWS-1K23A-1R**, 1200 W redundant modules, 80Plus Titanium level
Input:
100–127 VAC / 15 -12 A
200–240 VAC / 8.5 -7 A
200–240 VDC / 8.5 -7 A (For CCC only)
50–60 Hz
Output:
1000 W at 100–127 VAC
1200 W at 200–240 VAC
1200 W at 200–240 VDC (For CCC Only)
+12 V 100 A (1200 W) / 83 A (1000 W)
+5 VSB 4 A

(Optional) Model **PWS-1K68A-1R**, 1600 W redundant modules, 80Plus Titanium level
Input:
100–140 Vac /10 -7 A
180–240 Vac / 11 -8 A
50–60 Hz
Output:
800 W at 100–140 VAC
1600 W at 200–240 VAC
+12 V 133 A (1600 W) / 66 A (800 W)
+5 VSB 1 A

Operating Environment

Operating Temperature: 10º to 35º C (50º to 95º F)
Non-operating Temperature: -40º to 60º C (-40º to 140º F)
Operating Relative Humidity: 8% to 90% (non-condensing)
Non-operating Relative Humidity: 5% to 95% (non-condensing)

Certified Safety Models

Compliant with UL or CSA: LA26-R12X13, LA26-12, LA26-R16X13, LA26-16

Regulatory Compliance

FCC, ICES, CE, VCCI, RCM, UKCA, NRTL, CB, KCC, CCC, BIS

Perchlorate Warning

California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. “Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate”

Applied Directives, Standards

EMC/EMI: 2014/30/EU (EMC Directive)
Electromagnetic Compatibility Regulations 2016
FCC Part 15
ICES-003
VCCI-CISPR 32
AS/NZS CISPR 32
BS/EN55032
BS/EN55035
CISPR 32
CISPR 35
BS/EN 61000-3-2
BS/EN 61000-3-3
BS/EN 61000-4-2
BS/EN 61000-4-3
BS/EN 61000-4-4
BS/EN 61000-4-5
BS/EN 61000-4-6
BS/EN 61000-4-8
BS/EN 61000-4-11

Environment:
2011/65/EU (RoHS Directive)
EC 1907/2006 (REACH)
2012/19/EU (WEEE Directive)
California Proposition 65

Product Safety: 2014/35/EU (LVD Directive)
UL/CSA 62368-1 (USA and Canada)
Electrical Equipment (Safety) Regulations 2016
IEC/BS/EN 62368-1

この装置は、クラスＡ機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 **VCCI－A**

General Data Center Environmental Specifications

Particulate contamination specifications
- Air filtration: Data centers must be kept clean to Class 8 of ISO 14644-1 (ISO 2015). The air entering the data center should be filtered with a MERV 11 filter or better. The air within the data center should be continuously filtered with a MERV 8 filter or better.
- Conductive dust: Air should be free fo conductive dust, zinc whiskers, or other conductive particles.
- Corrrosive dust: Air should be free of corrosive dust.

Gaseous* contamination specifications
- Copper coupon corrosion rate: <300 Å/month per class G1 as defined by ANSI.ISA71.04-2013, reference by ASHRAE TC 9.9
- Silver coupon corrosion rate: <200 Å/month per class G1 as defined by ANSI.ISA71.04-2013, reference by ASHRAE TC 9.9
- *If testing with silver or copper coupons results in values less that 200 Å/month or 300 Å/month, respectively, then operating up to 70% relative humidity (RH) is acceptable. If the testing shows corrosion levels exceed these limits, then catalyst-type pollutants are probably present and RH should be driven to 50% or lower.

BSMI RoHS Statement

限用物質含有情況標示聲明書

Declaration of the Presence Condition of the Restricted Substances Marking

設備名稱: 伺服器/Server

Equipment name

型號（型式）： LA26-R12X13 (系列型號: LA26-R16X13, SYS-621C-TN12R)

Type designation (Type)

單元Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
機殼 (Chassis)	○	○	○	○	○	○
機殼風扇 (Chassis Fan)	-	○	○	○	○	○
線材 (Cable)	○	○	○	○	○	○
主機板 (Motherboard)	-	○	○	○	○	○
電源供應器 (Power Supply)	-	○	○	○	○	○
電源背板 (PDB)	-	○	○	○	○	○
硬碟 (SSD)	-	○	○	○	○	○
附加卡 (Add-on Card)	-	○	○	○	○	○

備考1.〝超出0.1 wt %〞及〝超出0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。

Note 1：“Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.

備考2.〝○〞係指該項限用物質之百分比含量未超出百分比含量基準值。

Note 2：“○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考3.〝-〞係指該項限用物質為排除項目。

Note 3：The “–” indicates that the restricted substance corresponds to the exemption.

警告: 為避免電磁干擾, 本產品不應安裝或使用於住宅環境。

輸入額定:

PWS-1K23A-1R
100-127V ~, 60-50Hz, 12-10A (x2)
200-240V ~, 60-50Hz, 8.5-7A (x2)

PWS-1K68A-1R
100-127V ~, 60-50Hz, 10-7A (x2)
200-240V ~, 60-50Hz, 10-8A (x2)

*使用者不能任意拆除或替換內部配備

*報驗義務人之姓名或名稱：美超微電腦股份有限公司

Statement of Volatility

The Statement of Volatility provides information about volatile and non-volatile components of the SYS-621C-TN12R. When power is removed from the system, non-volatile components retain their data, while volatile components lose their data.

SYS-621C-TN12R				
Device	**Reference**	**Volatility**	**User Data**	**Procedure to Clear**
X13DDW				
PCH	U3	YES	YES	Remove AC power and battery for five minutes
CPU VRM Controller	U51, U18, U27, U23, U50, U62, U70, U69	NO	NO	Use software and utility to erase
BIOS Flash	UM16	NO	NO	Use software and utility to erase
BMC Flash	UM13	NO	NO	Use software and utility to erase
BMC SDRAM	UM2	YES	YES	Remove AC power for two seconds
EMMC	U25	NO	YES	Use software and utility to erase
CPLD Chip	U9	NO	NO	Use programmer to erase
CPLD Dual Boot Flash	UM26	NO	NO	Not allowed to clear
BPN-NVME5-LA26A-S12				
LCMX03LF-2100C-5BG256C	U3	NO	NO	Use programmer to clear
W25X40CLSSIG	U131	NO	NO	Use programmer to clear
RSC-D2-666G5				
AT24C02D-SSHM-T	U5	NO	NO	Use software and utility to erase
RSC-DR-666G5				
AT24C02D-SSHM-T	U5	NO	NO	Use software and utility to erase
PWS-1K23A-1R				
UDC3138064RGCR	U601	NO	NO	Use programmer to clear
UCD3138RHAR	U10	NO	NO	Use programmer to clear