



A+ SERVER AS -2025HS-TNR



USER'S MANUAL

Revision 1.1

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Manual Revision 1.1

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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 the server. Installation and maintenance should be performed by experienced technicians only.

Please refer to the AS -2025HS-TNR server specifications page on our website for updates on supported memory, processors and operating systems (<http://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: <http://www.supermicro.com/support/manuals/>
- Product drivers and utilities: <https://www.supermicro.com/wdl>
- Product safety info: http://www.supermicro.com/about/policies/safety_information.cfm

If you have any questions, please contact our support team at:
support@supermicro.com

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

Secure Data Deletion

A secure data deletion tool designed to fully erase all data from storage devices can be found on our website: https://www.supermicro.com/about/policies/disclaimer.cfm?url=/wdl/utility/Lot9_Secure_Data_Deletion_Utility/

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.

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Chapter 1

Introduction

1.1 Overview

This chapter provides an outline of the functions and features of the SuperServer AS -2025HS-TNR. The following provides an overview of the specifications and capabilities.

System Overview	
Motherboard	H13DSH
Chassis	CSE-HS829-R1K63P-A
Processor	Dual AMD EPYC™ 9004 series processors in Socket SP5
Memory	Twenty-four DIMM slots, 6TB Reg. ECC DDR5 up to 4800MT/s
Storage	Twelve hot-swap 3.5" or 2.5" NVMe/SAS/SATA (Additional components are needed to enable the drive options.) Two M.2 NVMe PCIe 3.0 x4 in the 2280 and 22110 form factors for boot drives
Expansion Slots	Four PCIe 5.0 x16 slots or Eight PCIe 5.0 x8 slots or Three PCIe 5.0 x16 slots + two PCIe 5.0 x8 slots or Two PCIe 5.0 x16 slots + four PCIe 5.0 x8 slots or One PCIe 5.0 x16 slot + six PCIe 5.0 x8 slots
I/O Ports	One AIOM slot for flexible networking (OCP 3.0 compatible) One RJ45 dedicated BMC LAN port Two rear USB 3.0 ports One VGA port (rear)
System Cooling	Four 8-cm heavy duty fans with optimal fan speed control Two air shrouds
Power	Two redundant power supplies. Default: 1600 W (Titanium Level)
Form Factor	2U Rackmount 3.5 x 17.2 x 31.6 in. / 88.9 x 437 x 803 mm (HxWxD)

A Quick Reference Guide can be found on the [product page](#) of the Supermicro website.

The following safety models associated with the AS -2025HS-TNR have been certified as compliant with UL or CSA: HS829-R9H13, HS829-R12H13, HS829-R16H13, HS829-R20H13, HS829-R26H13, HS829-R13DH13, HS829-R16DH13, HS829-R20DH13, HS829-9, HS829-12, HS829-16, HS829-20, HS829-26, HS829-13D, HS829-16D, HS829-20.

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. System Front View

System Features: Front	
Item	Description
Control Panel	One control panel (see Control Panel for details)
Service Tag	Service Tag with BMC password

Logical Storage Drive Numbers	
Item	Description
0-11	Twelve 3.5" or 2.5" hot swap NVMe/SAS/SATA drive bays*

* Additional components are needed to enable the drive options.

Drive Carrier Indicators

Each drive carrier has two LED indicators: an activity indicator and a status indicator. In RAID configurations, the status indicator lights to indicate the status of the drive. In non-RAID configurations, the status indicator remains off. See the table below for details.

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
	Blue	Off	Idle SATA drive installed
	Green	Solid Green LED	Safe to remove NVMe device
	Amber	Blinking at 1Hz	Do not remove NVMe device

Control Panel

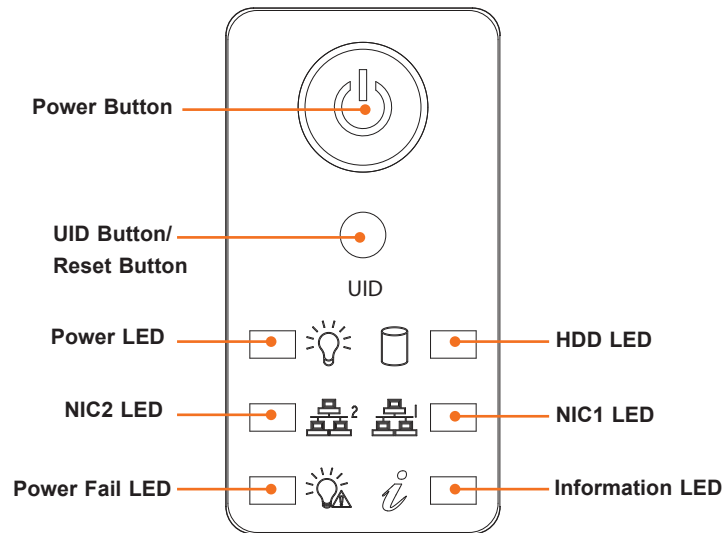


Figure 1-2. Control Panel

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/ Reset Button	The unit identification (UID) button turns on or off the blue light function of the Information LED. Press and hold the button to toggle the UID function in the information LED. Reset— Press and hold the button. After 6 seconds, the BMC resets. Restore factory default configuration— Hold the button for 12 seconds This button can also be used to reset the system, depending on the JRU1 settings.
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
NIC1 LED	Indicates network activity on odd numbered LAN ports. A1 (ports 1 and 3) and A2 (ports 1 and 3).
NIC2 LED	Indicates network activity on even numbered LAN ports. A1 (ports 2 and 4) and A2 (ports 2 and 4).
Power Fail LED	Indicates a power supply module has failed.
HDD LED	Indicates activity on the hard drive when flashing.
Information LED	Alerts operator to several states (noted in the table below).

Information (i) LED	
Color, Status	Description
Red, solid	An overheat condition has occurred.

(Table continued on next page)

Information (i) LED	
Color, Status	Description
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, solid, with Power LED blinking green	Fault detected
Blue and red, blinking at 10 Hz	Recovery mode
Blue, solid	UID has been activated locally to locate the server in a rack environment.
Blue, blinking at 1 Hz	UID has been activated using the BMC to locate the server in a rack environment.
Blue, blinking at 2 Hz	BMC is resetting.
Blue, blinking at 4 Hz	BMC is setting factory defaults.
Blue, blinking at 10 Hz with Power LED blinking green	BMC/BIOS firmware is updating.

Rear View

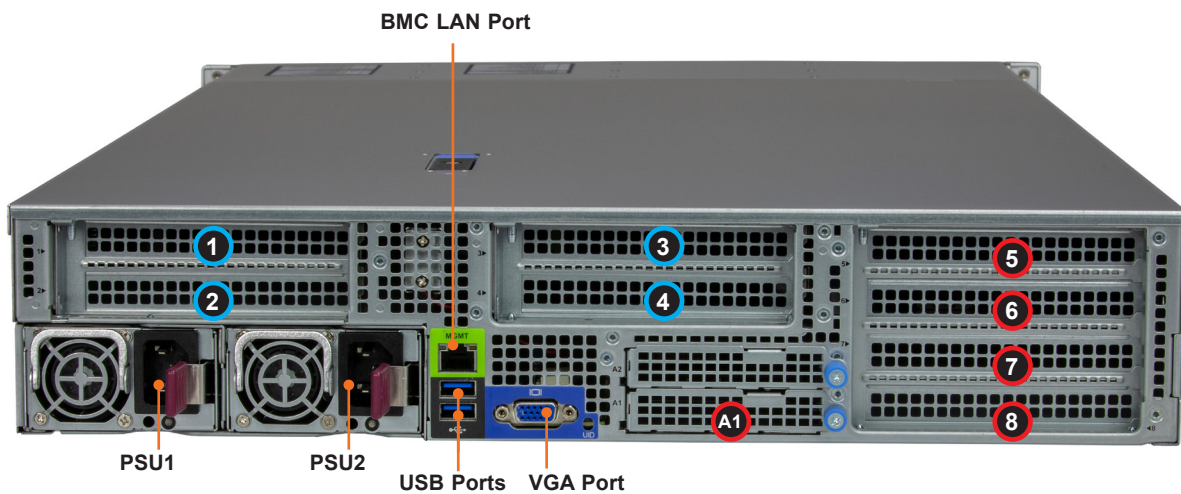


Figure 1-3. System Rear View

System Features: Rear	
Feature	Description
Power Supplies (PSU1 and PSU2)	Two 1600 W Titanium Level redundant power supply modules
VGA Port	Video port
USB Ports	Two USB 3.0 ports
BMC LAN Port	Dedicated port to access the BMC; for indicator details, see BMC LAN LEDs

Expansion Slot Locations	
Item	Description
1 to 4	Up to four optional PCIe 5.0 x8 or up to two PCIe 5.0 x16 full-height, full-length slots (CPU2)
5 to 8	Up to four optional PCIe 5.0 x8 or up to two PCIe 5.0 x16 full-height, full-length slots (CPU1)
A1	PCIe 5.0 x16 AIOM slot (NCSI)

Note: Some combinations of expansion slot options may not be available due to the limited number of PCIe lanes reserved for expansion slots. See [Section 3.8](#) for details.

Power Supply Indicators

Power Supply Indicators	
LED Color and State	Power Supply Condition
Solid Green	Indicates that the power supply is on
Blinking Green	Indicates that the power supply is plugged in and turned off by the system.
Blinking Amber	Indicates that the power supply has a warning condition and continues to operate.
Solid Amber	Indicates that the power supply is plugged in, and is in an abnormal state. The system might need service. Please contact Supermicro technical support.
Off	No AC power to modules

1.3 System Architecture

This section covers the locations of the system's main components, a system block diagram, and a motherboard layout with the connectors and jumpers called out.

Main Components

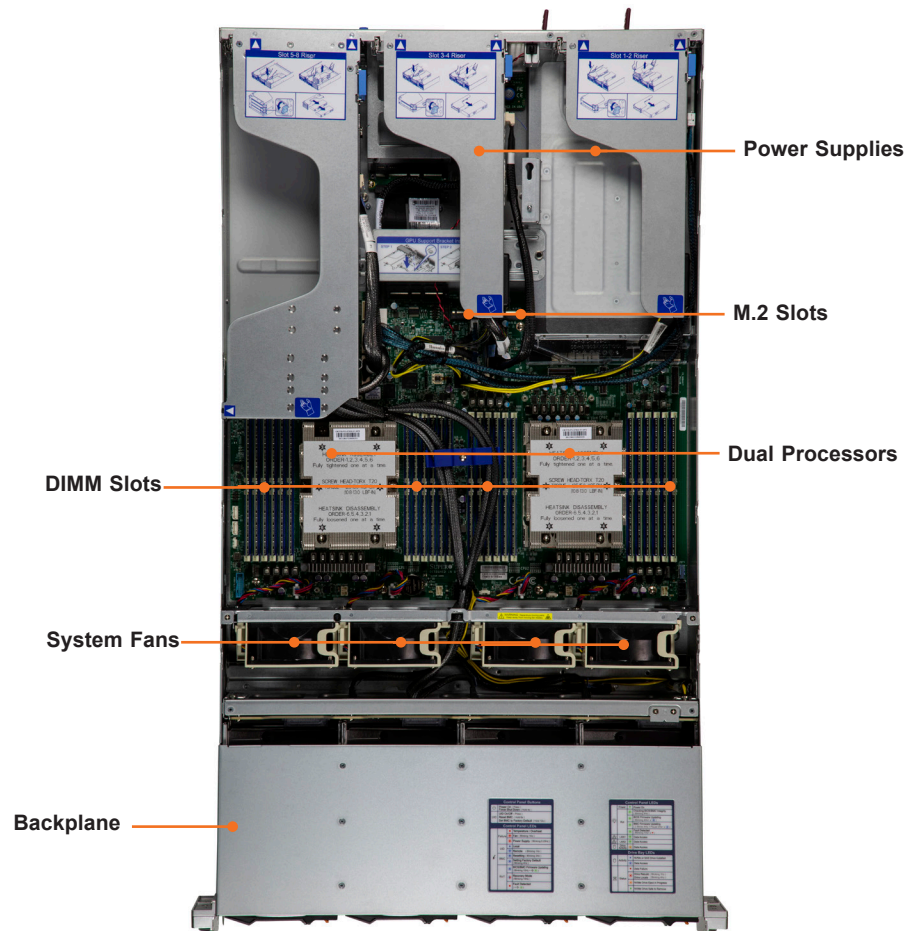


Figure 1-4. System: Top View

System Features: Top	
Feature	Description
Backplane	Twelve SAS/SATA/NVMe storage device backplane (BPN-NVME5-LA26A-S12)
Power Supplies	Dual redundant modules (PWS-1K63A-1R)
M.2 Slots	Two slots for M.2 NVMe
DIMM Slots	Twenty-four memory slots
Processors	Dual AMD EPYC™ 9004 series processors
System Fans	Four 8-cm heavy duty fans with Optimal Fan Speed Control

System Block Diagram

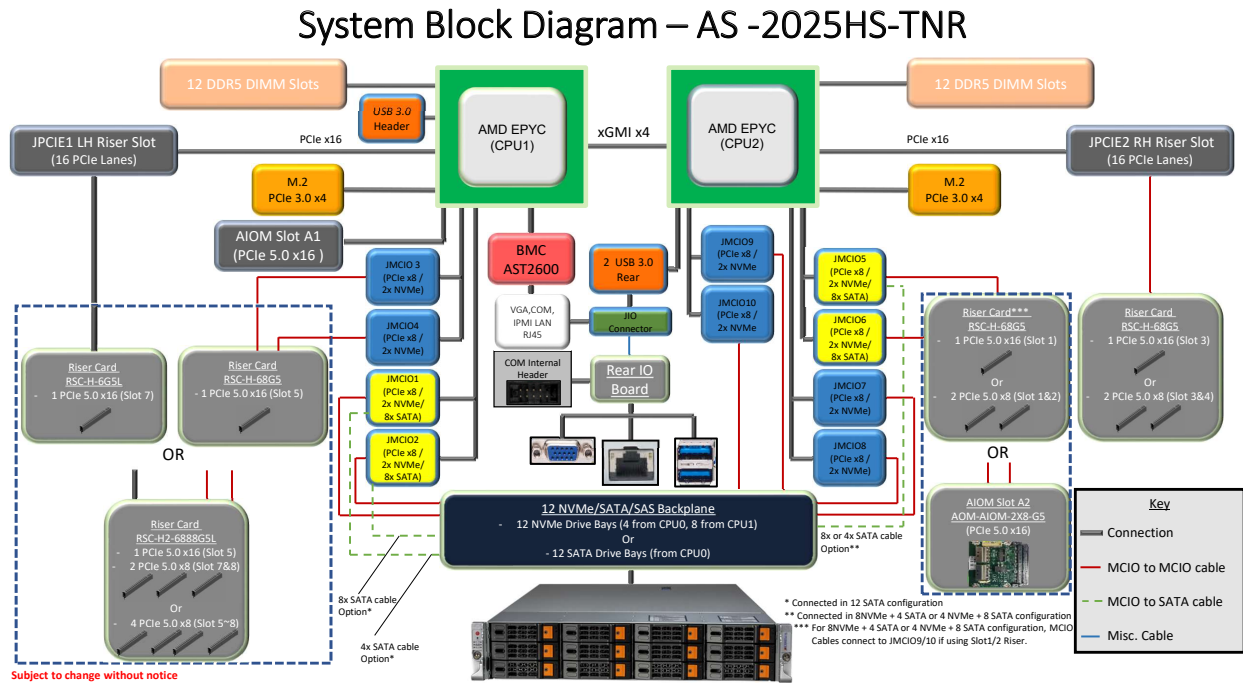


Figure 1-5. System Block Diagram

Note: This is a general block diagram and may not exactly represent the features on your motherboard. See the previous pages for the actual specifications of your motherboard.

1.4 Motherboard Layouts

Below are layouts for two revision levels of the H13DSH motherboard with jumper, connector and LED locations shown. See the following pages for descriptions. For detailed descriptions, pinout information and jumper settings, refer to [Chapter 4](#) or the [Motherboard Manual](#).

H13DSH Motherboard Revision 1.01A

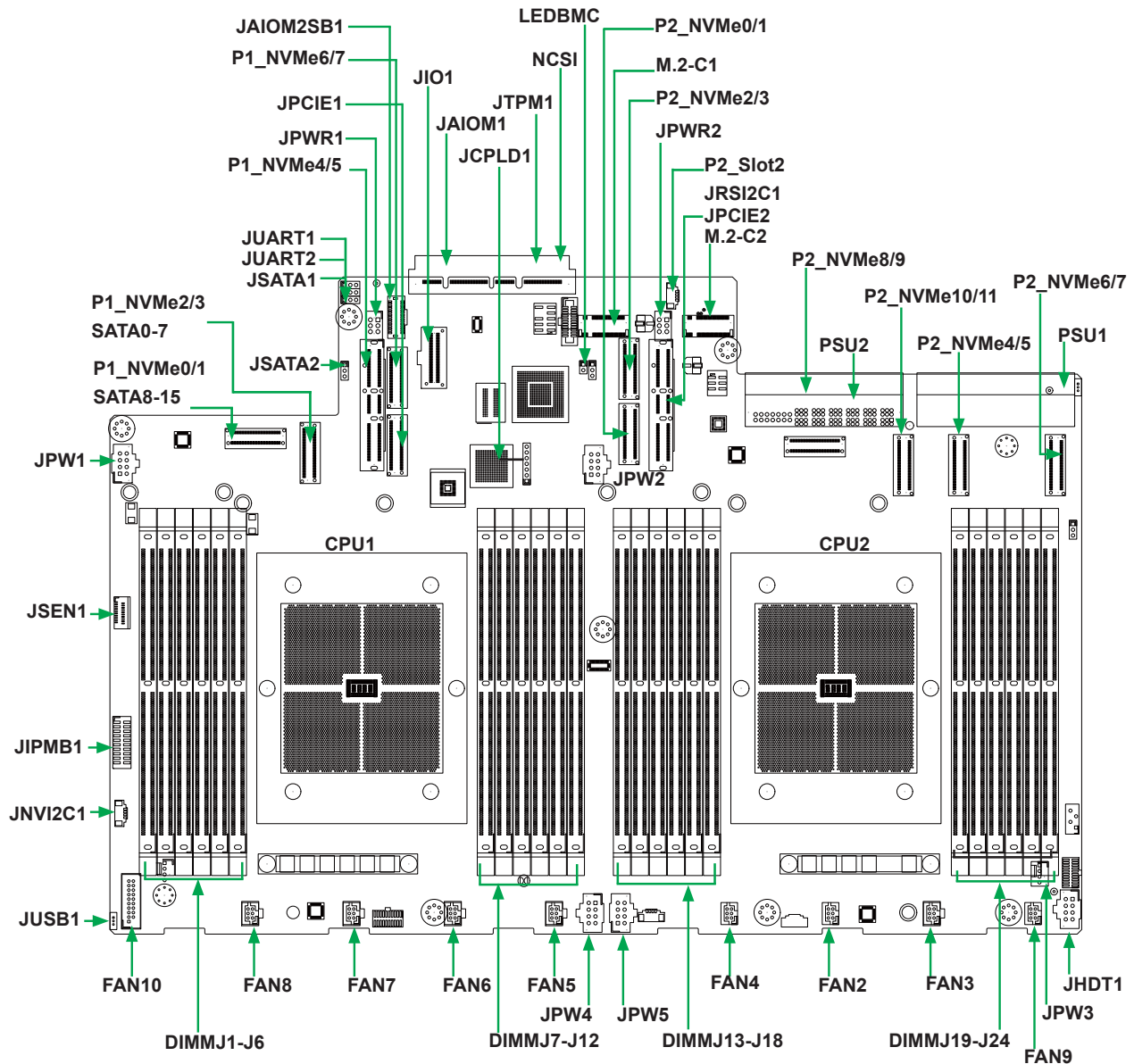


Figure 1-6. H13DSH Motherboard (Revision 1.01A)

H13DSH Motherboard Revision 1.10

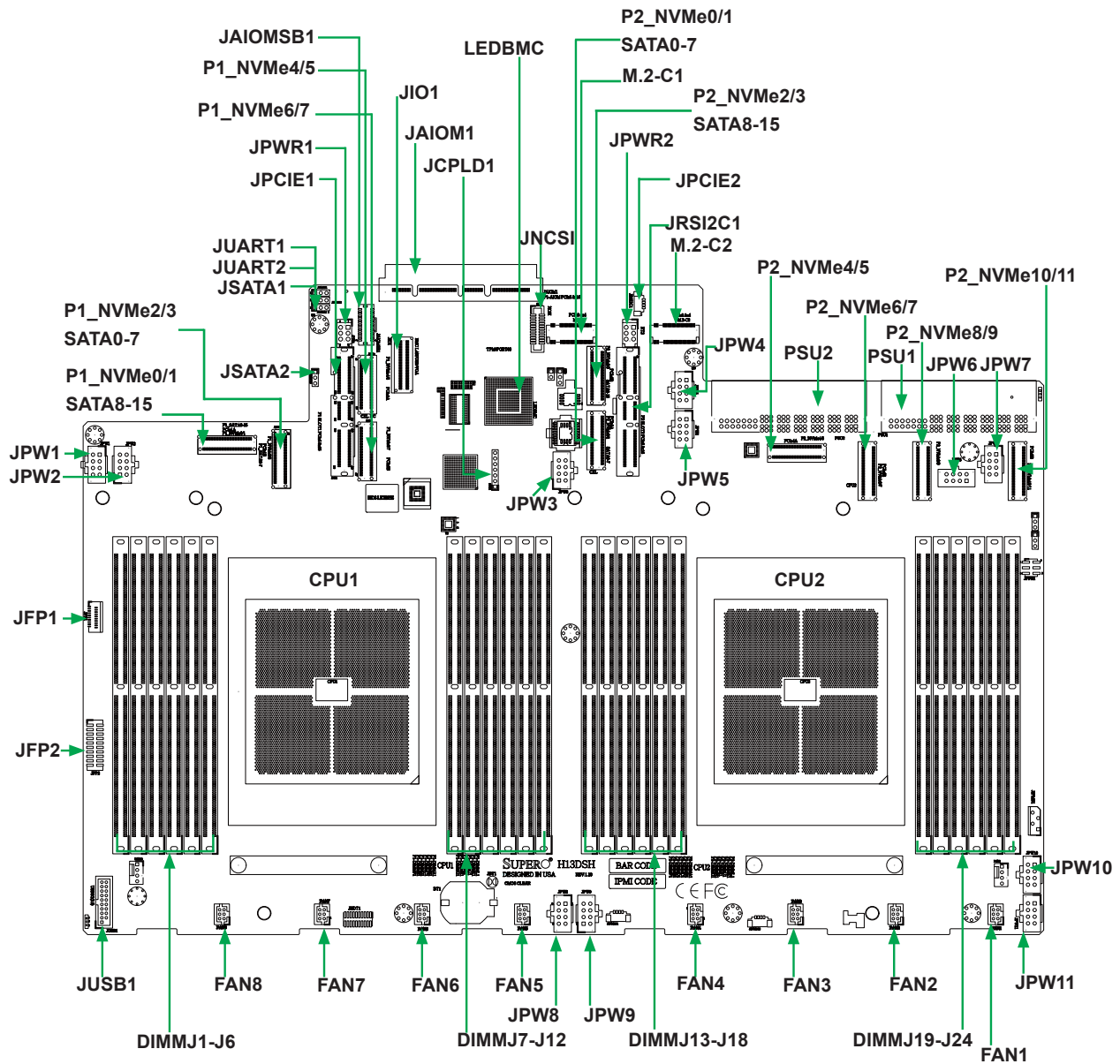


Figure 1-7. H13DSH Motherboard (Revision 1.10)

Quick Reference Table

Jumper	Description	Default Setting
JBT1	CMOS Clear	Open (Normal)
JSATA1	Hybrid MCIO Select	Open (NVMe)
JSATA2	Hybrid MCIO Select	Open (NVMe)

LED	Description	Status
LEDBMC	BMC Heartbeat LED	Green: Blinking (BMC Normal) Green: Fast Blinking (BMC Initializing)
LED_PWR	Power LED	Solid Green: Power On

Connector	Description
BT1	Onboard Battery
FAN1~8	System Cooling Fan Headers
*JAIOM1	Supermicro® Advanced I/O Module (AIOM) Slot
JAIOM1SB1	AIOM1 Sideband Signals Header
JFP1	Front Panel Connector
*JFP2	Front VGA Header
JIO1	Front IPMI and Onboard VGA / USB / NIC Module Connector
JIPMB1	4-Pin External BMC I ² C Header
JNCSI1	NCSI Connector
JPCIE1 (CPU1 Slot1)	PCIe 5.0 x16 Slot Supported by CPU1
JPCIE2 (CPU2 Slot2)	PCIe 5.0 x16 Slot Supported by CPU2
JPW1~JPW5	12V 8-Pin GPU / BPN / AOC Power Connector
*JPW6~JPW11	12V 8-Pin GPU / BPN / AOC Power Connector
*JPWR2	24-pin ATX Main Power Connector
JSATA1	SATA0~15
JSATA2	SATA16~31
M.2-C1 / M.2-C2	M/2 PCIe Interfaces (NVMe only)
P1_NVMe0/1 PCIe1A	Processor 1 NVMe Ports 0/1 / P1_SATA 8~15
P1_NVMe2/3 PCIe1B	Processor 1 NVMe Ports 2/3 / P1_SATA 0~7
P1_NVMe4/5 PCIe2A	Processor 1 NVMe Ports 4/5
P1_NVMe6/7 PCIe2B	Processor 1 NVMe Ports 6/7
P2_NVME0/1 PCIe3A	Processor 2 NVMe Ports 0/1 / P2_SATA 0~7
P2_NVME2/3 PCIe3B	Processor 2 NVMe Ports 2/3 / P2_SATA 8~15
P2_NVME4/5 PCIe4A	Processor 2 NVMe Ports 4/5
P2_NVME6/7 PCIe4B	Processor 2 NVMe Ports 6/7
P2_NVME8/9 PCIe5A	Processor 2 NVMe Ports 8/9
P2_NVME10/11 PCIe5B	Processor 2 NVMe Ports 10/11
PSU1/2	Serverboard Main Power Supply Connector

Notes:

- In the Quick Reference Table, an asterisk (*) indicates the additional connectors on the H13DSH motherboard of revision 1.10.
- Jumpers, connectors, switches, and LED indicators that are not described in the preceding tables are for manufacturing testing purposes only, and are not covered in this manual.
- See [Chapter 4](#) for detailed information on jumpers, I/O ports, and JF1 front panel connections.
- Use only the correct type of onboard CMOS battery as specified by the manufacturer. To avoid possible explosion, do not install the onboard battery upside down.

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](#) 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 system 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 or in [Appendix A](#).

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](#).
- 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

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.).



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 workspace.



Slide rail mounted equipment is not to be used as a shelf or a workspace.



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

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 package includes two rail assemblies. Each assembly consists of three sections: An inner rail that secures directly to the chassis, an outer rail that secures to the rack, and a middle rail which extends from the outer rail. These assemblies are specifically designed for the left and right side of the chassis and labeled.

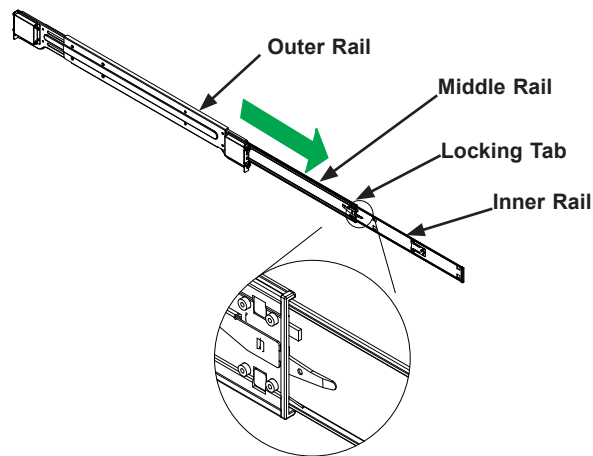


Figure 2-1. Identifying the Outer Rail, Middle Rail and Inner Rail
(Left Rail Assembly Shown)

Releasing the Inner Rail

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

To mount the rail onto the chassis, first release the 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.

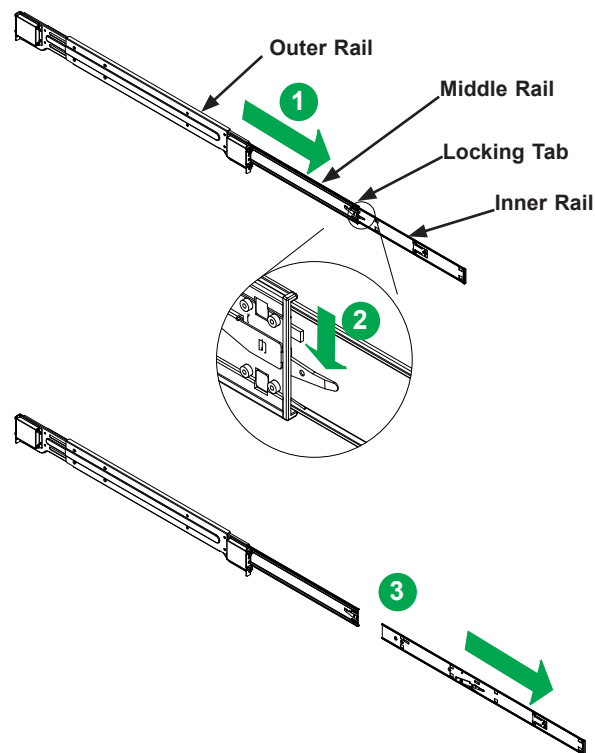


Figure 2-2. Extending and Releasing the Inner Rail

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 screws.

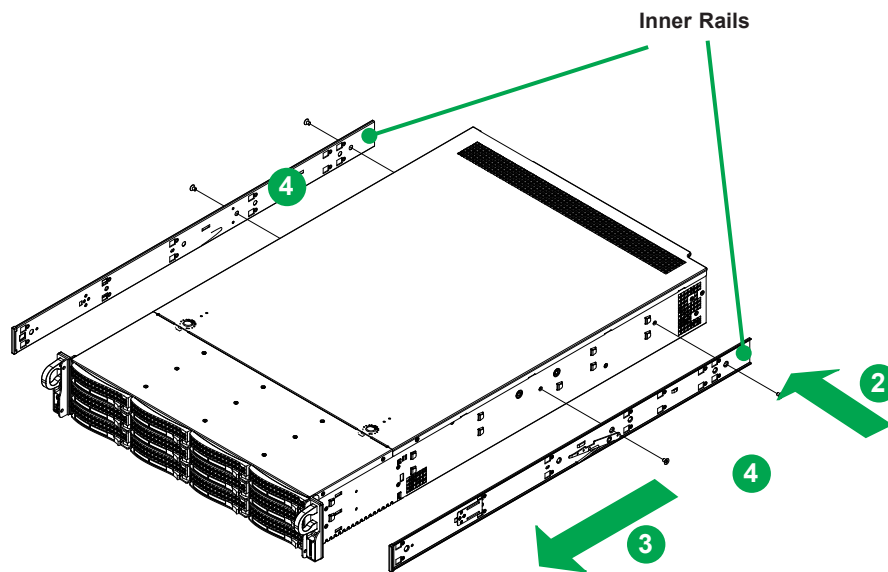


Figure 2-3. Installing the Inner Rails

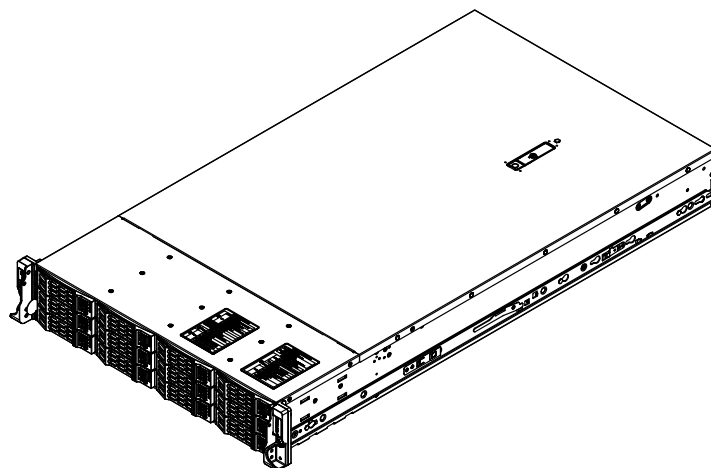


Figure 2-4. Inner Rails Installed on the Chassis

Installing the Outer Rails onto the Rack

Each end of the assembled outer rail includes a bracket with hooks and square, spring-loaded pegs to fit into the square holes in your rack.

Installing the Outer Rail

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.

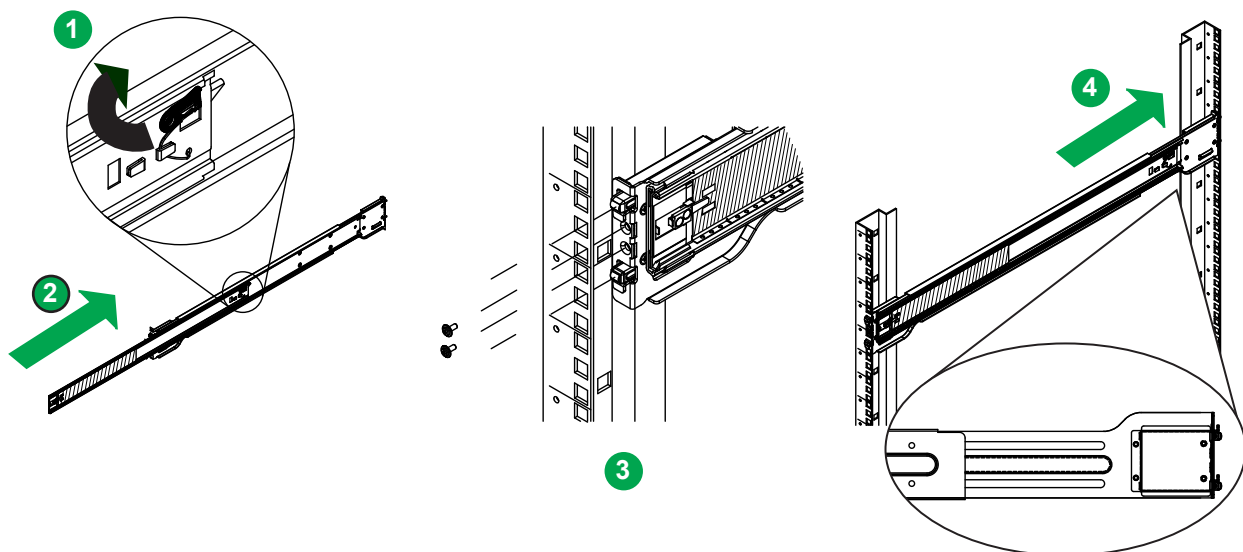


Figure 2-5. Extending and Mounting the Outer Rails

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



Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over.



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

2.5 Installing the Chassis into a Rack

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

Warning: Mounting the system into the rack requires at least two people to support the chassis during installation. Please follow safety recommendations printed on the rails.

Installing the Chassis into a Rack

1. Extend the outer rails as illustrated.
2. Align the inner rails of the chassis with the outer rails on the rack.
3. Slide the inner rails into the outer rails, keeping the pressure even on both sides. When the chassis has been pushed completely into the rack, it should click into the locked position.
4. Optional screws may be used to hold the front of the chassis to the rack.

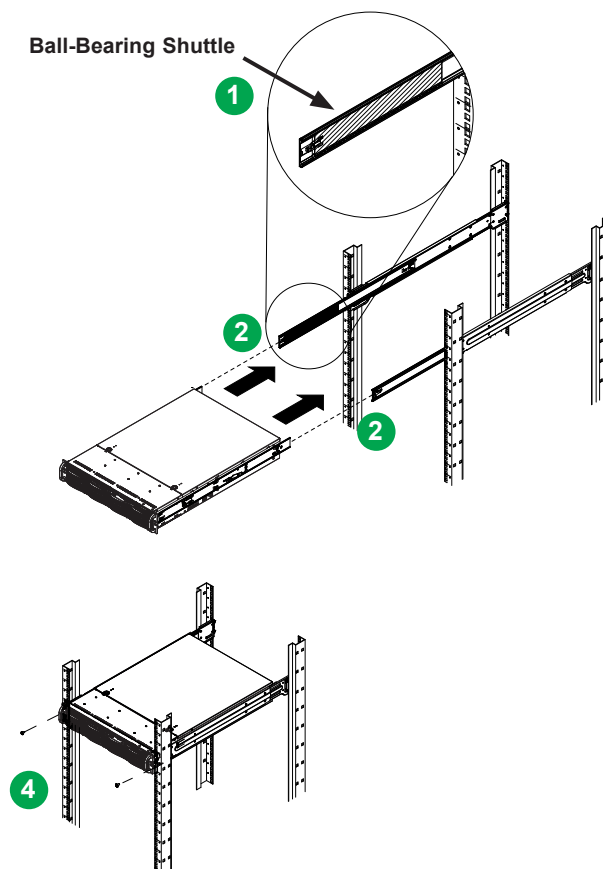


Figure 2-6. Installing the Server into the Rack

Note: Keep the ball bearing shuttle locked at the front of the middle rail during installation.

Note: Figure is for illustrative purposes only. Always install servers to the bottom of a rack first.

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. If necessary, loosen the thumb screws on the front of the chassis that hold it in the rack.
2. Pull the chassis forward out the front of the rack until it stops.
3. Press the release latches on each of the inner rails downward simultaneously and continue to pull the chassis forward and out of the rack.

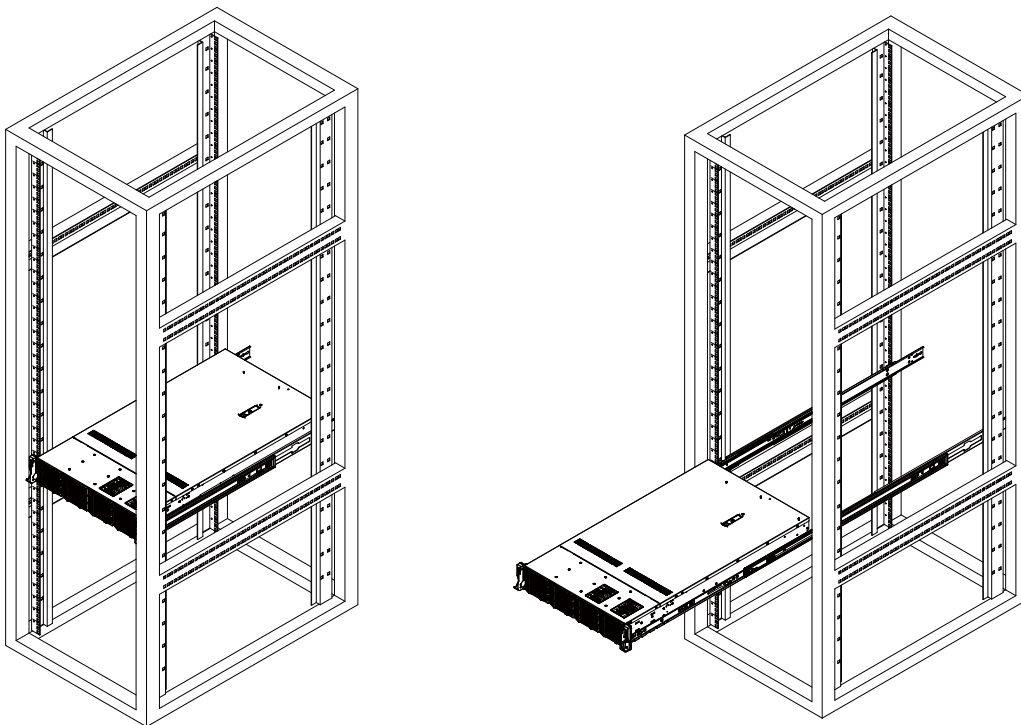


Figure 2-7. Removing the Chassis From the Rack

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).

3.2 Accessing the System

A removable top cover allows access to the inside of the chassis.

Removing the Top Cover

1. Remove the two screws on each side of the cover, which secure the cover to the chassis. These two screws are optional and will not impact functionality if they are not installed.
2. Press the release button and slide the cover toward the rear.
3. Lift the top cover up.

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

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

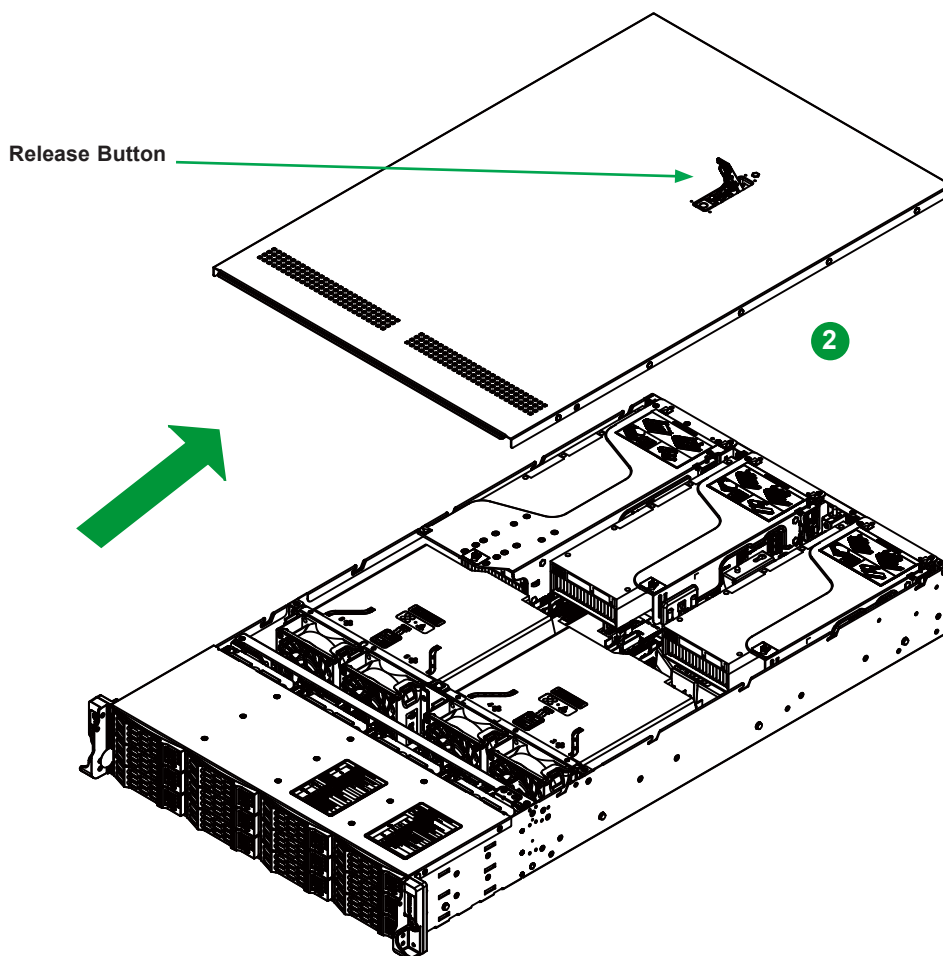


Figure 3-1. Removing the System Cover

3.3 Processor and Heatsink Installation

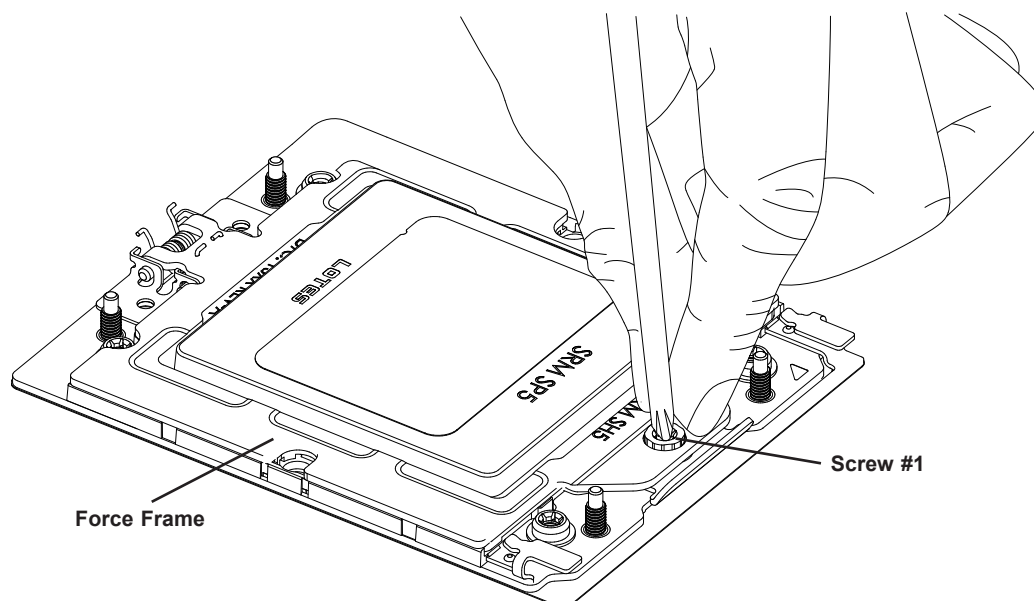
Warning: When handling the processor package, avoid placing direct pressure on the label area of the fan.

Important:

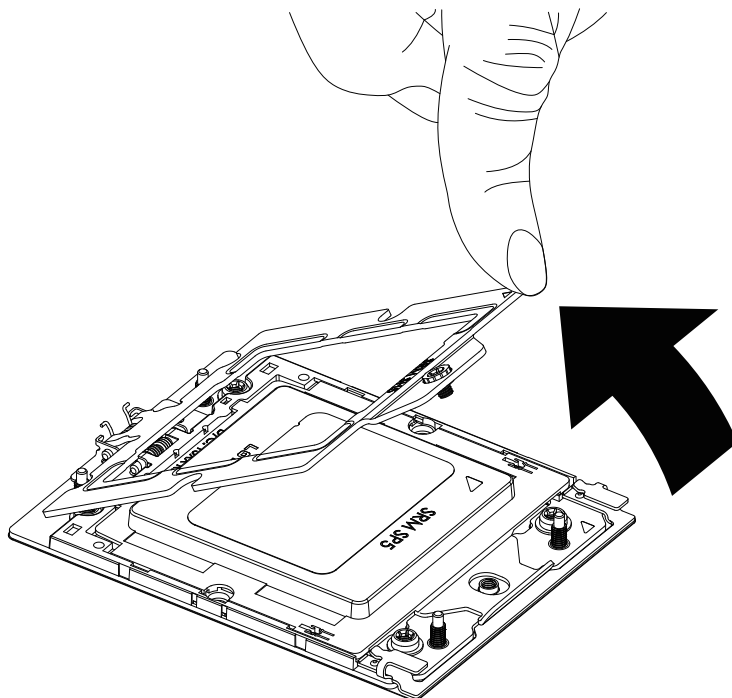
- For the Processor/Heatsink installation you need to use a T20 screwdriver when opening/closing the CPU socket.
- Always connect the power cord last, and always remove it before adding, removing or changing any hardware components. Make sure that you install the processor into the CPU socket before you install the CPU heatsink.
- If you buy a CPU separately, make sure that you use an AMD-certified multi-directional heatsink only.
- Make sure to install the motherboard into the chassis before you install the CPU heatsink.
- When receiving a motherboard without a processor pre-installed, make sure that the plastic CPU socket cap is in place and none of the socket pins are bent; otherwise, contact your retailer immediately.
- Refer to the Supermicro website for updates on CPU support.

Installing the Processor and Heatsink

1. Unscrew the screw #1 holding down the force frame.

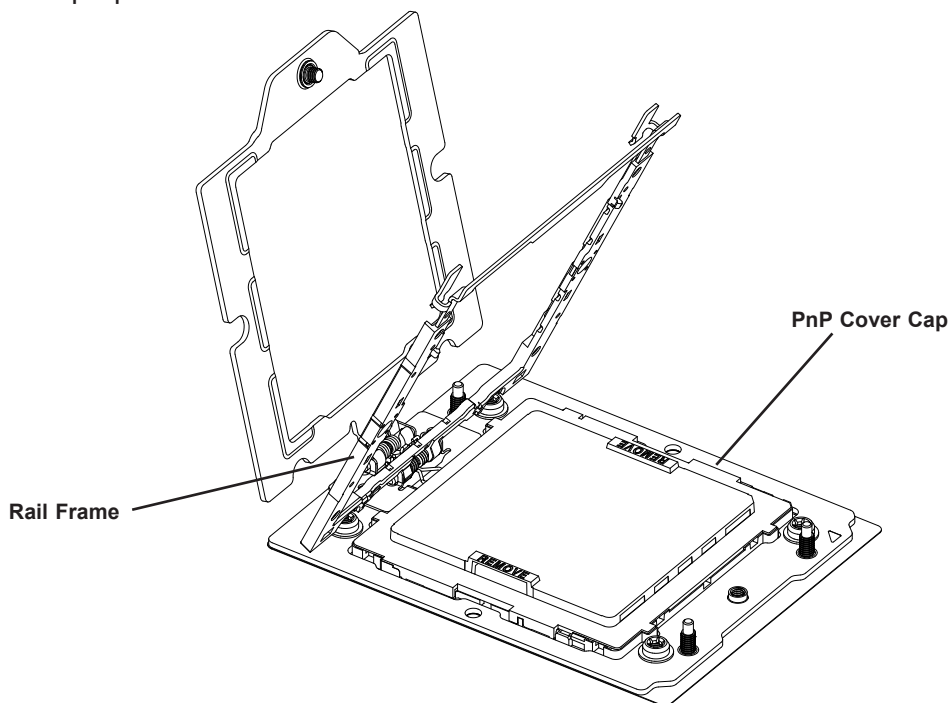


2. The spring-loaded force frame will raise up after the screw securing it (#1) is removed. Gently allow it to lift up to its stopping position.

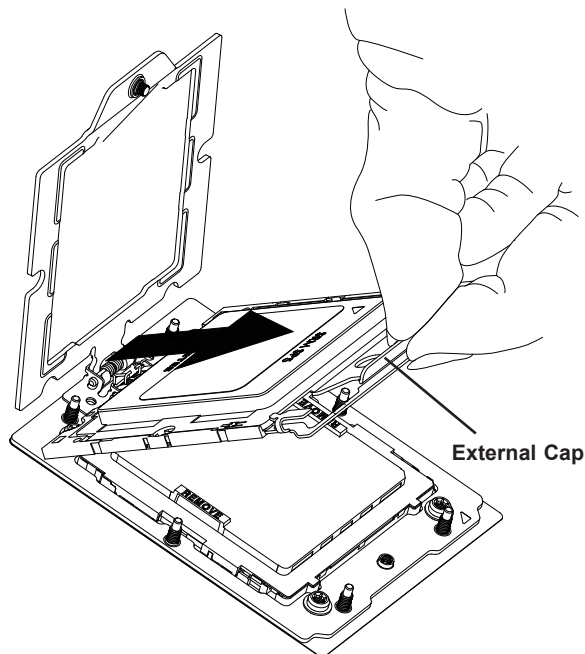


3. Lift the rail frame up by gripping the lift tabs near the front end of the rail frame. While keeping a secure grip of the rail frame, lift it to a position so you can do the next step of removing the external cap.

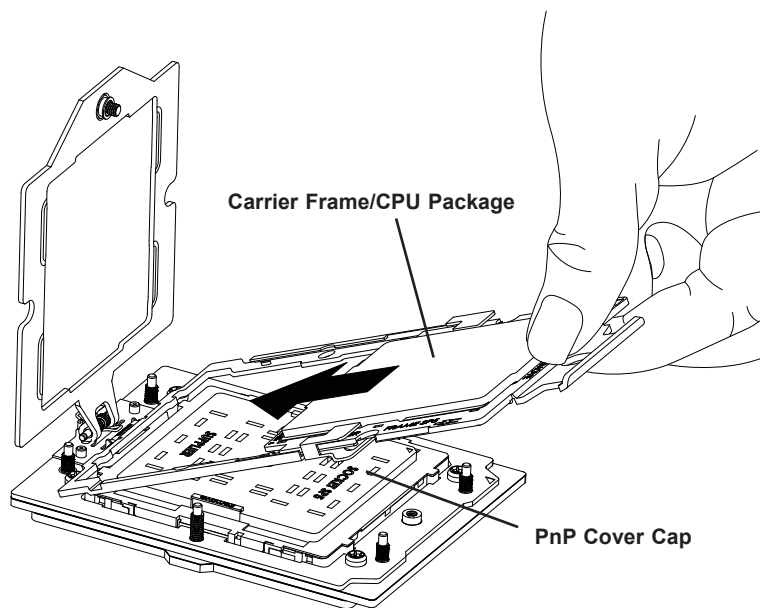
Note: The rail frame is spring loaded, so keep a secure grip on it as you lift it so it does not snap up.



4. Remove the external cap from the rail frame by pulling it upwards through the rail guides on the rail frame.

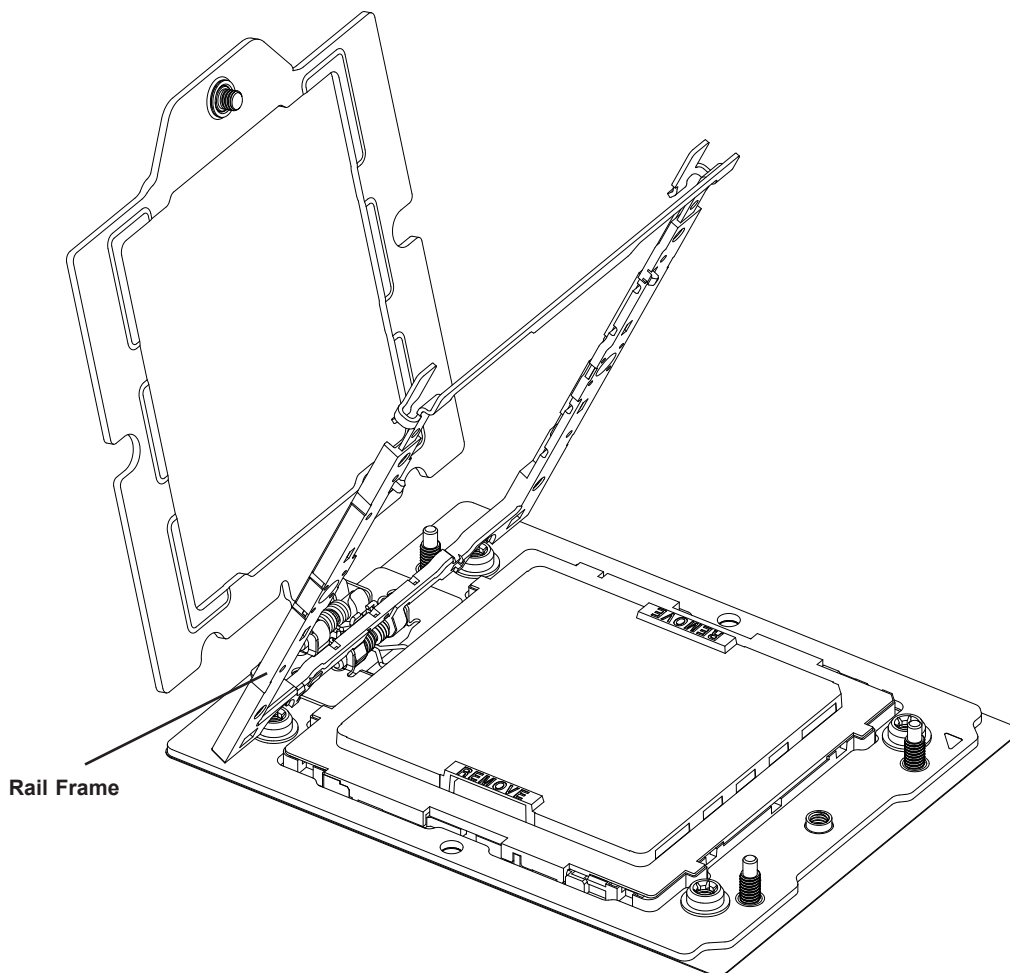


5. The CPU package is shipped from the factory with the carrier frame pre-assembled. Grip the handle of the carrier frame/CPU package assembly from its shipping tray, and while gripping the handle, align the flanges of the carrier frame onto the rails of the rail frame so its pins will be at the bottom when the rail frame is lowered later.
6. Slide the carrier frame/CPU package downwards to the bottom of the rail frame. Ensure the flanges are secure on the rails as you lower it downwards.



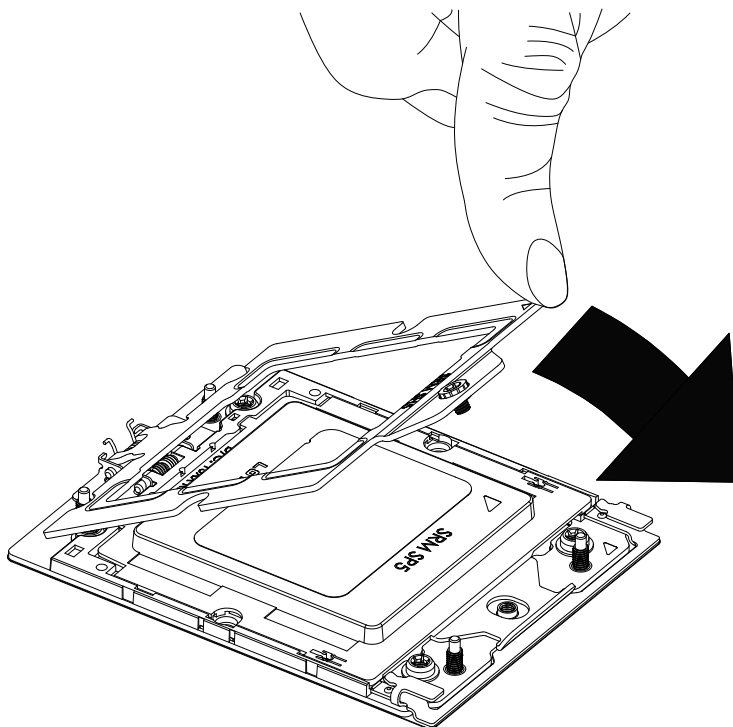
Note: You can only install the CPU inside the socket in one direction with the handle at the top. Make sure that it is properly inserted into the CPU socket before closing the rail frame plate. If it doesn't close properly, do not force it as it may damage your CPU. Instead, open the rail frame plate again, and double-check that the CPU is aligned properly.

7. Lift up the rail frame till it securely rests in upright position. Then remove the PnP cover cap from the CPU socket below. Grip the two lift tabs marked "Remove" at the middle of the cap and pull vertically upwards to remove the PnP cover cap.

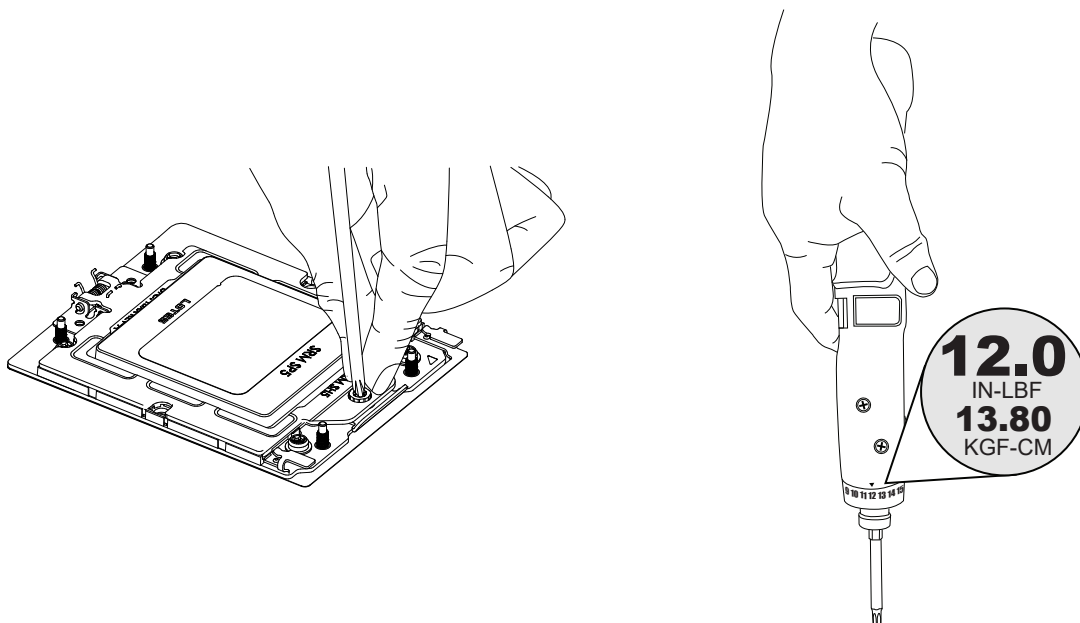


Warning! The exposed socket contacts are extremely vulnerable and can be damaged easily. Do not touch or drop objects onto the contacts and be careful removing the PnP cover cap and when placing the rail frame over the socket.

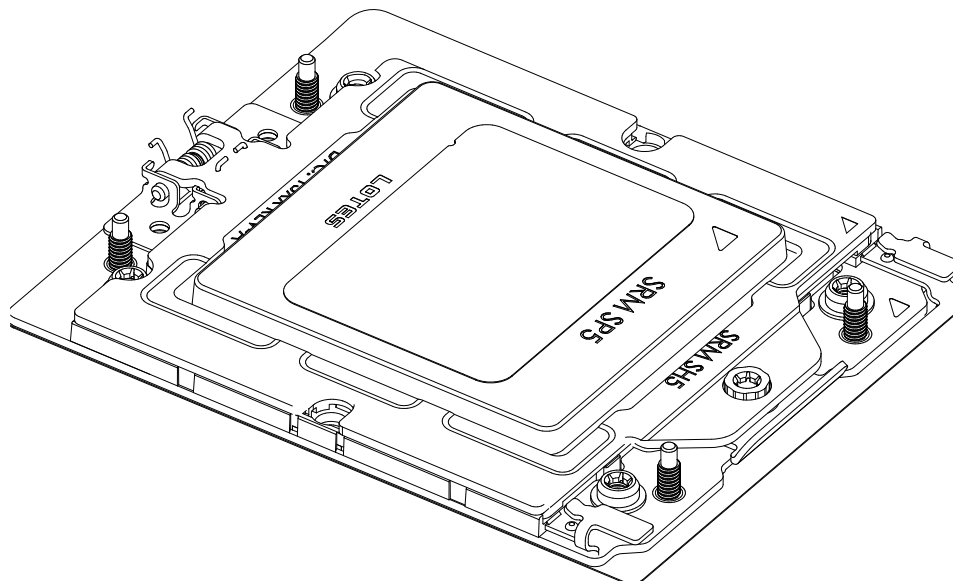
8. Gently lower the rail frame down onto the socket until the latches on the rail frame engage with the socket housing and it rests in place. DO NOT force it into place!



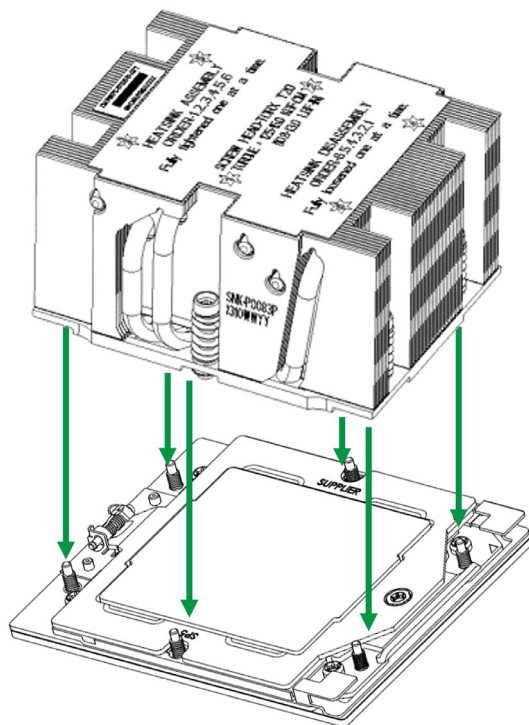
9. Note that the force frame is spring loaded and has to be held in place before it is secured. **Important:** use a torque screwdriver, set it at 12.5 to 15.0 kgf-cm (10.8 to 13.0 in-lbf) with a Torx T20 screw head bit, to prevent damage to the CPU.



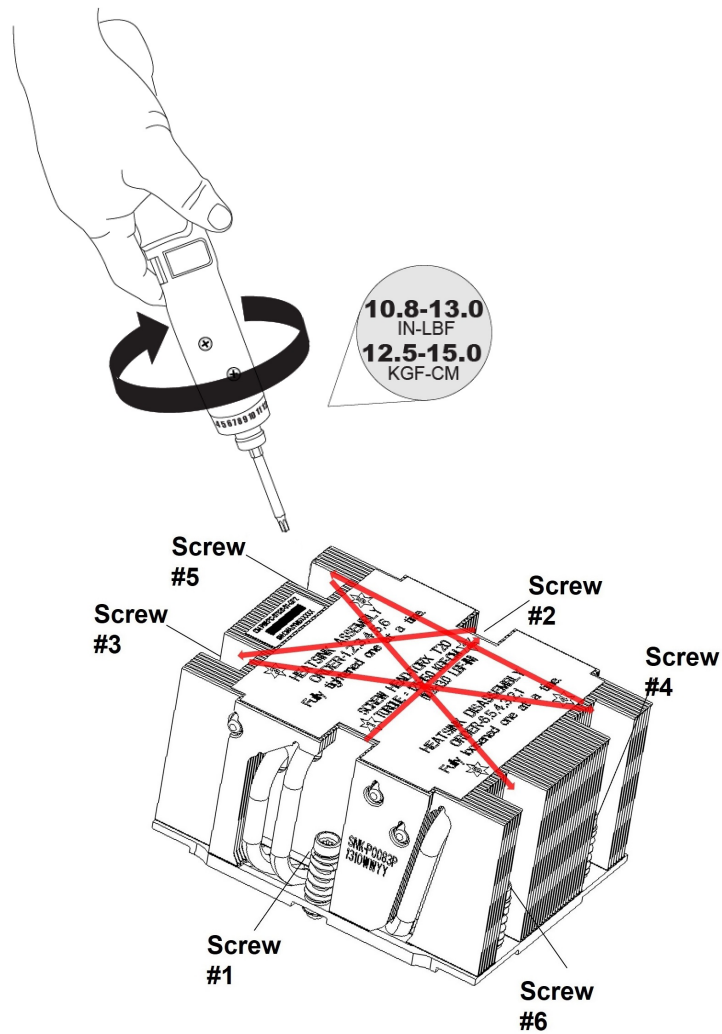
10. Place and re-screw the screw to the way you removed them. When finished, the force frame will be secure over both the rail frame and CPU package.



11. After the force frame is secured and the CPU package is in place, now you must install the heatsink to the frame. Lower the heatsink down till it rests securely over the six screw holes on CPU package on the socket frame.



- Using a diagonal pattern, tighten the six screws down on the heatsink in a clockwise fashion till it is secure. Use a torque screwdriver, set it at 12.5~15.0 kgf-cm (10.8 to 13.0 in-lbf) with a Torx T20 screw head bit to prevent damage to the CPU socket and heatsink. The heatsink will now be secured and you have finished installing the processor and heatsink onto the motherboard. Repeat this procedure for any remaining CPU sockets on the motherboard.



Un-installing the Processor and Heatsink

1. Remove the heatsink attached to the top of the CPU package by reversing the installation procedure.
2. Clean the thermal grease left by the heatsink on the CPU package lid to limit the risk of it contaminating the CPU package land pads or contacts in the socket housing.
3. Unscrewing the plate and lift the force frame to the vertical position.
4. Lift the rail frame using the lift tabs near the front end of the rail frame. Note that the rail frame is spring loaded, so be careful lifting it up into a vertical position.
5. Grip the handle of the carrier frame and pull upwards to extract it from the rail frame. Return the carrier frame/CPU package to its original shipping container.
6. Grip the handle on the external cap and return it to the rail frame sliding it downwards till it rests in the frame.
7. Gripping the rail frame, rotate it downwards till it rests above and locks over the socket housing in its horizontal position.
8. Push and rotate down the force frame till it is over the external cap and rail frame into a horizontal position.
9. While holding down the force frame, secure it back to the socket frame by securing screw #1 in place.

3.4 Memory Support and Installation

Note: Check the Supermicro website for recommended memory modules.

Important: Exercise extreme care when installing or removing DIMM modules to prevent any possible damage.

Memory Support

The H13DSH supports up to 6 TB of ECC DDR5 4800 MT/s speed, RDIMM/LRDIMM/3DS memory in 24 slots. Refer to the table below for additional memory information.

Note: Check the Supermicro website for possible updates to memory support.

DIMM Population Guide													
CPU1													
Type	1 DIMM per Channel												
	F1	E1	D1	C1	B1	A1	CPU1	G1	H1	I1	J1	K1	L1
CPU1 & 1 DIMM*						V							
CPU1 & 2 DIMMs*						V		V					
CPU1 & 4 DIMMs*				V		V		V		V			
CPU1 & 6 DIMMs*				V	V	V		V	V	V			
CPU1 & 8 DIMMs**		V		V	V	V		V	V	V		V	
CPU1 & 10 DIMMs**		V	V	V	V	V		V	V	V	V	V	
CPU1 & 12 DIMMs***	V	V	V	V	V	V		V	V	V	V	V	V

DIMM Population Guide													
CPU2													
Type	1 DIMM per Channel												
	F1	E1	D1	C1	B1	A1	CPU2	G1	H1	I1	J1	K1	L1
CPU1 & 1 DIMM*						V							
CPU1 & 2 DIMMs*						V		V					
CPU1 & 4 DIMMs*				V		V		V		V			
CPU1 & 6 DIMMs*				V	V	V		V	V	V			
CPU1 & 8 DIMMs**		V		V	V	V		V	V	V		V	
CPU1 & 10 DIMMs**		V	V	V	V	V		V	V	V	V	V	
CPU1 & 12 DIMMs***	V	V	V	V	V	V		V	V	V	V	V	V

* According to AMD, installing one, two, four or six DIMMs per CPU socket is not recommended, as it may affect performance.

** This is recommended for 16 to 64 core CPUs.

*** Though this order suits all types of CPU core count, it is best recommended for 84 core CPUs or higher CPU core count.

Populating RDIMM/RDIMM 3DS DDR5 Memory Modules with AMD EPYC™ 9004 Series Processors				
Type	DIMM Population	Maximum DIMM Capacity		Maximum Frequency (MT/s)
	DIMM1	1 Channel	12 Channels	
RDIMM	1R (1 rank)	32 GB	384 GB	4800
	2R (2 ranks)	64 GB	768 GB	4800
3DS RDIMM	2S2R (4 ranks)	128 GB	1.5 TB	4800
	2S4R (8 ranks)	256 GB	3 TB	4800

DIMM Module Population Sequence

There is no specific order or sequence required when installing memory modules. However do keep the following in mind:

- It is recommended that DDR5 DIMM modules of the same type, size and speed should be installed.
- Mixed DIMM speeds can be installed. However, all DIMMs will run at the speed of the slowest DIMM.
- The motherboard will support odd-numbered modules (1 or 3 modules installed). However, to achieve the best memory performance, fully populate the motherboard with validated memory modules.

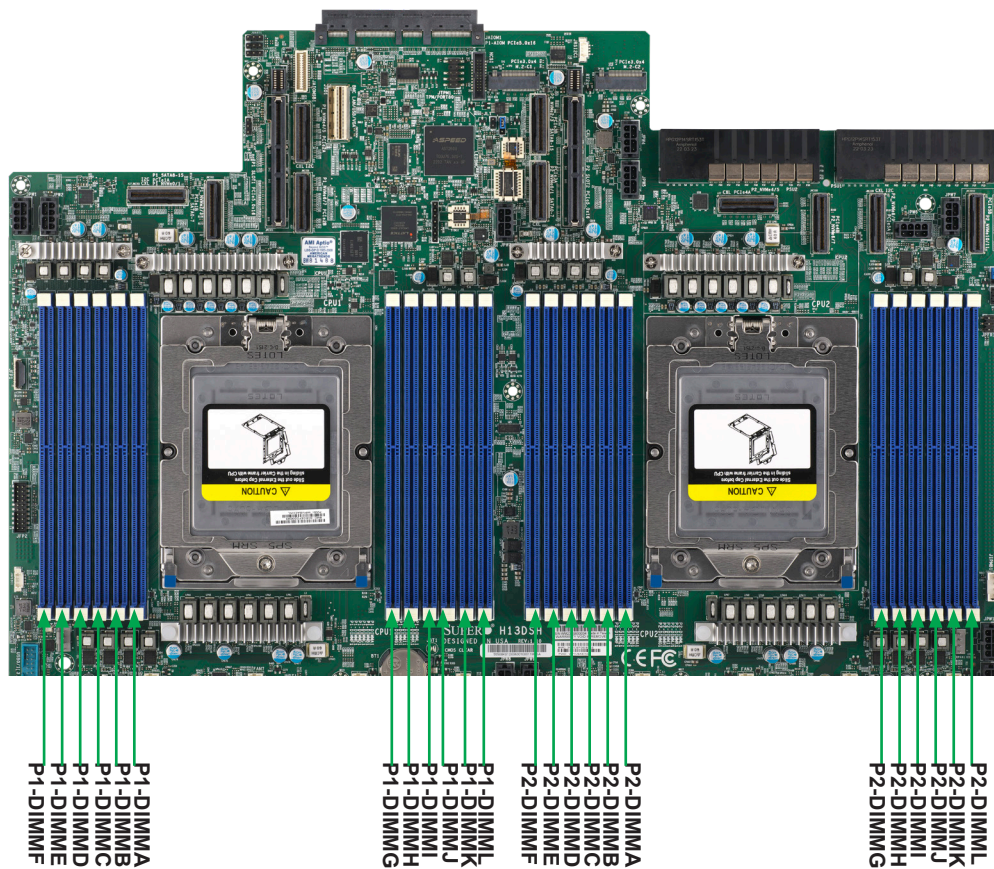


Figure 3-2. DIMM Numbering

Installing Memory

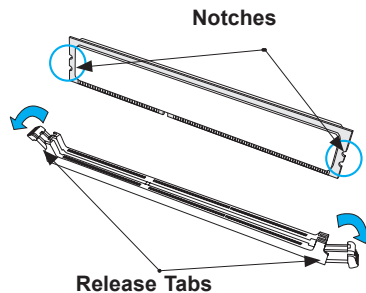
Electrostatic Discharge (ESD) can damage electronic components including memory modules. To avoid damaging DIMM modules, it is important to handle them carefully. The following measures are generally sufficient.

- 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.

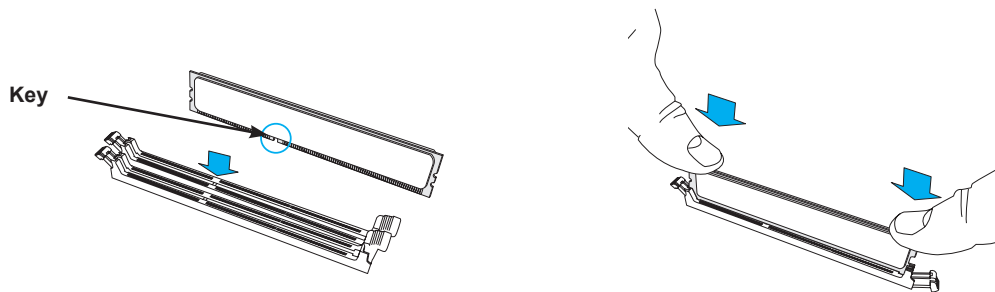
Installing Memory

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.

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.

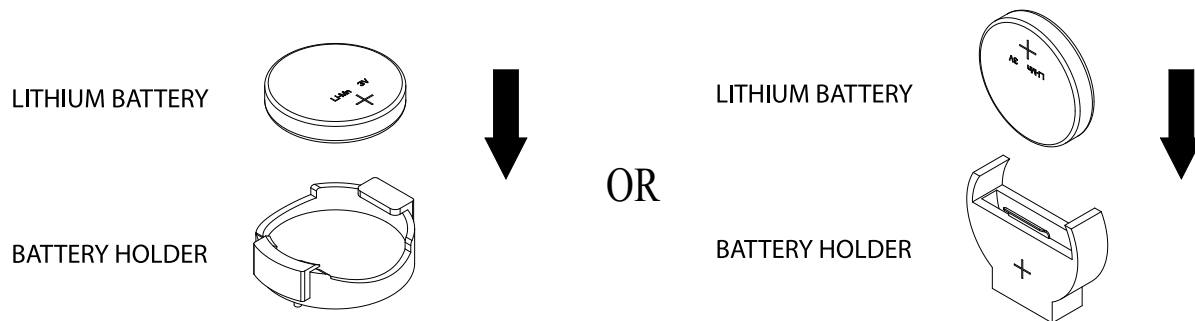


Figure 3-3. Installing the Onboard Battery



Warning: 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 (BR2032).

3.6 Storage Drives

The system supports up to twelve 3.5" or 2.5" storage drives. The 3.5" storage drives are mounted in tool-less 3.5" drive carriers that simplify their removal from the chassis. These 3.5" drive carriers can also support 2.5" drives through screw mounting. These carriers also help promote proper airflow. For compatible storage drives, see the [AS -2025HS-TNR product page](#).

SAS, SATA, and NVMe drives are supported using optional parts that are sold separately. SAS support can be afforded with an optional controller card and cables, while SATA and NVMe support just require additional cables. (Refer to the optional parts list for more details.)

Installing Drives



Figure 3-4. Logical Drive Numbers

Note: The NVMe storage numbering is not sequential in the OS when M.2 NVMe SSDs are installed. Please refer to the FAQ: <https://www.supermicro.com/support/faqs/faq.cfm?faq=36169>

Removing a Hot-Swap Drive Carrier from the Chassis

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.

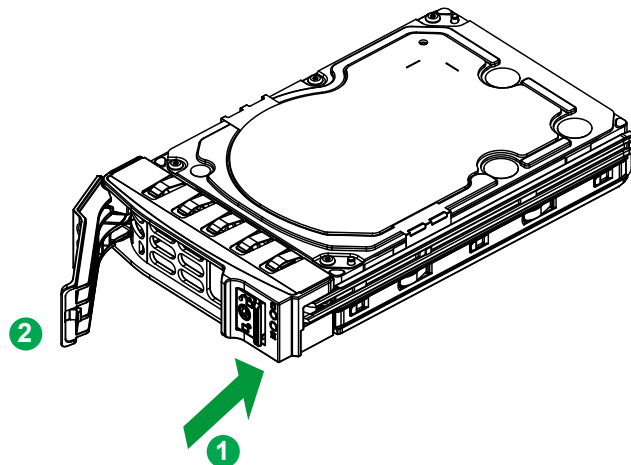


Figure 3-5. Removing a Drive Carrier

Installing a 3.5" Drive

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

3.5" Drive

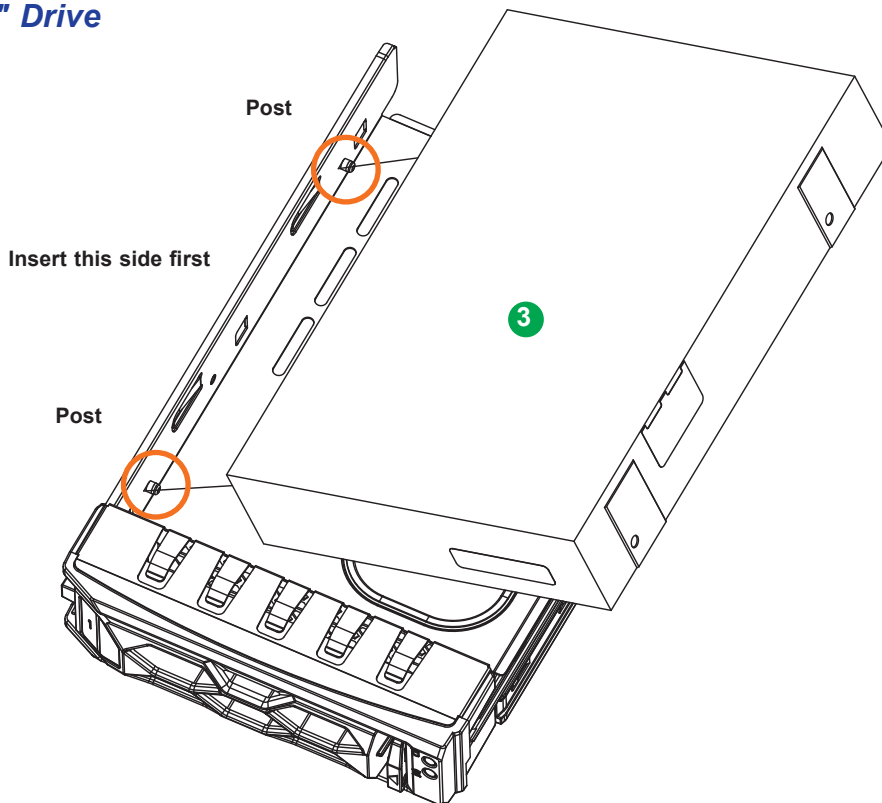


Figure 3-6. Installing a 3.5" Drive into a Carrier

2. Tilt the drive to insert it onto the two posts on the left inside of the carrier.
3. Push the right side of the drive fully into the carrier and allow the two spring locking clasps to secure the drive.
4. 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.
5. Push the handle in until it clicks into its locked position

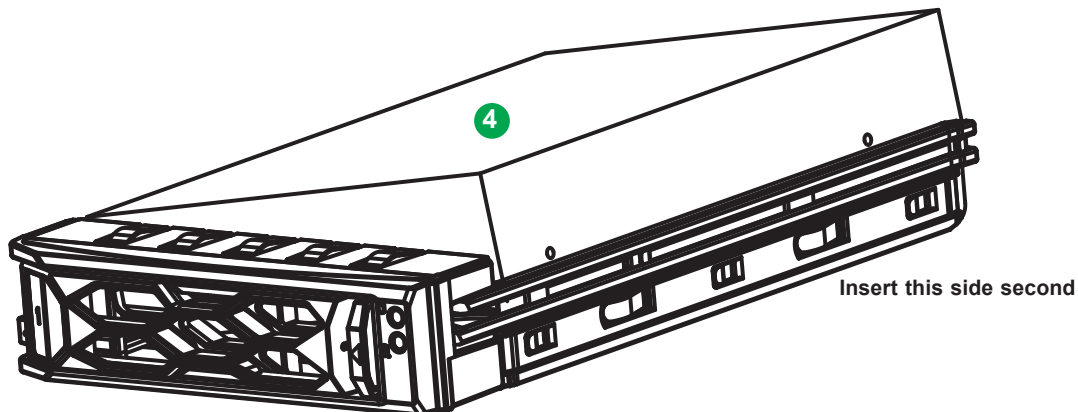


Figure 3-7. Installing a 3.5" Drive into a Carrier

Installing a 2.5" Drive

1. Install the drive directly into the tray with four screws underneath.
2. 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.
3. Push the handle in until it clicks into its locked position

2.5" Drive

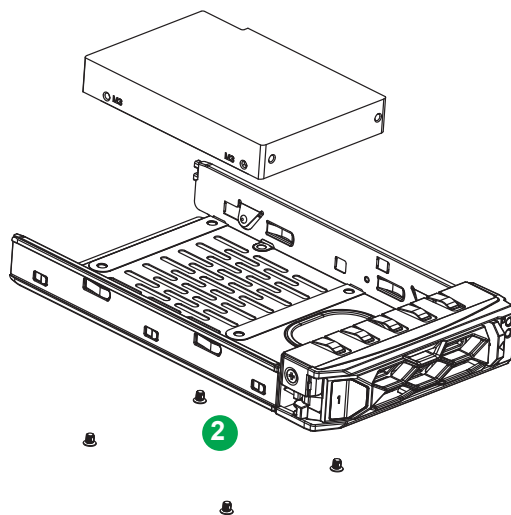


Figure 3-8. Installing a 2.5" Drive into a Carrier

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 you can only eject one drive at a time.

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

Slot is the slot number on which the NVMe drives are mounted. An NVMe drive is successfully ejected via the BMC Web GUI, but it displays "Exception" in the log. This is perfectly fine at this stage and will not affect your normal use of the drives and the BMC Web GUI.

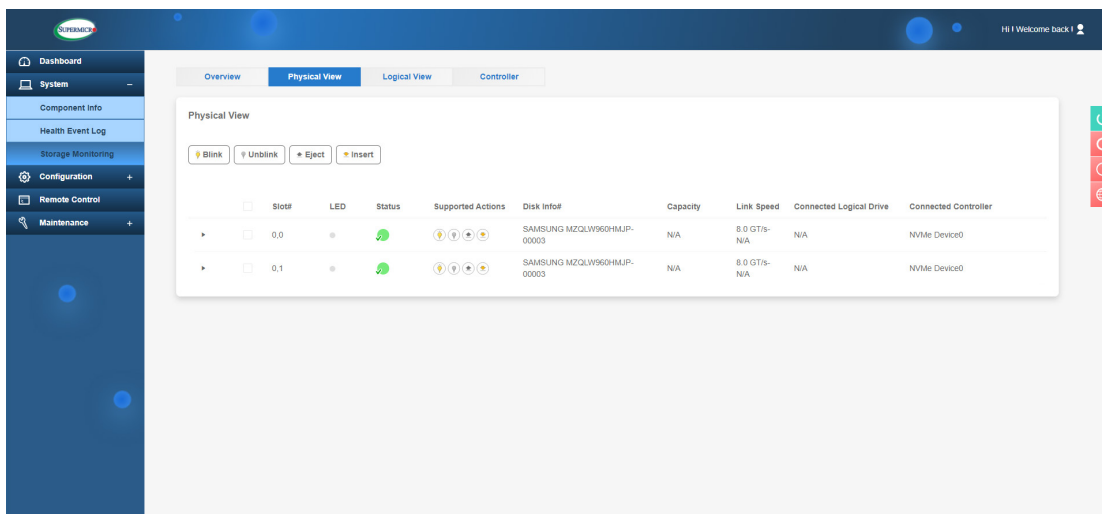


Figure 3-9. BMC Dashboard Screenshot

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.

3.7 System Cooling

Fans

The chassis contains four 8-cm hot-swappable, high-performance fans. Fan speed is controlled by the BMC depending on the system temperature. If a fan fails, the remaining fans will ramp up to full speed. Replace any failed fan with the same type and model at your earliest convenience.

Changing a System Fan

1. Replace the failed fan with an identical fan, available from Supermicro. Push the new fan into the housing, making sure the air flow direction is the same.
2. Check that the fan is working properly and that the LED on the control panel has turned off. Finish by replacing the chassis cover.

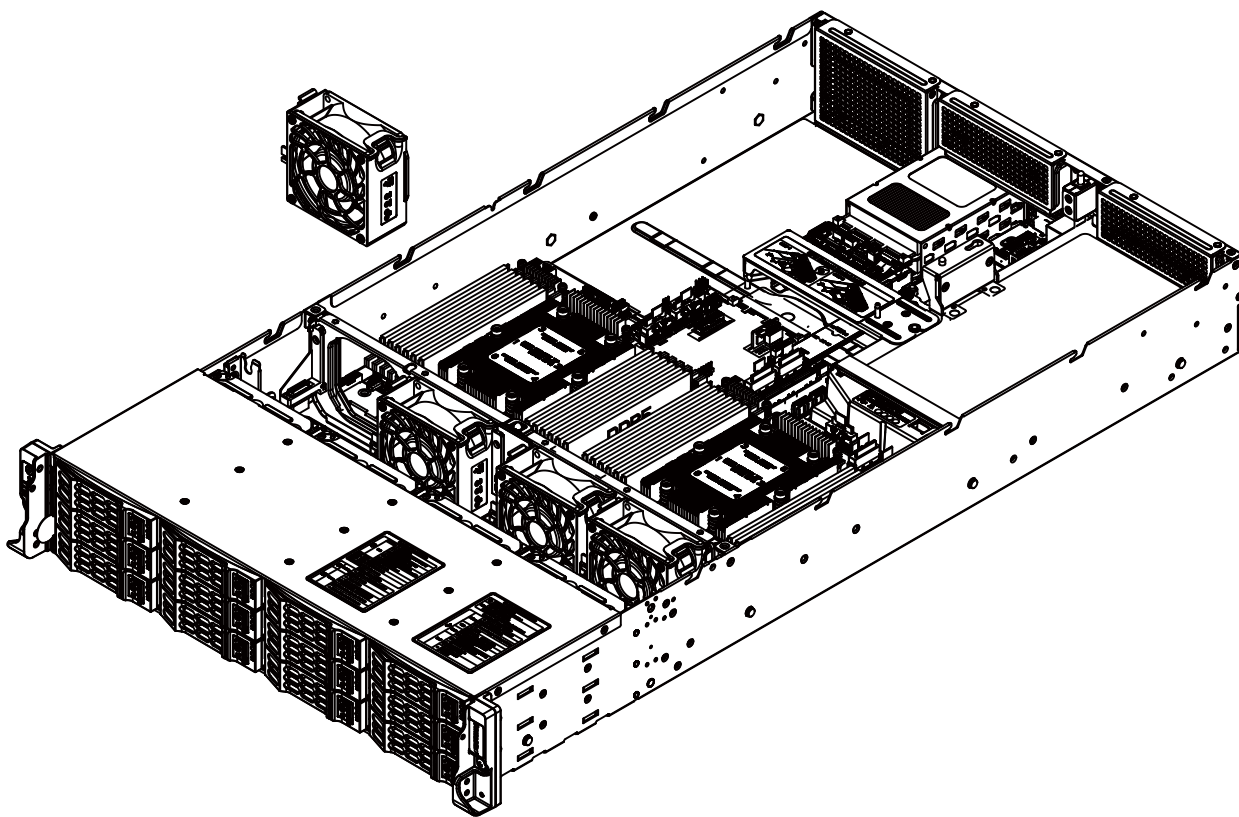


Figure 3-10. Replacing a Fan

Air Shrouds

Air shrouds concentrate airflow to maximize fan efficiency. They do not require screws to install.

Air Shroud for Memory (CPU1/2)

Two air shrouds cool the DIMM slots controlled by CPUs 1 and 2 (see figure below).

1. Remove power from the system and then remove the top cover as described in Sections [3.1](#) and [3.2](#).
2. Remove the system from the rack and remove the cover as described previously.
3. Place each air shroud over 12 DIMM slots at a time for both CPU1 and CPU2-controlled DIMM slots, as illustrated below.
4. Close the cover and push the system back into the rack.

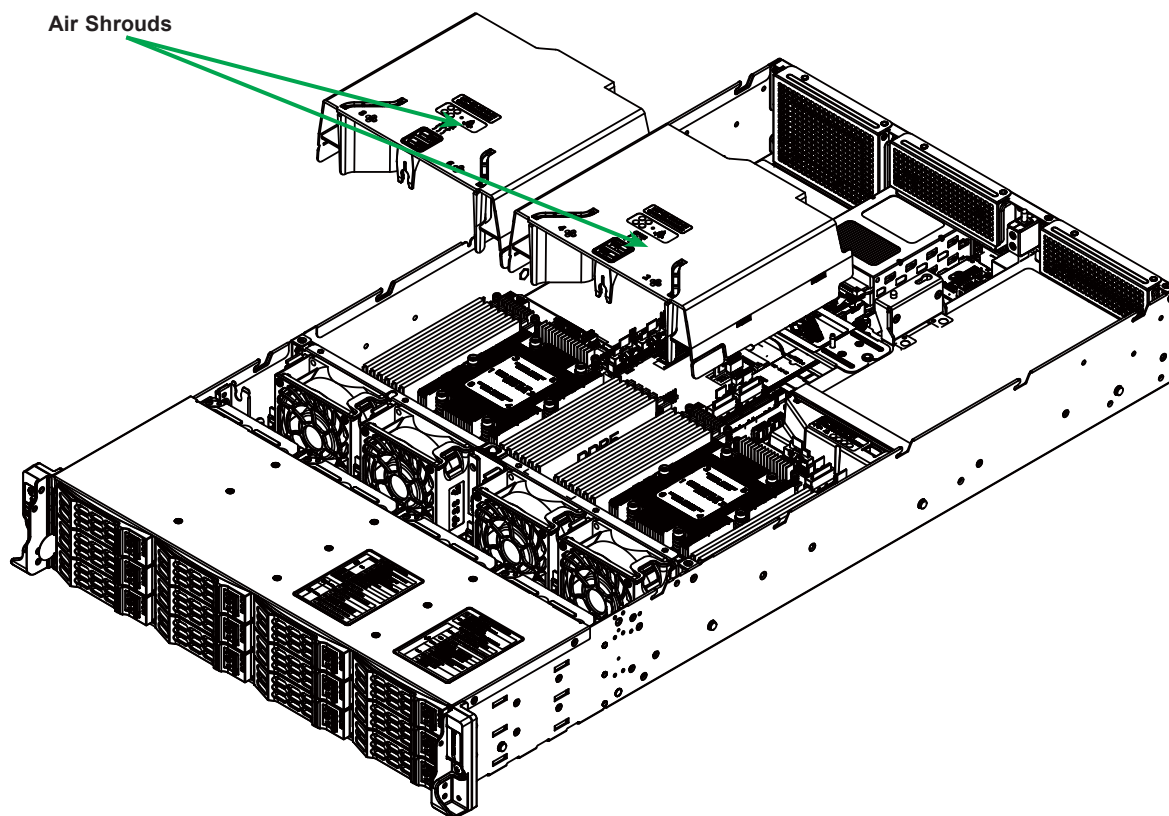


Figure 3-11. Installing the Air Shrouds

3.8 Expansion Cards

The system accepts up to eight PCIe 5.0 x 8 or up to four full-height, 10.5"L expansion cards, mounted on riser cards and brackets.

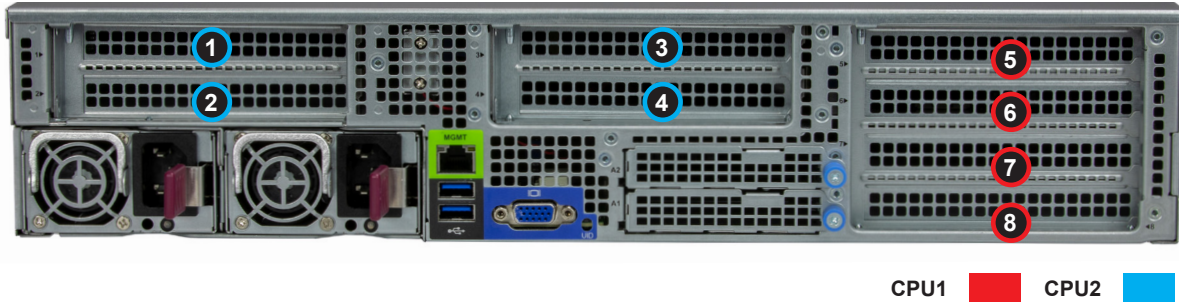


Figure 3-12. Expansion Card Chassis Slots

To enable any of the eight expansion card slots in this system it will require optional parts that are sold separately.

Each expansion card slot is assigned to specific motherboard PCIe x8 MCIO connectors or PCIe x16 slots. The following table shows the possible expansion card slot configuration options and the corresponding motherboard PCIe connector assignment.

Expansion Card Slot Configurations		
Slot Configuration	Slot Width	Motherboard Connection
Up to eight PCIe x8 slots	Slot 1: PCIe 5.0 x8	Cable connection from JMCIO9 (CPU2)
	Slot 2: PCIe 5.0 x8	Cable connection from JMCIO10 (CPU2)
	Slot 3: PCIe 5.0 x8	Cable connection from JPCIE2 (CPU2)
	Slot 4: PCIe 5.0 x8	Cable connection from JPCIE2 (CPU2)
	Slot 5: PCIe 5.0 x8	Cable connection from JMCIO3 (CPU1)
	Slot 6: PCIe 5.0 x8	Cable connection from JMCIO4 (CPU1)
	Slot 7: PCIe 5.0 x8	Edge connection from JPCIE1 (CPU1)
	Slot 8: PCIe 5.0 x8	Edge connection from JPCIE1 (CPU1)
Up to four PCIe x16 slots	Slot 1: PCIe 5.0 x16	Cable connection from JMCIO9 + JMCIO10 (CPU2)
	Slot 2: No Connection	No Connection
	Slot 3: PCIe 5.0 x16	Cable connection from JPCIE2 (CPU2)
	Slot 4: No Connection	No Connection
	Slot 5: PCIe 5.0 x16	Cable connection from JMCIO3 + JMCIO4 (CPU1)
	Slot 6: No Connection	No Connection
	Slot 7: PCIe 5.0 x16	Edge connection from JPCIE1 (CPU1)
	Slot 8: No Connection	No Connection

Installing a Riser Card

Before following the procedure below to install expansion cards, first turn off and remove power from the system as described in [Section 3.1](#) then remove the top cover.

Installing an Riser Card

1. Open any clips next to the slots and remove the PCI shield.
2. Install the riser card to the riser bracket, if necessary.
3. Install one or two expansion cards into the riser card. See the next page for M.2 SSD installation.
4. Insert the riser card bracket with the expansion cards into the chassis rear and connect cables.
5. Close any opened clips to secure the riser card bracket.

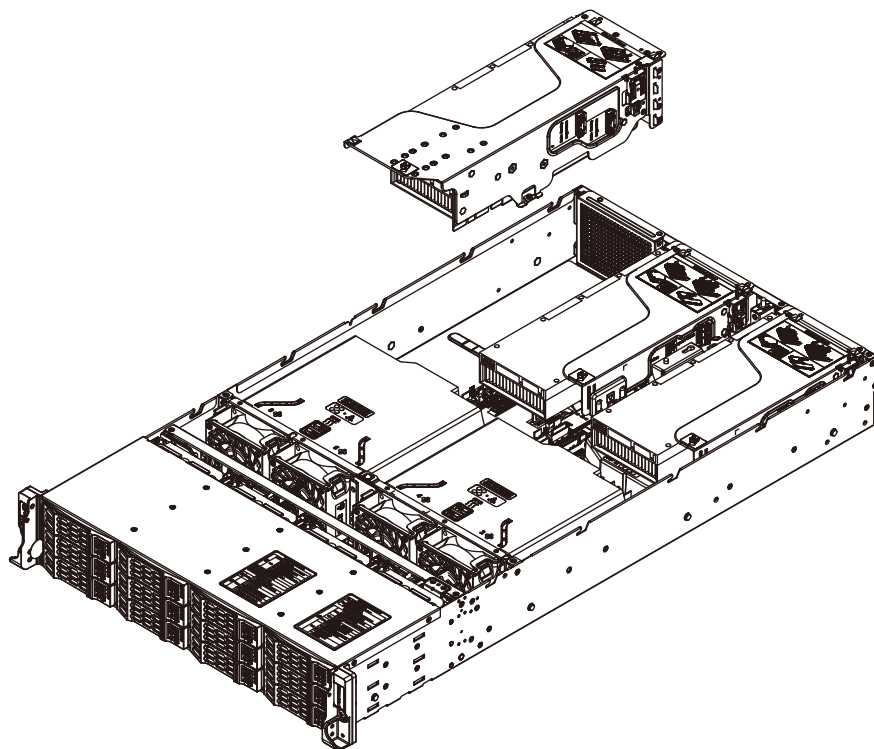


Figure 3-13. Installing a Riser Card

Installing M.2 Solid State Drives on the Motherboard

The H13DSH motherboard has two PCIe 3.0 x4 and NVMe M.2 slots (M.2-C1, M.2-C2). M.2 allows for a variety of card sizes, increased functionality, and spatial efficiency. The M.2 slot on the motherboard supports devices in the 2280 and 22110 form factors.

Installing M.2 SSDs

1. Remove power from the system and then remove the top cover as described in Sections [3.1](#) and [3.2](#).
2. Refer to its layout image in the [Motherboard manual](#) and locate the M.2 slot. Insert the plastic clip into the hole against the M.2 slot on the motherboard.
3. Turn the plastic clip 90° degrees.
4. Insert the M.2 sideways into the connector so that it lays flat, then secure it to the motherboard with the plastic clip.
5. Repeat as necessary for more M.2 drives.
6. Finish by replacing the cover and restoring power to the system.

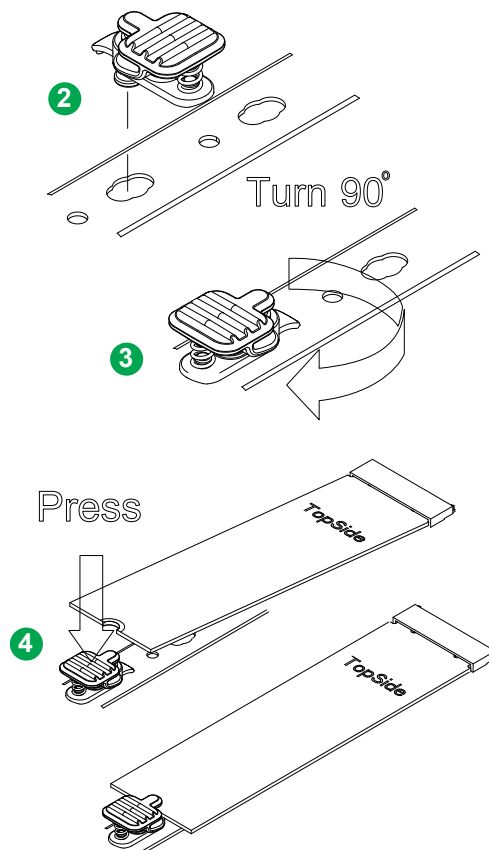


Figure 3-14. Installing an M.2 SSD

3.9 AIOM Cards

The system supports up to one Supermicro AIOM networking slot (OCP NIC 3.0 compatible).



Figure 3-15. AIOM Chassis Slot

AIOM Configurations			
Slot	Mechanical	Electrical	Thermal
A1	Small Form Factor, OCP 3.0	PCIe 5.0 x16 (CPU1)	Up to 15 W*

*AIOM cards exceeding the 15W Slot Power Envelope may require restricted conditions to meet thermal specification of the AIOM card. Contact your Supermicro account representative for more information.

Installing AIOM

1. Remove power as described in [Section 3.1](#).
2. Remove the blank cover plate (A1), unscrewing the thumbscrew.
3. Slide the AIOM card into the opening until it seats in the AIOM board slot.
4. Secure with the thumbscrew.

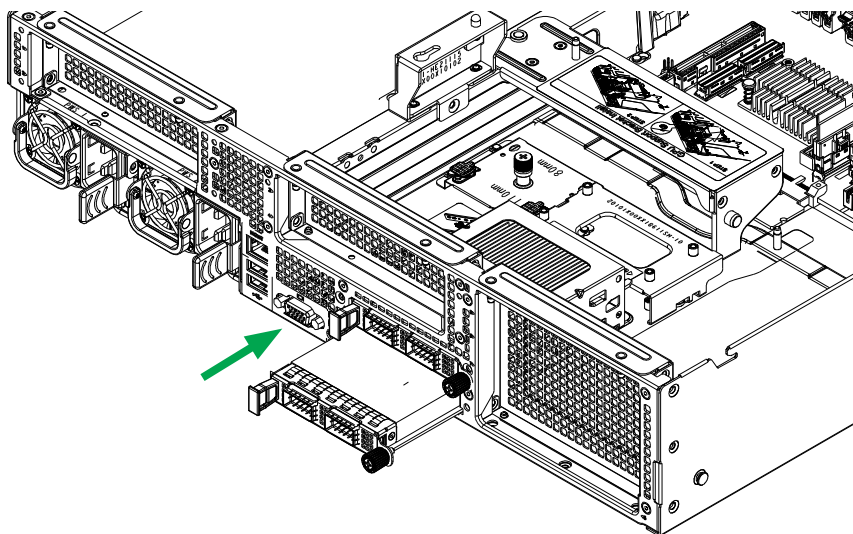


Figure 3-16. AIOM Chassis Slot

3.10 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 to 120 V or 180 to 240 V.

Power Supply LEDs

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

- **Solid Green:** When illuminated, indicates that the power supply is on.
- **Blinking Green:** When blinking, indicates that the power supply is plugged in and turned off by the system.
- **Blinking Amber:** When blinking, indicates that the power supply has a warning condition and continues to operate.
- **Solid Amber:** When illuminated, indicates that the power supply is plugged in, and is in an abnormal state. The system might need service. Please contact Supermicro technical support.

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.

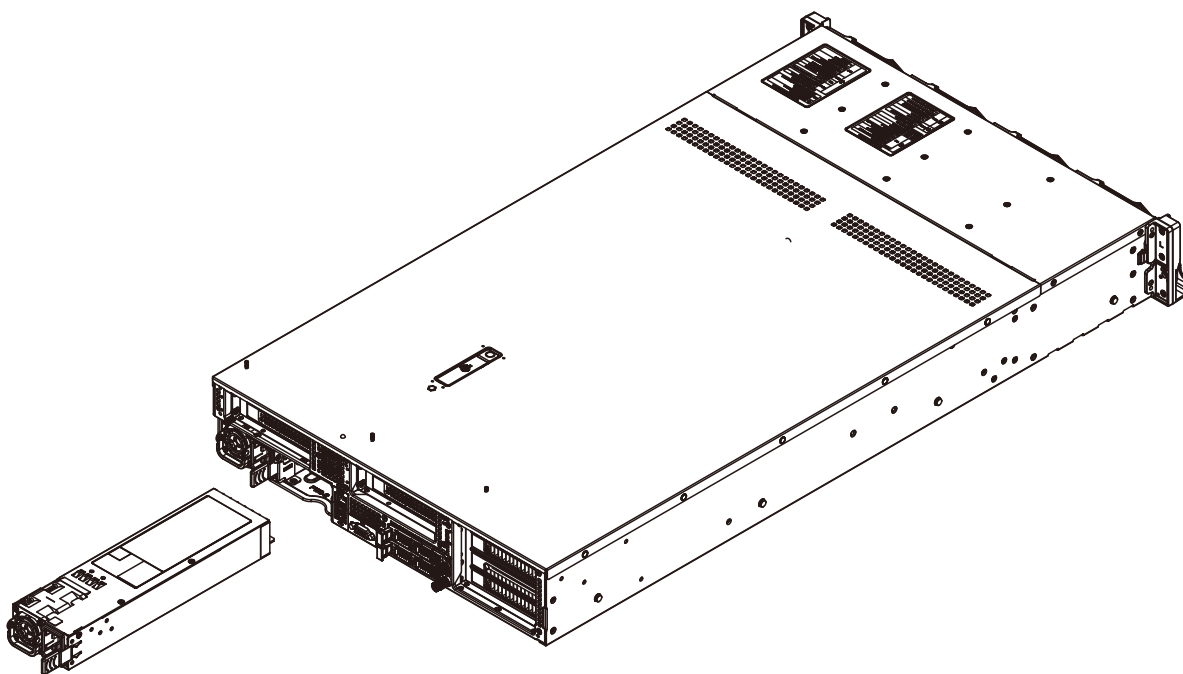
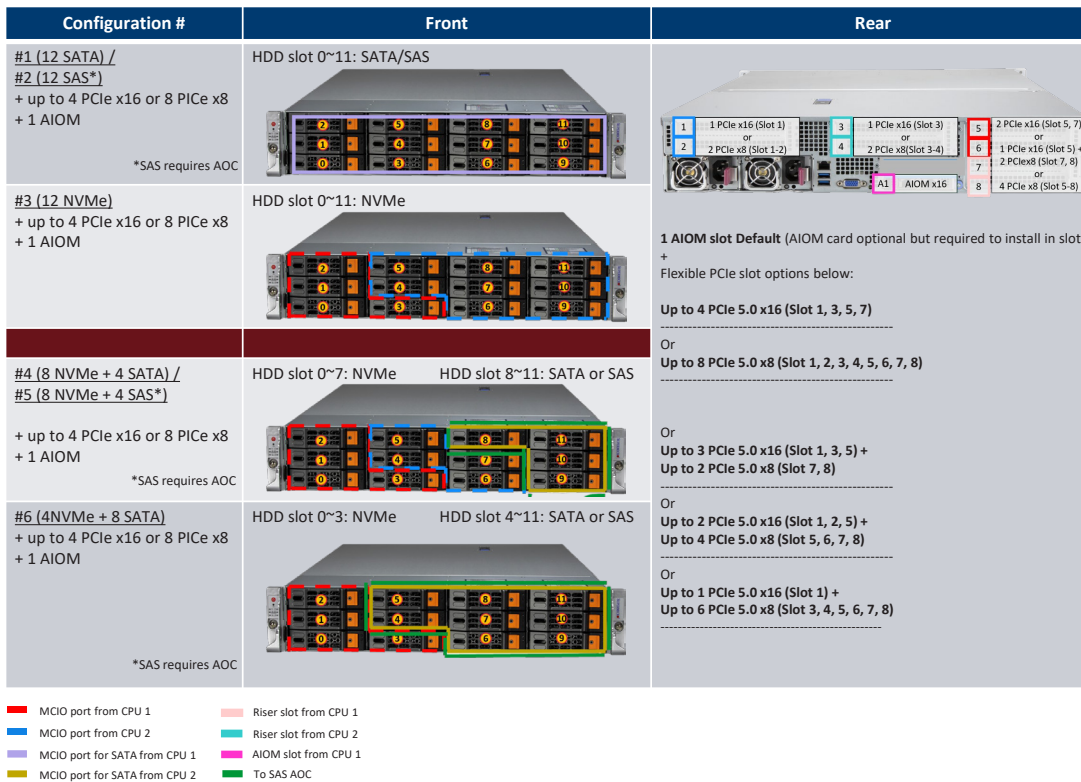
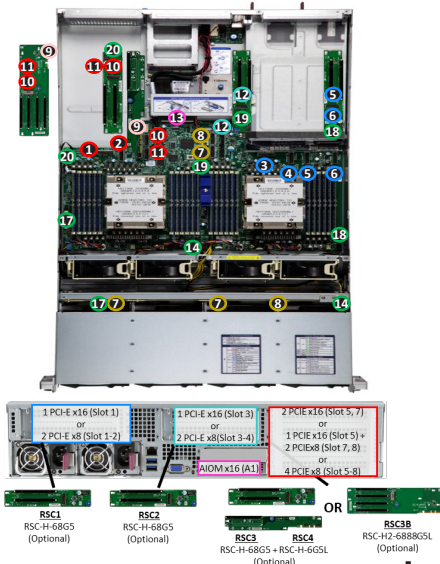


Figure 3-17. Installing a Power Supply Module

3.11 Cable Routing Diagrams



12 SATA



	Cable	Description	MB Port	Backplane/Riser and Port
7	CBL-MCIO-1255S4Y	SATA 0-7	JMCIO5	BP CN1/CN2
8	CBL-MCIO-1255S4Y	SATA 8-11	JMCIO6	BP CN3
13	CBL-GNZ5-1307	AIOM x16 (AIOM 1)	JAIOM1	N/A
14	CBL-PWEX-1142-40	BP Power	JPW8/ JPW4*	JPWR1
17	CBL-CDAT-0845-48	I2c cable	JVNI2C1	BP JIPMB1

* MB Port on MB Rev. 1.01A

- MCI0 port from CPU 1
- MCI0 port from CPU 2
- Power Cable
- AIOM slot from CPU 1
- MCI0 port for SATA from CPU 2
- Riser slot from CPU 1
- Riser slot from CPU 2
- From SAS ADC

Riser Card Add Options

1st Riser (slot 1 or 1+2)

	Cable/Part	Description	MB Port	Riser card Port
5	CBL-MCIO-1233M5R	PCIe x16 (Slot 1)	JMCIO9	RSC1 JPCIE1A1
6	CBL-MCIO-1226M5R	PCIe x8 (Slot 1-2)	JMCIO10	RSC1 JPCIE1B1
18	CBL-PWEX-1136-40	RSC1 power	JPW11/3*	JPWR1
	MCP-240-21108-0N	Riser bracket	NA	NA
	LBL-4000	Slot 2 cover	NA	NA
	RSC-H-68G5	Slot 1 Riser	NA	NA
OR				
5	CBL-MCIO-1233M5R	PCIe x8 (Slot 1 & 2)	JMCIO9	RSC1 JPCIE1A1
6	CBL-MCIO-1232M5	PCIe x16 (Slot 3)	JMCIO10	RSC1 JPCIE2A1
18	CBL-PWEX-1136-40	RSC1 power	JPW11/3*	JPWR1
	MCP-240-21108-0N	Riser bracket	NA	NA
	RSC-H-68G5	Slot 1/2 Riser	NA	NA

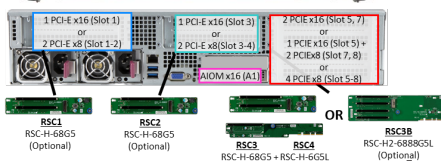
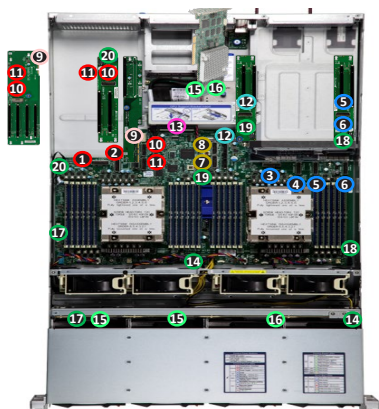
2nd Riser (slot 3 or 3+4)

	Cable/Part	Description	MB Port	Riser card Port
12	CBL-GNZ4-1227M5YRR16	PCIe x16 (Slot 3)	JPCIE2	RSC2 JPCIE1A1 and JPCIE1B1
19	CBL-PWEX-1136YB-25	RSC2 power	JPW3/2*	JPWR1
	MCP-240-21108-0N	Riser bracket	NA	NA
	MCP-120-82927-0N	Support bracket	NA	NA
	LBL-4000	Slot 2 cover	NA	NA
	RSC-H-68G5	Slot 3 Riser	NA	NA
OR				
12	CBL-GNZ4-1227M5YR21	PCIe x8 (Slot 3 & 4)	JPCIE2	RSC2 JPCIE1A1 and JPCIE2A1
19	CBL-PWEX-1136YB-25	RSC2 power	JPW3/2*	JPWR1
	MCP-240-21108-0N	Riser bracket	NA	NA
	MCP-120-82927-0N	Support bracket	NA	NA
	RSC-H-68G5	Slot 3 Riser	NA	NA

3rd Riser (slot 5+7 or 5+7+8 or 5 ~ 8)

	Cable/Part	Description	MB Port	Riser card Port
9	N/A		JPCIE1	RSC4 Gold Finger
10	CBL-MCIO-1226AM5R	2x PCIe x16 (Slot 5&7)	JMCIO4	RSC3 JPCIE1B1
11	CBL-MCIO-1226AM5R	2x PCIe x16 (Slot 5&7)	JMCIO3	RSC3 JPCIE1A1
20	CBL-PWEX-1136YB-25	RSC3 power	JPW1	JPWR1
	MCP-240-21908-0N	Riser bracket Slot 5-8	NA	NA
	LBL-4000	Slot 6 Cover	NA	NA
	RSC-H-68G5	Slot 5 Riser	NA	NA
	RSC-H-6G5L	Slot 7 Riser	NA	NA
OR				
9	N/A		JPCIE1	RSC3B Gold Finger
10	CBL-MCIO-1226AM5	1x PCIe x16 (Slot 5) + 2x PCIe x8 (Slot 7, 8)	JMCIO4	RSC3B JPCIE2B1
11	CBL-MCIO-1222AM5	1x PCIe x16 (Slot 5) + 2x PCIe x8 (Slot 7, 8)	JMCIO3	RSC3B JPCIE2A1
	MCP-240-21908-0N	Riser bracket Slot 5-8	NA	NA
	LBL-4000	Slot 6 Cover	NA	NA
	RSC-H2-6888G5L	Slot 5-8 riser	NA	NA
OR				
9	N/A		JPCIE1	RSC3B Gold Finger
10	CBL-MCIO-1222AM5	4x PCIe x8 (Slot 5~8)	JMCIO4	RSC3B JPCIE1A1
11	CBL-MCIO-1222AM5	4x PCIe x8 (Slot 5~8)	JMCIO3	RSC3B JPCIE2A1
	MCP-240-21908-0N	Riser bracket Slot 5-8	NA	NA
	RSC-H2-6888G5L	Slot 5-8 Riser	NA	NA

12 SAS



	Cable	Description	MB Port	Backplane/Riser and Port
15	CBL-SAST-1276F-100	SAS 0-11	JMCIO5	BP CN1/CN2
16	CBL-SAST-1201F-100		JMCIO6	BP CN3
13	CBL-GNZ5-1307	AIOM x16 (AIOM 1)	JAIOM1	N/A
14	CBL-PWEX-1142-40	BP Power	JPW8/ JPW4*	JPWR1
17	CBL-CDAT-0845-48	I2c cable	JVNI2C1	BP JIPMB1
	SAS AOC (3916/3816, etc)	SAS AOC	NA	Riser card

* MB Port on MB Rev. 1.01A

- MCIO port from CPU 1
- MCIO port for SATA from CPU 2
- MCIO port from CPU 2
- Power Cable
- AIOM slot from CPU 1
- Riser slot from CPU 1
- Riser slot from CPU 2
- From SAS AOC

Riser Card Add Options

2nd Riser (slot 3 or 3+4)

	Cable/Part	Description	MB Port	Riser card Port
5	CBL-MCIO-1233M5R	PCIe x16 (Slot 1)	JMCIO9	RSC1 JPCIE1A1
6	CBL-MCIO-1226M5R	PCIe x16 (Slot 1)	JMCIO10	RSC1 JPCIE1B1
18	CBL-PWEX-1136-40	RSC1 power	JPW11/3*	JPWR1
	MCP-240-21108-ON	Riser bracket	NA	NA
	LBL-4000	Slot 2 cover	NA	NA
	RSC-H-68G5	Slot 1 Riser	NA	NA
		OR		

	Cable/Part	Description	MB Port	Riser card Port
5	CBL-MCIO-1233M5R	PCIe x8 (Slot 1 & 2)	JMCIO9	RSC1 JPCIE1A1
6	CBL-MCIO-1232M5	PCIe x8 (Slot 1 & 2)	JMCIO10	RSC1 JPCIE2A1
18	CBL-PWEX-1136-40	RSC1 power	JPW11/3*	JPWR1
	MCP-240-21108-ON	Riser bracket	NA	NA
	RSC-H-68G5	Slot 1/2 Riser	NA	NA

	Cable/Part	Description	MB Port	Riser card Port
12	CBL-GNZ4-1227M5YR16	PCIe x16 (Slot 3)	JPCIE2	RSC2 JPCIE1A1 and JPCIE1B1
19	CBL-PWEX-1136YB-25	RSC2 power	JPW3/2*	JPWR1
	MCP-240-21108-ON	Riser bracket	NA	NA
	MCP-120-82927-ON	Support bracket	NA	NA
	LBL-4000	Slot 2 cover	NA	NA
	RSC-H-68G5	Slot 3 Riser	NA	NA
		OR		
12	CBL-GNZ4-1227M5YR21	PCIe x8 (Slot 3 & 4)	JPCIE2	RSC2 JPCIE1A1 and JPCIE2A1
19	CBL-PWEX-1136YB-25	RSC2 power	JPW3/2*	JPWR1
	MCP-240-21108-ON	Riser bracket	NA	NA
	MCP-120-82927-ON	Support bracket	NA	NA
	RSC-H-68G5	Slot 3 Riser	NA	NA

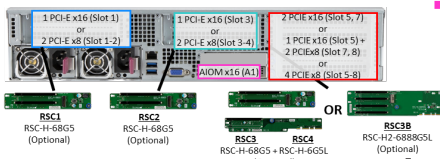
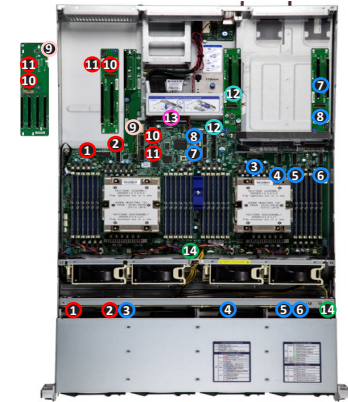
3rd Riser (slot 5+7 or 5+7+8 or 5~8)

	Cable/Part	Description	MB Port	Riser card Port
9	N/A		JPCIE1	RSC4 Gold Finger
10	CBL-MCIO-1226AM5R	2x PCIe x16 (Slot 5&7)	JMCIO4	RSC3 JPCIE1B1
11	CBL-MCIO-1226AM5R		JMCIO3	RSC3 JPCIE1A1
20	CBL-PWEX-1136YB-25	RSC3 power	JPW1	JPWR1
	MCP-240-21908-ON	Riser bracket Slot 5-8	NA	NA
	LBL-4000	Slot 6 Cover	NA	NA
	RSC-H-68G5	Slot 5 Riser	NA	NA
	RSC-H-6G5L	Slot 7 Riser	NA	NA
		OR		

	Cable/Part	Description	MB Port	Riser card Port
9	N/A		JPCIE1	RSC3B Gold Finger
10	CBL-MCIO-1226AM5	1x PCIe x16 (Slot 5) + 2x PCIe x8 (Slot 7, 8)	JMCIO4	RSC3B JPCIE2B1
11	CBL-MCIO-1222AM5		JMCIO3	RSC3B JPCIE2A1
	MCP-240-21908-ON	Riser bracket Slot 5-8	NA	NA
	LBL-4000	Slot 6 Cover	NA	NA
	RSC-H-2-6888G5L	Slot 5-8 riser	NA	NA
		OR		

	Cable/Part	Description	MB Port	Riser card Port
9	N/A		JPCIE1	RSC3B Gold Finger
10	CBL-MCIO-1222AM5	4x PCIe x8 (Slot 5~8)	JMCIO4	RSC3B JPCIE1A1
11	CBL-MCIO-1222AM5		JMCIO3	RSC3B JPCIE2A1
	MCP-240-21908-ON	Riser bracket Slot 5-8	NA	NA
	RSC-H-2-6888G5L	Slot 5-8 Riser	NA	NA

12 NVMe



	Cable	Description	MB Port	Backplane/Riser and Port
1	CBL-MCIO-1245M5	NVMe 0-1	JMCIO1	BP NVMe1
2	CBL-MCIO-1250M5-Z	NVMe 2-3	JMCIO2	BP NVMe2
3	CBL-MCIO-1245M5	NVMe 4-5	JMICO7	BP NVMe3
4	CBL-MCIO-1245M5	NVMe 6-7	JMCIO8	BP NVMe4
5	CBL-MCIO-1245M5	NVMe 8-9	JMCIO9	BP NVMe5
6	CBL-MCIO-1245M5	NVMe 10-11	JMCIO10	BP NVMe6
13	CBL-GNZ5-1307	AIOM x16 (AIOM 1)	JAIOM1	N/A
14	CBL-PWEX-1142-40	BP Power	JPW8/ JPW4*	JPWR1

* MB Port on MB Rev. 1.01A

- MCIO port from CPU 1
- MCIO port from CPU 2
- Power Cable
- AIOM slot from CPU 1
- MCIO port for SATA from CPU 2
- Riser slot from CPU 1
- Riser slot from CPU 2
- From SAS AOC

Riser Card Add Options

2nd Riser (slot 3 or 3+4)

	Cable/Part	Description	MB Port	Riser card Port
7	CBL-MCIO-1255M5R	PCIe x16 (Slot 1)	JMCIO5	RSC1 JPCIE1A1
8	CBL-MCIO-1255M5R	PCIe x16 (Slot 1)	JMCIO6	RSC1 JPCIE1B1
18	CBL-PWEX-1136-40	RSC1 power	JPW11/3*	JPWR1
	MCP-240-21108-ON	Riser bracket	NA	NA
	LBL-4000	Slot 2 cover	NA	NA
	RSC-H-68G5	Slot 1 Riser	NA	NA
		OR		

	Cable/Part	Description	MB Port	Riser card Port
7	CBL-MCIO-1255M5R	PCIe x8 (Slot 1 & 2)	JMCIO5	RSC1 JPCIE1A1
8	CBL-MCIO-1245M5	PCIe x8 (Slot 1 & 2)	JMCIO6	RSC1 JPCIE2A1
18	CBL-PWEX-1136-40	RSC1 power	JPW11/3*	JPWR1
	MCP-240-21108-ON	Riser bracket	NA	NA
	RSC-H-68G5	Slot 1/2 Riser	NA	NA

	Cable/Part	Description	MB Port	Riser card Port
12	CBL-GNZ4-1227M5YRR16	PCIe x16 (Slot 3)	JPCIE2	RSC2 JPCIE1A1 and JPCIE1B1
19	CBL-PWEX-1136YB-25	RSC2 power	JPW3/2*	JPWR1
	MCP-240-21108-ON	Riser bracket	NA	NA
	MCP-120-82927-ON	Support bracket	NA	NA
	LBL-4000	Slot 2 cover	NA	NA
	RSC-H-68G5	Slot 3 Riser	NA	NA
		OR		

	Cable/Part	Description	MB Port	Riser card Port
12	CBL-GNZ4-1227M5YR21	PCIe x8 (Slot 3 & 4)	JPCIE2	RSC2 JPCIE1A1 and JPCIE2A1
19	CBL-PWEX-1136YB-25	RSC2 power	JPW3/2*	JPWR1
	MCP-240-21108-ON	Riser bracket	NA	NA
	MCP-120-82927-ON	Support bracket	NA	NA
	RSC-H-68G5	Slot 3 Riser	NA	NA

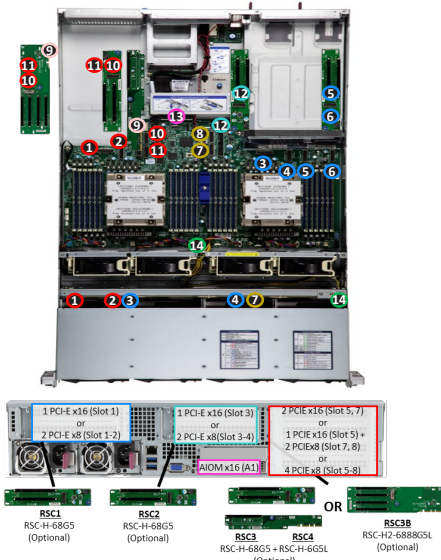
3rd Riser (slot 5+7 or 5+7+8 or 5 ~ 8)

	Cable/Part	Description	MB Port	Riser card Port
9	N/A		JPCIE1	RSC4 Gold Finger
10	CBL-MCIO-1226AM5R	RSC3 + RSC4 2x PCIe x16 (Slot 5&7)	JMCIO4	RSC3 JPCIE1B1
11	CBL-MCIO-1226AM5R		JMCIO3	RSC3 JPCIE1A1
20	CBL-PWEX-1136YB-25	RSC3 power	JPW1	JPWR1
	MCP-240-21908-ON	Riser bracket Slot 5-8	NA	NA
	LBL-4000	Slot 6 Cover	NA	NA
	RSC-H-68G5	Slot 5 Riser	NA	NA
	RSC-H-6G5L	Slot 7 Riser	NA	NA
		OR		

	Cable/Part	Description	MB Port	Riser card Port
9	N/A		JPCIE1	RSC3B Gold Finger
10	CBL-MCIO-1226AM5	1x PCIe x16 (Slot 5) + 2x PCIe x8 (Slot 7, 8)	JMCIO4	RSC3B JPCIE2B1
11	CBL-MCIO-1222AM5		JMCIO3	RSC3B JPCIE2A1
	MCP-240-21908-ON	Riser bracket Slot 5-8	NA	NA
	LBL-4000	Slot 6 Cover	NA	NA
	RSC-H-2-6888G5L	Slot 5-8 riser	NA	NA
		OR		

	Cable/Part	Description	MB Port	Riser card Port
9	N/A		JPCIE1	RSC3B Gold Finger
10	CBL-MCIO-1222AM5	RSC3B 4x PCIe x8 (Slot 5~8)	JMCIO4	RSC3B JPCIE1A1
11	CBL-MCIO-1222AM5		JMCIO3	RSC3B JPCIE2A1
	MCP-240-21908-ON	Riser bracket Slot 5-8	NA	NA
	RSC-H-2-6888G5L	Slot 5-8 Riser	NA	NA

8 NVMe + 4 SATA



	Cable	Description	MB Port	Backplane/Riser and Port
1	CBL-MCIO-1245M5	NVMe 0-1	JMCIO1	BP NVMe1
2	CBL-MCIO-1250M5-Z	NVMe 2-3	JMCIO2	BP NVMe2
3	CBL-MCIO-1245M5	NVMe 4-5	JMCIO7	BP NVMe3
4	CBL-MCIO-1245M5	NVMe 6-7	JMCIO8	BP NVMe4
7	CBL-MCIO-1255S4Y	SATA 0-3	JMCIO5	BP CN3
13	CBL-GNZ5-1307	AIOM x16 (AIOM 1)	JAIOM1	N/A
14	CBL-PWEX-1142-40	BP Power	JPW8/ JPW4*	JPWR1

* MB Port on MB Rev. 1.01A

- MCIO port from CPU 1 ■ MCIO port for SATA from CPU 2
- MCIO port from CPU 2 ■ Riser slot from CPU 1
- Power Cable ■ Riser slot from CPU 2
- AIOM slot from CPU 1 ■ From SAS AOC

Riser Card Add Options

2nd Riser (slot 3 or 3+4)

1 st Riser (slot 1 or 1+2)				
	Cable/Part	Description	MB Port	Riser card Port
5	CBL-MCIO-1233M5R	PCIe x16 (Slot 1)	JMCIO9	RSC1 JPCIE1A1
6	CBL-MCIO-1226M5R		JMCIO10	RSC1 JPCIE1B1
18	CBL-PWEX-1136-40	RSC1 power	JPW11/3*	JPWR1
	MCP-240-21108-ON	Riser bracket	NA	NA
	LBL-4000	Slot 2 cover	NA	NA
	RSC-H-68G5	Slot 1 Riser	NA	NA
	OR			
	Cable/Part	Description	MB Port	Riser card Port
5	CBL-MCIO-1233M5R	PCIe x8 (Slot 1 & 2)	JMCIO9	RSC1 JPCIE1A1
6	CBL-MCIO-1232M5		JMCIO10	RSC1 JPCIE2A1
18	CBL-PWEX-1136-40	RSC1 power	JPW11/3*	JPWR1
	MCP-240-21108-ON	Riser bracket	NA	NA
	RSC-H-68G5	Slot 1/2 Riser	NA	NA

	Cable/Part	Description	MB Port	Riser card Port
12	CBL-GNZ4-1227M5YRR16	PCIe x16 (Slot 3)	JPCIE2	RSC2 JPCIE1A1 and JPCIE1B1
19	CBL-PWEX-1136YB-25	RSC2 power	JPW3/2*	JPWR1
	MCP-240-21108-ON	Riser bracket	NA	NA
	MCP-120-82927-ON	Support bracket	NA	NA
	LBL-4000	Slot 2 cover	NA	NA
	RSC-H-68G5	Slot 3 Riser	NA	NA
	OR			
	Cable/Part	Description	MB Port	Riser card Port
12	CBL-GNZ4-1227M5YR21	PCIe x8 (Slot 3 & 4)	JPCIE2	RSC2 JPCIE1A1 and JPCIE2A1
19	CBL-PWEX-1136YB-25	RSC2 power	JPW3/2*	JPWR1
	MCP-240-21108-ON	Riser bracket	NA	NA
	MCP-120-82927-ON	Support bracket	NA	NA
	RSC-H-68G5	Slot 3 Riser	NA	NA

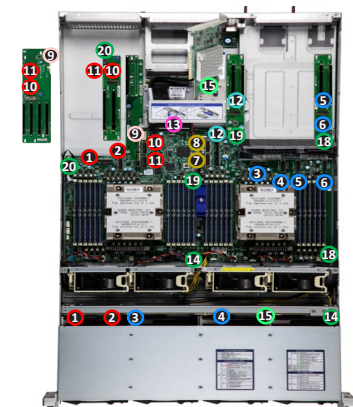
3rd Riser (slot 5+7 or 5+7+8 or 5~8)

	Cable/Part	Description	MB Port	Riser card Port
9	N/A		JPCIE1	RSC4 Gold Finger
10	CBL-MCIO-1226AM5R	RSC3 + RSC4 2x PCIe x16 (Slot 5&7)	JMCIO4	RSC3 JPCIE1B1
11	CBL-MCIO-1226AM5R		JMCIO3	RSC3 JPCIE1A1
20	CBL-PWEX-1136YB-25	RSC3 power	JPW1	JPWR1
	MCP-240-21908-ON	Riser bracket Slot 5-8	NA	NA
	LBL-4000	Slot 6 Cover	NA	NA
	RSC-H-68G5	Slot 5 Riser	NA	NA
	RSC-H-6G5L	Slot 7 Riser	NA	NA
	OR			

	Cable/Part	Description	MB Port	Riser card Port
9	N/A		JPCIE1	RSC3B Gold Finger
10	CBL-MCIO-1226AM5	1x PCIe x16 (Slot 5) + 2x PCIe x8 (Slot 7, 8)	JMCIO4	RSC3B JPCIE2B1
11	CBL-MCIO-1222AM5		JMCIO3	RSC3B JPCIE2A1
	MCP-240-21908-ON	Riser bracket Slot 5-8	NA	NA
	LBL-4000	Slot 6 Cover	NA	NA
	RSC-H2-6888G5L	Slot 5-8 riser	NA	NA
	OR			

	Cable/Part	Description	MB Port	Riser card Port
9	N/A		JPCIE1	RSC3B Gold Finger
10	CBL-MCIO-1222AM5	RSC3B 4x PCIe x8 (Slot 5~8)	JMCIO4	RSC3B JPCIE1A1
11	CBL-MCIO-1222AM5		JMCIO3	RSC3B JPCIE2A1
	MCP-240-21908-ON	Riser bracket Slot 5-8	NA	NA
	RSC-H2-6888G5L	Slot 5-8 Riser	NA	NA

8 NVMe + 4 SAS



1st Riser (slot 1 or 1+2)

Cable/Part	Description	MB Port	Riser card Port
5 CBL-MCIO-1233M5R	PCIe x16 (Slot 1)	JMCIO9	RSC1 JPCIE1A1
6 CBL-MCIO-1226M5R	PCIe x16 (Slot 1)	JMCIO10	RSC1 JPCIE1B1
18 CBL-PWEX-1136-40	RSC1 power	JPW11/3*	JPWR1
MCP-240-21108-ON	Riser bracket	NA	NA
LBL-4000	Slot 2 cover	NA	NA
RSC-H-68G5	Slot 1 Riser	NA	NA
OR			

Cable/Part	Description	MB Port	Riser card Port
5 CBL-MCIO-1233M5R	PCIe x8 (Slot 1 & 2)	JMCIO9	RSC1 JPCIE1A1
6 CBL-MCIO-1232M5	PCIe x8 (Slot 1 & 2)	JMCIO10	RSC1 JPICE2A1
18 CBL-PWEX-1136-40	RSC1 power	JPW11/3*	JPWR1
MCP-240-21108-ON	Riser bracket	NA	NA
RSC-H-68G5	Slot 1/2 Riser	NA	NA

Cable	Description	MB Port	Backplane/Riser and Port
1 CBL-MCIO-1245M5	NVMe 0-1	JMCIO1	BP NVMe1
2 CBL-MCIO-1250M5-Z	NVMe 2-3	JMCIO2	BP NVMe2
3 CBL-MCIO-1245M5	NVMe 4-5	JMICO7	BP NVMe3
4 CBL-MCIO-1245M5	NVMe 6-7	JMCIO8	BP NVMe4
13 CBL-GNZ5-1307	AIOM x16 (AIOM 1)	JAIOM1	N/A
14 CBL-PWEX-1142-40	BP Power	JPW8/JPW4*	JPWR1
15 CBL-SAST-1201F-100	SAS 0-3	SAS AOC	BP CN3
SAS AOC (3908/3808, etc)	SAS AOC	NA	Riser card

* MB Port on MB Rev. 1.01A

- MCIO port from CPU 1
- MCIO port from CPU 2
- Power Cable
- AIOM slot from CPU 1
- MCIO port for SATA from CPU 2
- Riser slot from CPU 1
- Riser slot from CPU 2
- From SAS AOC

Riser Card Add Options

2nd Riser (slot 3 or 3+4)

Cable/Part	Description	MB Port	Riser card Port
12 CBL-GNZ4-1227M5YRR16	PCIe x16 (Slot 3)	JPCIE2	RSC2 JPCIE1A1 and JPCIE1B1
19 CBL-PWEX-1136YB-25	RSC2 power	JPW3/2*	JPWR1
MCP-240-21108-ON	Riser bracket	NA	NA
MCP-120-82927-ON	Support bracket	NA	NA
LBL-4000	Slot 2 cover	NA	NA
RSC-H-68G5	Slot 3 Riser	NA	NA
OR			
Cable/Part	Description	MB Port	Riser card Port
12 CBL-GNZ4-1227M5YR21	PCIe x8 (Slot 3 & 4)	JPCIE2	RSC2 JPCIE1A1 and JPICE2A1
19 CBL-PWEX-1136YB-25	RSC2 power	JPW3/2*	JPWR1
MCP-240-21108-ON	Riser bracket	NA	NA
MCP-120-82927-ON	Support bracket	NA	NA
RSC-H-68G5	Slot 3 Riser	NA	NA

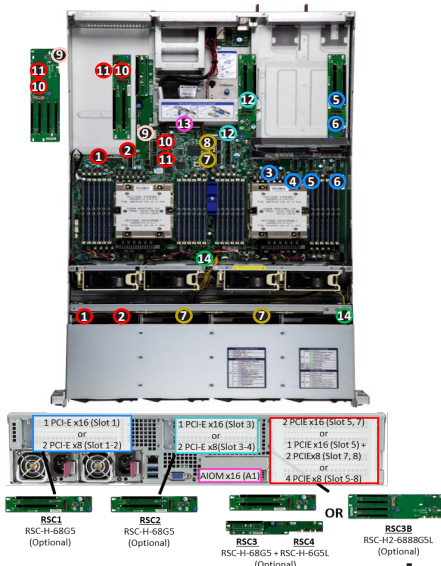
3rd Riser (slot 5+7 or 5+7+8 or 5~8)

Cable/Part	Description	MB Port	Riser card Port
9 N/A		JPCIE1	RSC4 Gold Finger
10 CBL-MCIO-1226AM5R	RSC3 + RSC4 2x PCIe x16 (Slot 5&7)	JMCIO4	RSC3 JPCIE1B1
11 CBL-MCIO-1226AM5R		JMCIO3	RSC3 JPCIE1A1
20 CBL-PWEX-1136YB-25	RSC3 power	JPW1	JPWR1
MCP-240-21908-ON	Riser bracket Slot 5-8	NA	NA
LBL-4000	Slot 6 Cover	NA	NA
RSC-H-68G5	Slot 5 Riser	NA	NA
RSC-H-6G5L	Slot 7 Riser	NA	NA
OR			

Cable/Part	Description	MB Port	Riser card Port
9 N/A		JPCIE1	RSC3B Gold Finger
10 CBL-MCIO-1226AM5	1x PCIe x16 (Slot 5) + 2x PCIe x8 (Slot 7, 8)	JMCIO4	RSC3B JPCIE2B1
11 CBL-MCIO-1222AM5		JMCIO3	RSC3B JPCIE2A1
MCP-240-21908-ON	Riser bracket Slot 5-8	NA	NA
LBL-4000	Slot 6 Cover	NA	NA
RSC-H2-6888G5L	Slot 5-8 riser	NA	NA
OR			

Cable/Part	Description	MB Port	Riser card Port
9 N/A		JPCIE1	RSC3B Gold Finger
10 CBL-MCIO-1222AM5	RSC3B 4x PCIe x8 (Slot 5-8)	JMCIO4	RSC3B JPCIE1A1
11 CBL-MCIO-1222AM5		JMCIO3	RSC3B JPICE2A1
MCP-240-21908-ON	Riser bracket Slot 5-8	NA	NA
RSC-H2-6888G5L	Slot 5-8 Riser	NA	NA

4 NVMe + 8 SATA



	Cable	Description	MB Port	Backplane/Riser and Port
1	CBL-MCIO-1245M5	NVMe 0-1	JMCIO1	BP NVMe1
2	CBL-MCIO-1250M5-2	NVMe 2-3	JMCIO2	BP NVMe2
7	CBL-MCIO-1255S4Y	SATA 0-7	JMCIO5	BP CN3
13	CBL-GNZ5-1307	AIOM x16 (AIOM 1)	JAIOM1	N/A
14	CBL-PWEX-1142-40	BP Power	JPW8/ JPW4*	JPWR1

* MB Port on MB Rev. 1.01A

- MCI0 port from CPU 1
- MCI0 port from CPU 2
- Power Cable
- AIOM slot from CPU 1
- MCI0 port for SATA from CPU 2
- Riser slot from CPU 1
- Riser slot from CPU 2
- From SAS AOC

Riser Card Add Options

2nd Riser (slot 3 or 3+4)

	Cable/Part	Description	MB Port	Riser card Port
5	CBL-MCIO-1233M5R	PCIe x16 (Slot 1)	JMCIO9	RSC1 JPCIE1A1
6	CBL-MCIO-1226M5R	PCIe x8 (Slot 1)	JMCIO10	RSC1 JPCIE1B1
18	CBL-PWEX-1136-40	RSC1 power	JPW11/3*	JPWR1
	MCP-240-21108-0N	Riser bracket	NA	NA
	LBL-4000	Slot 2 cover	NA	NA
	RSC-H-68G5	Slot 1 Riser	NA	NA
	OR			

	Cable/Part	Description	MB Port	Riser card Port
5	CBL-MCIO-1233M5R	PCIe x8 (Slot 1 & 2)	JMCIO9	RSC1 JPCIE1A1
6	CBL-MCIO-1232M5	PCIe x8 (Slot 1 & 2)	JMCIO10	RSC1 JPICE2A1
18	CBL-PWEX-1136-40	RSC1 power	JPW11/3*	JPWR1
	MCP-240-21108-0N	Riser bracket	NA	NA
	RSC-H-68G5	Slot 1/2 Riser	NA	NA

	Cable/Part	Description	MB Port	Riser card Port
12	CBL-GNZ4-1227M5YRR16	PCIe x16 (Slot 3)	JPCIE2	RSC2 JPCIE1A1 and JPCIE1B1
19	CBL-PWEX-1136YB-25	RSC2 power	JPW3/2*	JPWR1
	MCP-240-21108-0N	Riser bracket	NA	NA
	MCP-120-82927-0N	Support bracket	NA	NA
	LBL-4000	Slot 2 cover	NA	NA
	RSC-H-68G5	Slot 3 Riser	NA	NA
	OR			

	Cable/Part	Description	MB Port	Riser card Port
12	CBL-GNZ4-1227M5YR21	PCIe x8 (Slot 3 & 4)	JPCIE2	RSC2 JPCIE1A1 and JPICE2A1
19	CBL-PWEX-1136YB-25	RSC2 power	JPW3/2*	JPWR1
	MCP-240-21108-0N	Riser bracket	NA	NA
	MCP-120-82927-0N	Support bracket	NA	NA
	RSC-H-68G5	Slot 3 Riser	NA	NA

3rd Riser (slot 5+7 or 5+7+8 or 5~8)

	Cable/Part	Description	MB Port	Riser card Port
9	N/A		JPCIE1	RSC4 Gold Finger
10	CBL-MCIO-1226AM5R	RSC3 + RSC4 2x PCIe x16 (Slot 5&7)	JMCIO4	RSC3 JPCIE1B1
11	CBL-MCIO-1226AM5R		JMCIO3	RSC3 JPCIE1A1
20	CBL-PWEX-1136YB-25	RSC3 power	JPW1	JPWR1
	MCP-240-21908-0N	Riser bracket Slot 5-8	NA	NA
	LBL-4000	Slot 6 Cover	NA	NA
	RSC-H-68G5	Slot 5 Riser	NA	NA
	RSC-H-6G5L	Slot 7 Riser	NA	NA
	OR			

	Cable/Part	Description	MB Port	Riser card Port
9	N/A		JPCIE1	RSC3B Gold Finger
10	CBL-MCIO-1226AM5	1x PCIe x16 (Slot 5) + 2x PCIe x8 (Slot 7, 8)	JMCIO4	RSC3B JPCIE2B1
11	CBL-MCIO-1222AM5		JMCIO3	RSC3B JPICE2A1
	MCP-240-21908-0N	Riser bracket Slot 5-8	NA	NA
	LBL-4000	Slot 6 Cover	NA	NA
	RSC-H-6888G5L	Slot 5-8 riser	NA	NA
	OR			

	Cable/Part	Description	MB Port	Riser card Port
9	N/A		JPCIE1	RSC3B Gold Finger
10	CBL-MCIO-1222AM5	RSC3B 4x PCIe x8 (Slot 5~8)	JMCIO4	RSC3B JPCIE1A1
11	CBL-MCIO-1222AM5		JMCIO3	RSC3B JPICE2A1
	MCP-240-21908-0N	Riser bracket Slot 5-8	NA	NA
	RSC-H-6888G5L	Slot 5-8 Riser	NA	NA

Chapter 4

Motherboard Connections

This section describes the connections on the motherboard and provides pinout definitions. Note that depending on how the system is configured, not all connections are required. The LEDs on the motherboard are also described here. A motherboard layout indicating component locations may be found in Chapter 1. More detail can be found in the [Motherboard Manual](#). Please review the Safety Precautions in [Appendix A](#) before installing or removing components.

4.1 Power Connections

Power Connectors

JPW1 to JPW11 are the 8-pin power connectors for GPU, BPN and AOC power.

8-pin GPU Power Pin Definitions	
Pin#	Definition
1-11	Power 12 V, GPU, BPN and AOC

Onboard Battery

The onboard backup battery is located at BT1. The onboard battery provides backup power to the on chip CMOS, which stores the BIOS' setup information. It also provides power to the Real Time Clock (RTC) to keep it running.

4.2 Headers and Connectors

External BMC I2C Header

A System Management Bus header for IPMI 2.0 is located at JIPMB1. Connect a cable to this header to use the IPMB I²C connection on your system. Refer to the table below for pin definitions.

External I ² C Header Pin Definitions	
Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

NC-SI Connector

A Network-Controller Sideband Interface (NC-SI) header is located at JNCSI1 on the motherboard. The NCSI header is used to connect a Network Interface Card (NIC) to the motherboard so that the BMC is able to poll the temperature reading from it.

Note: For detailed instructions on how to configure Network Interface Card (NIC) settings, refer to the Network Interface Card Configuration User's Guide posted on: <http://www.supermicro.com>.

TPM/Port 80 Header

A Trusted Platform Module (TPM)/Port 80 header is located at JTPM1 to provide TPM support and Port 80 connection. Use this header to enhance system performance and data security. Refer to the table below for pin definitions. Please go to the following link for more information on the TPM: <http://www.supermicro.com/manuals/other/TPM.pdf>.

Trusted Platform Module Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	+3.3 V	2	SPI_CS#
3	RESET#	4	SPI_MISO
5	SPI_CLK	6	GND
7	SPI_MOSI	8	NC
9	+3.3 V Stdbby	10	SPI_IRQ#

NVMe Ports (NVMe P1_0~7, P2_0~11)

The H13DSH has 20 NVMe ports (2 ports per 1 MCIO x 8) on the motherboard. These ports provide high speed and low latency directly from the CPU to NVMe Solid State (SSD) drives. This greatly increases SSD data-throughput performance and significantly reduces PCIe latency by simplifying driver/software requirements resulting from direct PCIe interface from the CPU to the NVMe SSD drives.

SATA/NVMe Hybrid Ports (P1_NVMe 0/1, P1_SATA 0-7; P1_NVMe 2/3, P1_SATA 8-15; P2_NVMe 0/1, P2_SATA 0-7; P2_NVMe 2/3, P2_SATA8-15)

Each SATA/NVMe hybrid port can support up to eight SATA 3.0 ports or two NVMe ports (PCIe x4), for a total of 32 SATA ports or 8 NVMe ports.

Expansion Slots

The motherboard features two expansion slots (JPCIE1 and JPCIE2). These are both PCIe 5.0 x16 slots (JPCIE1 is for a left-hand riser card and JPCIE2 is for a right-hand riser card).

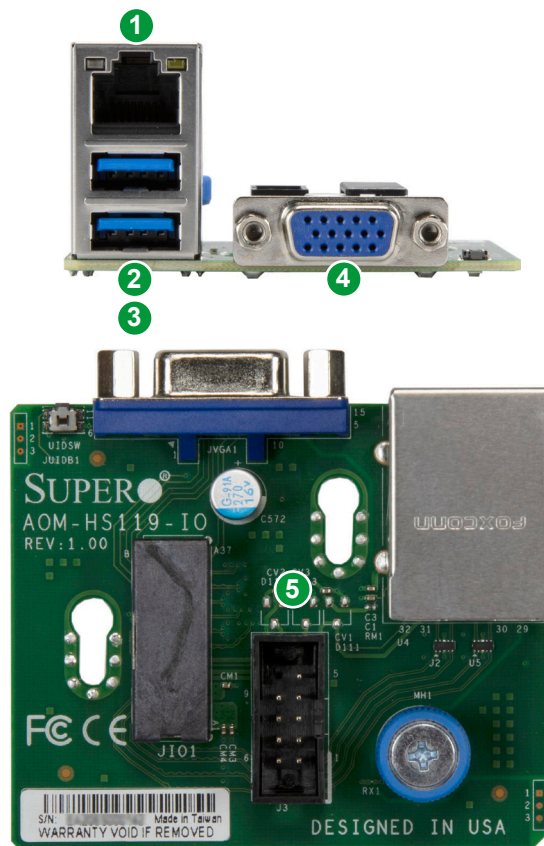
AIOM Slot

An Advanced I/O Module (AIOM) slot supports a networking adapter card with multiple RJ45 ports. This slot also supports NC-SI.

4.3 Input/Output Ports

I/O Ports

The low-profile slimSAS I/O connector, located at JIO1, is used to connect the motherboard to an I/O mezzanine board, AOM-HS119-IO, to provide VGA/COM/BMC/USB connections.



I/O Ports from AOM-HS119-IO	
#	Description
1	BMC_LAN Port
2	USB 0 (3.0)
3	USB 1 (3.0)
4	VGA Port
5	COM Port Header

VGA Connections

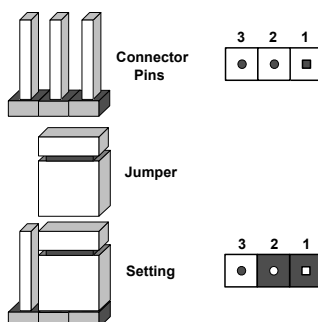
A VGA header is located at JFP2 on the motherboard.

4.4 Jumpers

How Jumpers Work

To modify the operation of the motherboard, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin #1 is identified with a square solder pad on the printed circuit board. See the diagram below for an example of jumping pins 1 and 2. Refer to the motherboard layout page for jumper locations.

Note: On two-pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.



CMOS Clear (JBT1)

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 and unplug the power cord(s).
2. Remove the cover of the chassis to access the motherboard.
3. Remove the CMOS battery from the motherboard.
4. Short the CMOS pads with a metal object such as a small screwdriver for at least four seconds.
5. Remove the screwdriver (or shorting device).
6. Re-install the CMOS battery on the motherboard.
7. Replace the cover, reconnect the power cord(s), and power on the system.

Note: Clearing CMOS will also clear all passwords.

Do not use the PW_ON connector to clear CMOS.



JSATA1/JSATA2

The 3-pin jumpers at JSATA1 and JSATA2 provide the option to switch the hybrid port (JMCI0 1/2/5/6) between SATA/NVMe. Refer to the table below for pin definitions.

JSATA1/JSATA2 Pin Definitions	
Pin#	Definition
1-2	Auto (Depends on system configuration)
2-3	SATA
Open	NVMe

4.5 LED Indicators

Onboard Power LED

LED_PWR is an onboard power LED. When this LED is lit, it means system is in the power-on state, and the onboard power status is ok. Turn off the system and unplug the power cord before removing or installing components.

Onboard Power LED Indicator	
LED Color	Definition
Off	System Off (power cable not connected)
Green	System On, Power OK

BMC Heartbeat LED

A BMC Heartbeat LED is located at LED BMC on the serverboard. When LED BMC is blinking, BMC is functioning normally. See the table below for more information.

BMC Heartbeat LED States		
Color	State	Definition
Green	Solid On	BMC is not ready.
Green	Blinking	BMC Normal
Green	Fast Blinking	BMC: Initializing

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 www.supernmicro.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. Go to the Supermicro web page for your motherboard and click on "Download the Latest Drivers and Utilities", select the proper driver, and copy it to a USB flash drive.
3. Boot from a bootable device with Windows OS installation. You can see a bootable device list by pressing <F11> during the system startup.

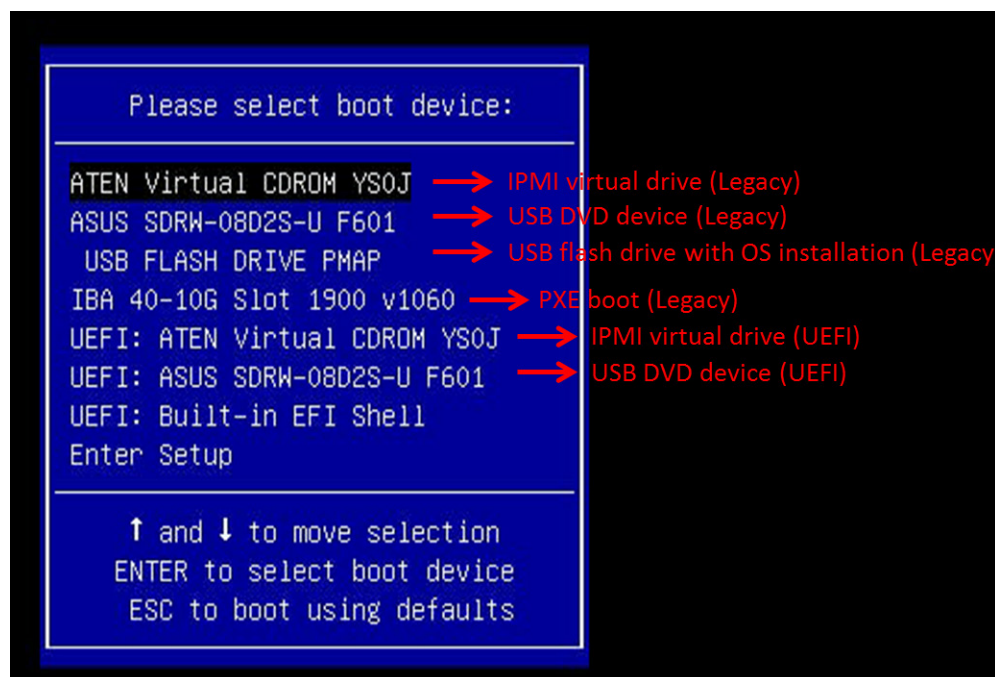


Figure 5-1. Select Boot Device

4. 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 on “Load driver” link at the bottom left corner.

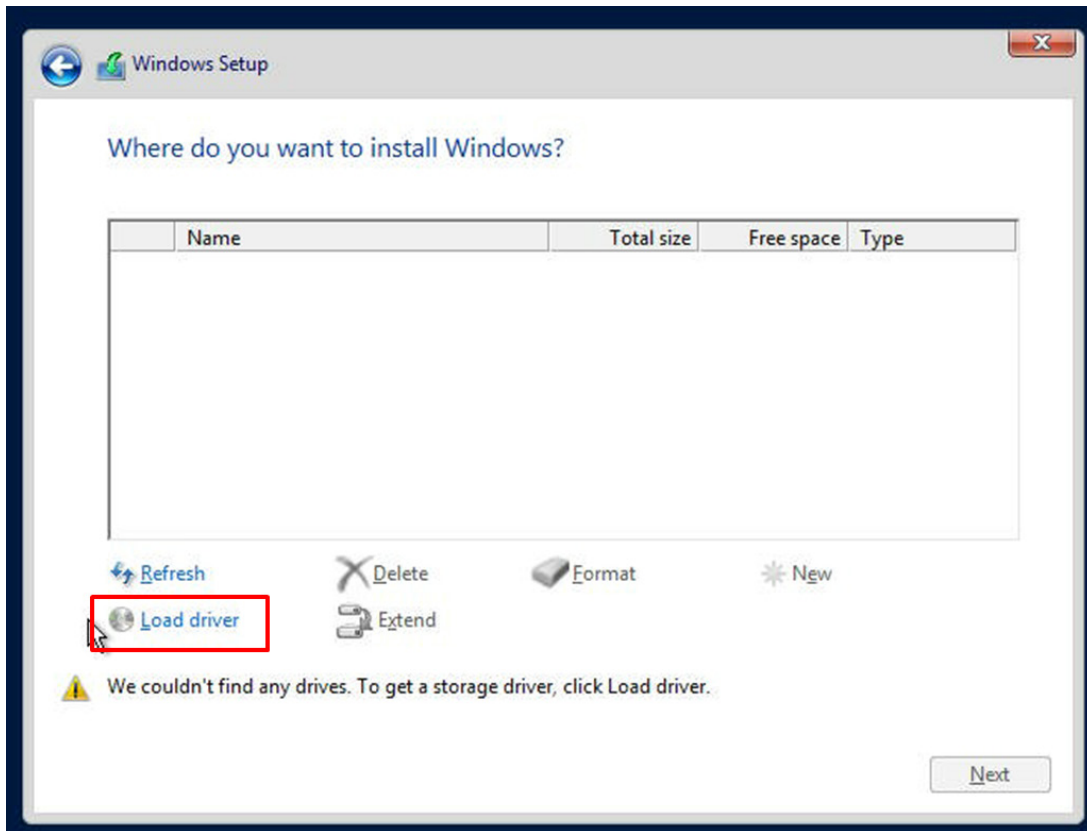


Figure 5-2. Load Driver Link

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.
5. Once all devices are specified, continue with the installation.
 6. 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 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 <http://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.

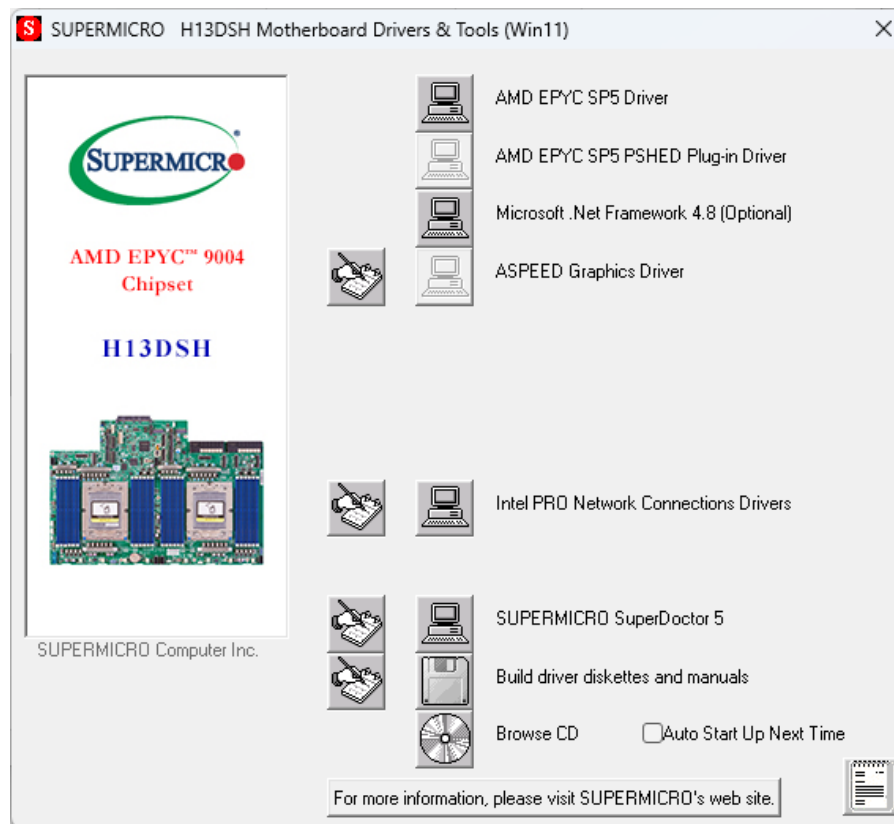


Figure 5-3. Driver & Tool Installation Screen

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 re-boot 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 SuperDoctor® 5

The Supermicro SuperDoctor 5 is a program that functions in a command-line or web-based interface for Windows and Linux operating systems. The program monitors such system health information as CPU temperature, system voltages, system power consumption, fan speed, and provides alerts via email or Simple Network Management Protocol (SNMP).

SuperDoctor 5 comes in local and remote management versions and can be used with Nagios to maximize your system monitoring needs. With SuperDoctor 5 Management Server (SSM Server), you can remotely control power on/off and reset chassis intrusion for multiple systems with SuperDoctor 5 or the BMC. SuperDoctor 5 Management Server monitors HTTP, FTP, and SMTP services to optimize the efficiency of your operation.

[SuperDoctor® Manual and Resources](#)

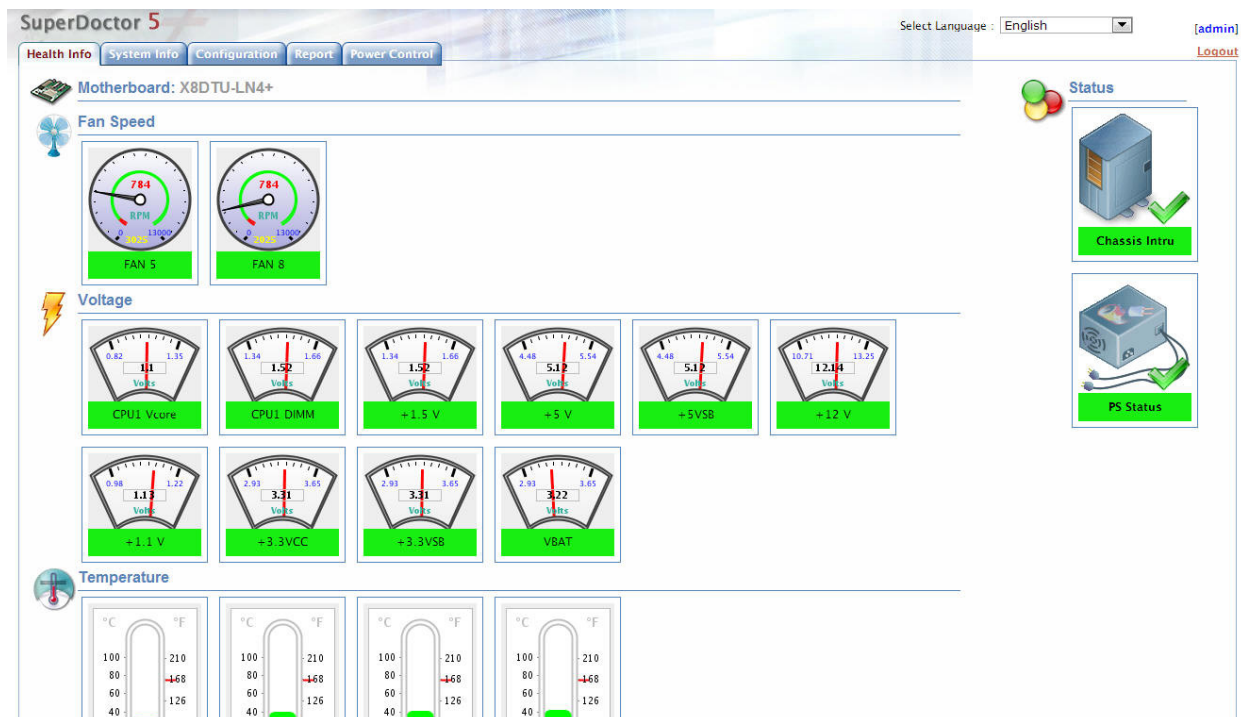


Figure 5-4. SuperDoctor 5 Interface Display Screen (Health Information)

5.4 IPMI

The motherboard supports the Intelligent Platform Management Interface (IPMI). IPMI is used to provide remote access, monitoring and management. There are several BIOS settings that are related to IPMI.

Supermicro ships standard products with a unique password for the BMC ADMIN user. This password can be found on a label on the motherboard.

For general documentation and information on IPMI, please visit our website at: <http://www.supermicro.com/products/nfo/IPMI.cfm>.

Chapter 6

Optional Components

This chapter describes alternate configurations and optional system components.

Optional Parts
Storage Protocols
Storage Control Cards
Power Options
PCIe Options
Cable Management Arm
TPM Security Module

6.1 Storage Protocols Supported

The storage drive bays can be configured to support either SATA, SAS, or NVMe drives by adding optional parts to the system.

SATA – The system supports 12 SATA drive bays from onboard connector. Additional cables are required.

SAS – They system supports up to 12 SAS drive bays. Additional storage add-on cards and cables are required.

NVMe – The system supports up to 12 NVMe drives. Additional cables are required.

See the following section for the supported storage drive bay configurations and the optional parts required.

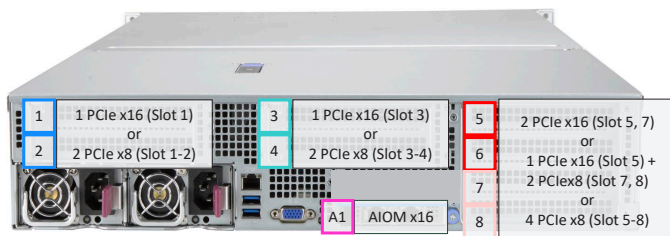
6.2 Storage Control Cards

Storage Control Card options	
AOC SKU	Description
AOC-S3908L-H8iR-16DD	SAS RAID Adapter (RAID 0, 1, 5, 6, 10, 50, 60), eight internal SAS3 ports, supports up to 16 physical devices with expander, one SlimSAS and eight black (100-Ohm) connector
AOC-S3916L-H16iR-32DD	SAS RAID Adapter (RAID 0, 1, 5, 6, 10, 50, 60), 16 internal SAS3 ports, supports up to 32 physical devices with expander, two SlimSAS eight black (100-Ohm) connectors
AOC-S3808L-L8iT	SAS Host Bus Adapter (IT mode), eight internal SAS3 ports, supports up to 122 physical devices with expander, one SlimSAS and eight black (100-Ohm) connectors
AOC-S3816L-L16iT	SAS Host Bus Adapter (IT mode), 16 internal SAS3 ports, supports up to 122 physical devices with expander, two SlimSAS and eight black (100-Ohm) connectors

6.3 Power Supply Configurations

Power Supply Module Options		
Watts	Part Number	80Plus Level
1200	PWS-1K24A-1R	Titanium
1600	PWS-1K63A-1R (default in AS- 2025HS-TNR)	Titanium
2000	PWS-2K07A-1R	Titanium
2600	PWS-2K63A-1R	Titanium

6.4 PCIe Options



Configurations of SATA or SAS or SATA/NVMe or SAS/NVMe Drives

1st Riser (slot 1 or 1+2) + 2nd Riser (slot 3 or 3+4) + 3rd Riser (slot 5+7 or 5+7+8 or 5 ~ 8)

Location and Description	Additional PN to the Configuration	Note	Qty
1 PCIe x16 (Slot 1) List of upgrade parts for H13 2U Hyper	MCP-240-21108-0N	Riser bracket	1
	RSC-H-68G5	Slot 1 Riser	1
	CBL-PWEX-1136-40	RSC-H-68G5 Power CBL	1
	CBL-MCIO-1233M5R	Slot 1 MCIO Cable	1
	CBL-MCIO-1226M5R	Slot 1 MCIO cable	1
	LBL-4000	Slot 2 cover	1
	OR		
2 PCIe x8 (Slot 1-2)	MCP-240-21108-0N	Riser bracket	1
	RSC-H-68G5	Slot 1/2 Riser	1
	CBL-PWEX-1136-40	RSC-H-68G5 Power CBL	1
	CBL-MCIO-1233M5R	Slot 1 MCIO Cable	1
	CBL-MCIO-1232M5	Slot 2 MCIO Cable	1

Location and Description	Additional PN to the Configuration	Note	Qty
1 PCIe x16 (Slot 3)	MCP-240-21108-0N	Riser bracket	1
	MCP-120-82927-0N	Support bracket	1
	RSC-H-68G5	Slot 3 Riser	1
	CBL-PWEX-1136YB-25	RSC-H-68G5 Power CBL	1
	LBL-4000	Slot 4 cover	1
	CBL-GNZ4-1227M5YRR16	Slot 3 MCIO to GenZ CBL	1
OR			
2 PCIe x8 (Slot 3-4)	MCP-240-21108-0N	Riser bracket	1
	MCP-120-82927-0N	Support bracket	1
	RSC-H-68G5	Slot 3/4 Riser	1
	CBL-PWEX-1136YB-25	RSC-H-68G5 Power CBL	1
CBL-GNZ4-1227M5YR21	Slot 3/4 MCIO to GenZ CBL	1	

Location and Description	Additional PN to the Configuration	Note	Qty
2 PCIe x16 (Slot 5, 7)	MCP-240-21908-0N	Riser bracket Slot 5-8	1
	RSC-H-68G5	Slot 5 Riser	1
	RSC-H-6G5L	Slot 7 Riser	1
	CBL-MCIO-1226AM5R	Slot 5 MCIO Cables	2
	CBL-PWEX-1136YB-25	RSC-H-68G5 Power CBL	1
	LBL-4000	Slot 6 Cover	1
OR			
1 PCIe x16 (Slot 5) + 2 PCIe x8 (Slot 7, 8)	MCP-240-21908-0N	Riser bracket Slot 5-8	1
	RSC-H2-6888G5L	Slot 5-8 riser	1
	CBL-MCIO-1222AM5	Slot 5 MCIO Cable	1
	CBL-MCIO-1226AM5	Slot 5 MCIO Cable	1
LBL-4000	Slot 6 Cover	1	
OR			
4 PCIe x8 (Slot 5-8)	MCP-240-21908-0N	Riser bracket Slot 5-8	1
	RSC-H2-6888G5L	Slot 5-8 Riser	1
	CBL-MCIO-1222AM5	Slot 5/6 MCIO Cables	2

12 NVMe Configuration

1st Riser (Slot 1 or 1+2) + 2nd Riser (Slot 3 or 3+4) + 3rd Riser (Slot 5+7 or 5+7+8 or 5 ~ 8)

Location and Description	Additional PN to the Configuration	Note	Qty
1 PCIe x16 (Slot 1) List of upgrade parts for H13 2U Hyper	MCP-240-21108-0N	Riser bracket	1
	RSC-H-68G5	Slot 1 Riser	1
	CBL-PWEX-1136-40	RSC-H-68G5 Power CBL	1
	CBL-MCIO-1255M5R	Slot 1 MCIO Cables	2
	LBL-4000	Slot 2 cover	1
	OR		
2 PCIe x8 (Slot 1-2)	MCP-240-21108-0N	Riser bracket	1
	RSC-H-68G5	Slot 1/2 Riser	1
	CBL-PWEX-1136-40	RSC-H-68G5 Power CBL	1
	CBL-MCIO-1255M5R	Slot 1 MCIO Cable	1
	CBL-MCIO-1245M5	Slot 2 MCIO Cable	1

Location and Description	Additional PN to the Configuration	Note	Qty
1 PCIe x16 (Slot 3)	MCP-240-21108-0N	Riser bracket	1
	MCP-120-82927-0N	Support bracket	1
	RSC-H-68G5	Slot 3 Riser	1
	CBL-PWEX-1136YB-25	RSC-H-68G5 Power CBL	1
	LBL-4000	Slot 4 cover	1
	CBL-GNZ4-1227M5YRR16	Slot 3 MCIO to GenZ CBL	1
OR			
2 PCIe x8 (Slot 3-4)	MCP-240-21108-0N	Riser bracket	1
	MCP-120-82927-0N	Support bracket	1
	RSC-H-68G5	Slot 3/4 Riser	1
	CBL-PWEX-1136YB-25	RSC-H-68G5 Power CBL	1
CBL-GNZ4-1227M5YR21	Slot 3/4 MCIO to GenZ CBL	1	

Location and Description	Additional PN to the Configuration	Note	Qty
2 PCIe x16 (Slot 5, 7)	MCP-240-21908-0N	Riser bracket Slot 5-8	1
	RSC-H-68G5	Slot 5 Riser	1
	RSC-H-6G5L	Slot 7 Riser	1
	CBL-MCIO-1226AM5R	Slot 5 MCIO Cables	2
	CBL-PWEX-1136YB-25	RSC-H-68G5 Power CBL	1
	LBL-4000	Slot 6 Cover	1
OR			
1 PCIe x16 (Slot 5) + 2 PCIe x8 (Slot 7, 8)	MCP-240-21908-0N	Riser bracket Slot 5-8	1
	RSC-H2-6888G5L	Slot 5-8 riser	1
	CBL-MCIO-1222AM5	Slot 5 MCIO Cable	1
	CBL-MCIO-1226AM5	Slot 5 MCIO Cable	1
LBL-4000	Slot 6 Cover	1	
OR			
4 PCIe x8 (Slot 5-8)	MCP-240-21908-0N	Riser bracket Slot 5-8	1
	RSC-H2-6888G5L	Slot 5-8 Riser	1
	CBL-MCIO-1222AM5	Slot 5/6 MCIO Cables	2

6.5 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 CMA attaches to the rack mounting rails using four connectors. They are labeled on the connectors 1, 2, 3, and 4.

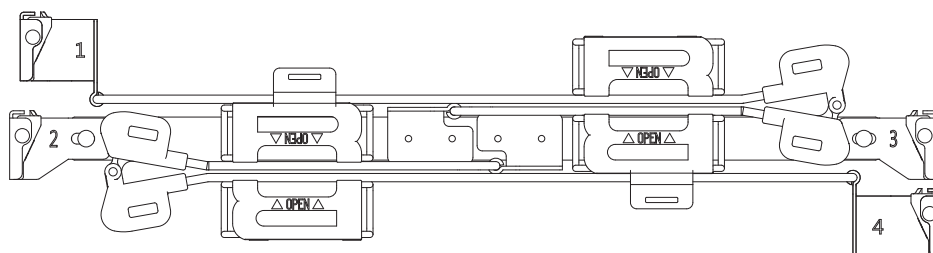


Figure 6-1. Cable Management Arm

Cable Arm Details		
Optional Part	Part Number	Description
Cable Arm	MCP-290-00168-0N	7.5" deep cable arm
Rail Set	MCP-290-11901-0N	41.2" rails (optimized for 1200 mm deep racks)

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.

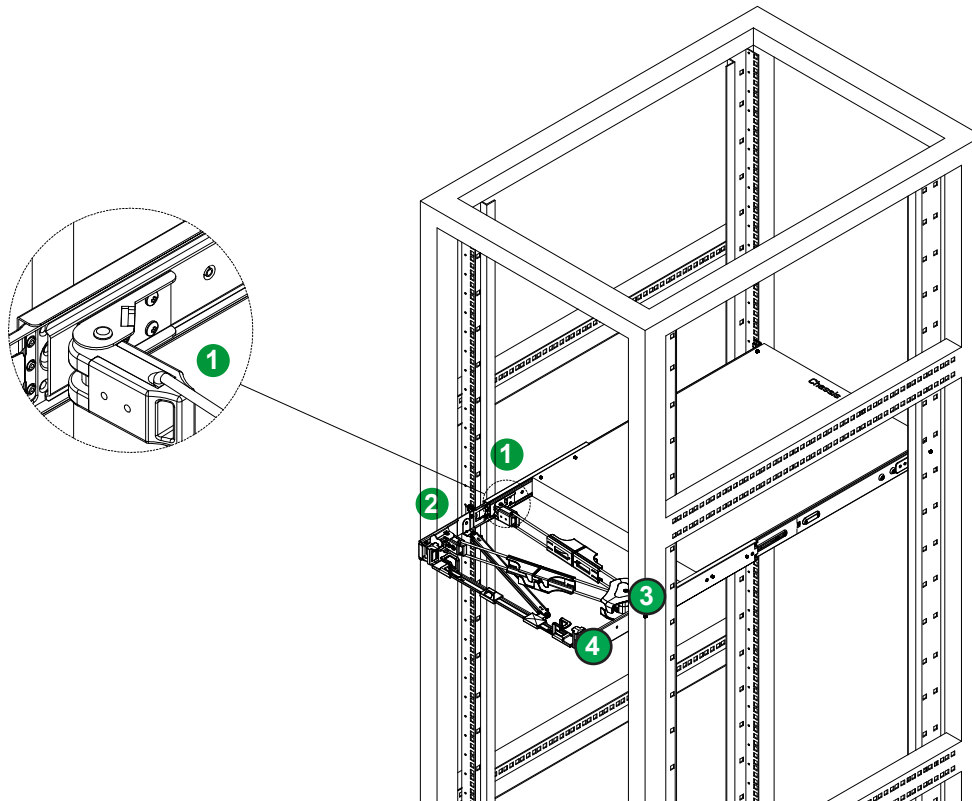


Figure 6-2. Installing the Connectors

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.
5. Route the cables through the holding brackets, leaving enough slack.

Removing the Cable Management Arm

1. Remove cables from the CMA.
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.

6.6 TPM Security Module

SPI capable TPM 2.0 (or 1.2) with Infineon 9670 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.

Details and installation procedures are at:

<http://www.supermicro.com/manuals/other/TPM.pdf>.

- AOM-TPM-9670V

Chapter 7

Troubleshooting and Support

7.1 Information Resources

Website

A great deal of information is available on the Supermicro website, supermicro.com.

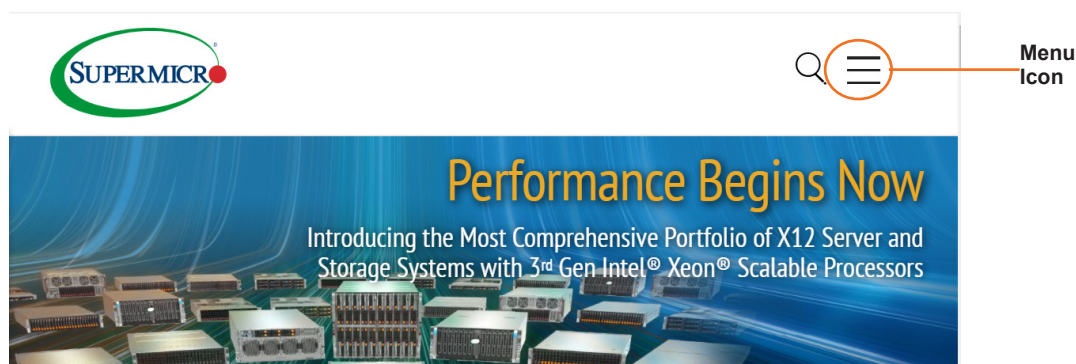


Figure 7-1. Supermicro Website

Click the menu icon, the three bars in the upper right corner, then select:

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

Direct Links for the AS -2025HS-TNR System

Web [AS -2025HS-TNR](#) specifications page

[H13DSH motherboard page](#) for links to the Quick Reference Guide, User Manual, validated storage drives, etc.

Direct Links for General Support and Information

[Frequently Asked Questions](#)

[TPM User Guide](#)

[BMC User Guide](#)

[SuperDoctor5 Large Deployment Guide](#)

For validated memory, use our [Product Resources page](#)

Direct Links (continued)

[Product Matrices](#) page for links to tables summarizing specs for systems, motherboards, power supplies, riser cards, add-on cards, etc.

[Security Center](#) for recent security notices

[Supermicro Phone and Addresses](#)

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_IPMI_X13_H13.pdf.

Severity	Date/Time	Sensor Type Categories	Description	Event Type
Warning	2020-10-15 18:57:06	ACPowerOn	[OEM] First AC Power on - Assertion	Sensor-specific
Warning	2020-10-15 18:56:43	System NIC	[OEM] Dedicated LAN Link Up - Assertion	Sensor-specific
Warning	2020-10-15 17:41:37	ACPowerOn	[OEM] First AC Power on - Assertion	Sensor-specific
Warning	2020-10-15 17:41:17	System NIC	[OEM] Dedicated LAN Link Up - Assertion	Sensor-specific
Warning	2020-10-15 17:41:14	System NIC	[OEM] Dedicated LAN Link Down - Assertion	Sensor-specific
Warning	2020-10-15 17:41:12	System NIC	[OEM] Dedicated LAN Link Up - Assertion	Sensor-specific

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 the 'Technical Support Procedures' and/or 'Returning Merchandise for Service' section(s) in this chapter. Always disconnect the AC power cord before adding, changing or installing any non hot-swap hardware components.

Before Power On

1. Check that the BMC_HB LED is blinking before the motherboard is turned on.
2. Check that the PWROK LED on the motherboard is on.
3. Make sure that the power connector is connected to your power supply.
4. Make sure that no short circuits exist between the motherboard and chassis.
5. Disconnect all cables from the motherboard, including those for the keyboard and mouse.
6. Remove all add-on cards.
7. Install a CPU, a heatsink*, and at least one DIMM on the motherboard. Check all jumper settings properly. *Make sure that the heatsink is fully seated.
8. Use the correct type of onboard CMOS battery (CR2032) as recommended by the manufacturer. To avoid possible explosion, do not install the CMOS battery upside down.

No Power

1. Make sure that no short circuits exist between the motherboard and the chassis.
2. Verify that all jumpers are set to their default positions.
3. Check that the 115 V/230 V switch on the power supply is properly set.
4. Turn the power switch on and off to test the system
5. The CMOS battery on your motherboard may be old. Check to verify that it still supplies approximately 3 VDC. If it does not, replace it with a new one.

No Video

1. Check that the VGA cable is connected properly, and the monitor is on.
2. Check if you follow the guidelines to install the memory module (see [DIMM Module Sequence](#) in Chapter 3).
3. Reseat the memory DIMM module.

Note: If you are a system integrator, VAR or OEM, a POST diagnostics card is recommended.

System Boot Failure

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

1. Clear the CMOS settings by unplugging the power cord and contacting both pads on the CMOS Clear Jumper (JBT1). Refer to Chapter 3.
2. Remove all components from the motherboard, especially the DIMM modules.
3. 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 in this chapter.

Memory Errors

1. Make sure that the DIMM modules are properly and fully installed.
2. 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 3.4](#) for memory details.
3. Check for bad DIMM modules or slots by swapping modules between slots and noting the results.
4. Check the power supply voltage 115 V/230 V switch.

The System Cannot Retain the Setup Configuration

1. Make sure that you are using a high quality power supply. A poor quality power supply may cause the system to lose the CMOS setup information. Refer to Section 1 for details on power supplies.
2. The battery on your motherboard may be old. Check to verify that it still supplies approximately 3 VDC. If it does not, replace it with a new one.
3. If the above steps do not fix the setup configuration problem, contact your vendor for repairs

When the System Becomes Unstable

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

1. CPU/BIOS support: Make sure that your CPU is supported and that you have the latest BIOS installed in your system.
2. Memory support: Make sure that the memory modules are supported by testing the modules using memtest86 or a similar utility.

Note: Refer to the product page on our website at <http://www.supermicro.com> for memory and CPU support and updates.

3. HDD support: Make sure that all hard disk drives (HDDs) work properly. Replace the bad HDDs with good ones.
4. System cooling: Check the system cooling to make sure that all heatsink fans and CPU/system fans, etc., work properly. Check the hardware monitoring settings in the IPMI to make sure that the CPU and system temperatures are within the normal range. Also check the front panel Overheat LED and make sure that it is not on.
5. Adequate power supply: Make sure that the power supply provides adequate power to the system. Make sure that all power connectors are connected. Please refer to our website for more information on the minimum power requirements.
6. Proper software support: Make sure that the correct drivers are used.

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

1. Source of installation: Make sure that the devices used for installation are working properly, including boot devices such as USB flash or media drives.
2. Cable connection: Check to make sure that all cables are connected and working properly.
3. Using 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. Refer to the steps listed in Section A above for proper troubleshooting procedures.

4. Identifying bad components by isolating them: If necessary, remove a component in question from the chassis, and test it in isolation to make sure that it works properly. Replace a bad component with a good one.
5. Check and change one component at a time instead of changing several items at the same time. This will help isolate and identify the problem.
6. To find out if a component is good, swap this component with a new one to see if the system will work properly. If so, then the old component is bad. You can also install the component in question in another system. If the new system works, the component is good and the old system has problems.

7.4 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 https://www.supermicro.com/manuals/other/BMC_IPMI_X13_H13.pdf.

Check Error Log

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

The screenshot shows the BMC Dashboard interface. On the left is a navigation sidebar with options: Dashboard, System, Component Info, Health Event Log, Configuration, Remote Control, and Maintenance. The main content area is titled 'Health Event Log' and includes a 'Filter' section with buttons for 'Sensor-specific', 'Threshold', 'Generic', 'OEM', and 'Unspecified'. Below the filter are buttons for 'Clear Health Event Log' and 'Export to Excel'. A table displays the event log with the following data:

Severity	Date/Time	Sensor Type Categories	Description	Event Type
Warning	2020-10-15 18:57:06	ACPowerOn	[OEM] First AC Power on - Assertion	Sensor-specific
Warning	2020-10-15 18:56:43	System NIC	[OEM] Dedicated LAN Link Up - Assertion	Sensor-specific
Warning	2020-10-15 17:41:37	ACPowerOn	[OEM] First AC Power on - Assertion	Sensor-specific
Warning	2020-10-15 17:41:17	System NIC	[OEM] Dedicated LAN Link Up - Assertion	Sensor-specific
Warning	2020-10-15 17:41:14	System NIC	[OEM] Dedicated LAN Link Down - Assertion	Sensor-specific
Warning	2020-10-15 17:41:12	System NIC	[OEM] Dedicated LAN Link Up - Assertion	Sensor-specific

Figure 7-3. BMC Event Log

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

7.5 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.

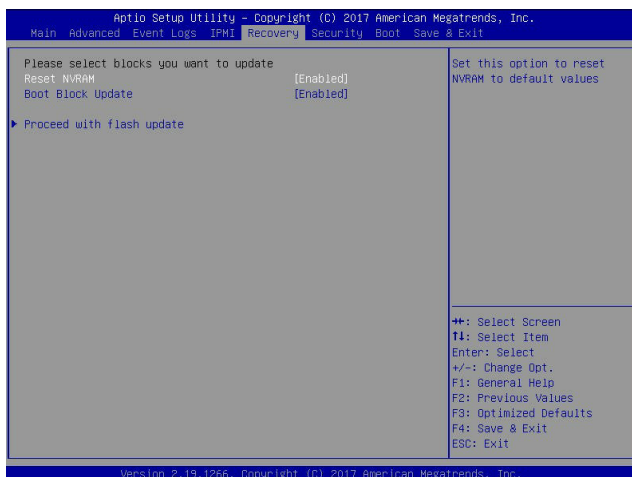
Note 1: If you cannot locate the "Super.ROM" file in your drive disk, visit our website at www.supermicro.com to download the BIOS package. Extract the BIOS binary image into a USB flash device and rename it "Super.ROM" for the BIOS recovery use.

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.



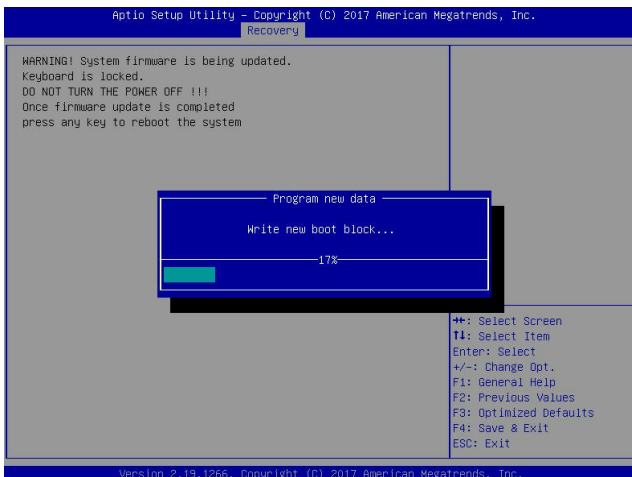
Note: At this point, you may decide if you want to start the BIOS recovery. If you decide to proceed with BIOS recovery, follow the procedures below.



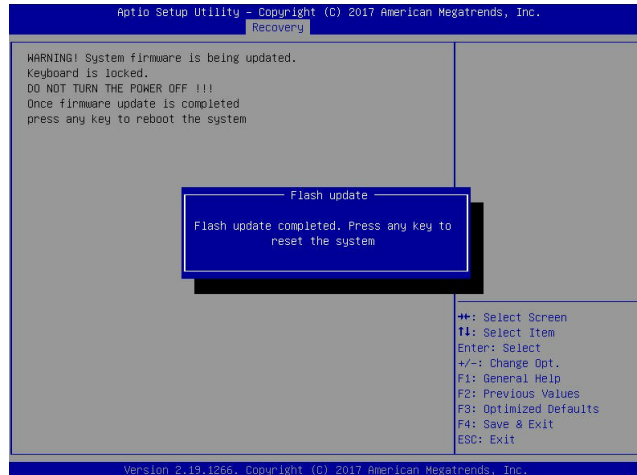
- When the screen as shown above displays, use the arrow keys to select the item "Proceed with flash update" and press the <Enter> key. You will see the BIOS recovery progress as shown in the screen below.

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

- After the BIOS recovery process is complete, press any key to reboot the system.
- Using a different system, extract the BIOS package into a USB flash drive.

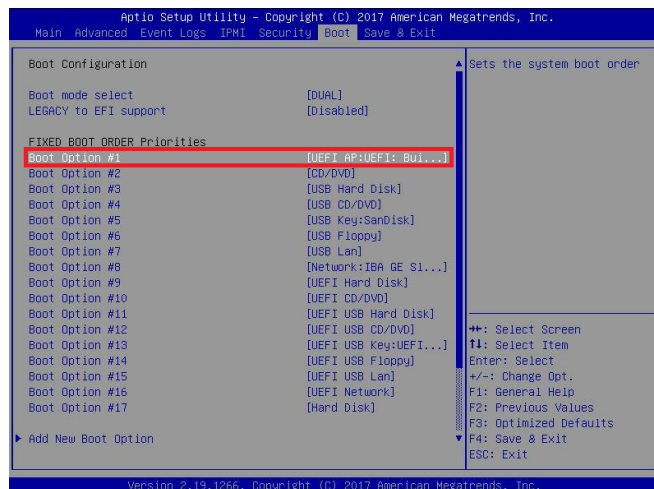


7. Press continuously during system boot to enter the BIOS Setup utility. From the top of the tool bar, select Boot to enter the submenu. From the submenu list, select Boot



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.

```

UEFI Interactive Shell v2.1
EDK II
UEFI v2.50 (American Megatrends, 0x0005000C)
Mapping table
  FS0: Alias(s):HD0:0B:BLK1:
        PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)/HD(1,MBR,0x37901D72,0x800,0x1
DR9592)
  BLK0: Alias(s):
        PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)
Press F8 in 1 seconds to skip startup.nsh or any other key to continue.
Shell: fs0:
FS0:\> cd \AFUDOS
FS0:\AFUDOS> cd SNIJPM2_03162017
FS0:\AFUDOS\SNIJPM2_03162017> flash.nsh X110PU7_314

```

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

```

Done.
[ Access Cmos Port Ex ]
<Read>
Index 0x51: 0x10

Done.
*****
* Program BIOS and ME (including FDT) regions...
*****
| AMT Firmware Update Utility v5.09.01.1917 |
| Copyright (C)2017 American Megatrends Inc. All Rights Reserved. |
-----
CPUID = 50652
Reading flash ..... done
- ME Data Size checking - ok
- FFS checksums ..... ok
- Check RomLayout ..... Ok
Erasing Boot Block ..... done
Updating Boot Block ..... done
Verifying Boot Block ..... done
_Erasing Main Block ..... 0x00132000 (0x)

```

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

10. Press continuously to enter the BIOS Setup utility.

```

Verifying NDB Block ..... done
- Update success for FDR
+ Update success for IE
- Successful Update Recovery Loader to OPR!!
- Successful Update MFSBI!
- Successful Update FPR!!
- Successful Update MFS, IVBI and IVB2!!
- Successful Update FLOG and UTDK!!
- ME Entire Image update success !!
WARNING : System must power-off to have the changes take effect!
Moving FS0:\AFUDOS\SNIJPM2_03162017\Fdtv64.efi -> FS0:\AFUDOS\SNIJPM2_03162017\
dt1.smc
- [ok]
Moving FS0:\AFUDOS\SNIJPM2_03162017\Fuef1x64.efi -> FS0:\AFUDOS\SNIJPM2_0316201
7\Fuef1.smc
- [ok]
*****
* Please ignore this 'Shell: Cannot read from file - Device Error'
* warning message due to it does not impact flashing process.
*****
Deleting " "
Delete successful.
FS0:\>

```

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.

7.6 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.
2. [Remove the cover](#) of the chassis to access the motherboard.
3. [Remove the onboard battery](#) from the motherboard.
4. Short the CMOS pads with a metal object such as a small screwdriver for at least four seconds.
5. Remove the screwdriver or shorting device.
6. Replace the cover, reconnect the power cords and power on the system.



Notes: Clearing CMOS will also clear all passwords.

Do not use the PW_ON connector to clear CMOS.

7.7 BMC Reset

The BMC can be reset using the UID button.

- Reset – Press and hold the 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 2Hz	Green, solid
Restore Defaults	Blue, Blinks at 4Hz	Off
Update	Blue, Blinks at 10Hz	

7.8 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: <http://www.supermicro.com>. Click the "Where to Buy" tab.

7.9 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 Procedures](#) in this manual and [Frequently Asked Questions](#) on our website 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 our [website](#). 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 (<http://www.supermicro.com/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.

7.10 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.

7.11 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: 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: 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: 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 http://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。

此警告符号代表危險。

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 הזהרות אזהרה

הזהרות 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.

اَكْ ف حالة وُكِي اَي تتسبب ف اصابة جسدهُ هذا الزهز عُ خطر! تحذُرُ .
 قبل اَي تعول على اَي هعدات، كي على علن بالوخاطز ال اُجوة عي الذوائر
 الكهزبائِة
 وكي على دراةُ بالووارسات النقاىِة لو عُ وقع اَي حادث
 استخدم رقن الب اى الو صُص ف هاةُ كل تحذُرُ 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.

اقرأ 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-250VDC, 20A

هذا المنتج يعتمد على معدات الحماية من الدوائر القصيرة 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 elektrische installatie. Controleer of het beveiligde apparaat 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 chasis pour installer ou enlever des composants de système.

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 فصل انظاؤ من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد انطاقت قيم

انصل إلى امناطق انداخييت نههيكم نشييج أو إزانت مكنناث الجهاز

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 새시 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..

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 installé 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 انحدة نترك بها ف مناطق محظورة تم .

،ممكن اننصل إن منطقت محظورة فقط من خلال استخذاو أداة خاصت أو أ وس هُت أخري نلالأمما ققم 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 النوع أو ما يعادلها مما أوصت به الشركة المصنعة
 جخلص من البطاريات المسحمة وفقا لعمليات الشركة 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

此装置连接的电源可能不只一个，必须切断所有电源才能停止对该装置的供电。

Warnung

Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein Strom 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!

ליחידה 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 من التيار الكهربائي أو الطاقة المتجددة على اللوحة
عندما يكون النظام يعمل كه حذرا عند خدمة هذا الجهاز

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 instalación 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 للقوايه 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 القوانين واللوائح الوطنية 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! 危險的可移動性零件。請務必與轉動的风扇叶片保持距離。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

警告

危險的可移動性零件。請務必與轉動的风扇叶片保持距離。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 el montaje del ventilador del chasis. Mantenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador

Attention

Pieces mobiles dangereuses. Se tenir a l'écart 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 בפעולה כאשר מסירים את חלקי המאוורר מהמארז, יתכן והמאווררים עדיין עובדים. יש להרחיק למרחק בטוח את האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר

تحذير! أجزاء متحركة خطيرة. ابتعد عن شفرات المروحة المتحركة. من الممكن أن المراوح لا تزال تدور عند 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. 새시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조립품 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 Adapter, 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 certifiés- 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 מיילמשח מילבכ

!הרהזא

ךרוצל ומאתוה וא ושכרנ רשא AC מימאתמו מיקפס, מילבכב שמתשהל שי, רצומה תא מיניקתמ רשאכ לכב שומיש . עקתהו לבכה לש הנוכח הדימ ללוכ, תוימוקמה תוחיטבה תושירדל ומאתוה רשאו, הנקתהה למשחה ירישכמב שומישה יקוחל מאתהב. ילמשח רצק וא הלקתל מורגל לולע, רחא גוסמ מאתמ וא לבכ לש דוק מהילע עיפומ רשאכ) UL-ב או CSA-ב -ב מיכמומה מילבכב שמתשהל רוסיא מייק, תוחיטבה יקוחו דבלב Supermicro י"ע מאתוה רשא רצומב קר אלא, רחא ילמשח רצומ לכ רובע (UL/CSA)

תאלבאלא אארשב מץ וא אדדחמלא וא ארפוטמלא תאליצוטלא מאדחטסאב מץ, אגתנמלא בייקרת דנע לכלז יפ אמב אילחמלא אלאסלא תאבלטתמו נינאו קב מאזתלאל אג דדרתמלא ראיטלא תאלוחמו אילברמלא קיירח וא לטע יפ בבסטטי דץ ירשא תאלוחמו תאלבאלא יא מאדחטסא. מילסלא סבאלאו לטומוא מךח CSA וא UL לביק נמ אדמתעמלא תאלבאלא מאדחטסא תאדעמלא אילברמלא אזהאלל אלאסלא נונאק רזחי Supermicro לביק נמ אדדחמלא אילעמלא תאגתנמלא רייג ירשא תאדעמ יא אג (UL/CSA) אלאע למחתי יתלאו

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 AMD EPYC™ 9004 series processors in Socket SP5

Chipset

System on Chip (SoC)

BIOS

256 Mb SPI AMI BIOS® SM Flash UEFI BIOS

ACPI 6.4, SMBIOS 3.5, Plug-and-Play (PnP), RTC (Real Time Clock) wakeup, Riser Card Auto-Detection support

Memory

Twenty-four DIMM slots to support up to 6TB 3DS ECC RDIMM DDR5-4800MT/s memories

Storage Drives

Twelve hot-swap 3.5" or 2.5" NVMe/SAS/SATA drives (Drive options require additional parts.)

Two M.2 NVMe PCIe 3.0 x4 in the 2280 and 22110 form factors for boot drives

PCI Expansion Slots

Four PCIe 5.0 x16 slots or

Eight PCIe 5.0 x8 slots or

Three PCIe 5.0 x16 slots + two PCIe 5.0 x8 slots or

Two PCIe 5.0 x16 slots + four PCIe 5.0 x8 slots or

One PCIe 5.0 x16 slot + six PCIe 5.0 x8 slots

Input/Output

Network: One AIOM slot for flexible networking (OCP 3.0 compatible)

BMC: One RJ45 dedicated BMC LAN port

USB: Two rear USB 3.0

Video: One VGA port (rear)

Motherboard

H13DSH; 17 (W) x 11.5" (L) (431.8 mm x 292.1 mm)

Chassis

CSE-HS829-R1K63P-A; 2U Rackmount, 3.5 x 17.2 x 31.6 in. / 89 x 437 x 803 mm (HxWxD)

System Cooling

Four 8-cm heavy duty fans with optimal fan speed control and two air shrouds to direct air flow

Power Supply

Model: PWS-1K63A-1R, 1600W 1U redundant power supply, 80Plus Titanium level

AC Input

1000 W: 100-127 Vac / 12 A-9 A / 50-60 Hz

1600W: 200-240 Vac / 9 A-7.5 A / 50-60 Hz

+12V

Max: 83.3 A / Min: 0 A (100 Vac-127 Vac)

Max: 133.3 A / Min: 0 A (200 Vac-240 Vac)

12V SB

Max: 3.5 A / Min: 0 A

(Full redundancy based on configuration and application load)

Operating Environment

Operating Temperature: 10° to 35° C (50° to 95° F)*

*Operating temperature based on configurations

Non-operating Temperature: -30° to 60° C (-22° to 140° F)

Operating Relative Humidity: 8% to 80% (non-condensing)

Non-operating Relative Humidity: 8% to 90% (non-condensing)

Regulatory Compliance

FCC, ICES, CE, VCCI, RCM, UKCA, NRTL, CB

Certified Safety Models

Compliant with UL and CSA: HS829-R9H13, HS829-R12H13, HS829-R16H13, HS829-R20H13, HS829-R26H13, HS829-R13DH13, HS829-R16DH13, HS829-R20DH13, HS829-9, HS829-12, HS829-16, HS829-20, HS829-26, HS829-13D, HS829-16D, and HS829-20.

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 24/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

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"

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