

1.2 System Features

The CSE-938NH-R2K20BP2 is a 3U chassis that supports 16 front hot-swape drives and eight rear hot-plug nodes.

Front View



Figure 1-1. System: Front View

System Features: Front	
Feature	Description
Control Panels	Power buttons and status indicators; details on the next page
Storage Drives	Sixteen 3.5" drive bays, two for each computing node; drive carriers display status lights

Drive Carrier LED Indicator			
LED	Color	Blinking Pattern	Behavior for Device
Activity LED	Blue	Solid On	SAS/NVMe drive installed
	Blue	Blinking	I/O activity
Status LED	Red	Solid On	Failure of drive with RSTe support
	Red	Blinking at 1 Hz	Rebuild drive with RSTe support
	Red	Blinking with two blinks and one stop at 1 Hz	Hot spare for drive with RSTe support (not supported in VMD mode)
	Red	On for five seconds, then off	Power on for drive with RSTe support
	Red	Blinking at 4 Hz	Identify drive with RSTe support
	Green	Solid On	Safe to remove NVMe device (not supported in VMD mode)
	Amber	Blinking at 1 Hz	Attention state---do not remove NVMe device (not supported in VMD mode)

Control Panel

The chassis front features a control panel to monitor node function and power off and on the entire system.



Figure 1-2. Control Panel

Control Panel Features		
Item	Feature	Description
1	Node Status Indicators	Eight numbered LEDs that indicate the status of each node (see table below).
2	Power Fail LED	Illuminated when one of the power supplies fails while any node is powered on. It is off during normal operation.
3	Main Power button	Used to apply or remove power from the power supply to the server system. Whether on or off, standby power to the system remains on.

Node Activity LED Indicators	
LED Appearance	Description
Solid Green	The node is powered on and operating normally.
Blinking Green	The node is in the process of shutting down.
Solid Red	The node is detecting an overheated condition.
1Hz Blinking Red	The node is detecting a fan failure.
.25Hz Blinking Red	The node is detecting a power failure.
Solid Blue	The node local UID is on.
1Hz Blinking Blue	The node remote UID is on.
No Illumination	The node is powered down.

Rear View

Dedicated and Centralized BMC LAN Ports

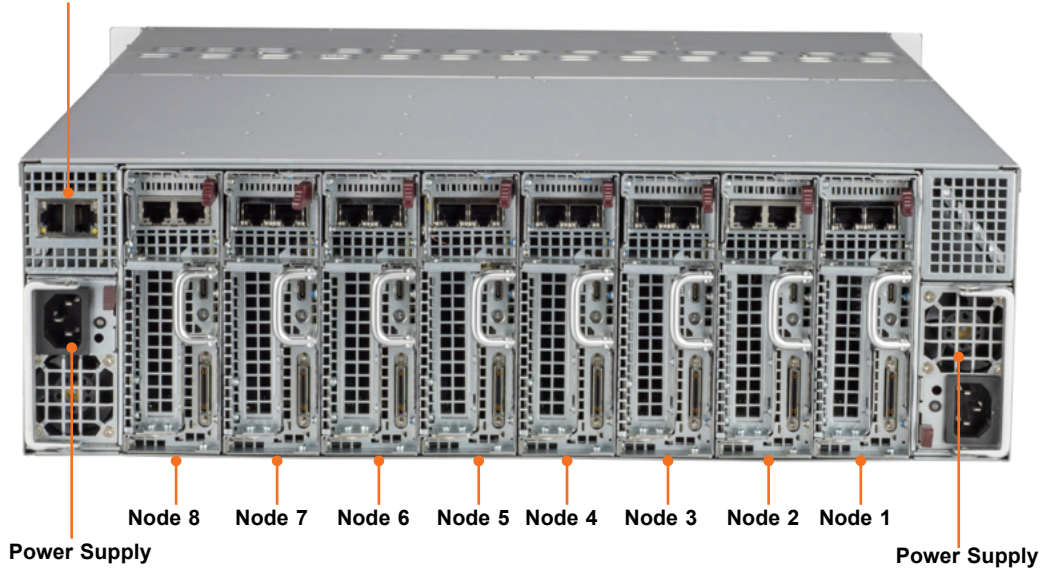


Figure 1-3. System: Rear View

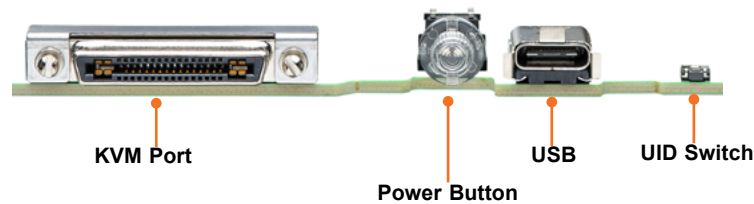


Figure 1-4. Node I/O Features

System Features: Rear	
Feature	Description
Nodes 1-8	Each node features a power button, two LAN ports and a KVM port
Power Supplies	Two redundant power supply modules, PWS1 on the left, PWS2 on the right
BMC LAN Ports	Dedicated and centralized ports in cascade or redundancy mode <i>Cascade</i> : connect the first port to a management device and the second port to another server <i>Redundancy</i> : connect each port to a different subnetwork switch
KVM Port	One VGA, one COM, and two USB 2.0 (with KVM dongle)
Power Button	Node power switch and indicator (green)
USB Port	USB Type C Port
UID Button	Toggle switch and LED indicator for Unit ID (blue)

Connecting to a Node

USB, COM, and VGA port capabilities can be added to any node through the KVM port on the rear. Plug in the adapter (dongle).



Figure 1-5. Adapter to Provide USB, COM, and VGA Ports

Node Trays

The chassis contains eight separate computing node drawers, each with its own motherboard.

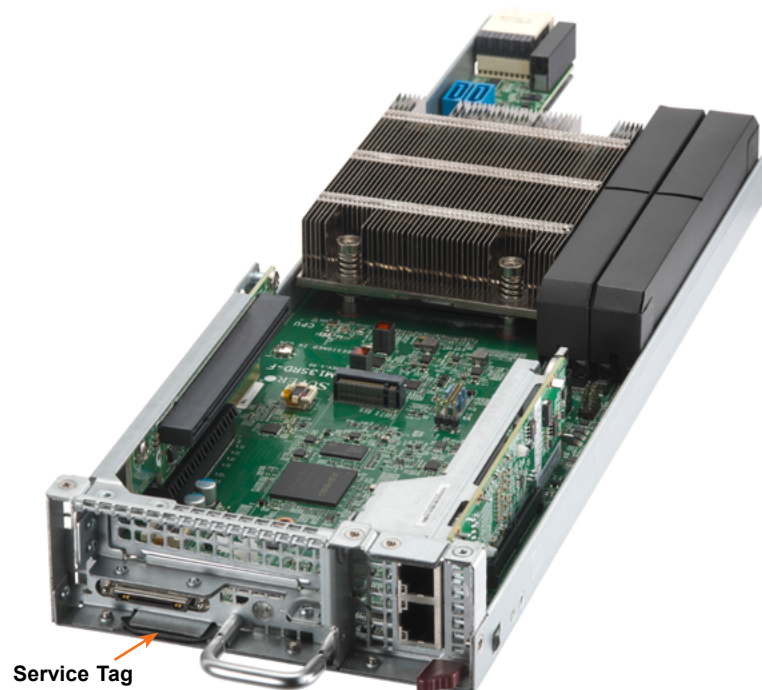


Figure 1-6. AS -3015MR-H8TNR Node Tray

BMC Password

Each node supports a pull-out server tag with a unique BMC Password Label. Extend the server tag and use the unique password to log into the BMC as the ADMIN user.

1.3 System Architecture

This section highlights the features on each node.

Main Components

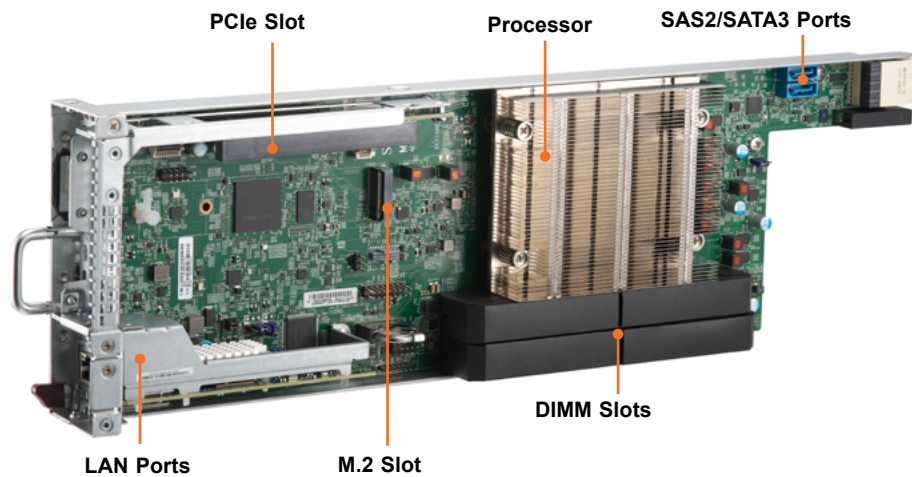


Figure 1-7. Node Features

Main Node Components	
Feature	Description
PCIe Slot	One PCIe 5.0 x8 (in x16) LP slot
Processor	Single AMD Ryzen Zen4 7000 Series Processor
SAS/SATA Ports	Two SAS2/SATA3 ports for AOC
DIMM Slots	Four DIMM slots DDR5 (ECC/non-ECC UDIMM)
M.2 Slot	One NVMe M.2 slot (2280/22110 form factor)
LAN Ports	Dual 1GbE/10GbE/25GbE PCIe 5.0 x8 LAN ports (Micro LP)

System Block Diagram

The block diagram below shows the connections and relationships between the subsystems and major components of the overall system.

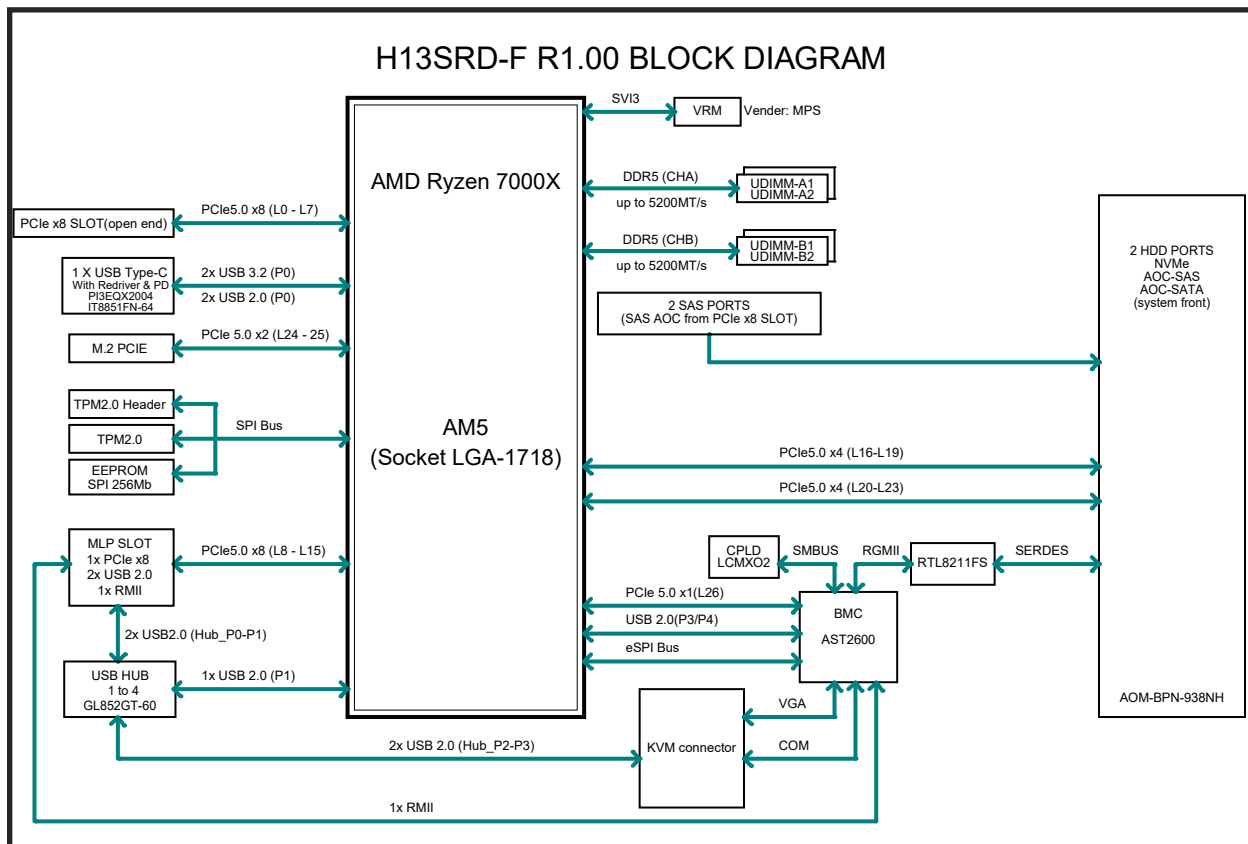


Figure 1-5. System Block Diagram

1.4 Motherboard Layout

Below is a layout of the H13SRD-F motherboard with jumper, connector and LED locations shown. See the table on the following page for descriptions. For detailed descriptions, pinout information and jumper settings, refer to [Chapter 4](#) or the [Motherboard Manual](#).

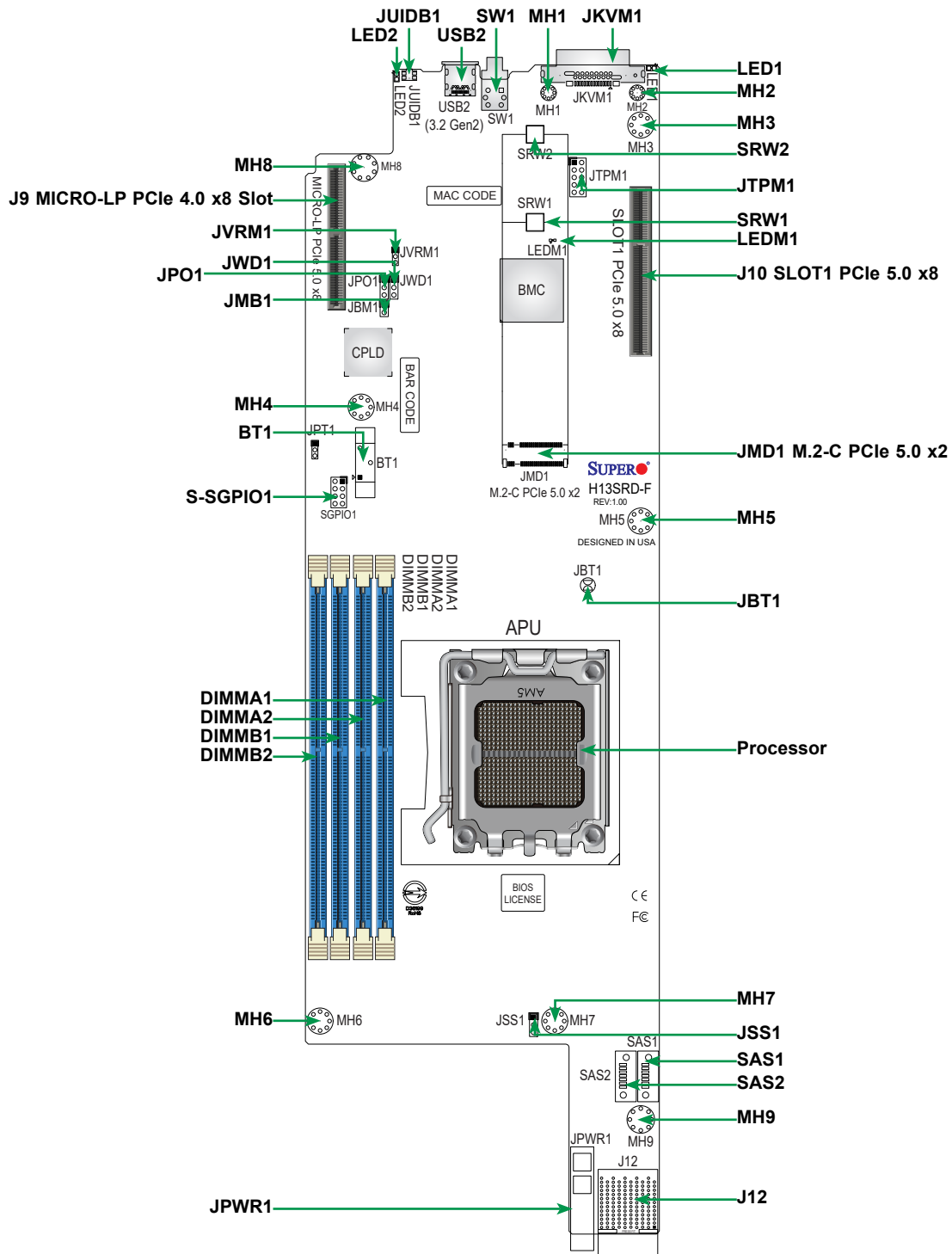


Figure 1-6. Motherboard Layout

Quick Reference Table

Jumper	Description	Default Setting
JBM1	Disable IPMI Share LAN	Pins 1-2 Open: Enabled
JPO1	CPU Throttle when PWR_FAIL	Pins 2-3: Disabled
JPT1	Onboard TPM 2.0 Enable/Disable	Pins 1-2: Enabled
JSS1	AOC SAS Enable/Disable	Pins 1-2: Disabled
JWD1	Watch Dog Timer	Pins 1-2: Reset

LED	Description	Status
LED1	OH/Power Fail/FAN Fail	Blinking Red: Power Fail or FAN Fail Solid Red: Overheat
LED2	Unit Identifier LED	Solid Blue: Unit Identified
LEDM1	BMC Heartbeat LED	Blinking Green: BMC Normal

Connector	Description
BT1	Onboard Battery
J9	Micro Low-Profile PCIe 5.0 x8 Slot with two USB 2.0
J10	PCIe 5.0 x8 Slot (Open-End support up to 75W)
J12	MicroCloud Backplane Connector for 2x PCIe 5.0 x4 / Dedicated IPMI LAN / 2x AOC SATA/SAS
JKVM1	KVM Connector for USB0/1, COM1, VGA
JMD1	M.2 M-Key 2280/22110 Slot (PCIe 5.0 x2)
JPWR1	12V Input Power Connector
JTPM1	Trusted Platform Module/Port 80 Connector
JUIDB1	UID Switch
SAS1, SAS2	AOC SATA/SAS Input Connector (Link to AOC SAS Card)
S-SGPIO1	Serial Link General Purpose I/O Header
SW1	Power Switch, Power LED
USB0/1	Two USB 2.0 Ports via JKVM1
USB2	USB 3.2 Gen2 Type C Connector

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 AS -3015MR-H8TNR was shipped, and note if it was damaged in any way. If any equipment appears damaged, file a damage claim with the carrier who delivered it.

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

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 work space.



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



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. Do not use a two post "telco" type rack. This rail set fits a rack between 26.5" 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.

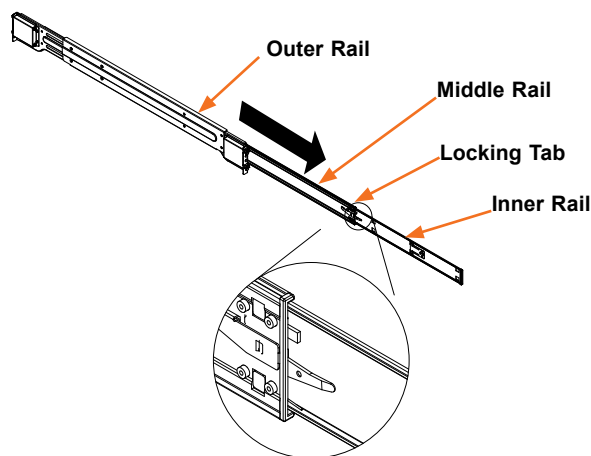


Figure 2-1. Identifying the Outer Rail, Middle Rail and Inner Rail
(Left Rail Assembly Shown)

Note: Both front chassis rails and the rack rails have a locking tab, which serves two functions. First, it locks the server into place when installed and pushed fully into the rack (its normal operating position). In addition, these tabs lock the server in place when fully extended from the rack. This prevents the server from coming completely out of the rack when pulled out for servicing.

Releasing the Inner Rail

Each inner rail has a locking latch. This latch prevents the server from coming completely out of the rack when 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.

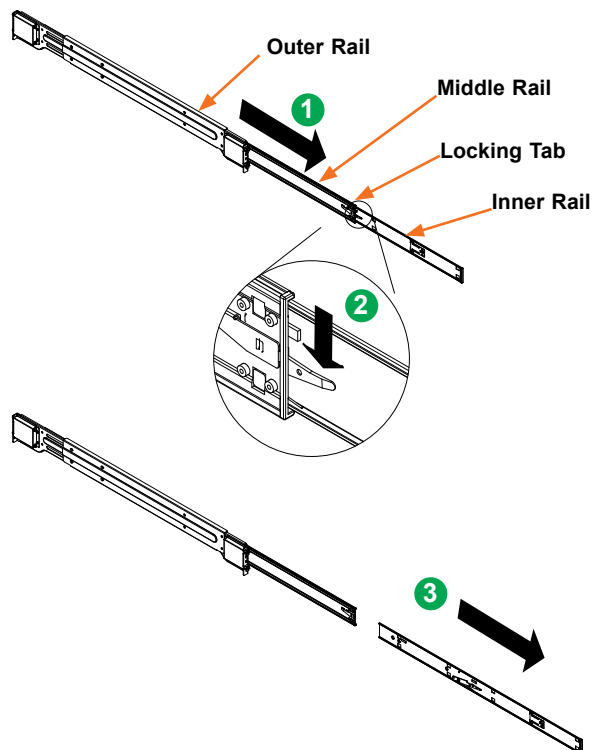


Figure 2-2. Extending and Releasing the Inner Rail

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.

Installing the Inner Rails

Begin the rack mounting procedure by installing the inner rails to the chassis.

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 and under the hooks until the quick release bracket snaps into place, securing the rail to the chassis.
4. If desired, add screws (two flat head M4 x 4mm) through the rail into the chassis for extra security.

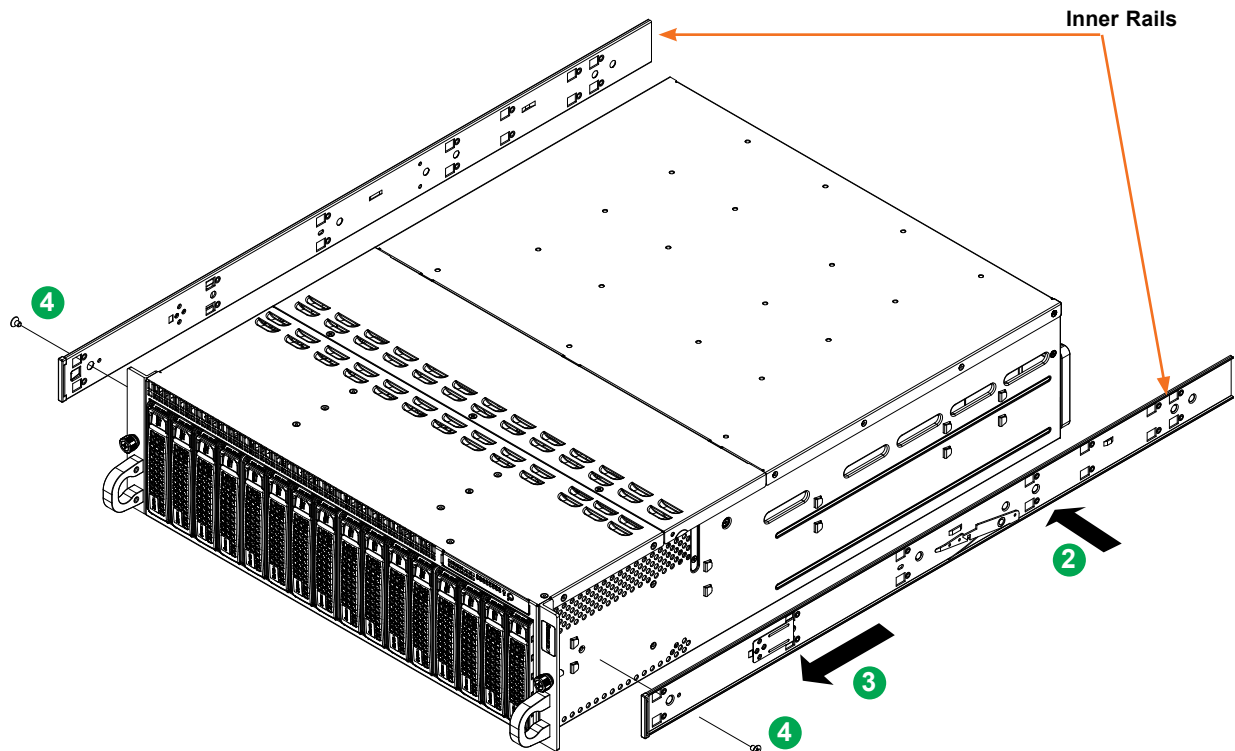


Figure 2-3. Installing the Rails



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

Installing the Outer Rails onto the Rack

Each end of the assembled outer rail includes a bracket with hooks and 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.

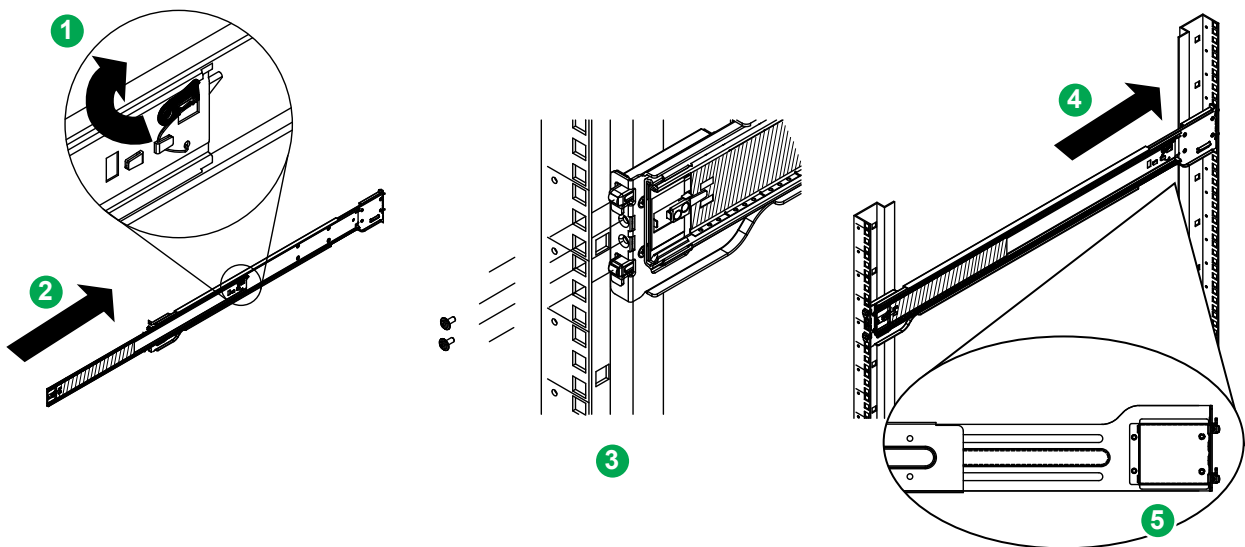


Figure 2-4. Extending and Mounting the Outer Rails

2.5 Installing the Chassis into a Rack

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

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

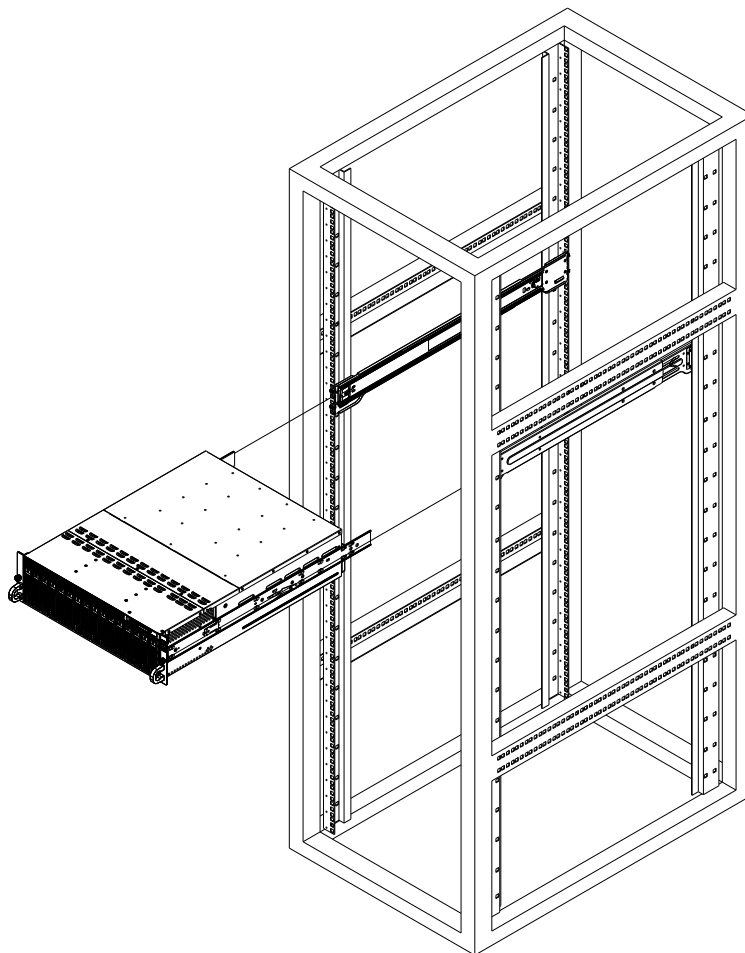


Figure 2-5. Installing the Server into the Rack

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

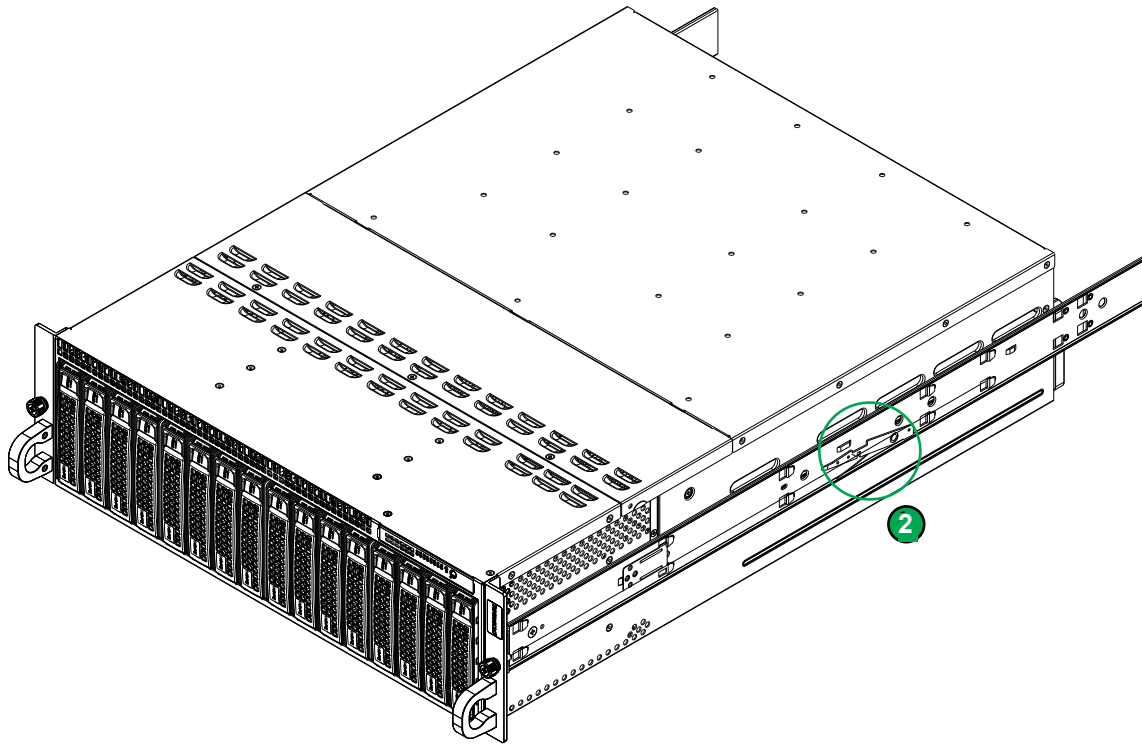


Figure 2-6. Removing the Chassis From the Rack

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 Powering Down the System

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.

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 and remove the AC power cords from all power supply modules.
3. Disconnect the power cord(s) from the power supply module(s).
4. When performing service on non hot-swap components, remove the system from the rack and place it on a bench or desk. Do not service with the system extended from the rack.

3.2 Accessing the System

The CSE-938NH chassis features a removable top cover, which allows easy access to the inside of the chassis.

Removing the Top Cover

1. If necessary, remove power from the system as described in Section 3.1.
2. Remove the three screws securing the cover to the chassis. See Figure 3-1.
3. Lift the cover from the chassis.

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.

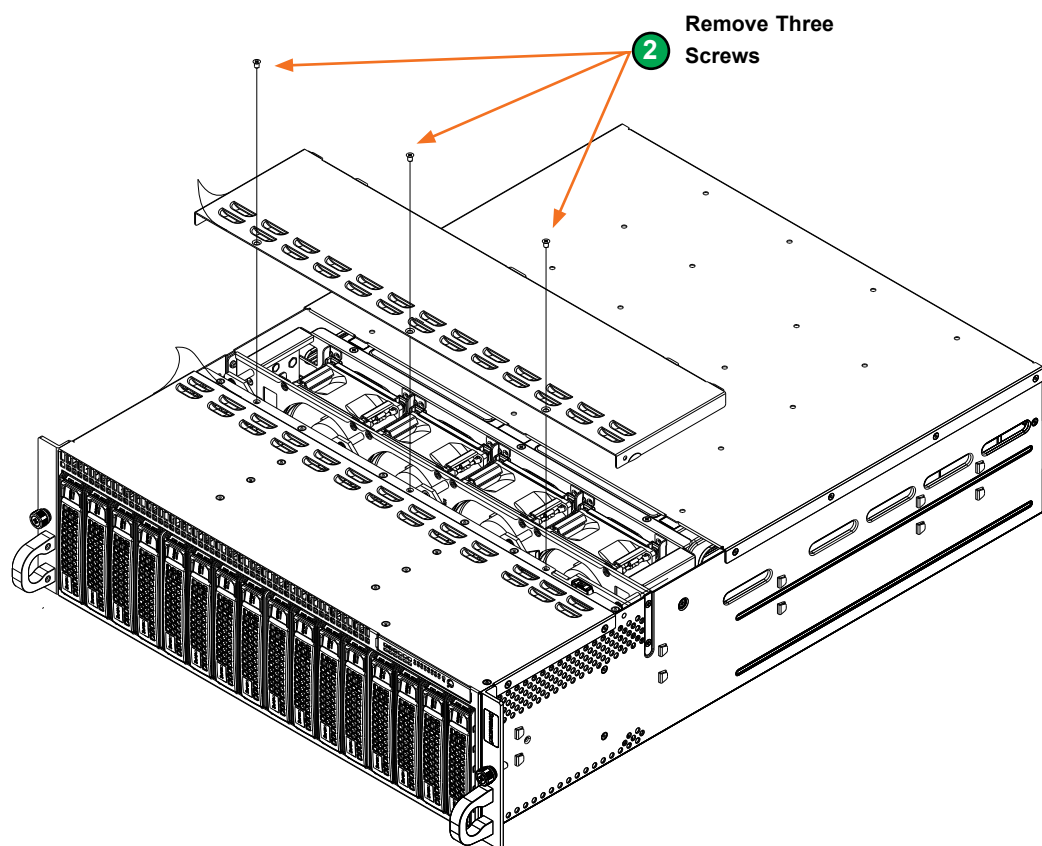


Figure 3-1. Removing the Chassis Cover

Nodes

The system includes eight removable computing nodes, each containing an individual motherboard. A node may be removed while other nodes continue to function.

Each node controls two storage drives and shares a fan with the node beside it. If a node is pulled out of the chassis, the storage drives associated with that node will power-down.

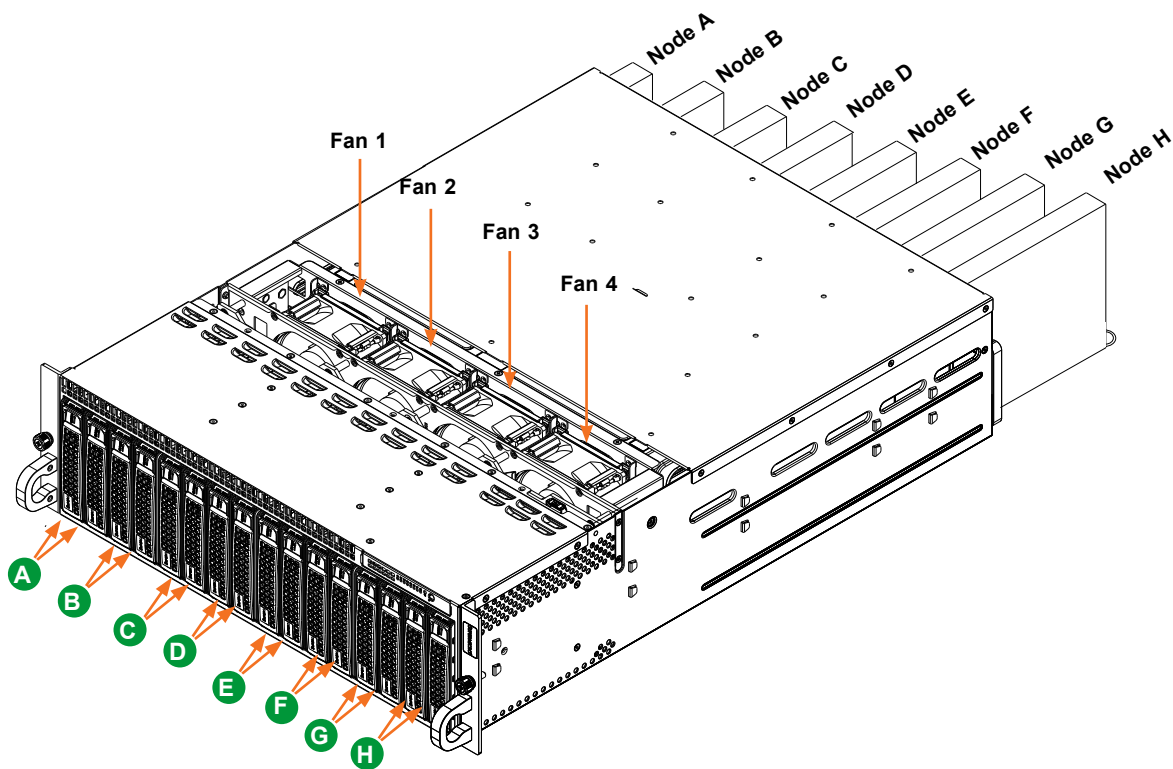


Figure 3-2. Corresponding Nodes, Fans and Storage Drives

Corresponding Nodes, Fans and Storage Drives		
Node	Fan	Storage Drives
Node A	Fan 1	Drives A1 and A2
Node B	Fan 1	Drives B1 and B2
Node C	Fan 2	Drives C1 and C2
Node D	Fan 2	Drives D1 and D2
Node E	Fan 3	Drives E1 and E2
Node F	Fan 3	Drives F1 and F2
Node G	Fan 4	Drives G1 and G2
Node H	Fan 4	Drives H1 and H2

Removing Nodes from the System

1. Power-down the individual node by pressing that node's power button.
2. Press and hold down the release tab on the front of the node.
3. Use the node handle to pull the node from the system.

Caution: Except for short periods of time while swapping nodes, do not operate the server with the node bays empty. In the unlikely event of a node failure, remove the failed node and replace it with the dummy node that was included with the system.

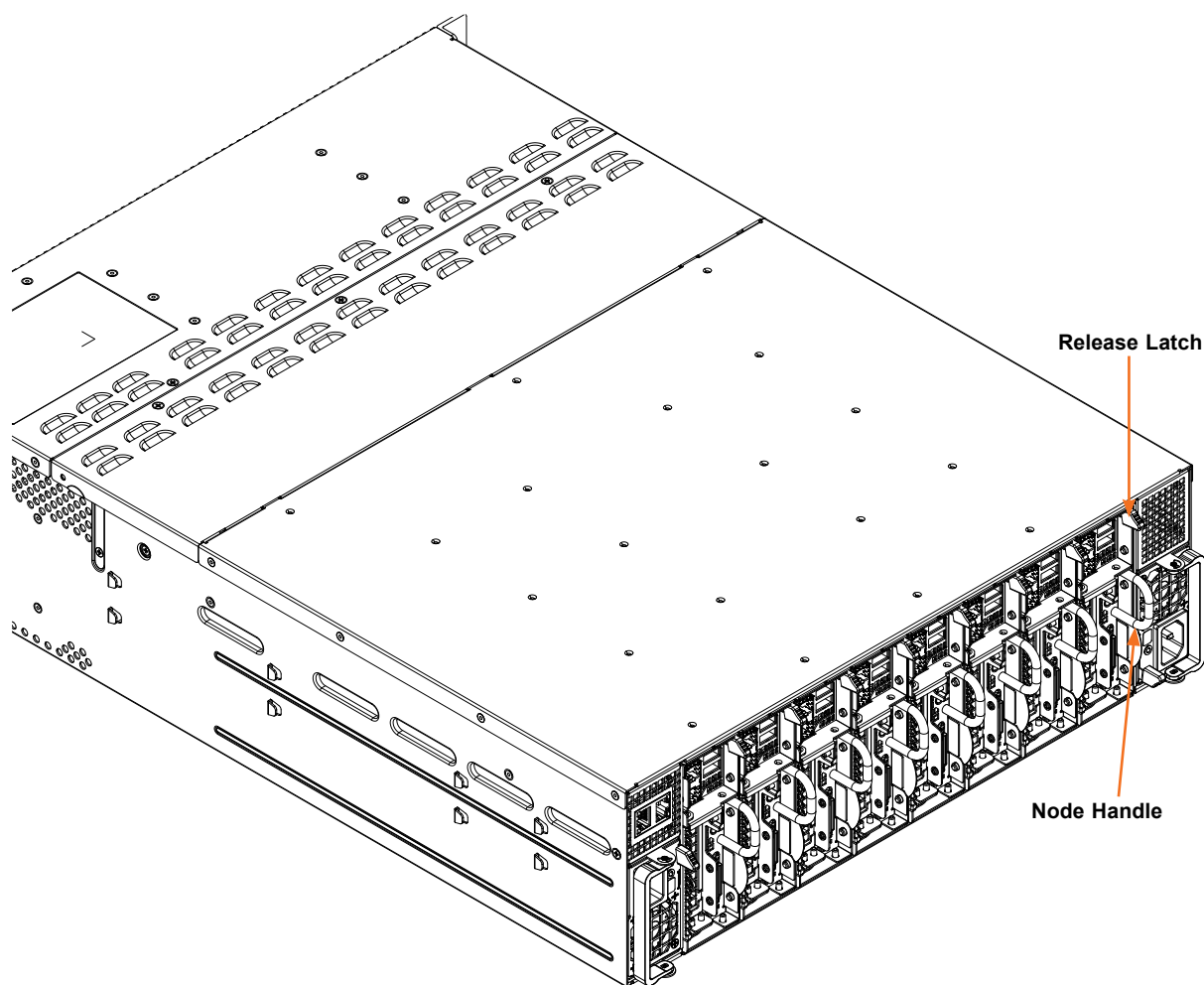


Figure 3-3. Removing a Node

3.3 Static-Sensitive Devices

Electrostatic Discharge (ESD) can damage electronic components. To avoid damaging your motherboard, it is important to handle it very carefully. The following measures are generally sufficient to protect the system PCBs from ESD.

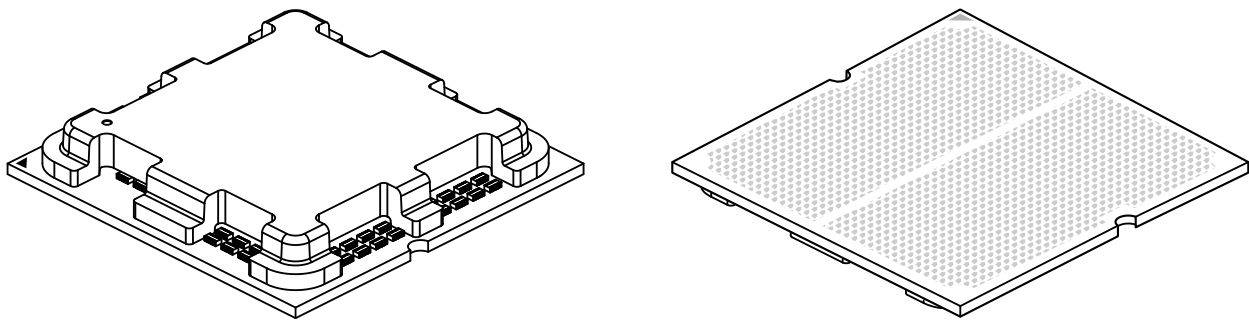
Precautions

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing any PCB (printed circuit board) from its antistatic bag.
- Handle PCBs by their edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the PCBs back into their antistatic bags when not in use.
- Use only the correct type of onboard CMOS battery. Do not install the onboard battery upside down to avoid possible explosion.

3.4 Processor and Heatsink Installation

Notes:

- Use ESD protection.
- Shut down the system and then unplug the AC power cord from all power supplies.
- Check that the plastic protective cover is on the processor socket and none of the socket pins are bent. If they are, contact your retailer.
- When handling the processor, avoid touching or placing direct pressure on the LGA lands (gold contacts). Improper installation or socket misalignment can cause serious damage to the processor or socket, which may require manufacturer repairs.
- Thermal grease is pre-applied on a new heatsink. No additional thermal grease is needed.
- Refer to the Supermicro website for updates on processor support.
- All graphics in this manual are for illustrations only. Your components may look different.
- Installing the processor does not require a screwdriver. Do not unscrew the processor socket.
- Installing the heatsink requires a Phillips #1 screwdriver.

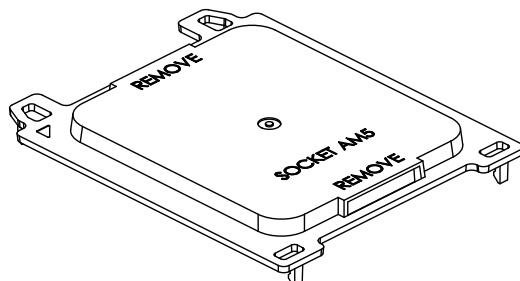


The Single AMD Ryzen Zen4 7000 Series Processor

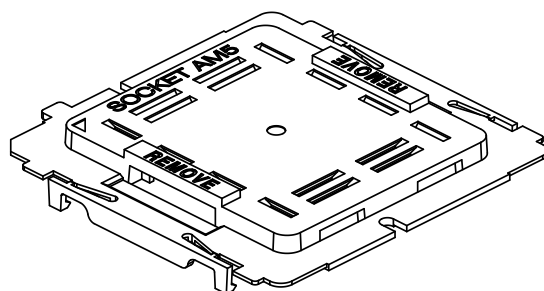
Overview of the Processor Socket

The processor socket is protected by an outer plastic protective cover. If the motherboard is new, the socket will also be protected by an inner plastic cover.

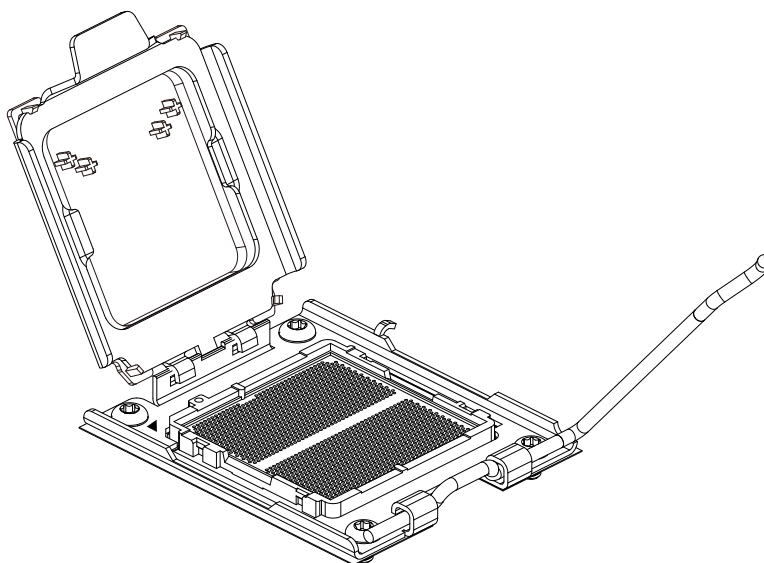
1. Outer Plastic Cover



2. Inner Plastic Cover

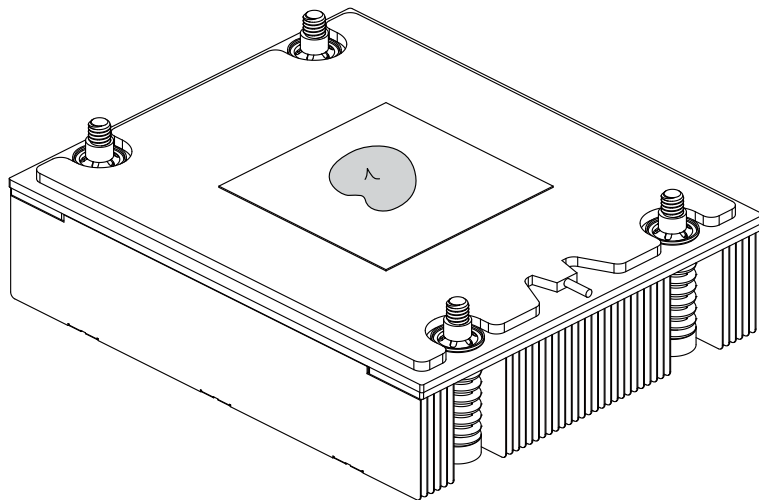
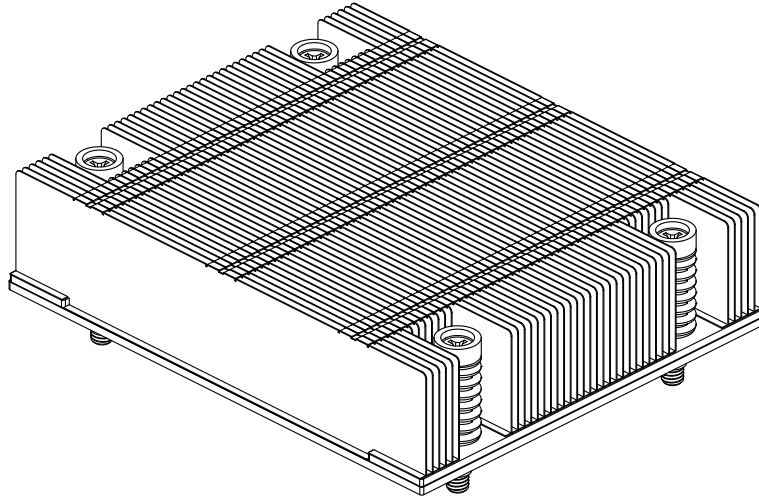


3. Socket AM5



Overview of the Heatsink

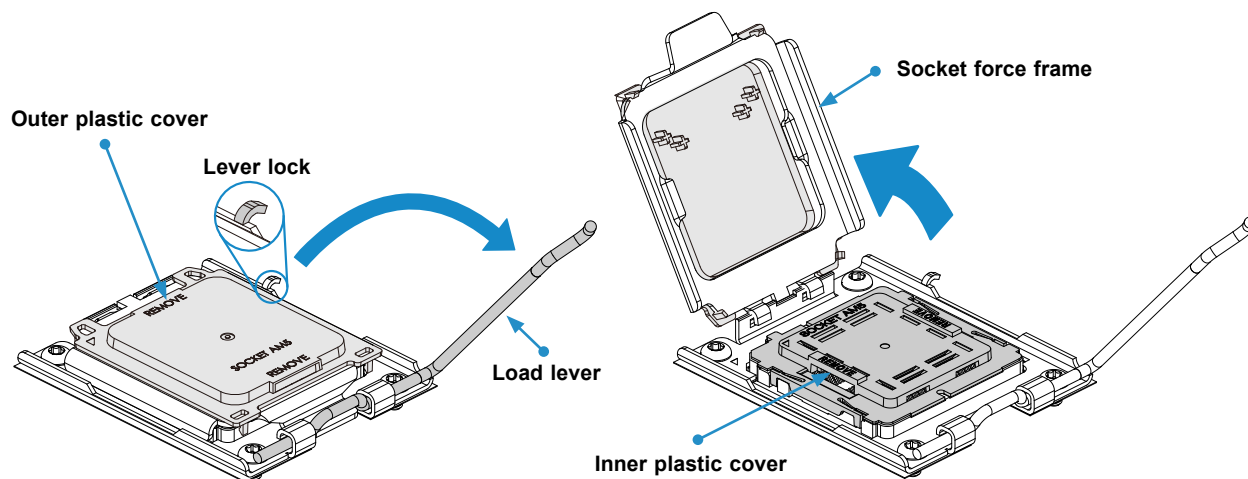
The heatsink is attached to the socket with Phillips #1 screws after the processor is secured. If this is a new heatsink, thermal grease is pre-applied.



Installing the Processor

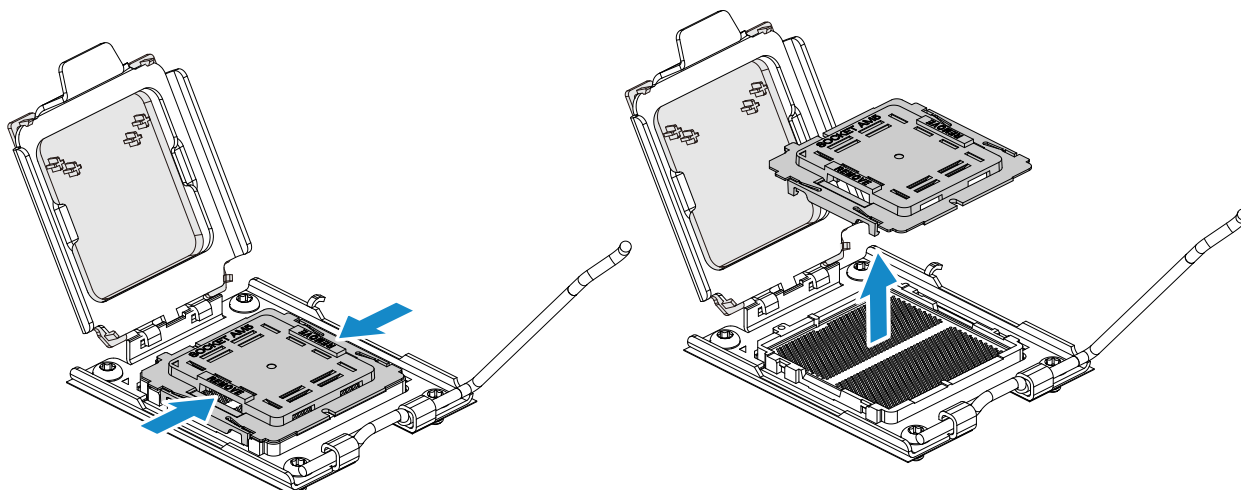
Note: Do not remove the plastic cover covering the outside of the socket. This cover will pop out during installation of the processor.

1. Use a finger to push down the lever, then move the lever rightward. Pull the lever until it passes over the processor socket.

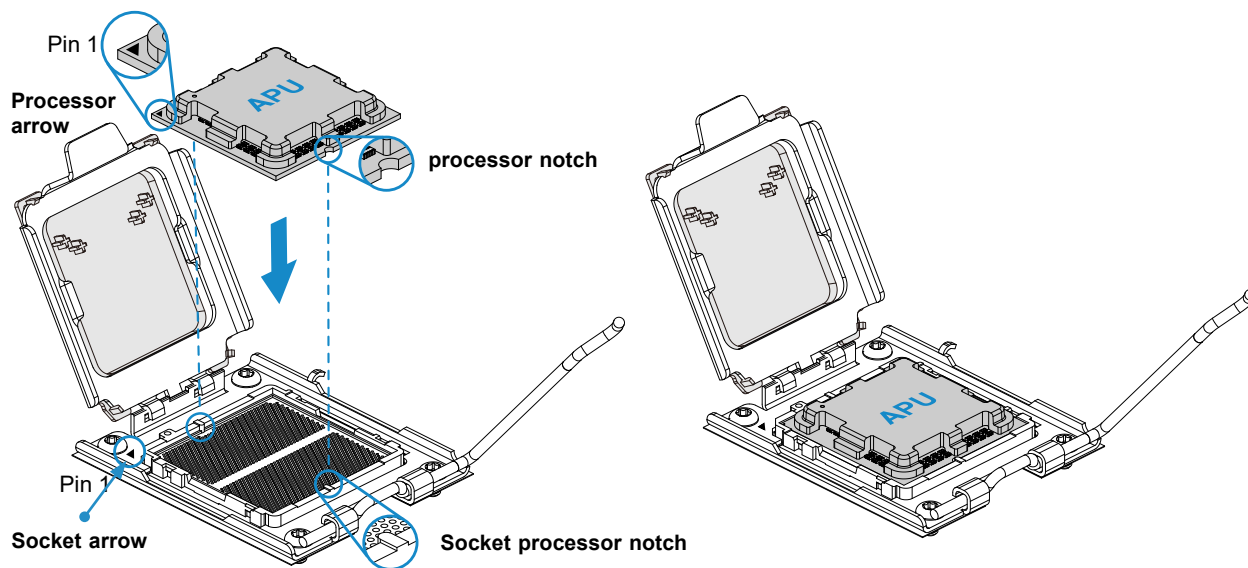


2. If there is an inner plastic cover, push the cover on its left and right sides, then lift it out.

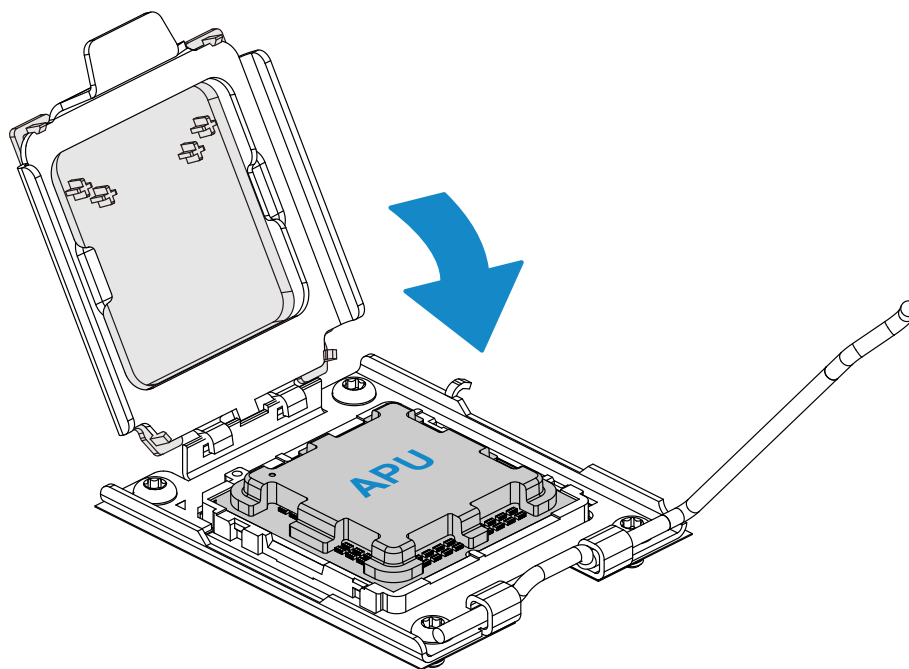
Note: Discard the inner plastic cover. Do not use the inner plastic cover for storing or transporting the motherboard without a processor.



- Pick up the processor on its left and right edges. Hold the processor over the socket and align the arrow on the top-left corner of the processor with the arrow on the top-left corner of the socket. Gently lower it onto the AM5 socket pins.

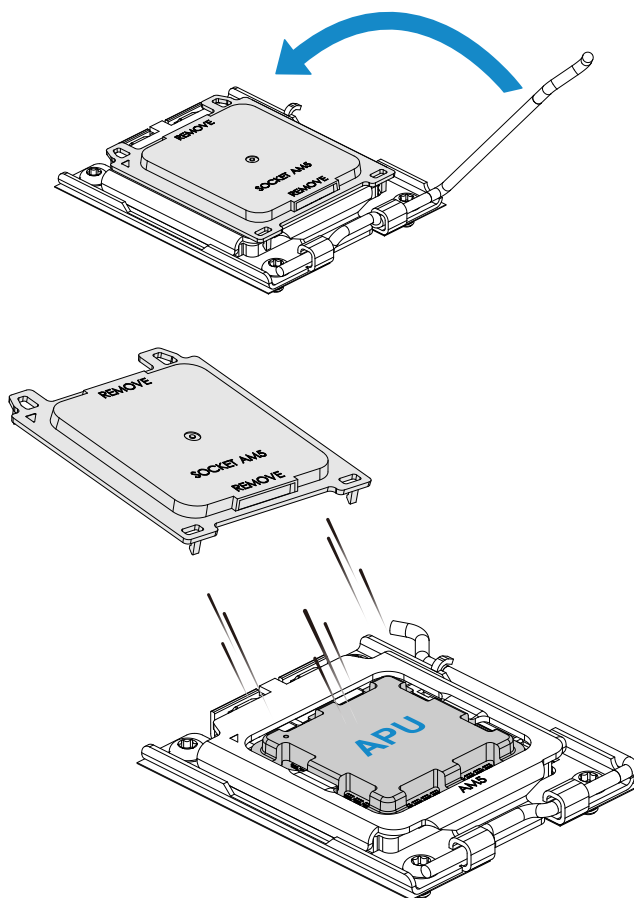


- With the processor in the socket, lower the socket force frame.

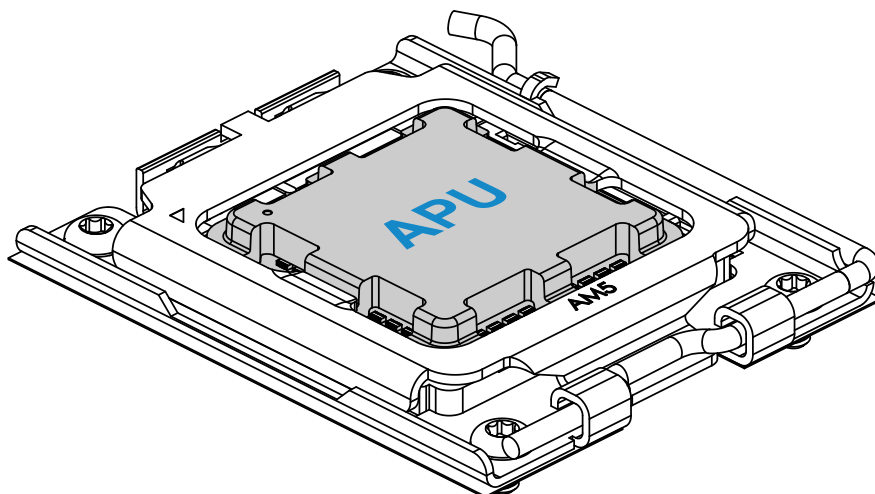


5. Reattach the lever arm onto the right side of the socket. The outer plastic cover will pop out when the lever arm is reattached.

Note: Store the outer plastic cover. Attach the outer plastic cover to the socket force frame when storing or transporting the motherboard without a processor.

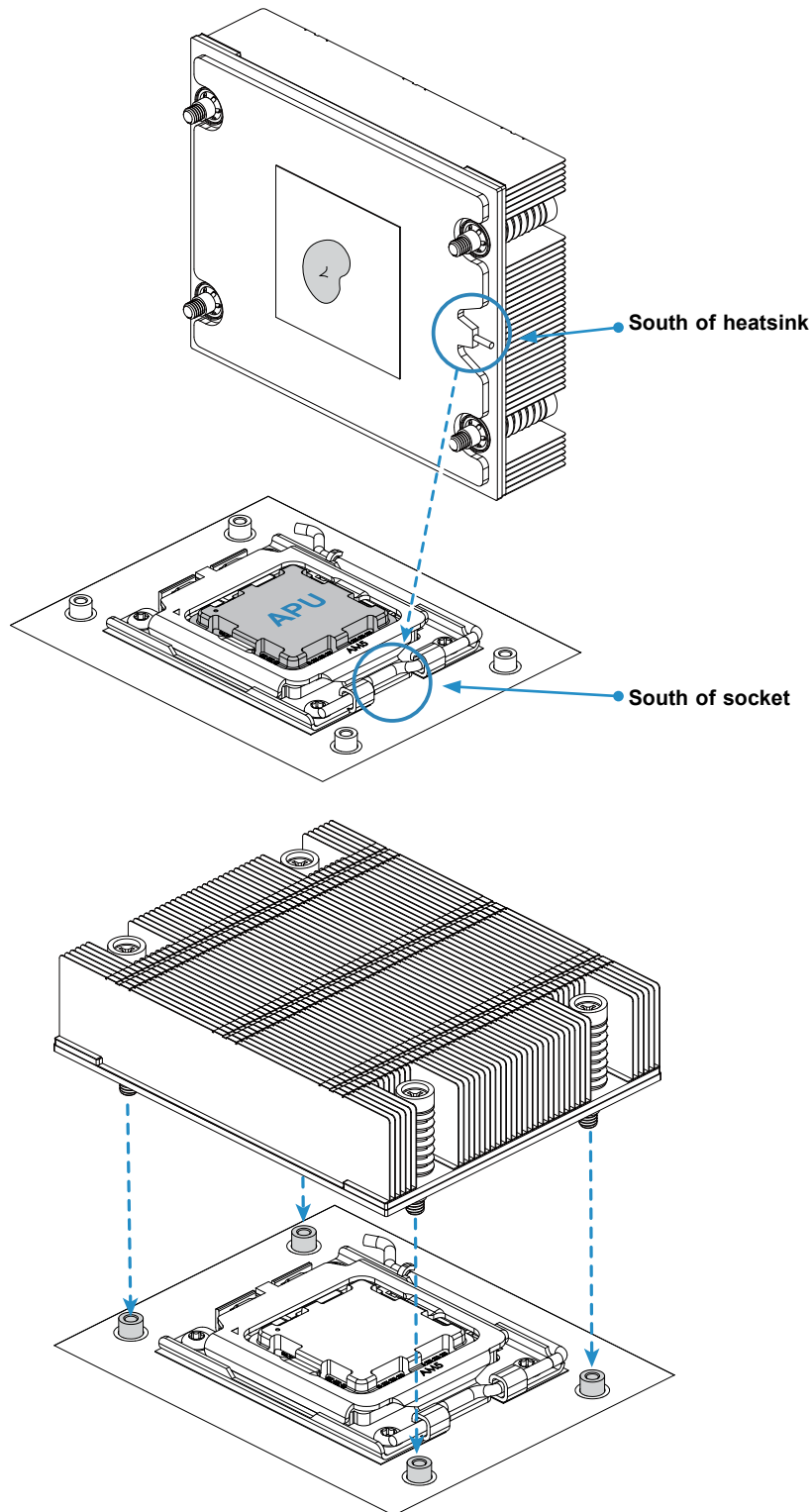


6. When finished, the socket force frame will secure the processor.

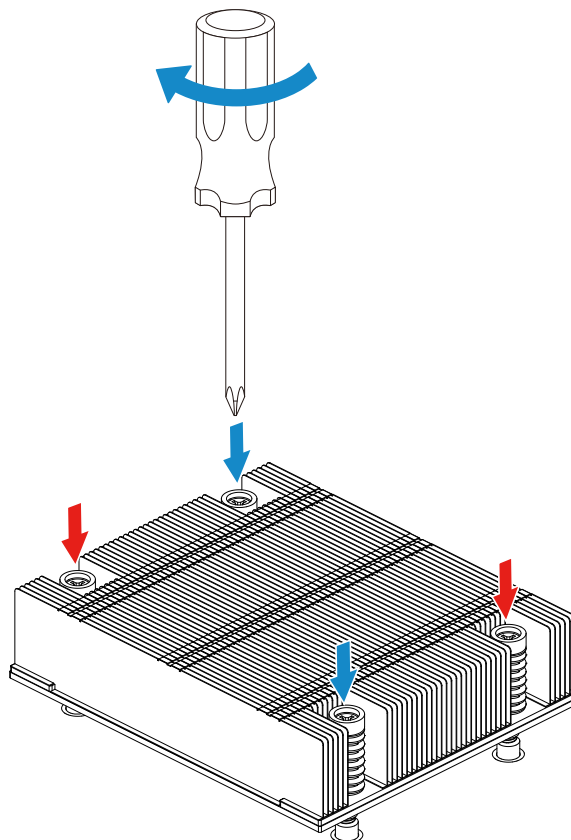


Installing the Heatsink

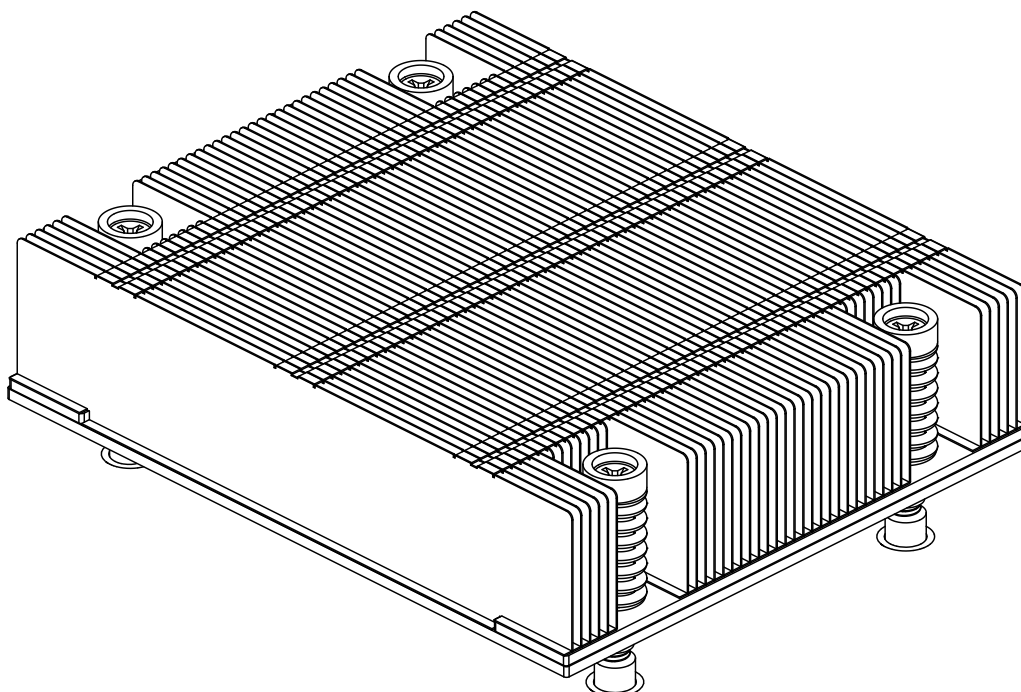
1. After the processor is secure, you must install the heatsink to the socket frame. Ensure a proper amount of thermal grease is applied to the heatsink. Lower the heatsink down until the four screws on the heatsink align with the four screw holes on the socket frame.



2. Starting with two screws on opposite corners, use a Phillips #1 screwdriver to press down and tighten the screws on the heatsink.



3. When finished, the heatsink will be secured over the socket and processor.



3.5 Memory

Memory Support

The H13SRD-F supports up to 128GB of ECC and Non-ECC DDR5 UDIMM memory with speeds of up to up to 5200MT/s. Refer to the table below for DIMM support information.

1 Processor, 4 DIMM Slots							
Channel	DIMM Slot	DIMM Configuration & Maximum Memory Speed (MT/s)					
		1	2	3	4	5	6
Channel A	DIMMA1					Up to 3600 MT/s	Up to 3600 MT/s
	DIMMA2	Up to 5200 MT/s		Up to 5200 MT/s		Up to 3600 MT/s	Up to 3600 MT/s
Channel B	DIMMB1				Up to 3600 MT/s		Up to 3600 MT/s
	DIMMB2		Up to 5200 MT/s	Up to 5200 MT/s	Up to 3600 MT/s		Up to 3600 MT/s

General Guidelines for Optimizing Memory Performance

- The blue or black slots must be populated first.
- It is recommended to use DDR5 memory of the same type, size, and speed.
- Mixed DIMM speeds can be installed. However, all DIMMs will run at the speed of the slowest DIMM.
- The motherboard will not support an odd-numbered amount of DIMM modules except for a single DIMM module necessary for board operation.

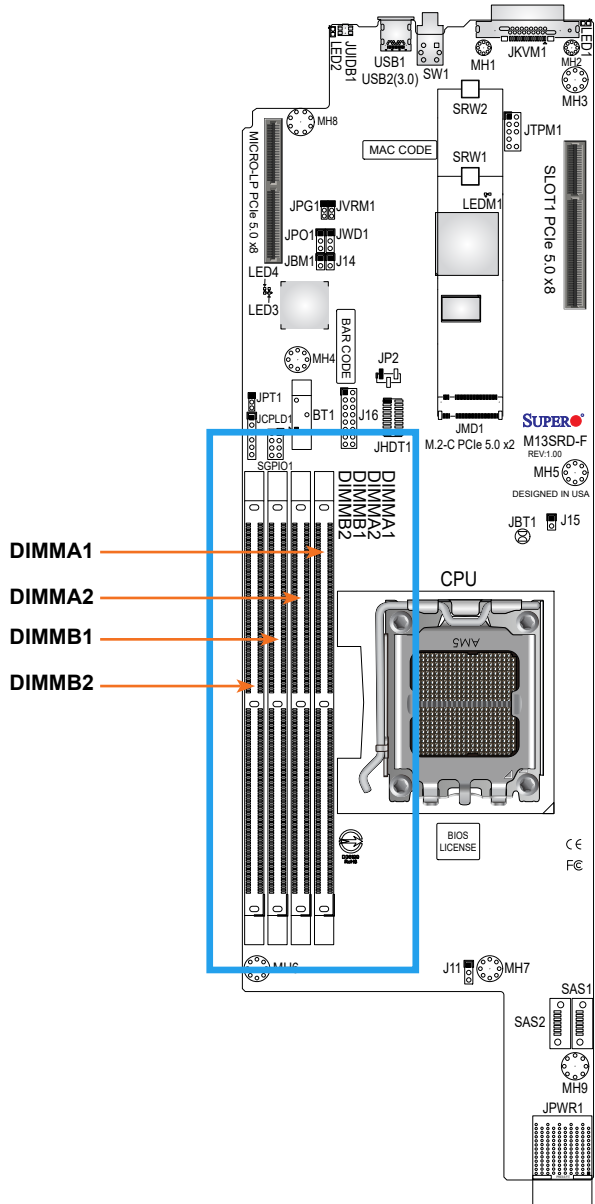
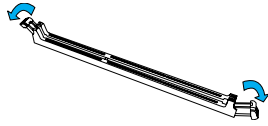


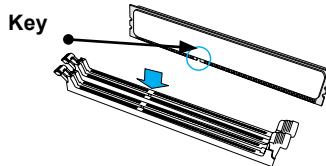
Figure 3-4. DIMM Slot Locations

DIMM Installation

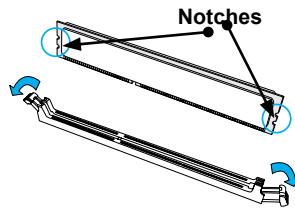
1. Insert the desired number of DIMMs into the slots based on the recommended DIMM population tables shown above.
2. Push the release tabs on both ends of the DIMM slot outwards to unlock it.



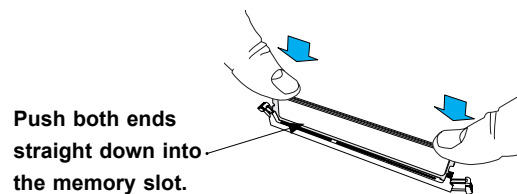
3. Align the key of the DIMM module with the receptive point on the memory slot.



4. Align the notches on both ends of the module with the receptive points on the ends of the slot.



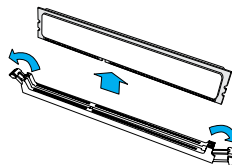
5. Push both ends of the module straight down into the slot until the module snaps into place.



6. Press the release tabs to the lock positions to secure the DIMM module into the slot.

DIMM Removal

Press both release tabs on the ends of the DIMM module to unlock it. Once the DIMM module is loose, remove it from the memory slot.



Warning! To avoid causing any damage to the DIMM module or the DIMM socket, do not use excessive force when pressing the release tabs on the ends of the DIMM socket. Handle DIMMs with care. Be aware and follow the ESD instructions given at the beginning of this chapter.

3.6 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.

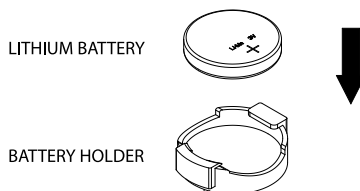


Figure 3-5. Installing the Onboard Battery

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 (CR2032).

3.7 Chassis Components

Storage Drives

The chassis features sixteen hot-swap storage drives. These storage drives are contained in drive carriers and may be removed without powering-down the system. These carriers also help promote proper airflow through the drive bays.

Removing Drive Carriers 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 carrier out of the chassis.

Removing a Dummy Drive from the Drive Carrier

1. Remove the drive carrier from the chassis as described in the previous section and lay it on a flat surface.
2. Remove the two screws securing the dummy drive to the drive carrier.
3. Lift the dummy drive from the drive carrier.

Caution: ETo maintain proper airflow, except for short periods of time (swapping drives), do not operate the server with the drive carriers removed from the bays, regardless of how many drives are installed.

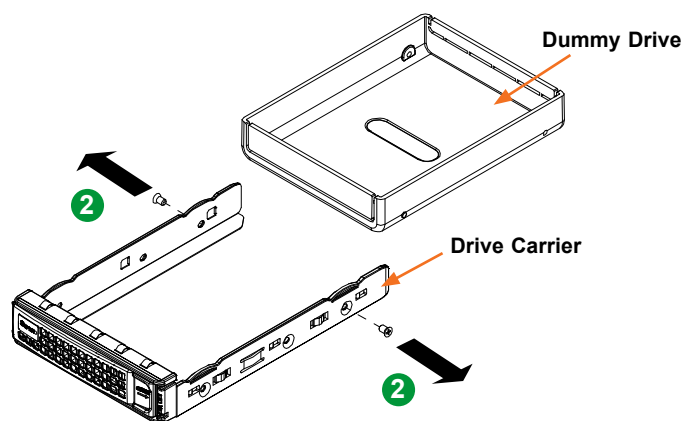


Figure 3-6. Removing a Dummy Drive from the Drive Carrier

Note: Enterprise level storage drives are recommended for use in Supermicro servers. For information on recommended drives, visit the Supermicro website at <http://www.supermicro.com/products/nfo/storage.cfm>.

System Cooling

Fans

Four 8-cm fans circulate air through the chassis to lower the internal temperature. The system fans are designed to be easily changed, with no tools required and no need to remove any other parts inside the chassis. See Figure 3-2 to determine which nodes and storage drives are cooled by each fan.

Replacing a System Fan

1. Determine which fan must be replaced. Use IPMI or open the chassis top cover while the system is operating and observe. Do not run the server for an extended period of time with the top cover open.
2. Simultaneously squeeze both release tabs on the top of the fan module.
3. Lift the fan module up and out of the chassis.
4. Place the replacement fan into the vacant space in the fan bracket while making sure the arrows on the top of the fan (indicating air direction) point in the same direction as the arrows on the other fans.
5. Put the fan back into the chassis and make sure that it is properly locked.
6. Confirm that the fan is working properly before replacing the chassis cover.

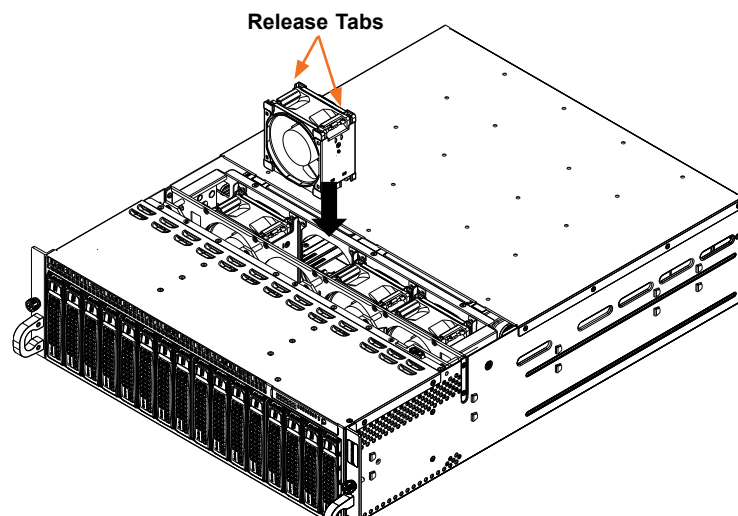


Figure 3-7. Replacing a Fan