



A+ SERVER AS -3015MR-H5TNR



USER'S MANUAL

Revision 1.0

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Manual Revision 1.0

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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 certified service technicians only.

Please refer to the AS -3015MR-H5TNR 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/driver>
- 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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Appendix A Standardized Warning Statements for AC Systems

Appendix B System Specifications

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Chapter 1

Introduction

1.1 Overview

This chapter provides a brief outline of the functions and features of the SuperServer AS -3015MR-H5TNR. The AS -3015MR-H5TNR is a five-node MicroCloud server system based on the H13SRE-F motherboard and the CSE-MC301G-000NFP chassis.

The following provides an overview of the specifications and capabilities of the system.

System Overview	
Motherboard*	One H13SRE-F
Chassis	CSE-MC301G-000NFP
Processor*	Single AMD EPYC™ 4005/4004 or Ryzen™ 7000/9000 Series Processor in an AM5 socket
Memory*	Up to 192 GB of ECC and Non-ECC DDR5 UDIMM memory with speeds of up to 5600 MT/s in four DIMM slots
Drive Support*	Two internal fixed 2.5" PCIe 5.0 NVMe drive bays Two internal fixed 2.5" SATA drive bays One M.2 NVMe slot (M-key 2280/22110)
Expansion Slots*	One PCIe 5.0 x16 FHFL double-width slot One PCIe 5.0 x4 MicroLP slot
I/O Ports*	Two USB 2.0 ports One VGA port One onboard TPM/Port 80 port
System Cooling	Five 8-cm heavy duty fans
Power	Four 2000 W redundant Titanium Level (96%) power supply modules
Form Factor	3U rackmount: 5.16 x 17.68 x 30.51 in. / 131 x 449 x 775 mm (HxWxD)

*per node

Notes: A Quick Reference Guide can be found on the product page of the Supermicro website.

The following safety models associated with the AS -3015MR-H5TNR have been certified as compliant with UL or CSA: MC301G-20, MC301G-Q20H13.

1.2 System Features

The CSE-MC301G-000NFP is a 3U chassis that supports five hot-plug nodes.

Front View



Figure 1-1. System: Front View

System Node Features: Front	
Feature	Description
① to ⑤	Logical node numbers
①	One PCIe 5.0 x16 FHFL double-width or (optional) two PCIe 5.0 x8 (FHFL in slot 1, LP in slot 3)
②	Dual 1 GbE/10 GbE/25 GbE LAN port card (in PCIe 5.0 x4 MicroLP slot2)
③	Power Button/Status LED
④	IPMI port
⑤	KVM port
⑥	Optional PCIe 5.0 x8 slot3

Rear View



Figure 1-2. System: Rear View

System Features: Rear	
Feature	Description
1	Power supplies (left to right: PWS1, PWS2, PWS3, PWS4)
2	1+1 dedicated, centralized IPMI management ports (cascade or redundancy modes) Cascade Mode: connect the first port to a management device and the second port to another server Redundancy Mode: connect each port to a different subnetwork switch Note: Do not connect both dedicated IPMI ports to the same network.
3	8-cm hot-swap fans

Optional Fan and Power Supply Parts		
Part Number	Passive GPU & Mixed Node Config.	Active GPU & Mixed Node Config.
FAN-0225L4-1	Qty: 5	N/A
PWS-2K08A-1R	Qty: 4	N/A
FAN-0225L4	N/A	Qty: 5
PWS-2K08F-1R	N/A	Qty: 4

1.3 System Architecture

The chassis contains five separate computing node drawers, each with its own motherboard. This section highlights the features on each node.

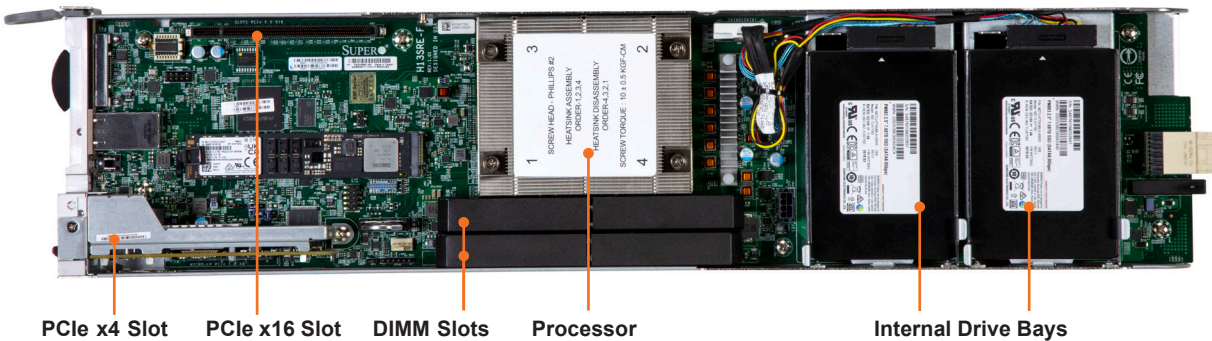


Figure 1-3. Node Features

Node Components	
Feature	Description
Internal Drive Bays	Two internal 2.5" NVMe or SATA drives + (optional) two additional internal 2.5" SATA drive bays with optional bracket and cable connected to CN1.
Processor	Single AMD EPYC™ 4005/4004 or Ryzen™ 7000/9000 Series Processor
DIMM Slots	Four DDR5 DIMM slots
PCIe x16 Slot	One full-height, full-length PCIe 5.0 x16 slot
PCIe x4 Slot	One MicroLP PCIe 5.0 x4 slot

System Block Diagram

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

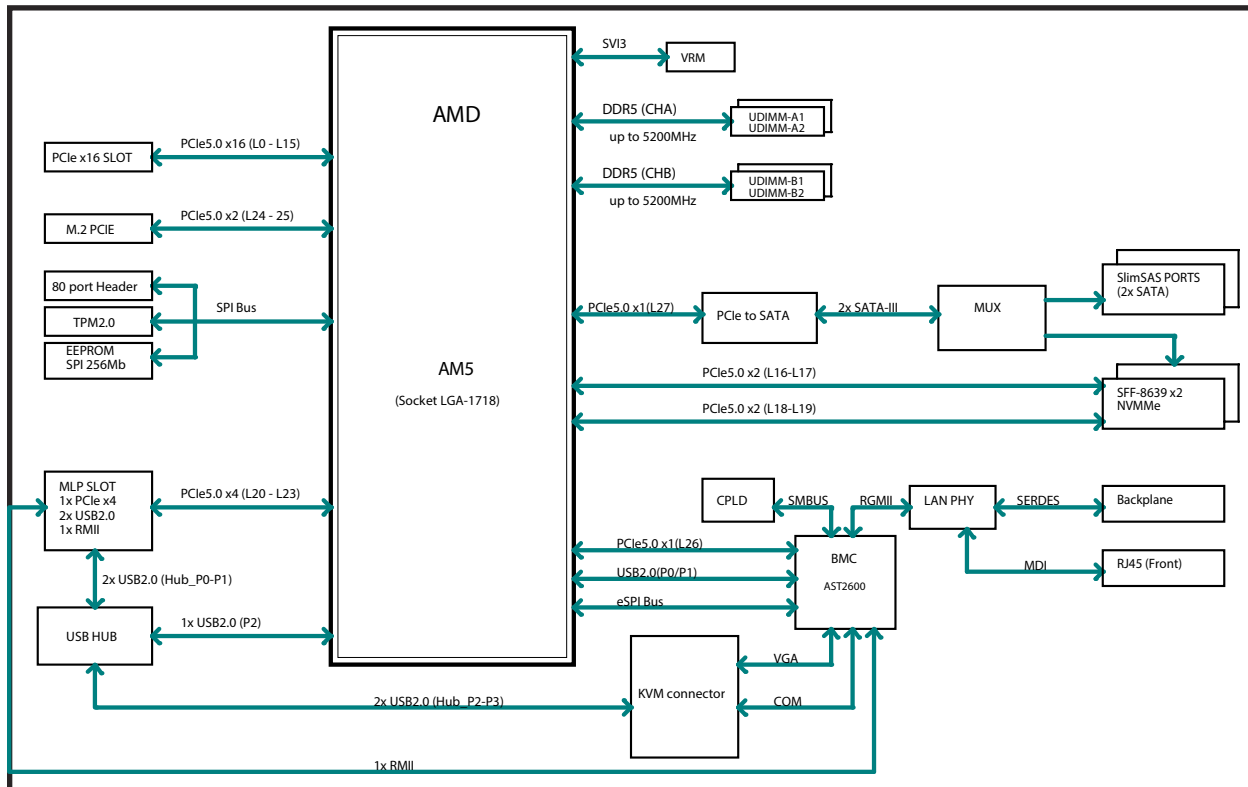


Figure 1-4 System Block Diagram

1.4 Motherboard Layout

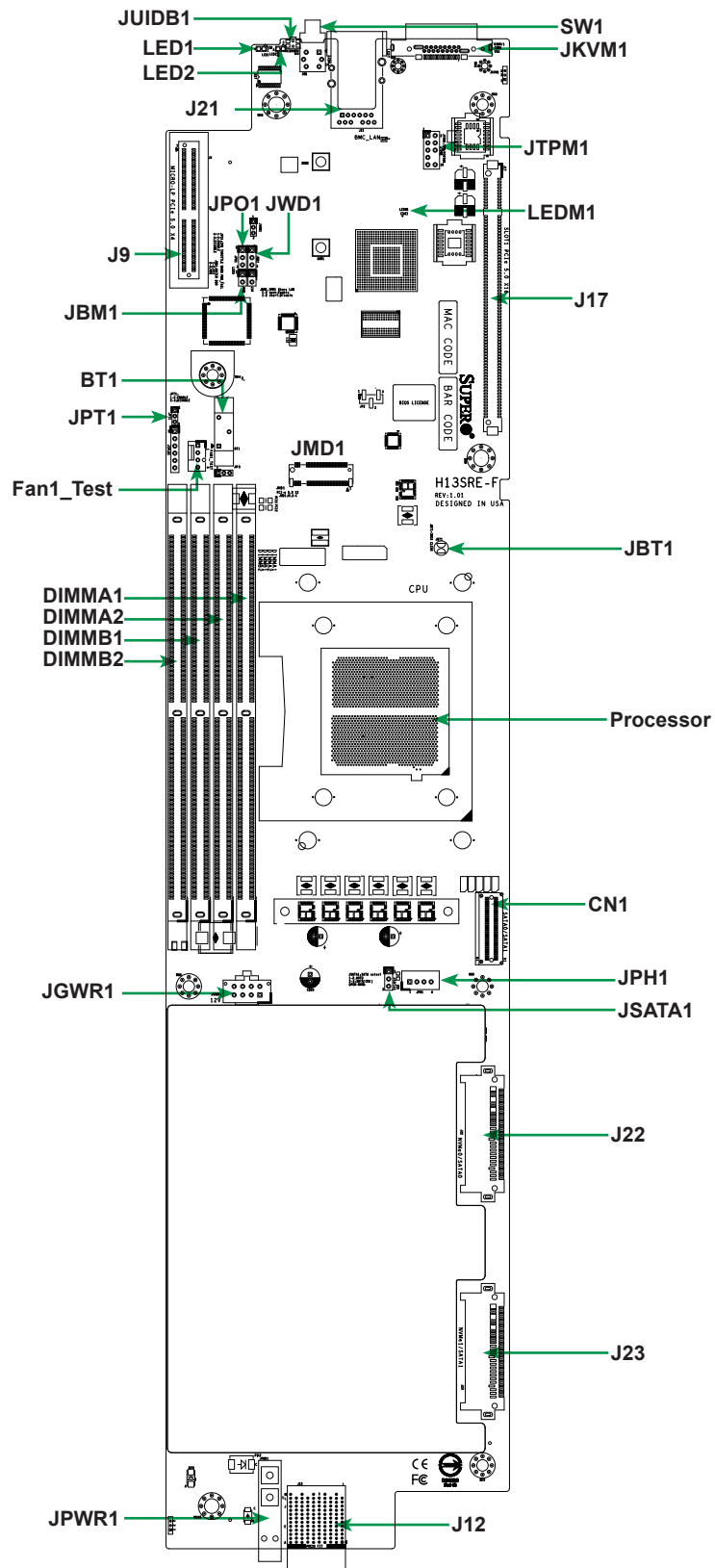


Figure 1-5. Motherboard Layout

Quick Reference Table

Jumper	Description	Default Setting
JBM1	Disable IPMI Share LAN	Pins 1-2 Open: Enabled
JBT1	CMOS Clear	Open
JPO1	CPU Throttle when PWR_FAIL	Pins 2-3: Disabled
JPT1	Onboard Trusted Platform Module (TPM) 2.0	Pins 1-2: Enabled
JSATA1	SATA Select	Pins 1-2: Auto
JWD1	Watch Dog Timer	Pins 1-2: Reset
LED	Description	Status
LED1	Unit Identifier LED (UID)	Solid Blue: Unit Identified
LED2	OH/Power Fail/FAN Fail	Blinking Red: Power Fail or Fan Fail Solid Red: Overheat
LEDM1	BMC Heartbeat LED	Blinking Green: BMC Normal
Connector	Description	
BT1	Onboard Battery	
CN1	SATA Cable Connector for SATA0/SATA1	
DIMMA1-DIMMB2	DIMM (Memory) Slots	
Fan1_Test Header	(used for testing/debug purposes only)	
J9	Micro Low-Profile PCIe 5.0 x4 Slot with two USB 2.0 Connectors	
J12	MicroCloud Backplane Connector	
J17	PCIe 5.0 x16 Slot (support up to 75 W)	
J21	Dedicated BMC LAN Port	
J22	NVMe0/SATA0 Connectors (SATA shared with CN1)	
J23	NVMe1/SATA1 Connectors (SATA shared with CN1)	
JGWR1	12 V Output Power Connector for GPU	
JKVM1	KVM Connector for USB0/1, COM1, VGA	
JMD1	M.2 M-Key 2280/22110 Slot (PCIe 5.0 x2)	
JPH1	SATA Power Cable Connector	
JPWR1	12 V Input Power Connector	
JTPM1	Port 80 Connector (used for testing/debug purposes only)	
JUIDB1	UID Switch	
SW1	Power Switch, Power LED	

Notes:

- See Chapter 4 for detailed information on jumpers, I/O ports, and connections. Jumpers, connectors, switches, and LED indicators that are not described in the preceding table are for manufacturing testing purposes only and are not covered in this manual.
- "■" indicates the location of pin 1.

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.

Important! 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-H5TNR 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.).

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

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

Warning!



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

Avertissement!



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

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 28" and 33.5" deep. Do not use a two post "telco" type rack.

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.

Installing the Rails onto a Rack

1. Identify the left rail and right rail, as they are different.

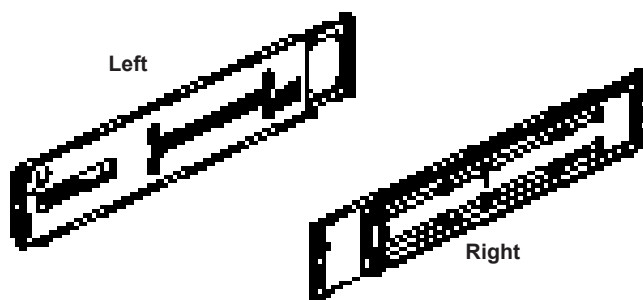


Figure 2-1. Left and Right Rails

2. Position the template at the front of the rack to determine the locations of the screws for the rails.

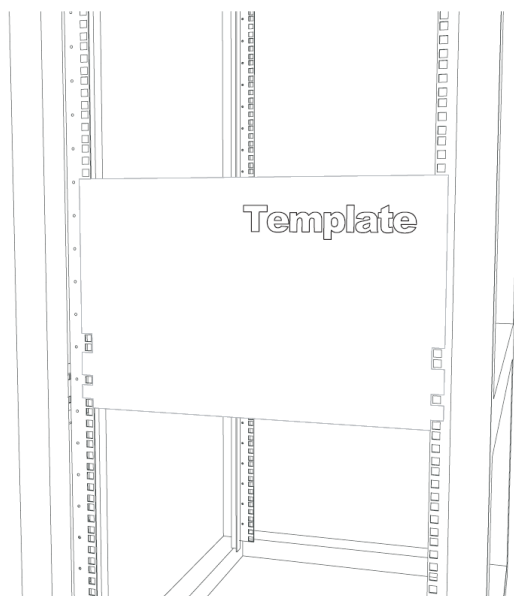


Figure 2-2. Placing Template in Rack

3. In each rail set, the two sections are screwed together to keep them immobile during shipping. Release these screws just enough to allow the rail sections to slide apart. Note the arrow on the rail, which indicates the end that attaches to the front of the rack.
4. Slide the rails sections apart to match the depth of the rack. Position the rails with the template and secure the front of each to the front of the rack with two flathead screws, then secure the back of each rail to the rear of the rack with two flathead screws (see Figure 2-3).

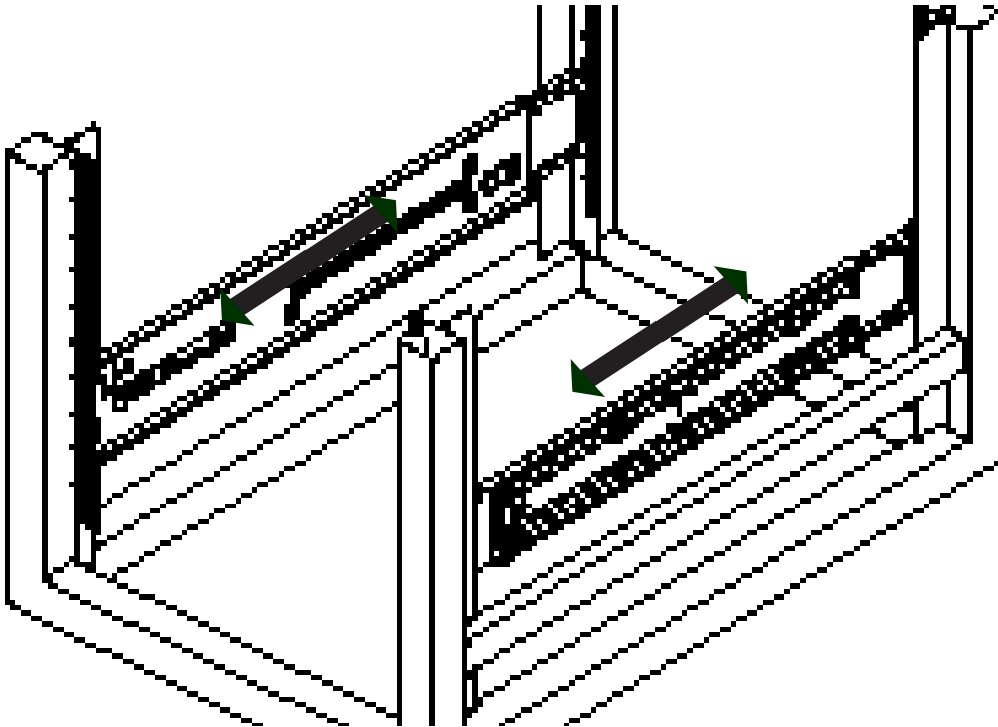


Figure 2-3. Sliding the Rail to the Depth of the Rack

Important: 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 Server

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

Installing the Chassis into a Rack

Important! The assembled system may weigh over 200 lbs. Use a lift and multiple people to move it. Remove the GPU tray before installing into the rack to reduce the weight of the system.

1. If you want to install the optional chassis handles, use screws including a thumbscrew, through the bottom hole of each handle. **Note:** These handles need only be installed when mounting the system into a short rack. When mounting into a deep rack, they are unnecessary and regular screws should be used instead of thumbscrews.
2. Using a lift and as many people as necessary, lift the system and slide it onto the installed rails.

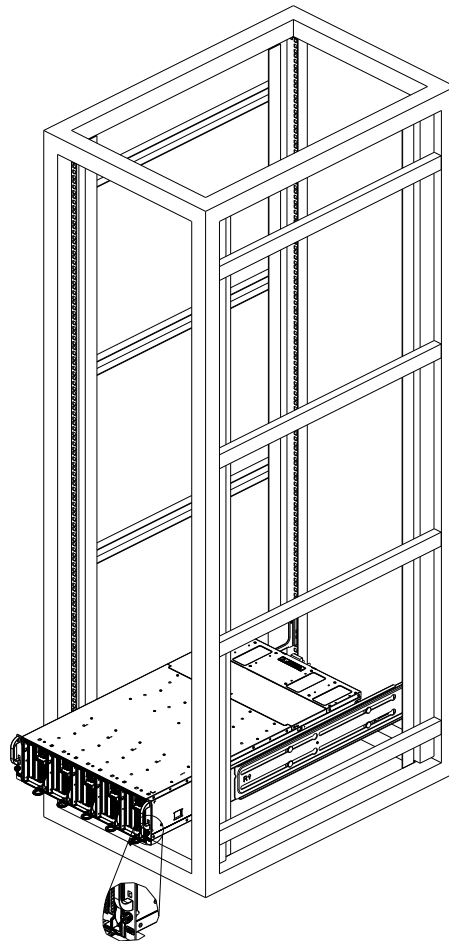


Figure 2-4. Sliding the Server into the Rack

Note: This figure is for illustrative purposes only. Some chassis components such as the GPU tray may be removed from the chassis enclosure before installing the system to the rack.

3. After pushing the enclosure all the way into the rack, use the thumbscrew on each side of the server to lock it into place.

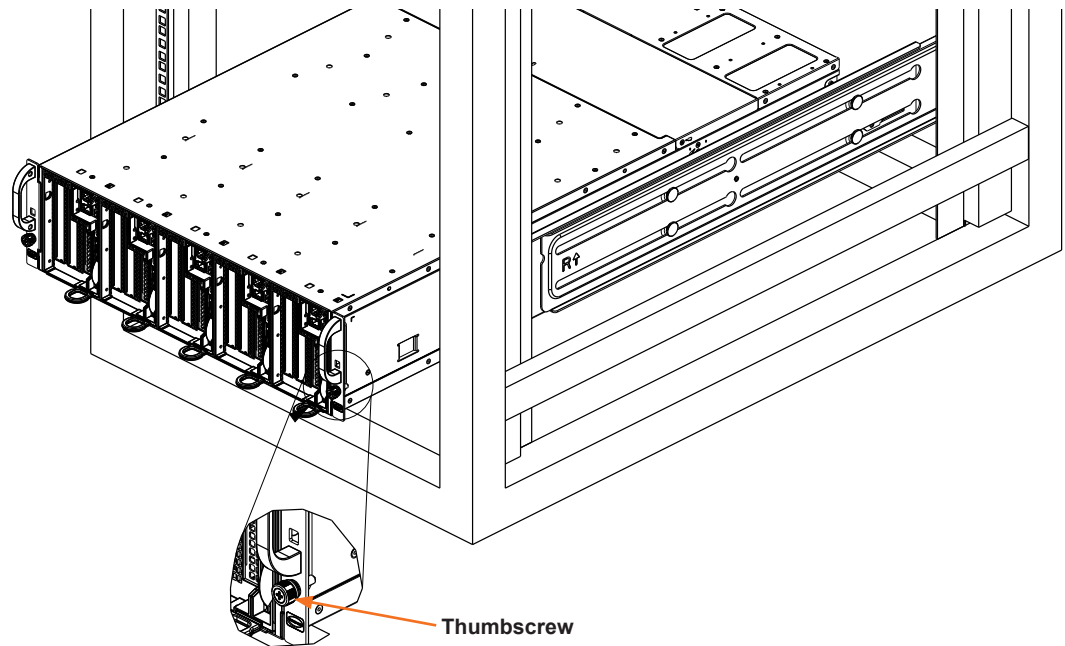


Figure 2-5. Locking the Server to the Rack

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

Removing the Chassis from the Rack

Important! 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.

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

All the main components of the system (nodes, fans, power supplies) can be accessed without removing any system covers.

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

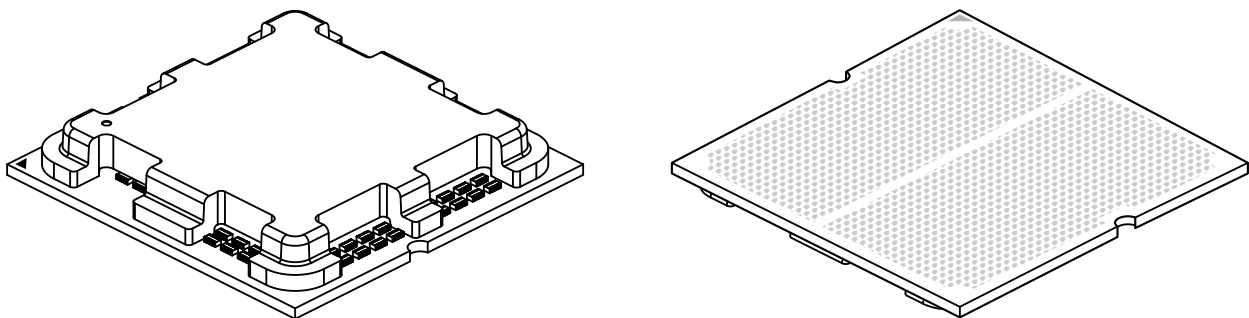
- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing any PCB (printed circuit board) from its antistatic bag.
- Handle PCBs by their edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the PCBs back into their antistatic bags when not in use.
- For grounding purposes, make sure that your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.
- 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 illustrative purposes only. Your components may look different.
- Installing the processor does not require a screwdriver. Do not unscrew the processor socket.
- When installing the heatsink, ensure a torque driver with a Phillips #1 bit set to the correct force is used for each screw.

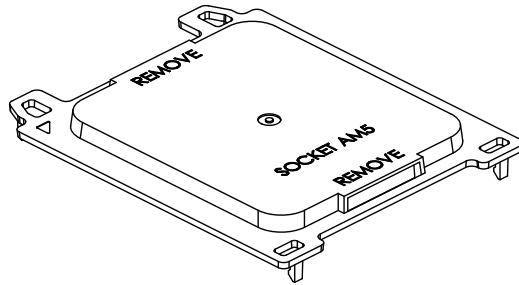
The AMD EPYC™ 4005/4004 Series Processor



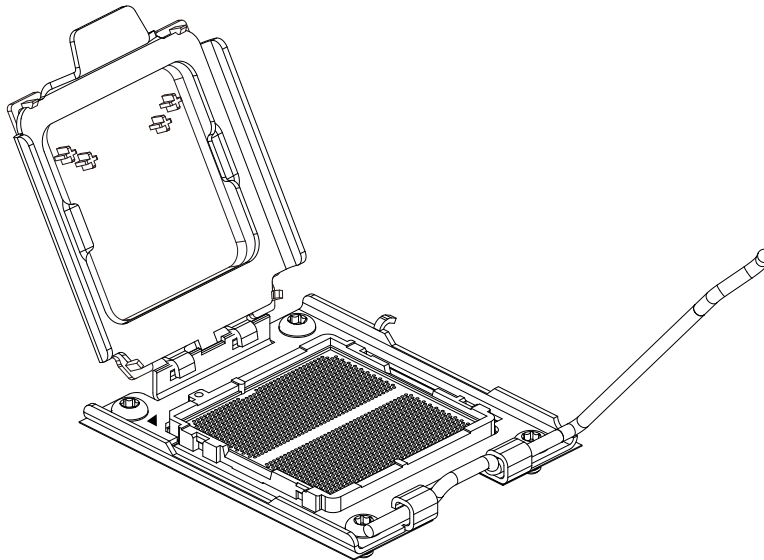
Overview of the Processor Socket

The processor socket is protected by an outer plastic protective cover.

1. Outer Plastic Cover

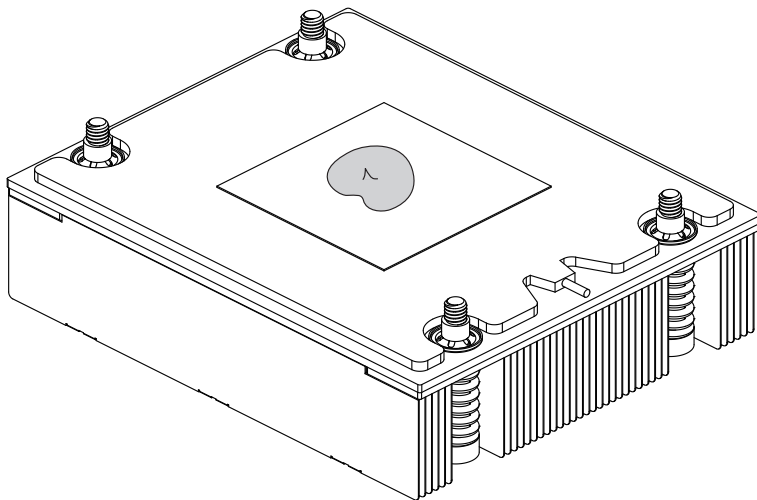
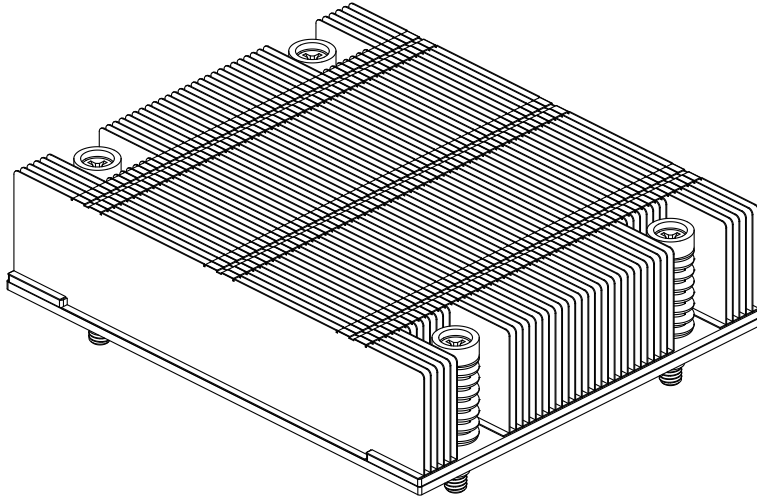


2. Socket AM5



Overview of the Heatsink

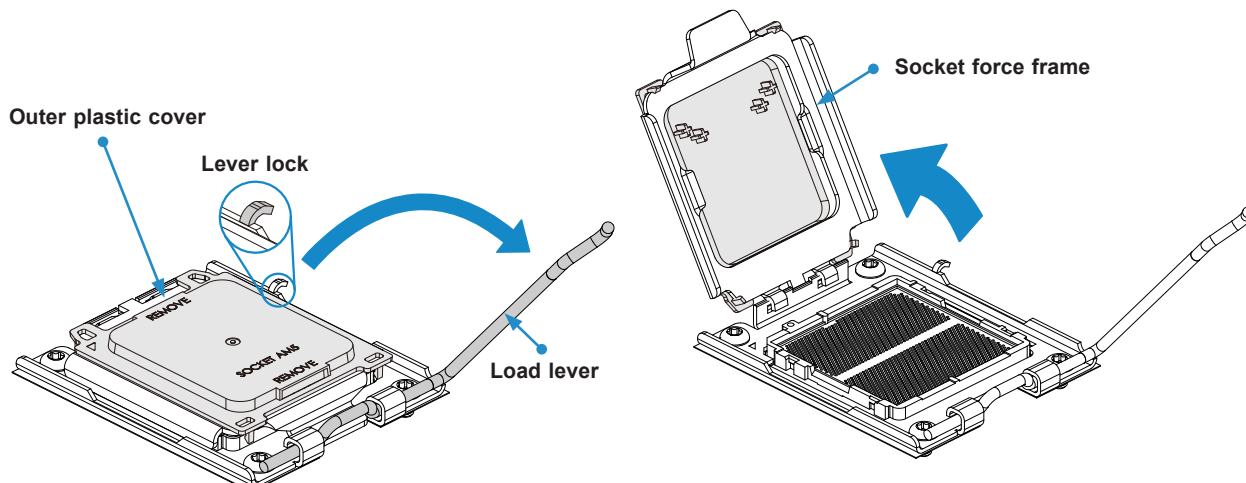
The heatsink is attached to the socket with Phillips #1 screws after the processor is secured. If this is a new heatsink, thermal grease is pre-applied.



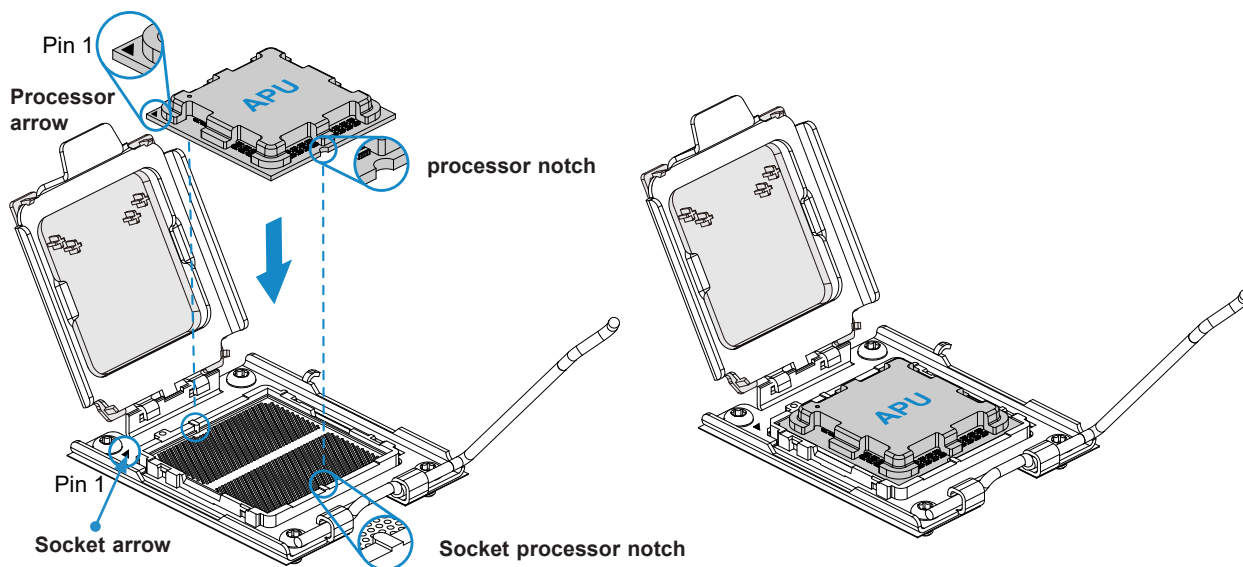
Installing the Processor

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

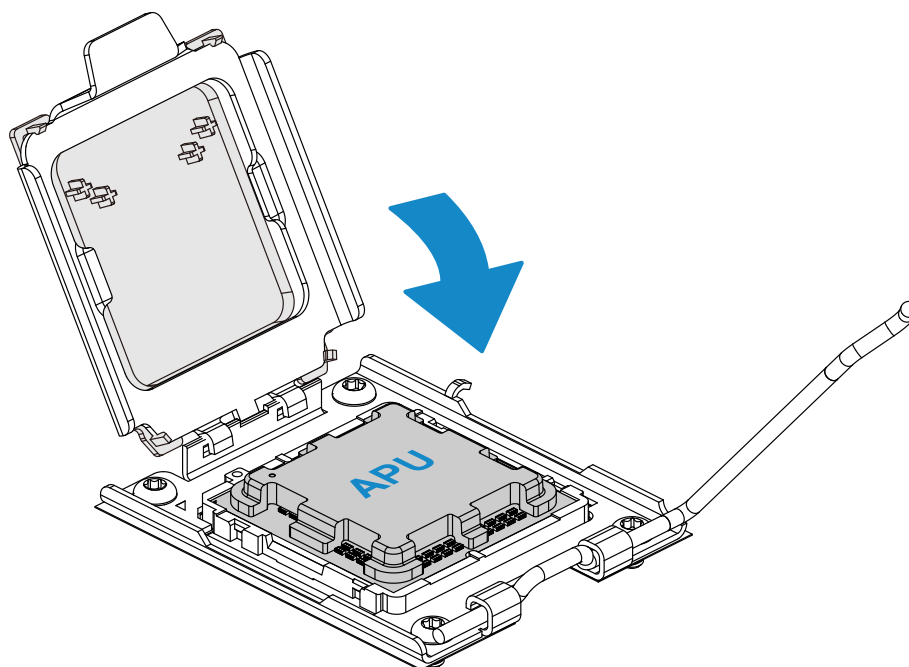
1. Use a finger to push down the lever, then move the lever rightward. Pull the lever until it passes over the processor socket.



2. 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.

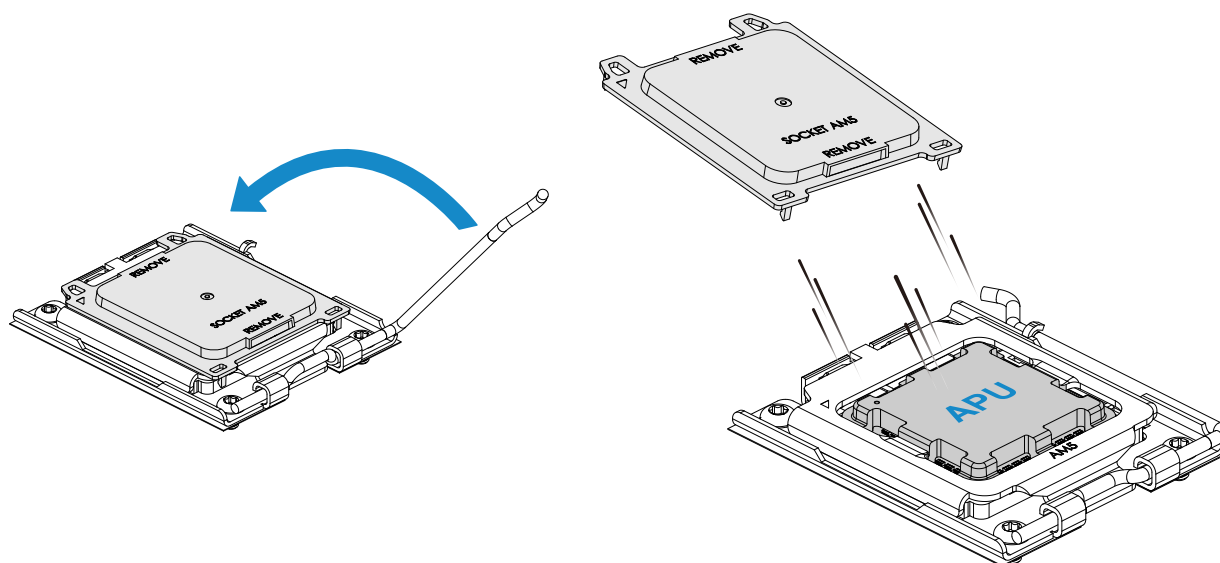


3. With the processor in the socket, lower the socket force frame.

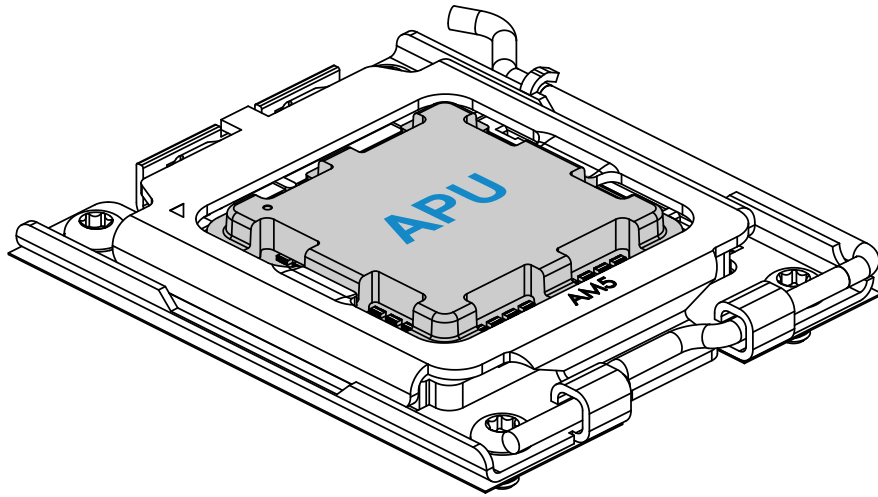


4. Reattach the lever arm onto the right side of the socket. The outer plastic cover will pop out when the lever arm is reattached.

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.

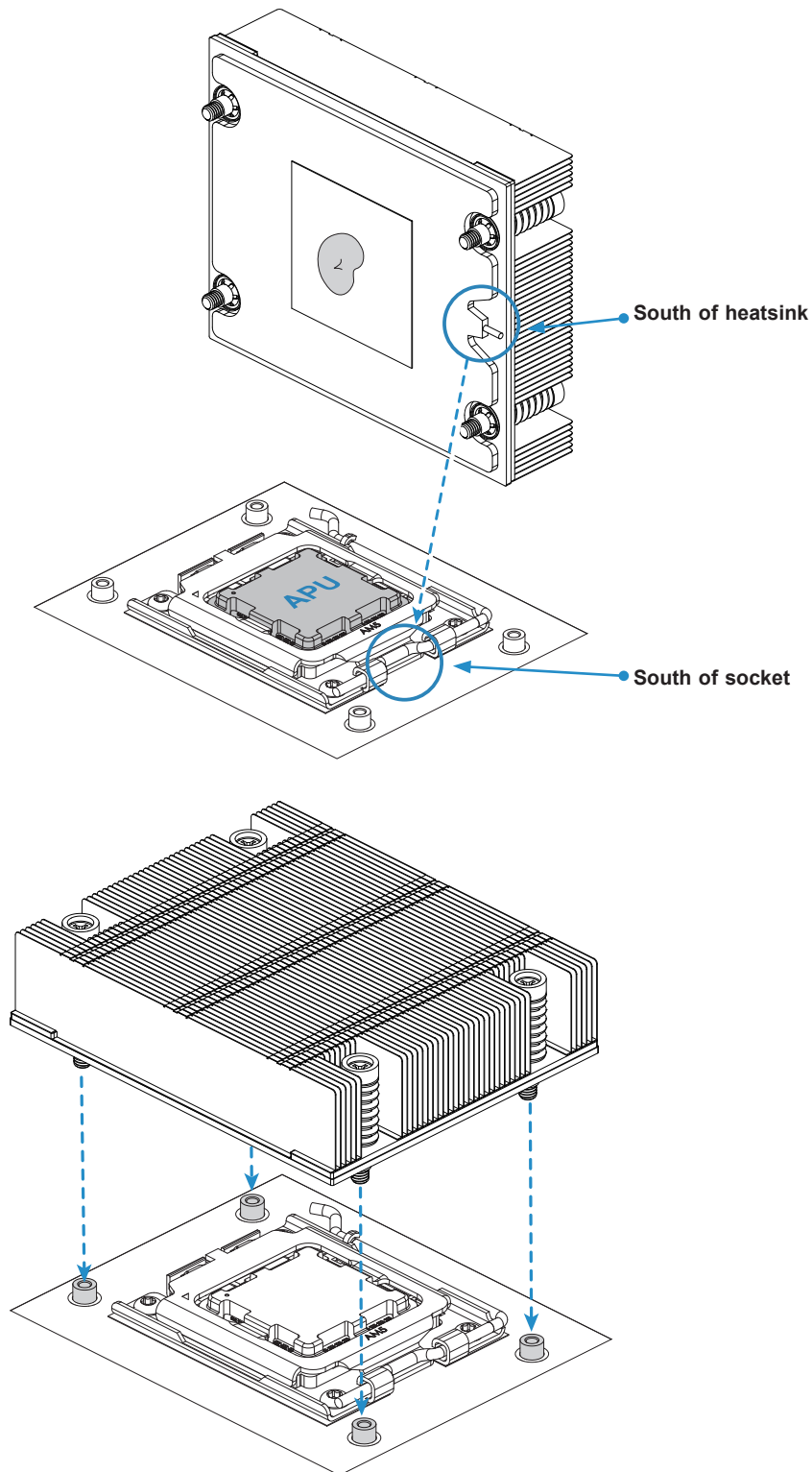


5. When finished, the socket force frame will secure the processor.



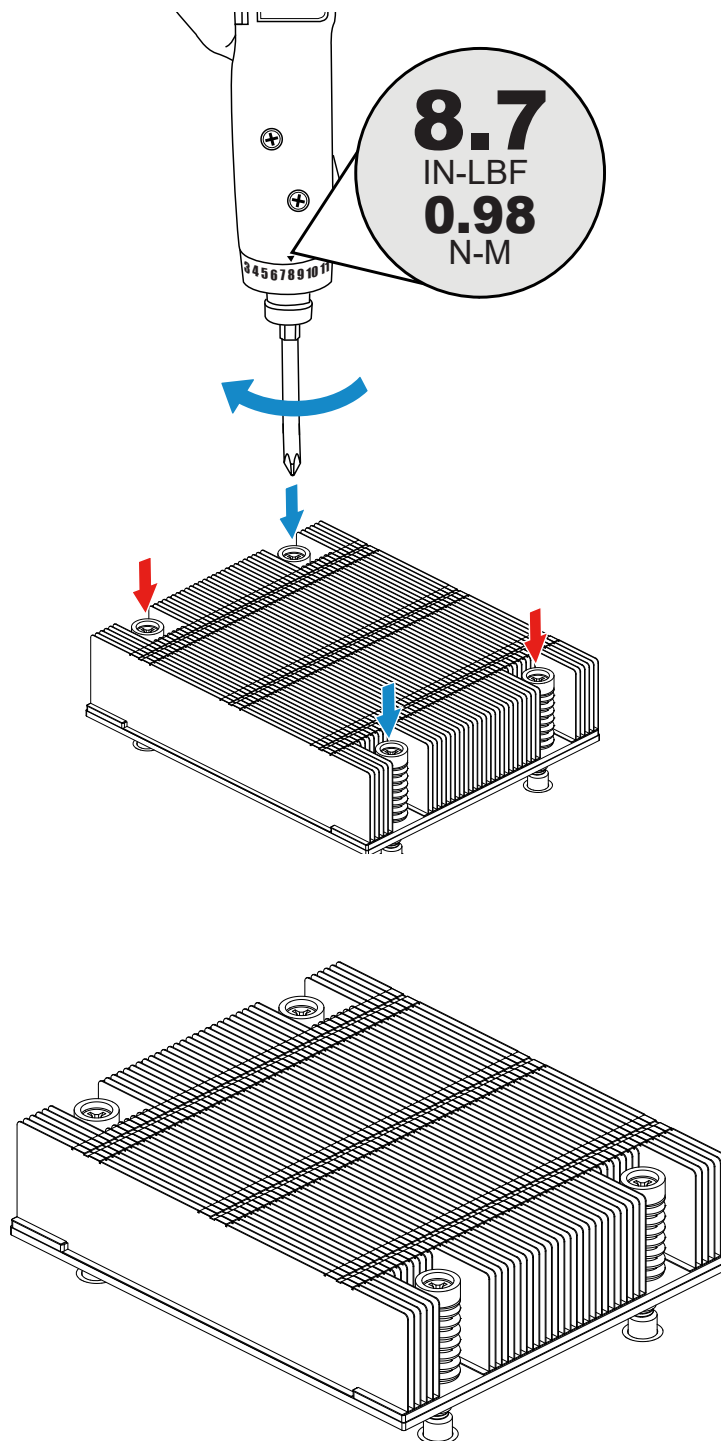
Installing the Heatsink

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. Align the heatsink to the socket. With a Phillips #1 bit torque driver set to a force of 8.7 in-lbf (0.98 N-m), gradually secure the heatsink by starting with two screws on opposite corners. When finished, the heatsink will be secured over the socket and processor

Important: Do not use a force greater than 8.7 in-lbf (0.98 N-m). Exceeding this force may over-torque the screw, causing damage to the processor, heatsink, and screw. (0.98 N-m), gradually secure the heatsink by starting with two screws on opposite corners. When finished, the heatsink will be secured over the socket and processor.



3.5 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 H13SRE-F supports up to 192 GB of ECC and Non-ECC DDR5 UDIMM memory memory with speeds of up to up to 5600 MT/s. Refer to the table below for DIMM support information.

Four DIMM Slots							
Channel	DIMM Slot	DIMM Configuration and 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 5600 MT/s		Up to 5600 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 5600 MT/s	Up to 5600 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.

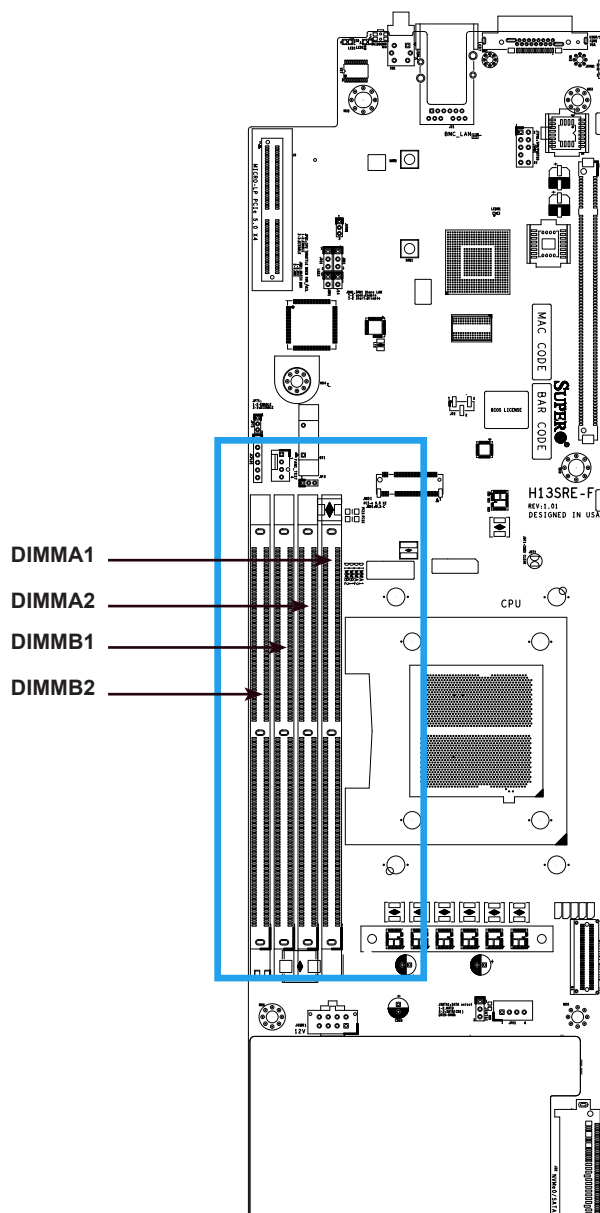
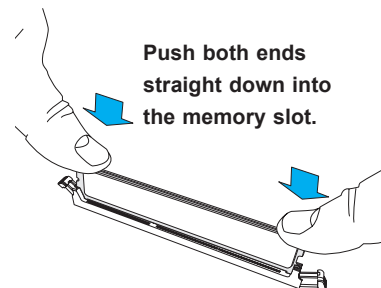
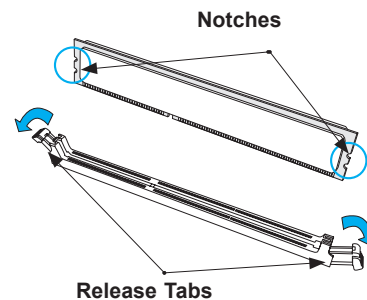
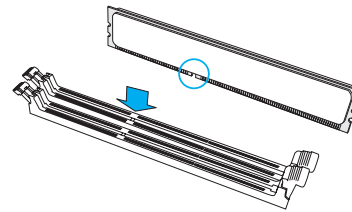


Figure 3-1. DIMM Slot Locations

DIMM Installation

1. Insert DIMM modules in the following order: DIMMA2, DIMMB2, then DIMMA1, DIMMB1, and insert the desired number of DIMMs into memory slots based on the memory population sequence on page 30. For the system to work properly, use memory modules of the same type and speed.
2. Push the release tabs outwards on both ends of the DIMM slot 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 against 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 loosened, remove it from the memory slot.

Important! 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.

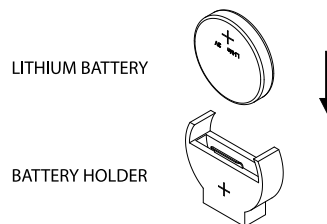


Figure 3-2. Installing the Onboard Battery

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

3.7 Chassis Components

Nodes

The system includes five removable computing nodes, each containing an individual motherboard. The recommended method to shut down a node is by using the OS. Alternatively, press and hold the power button for that node until the power button LED turns off.

Each node controls four storage drives and shares a fan with the node beside it. If a node is removed from the chassis, the storage drives associated with that node will power-down.

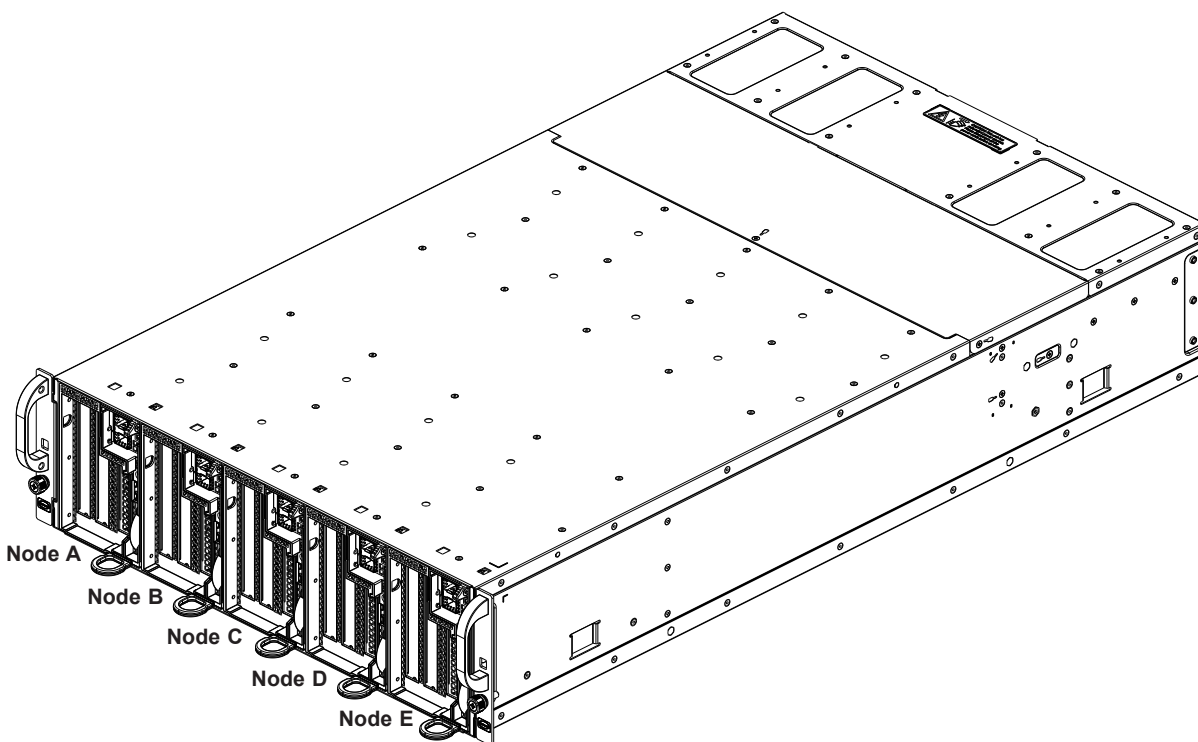


Figure 3-4. Logical Node Locations

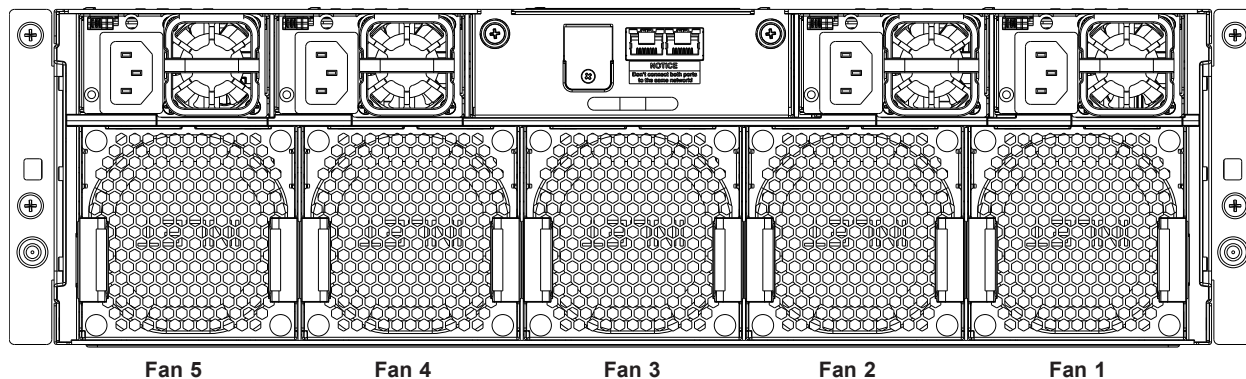


Figure 3-5. Logical Fan Locations

Corresponding Nodes and Fans	
Node	Fan
Node A	Fan 1
Node B	Fan 2
Node C	Fan 3
Node D	Fan 4
Node E	Fan 5

Removing a Node

1. Power-down an individual node by pressing its 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.
4. When service for the node is complete, slide the node back into the system until the release latch fully locks.
5. Power the node back on by pressing its power button.

Important! 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 from the accessory box that was included with the system.

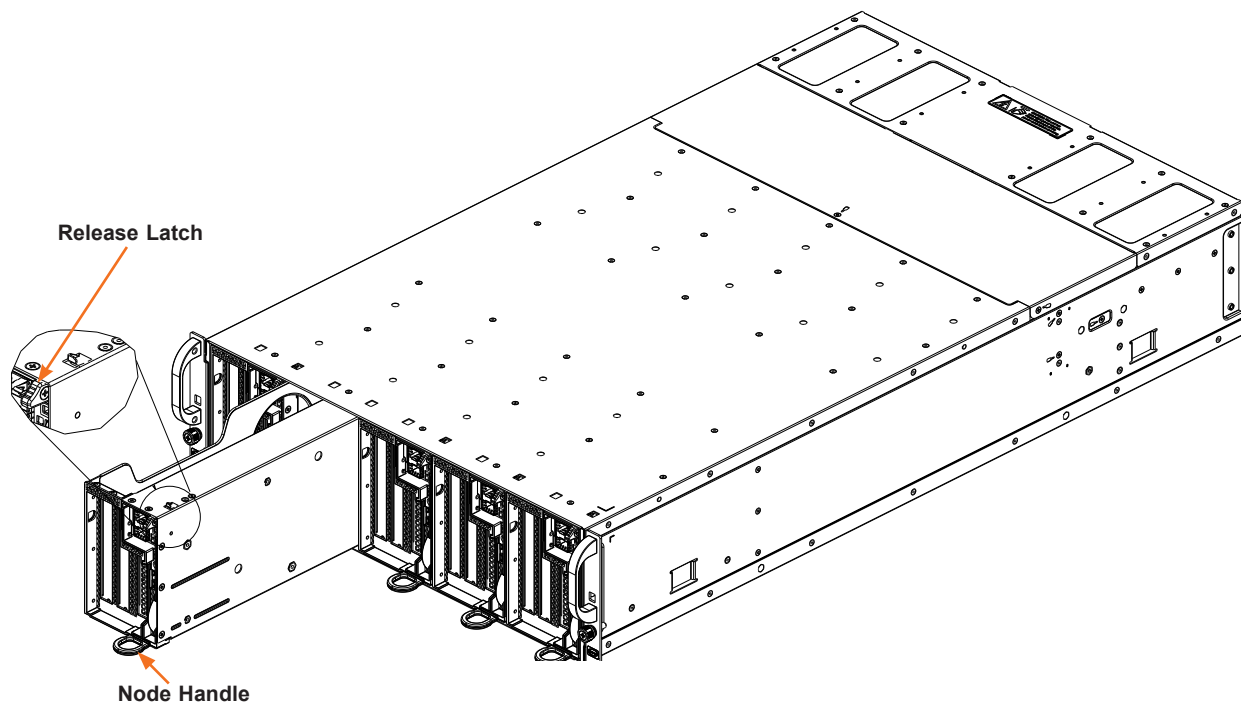


Figure 3-6. Removing a Node

Storage Drives

Each node can support two internal fixed 2.5" PCIe 5.0 NVMe and two internal fixed 2.5" SATA storage drives. A node must be removed from the system when installing or removing a drive it contains.

To support an optional top layer of drives, a drive case (MCP-240-30104-0N) and a SATA/ power cable (CBL-SAST-1320YU2-85) are required.

Installing a Drive in a Node

1. Power down and remove the node from the chassis as described in the previous section and lay it on a flat surface.
2. Remove two screws from each side of the drive that secure it to the node.
3. Lift the drive from the node.
4. Install a new drive in the same orientation, then secure it to the node with the screws previously removed.
5. Install the node back into the chassis.

Important! 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.

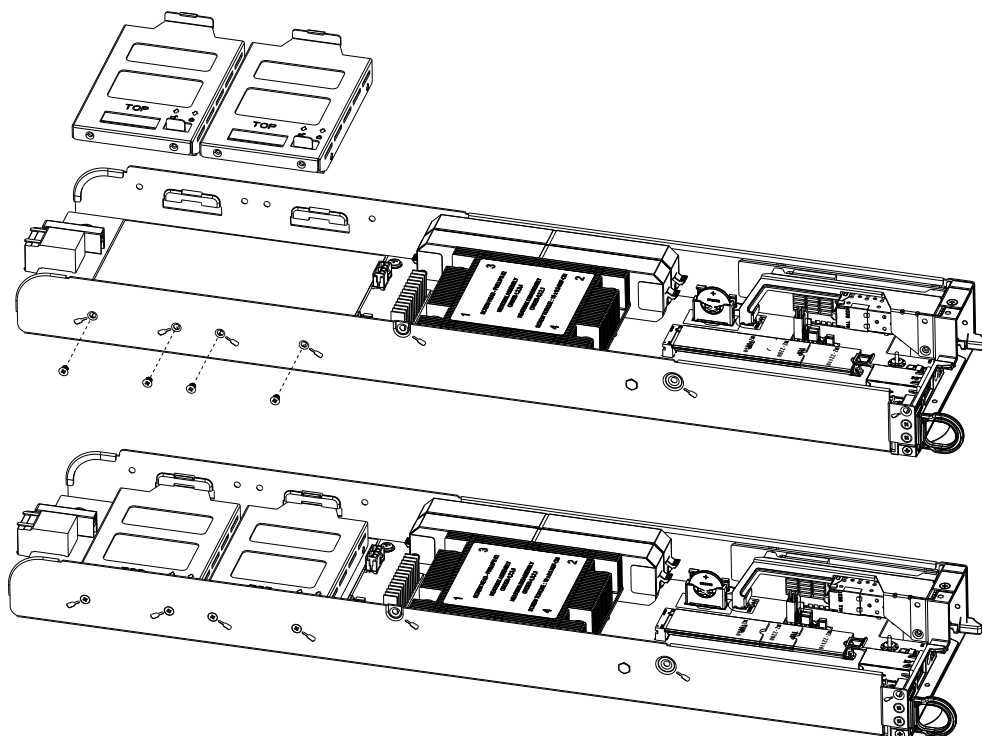


Figure 3-7. Installing Storage Drives

System Fans

The system includes five 8-cm fans, which are mounted on the rear of the chassis to provide cooling for the nodes. These fans are hot-swappable and designed to be easily changed, with no tools required. Each fan cools a pair of adjacent nodes (see Nodes section at the beginning of this section). Replacement fans may be ordered directly from Supermicro.

Replacing a Fan

1. Inspect the fans or use IPMI to determine which fan must be replaced. Do not run the server for an extended period of time with a fan removed.
2. Squeeze both release tabs simultaneously on the fan to be removed.
3. Pull the fan module away from the chassis.
4. Place the replacement fan into the vacant space and push in until you hear a click indicating the fan is fully seated in the chassis.

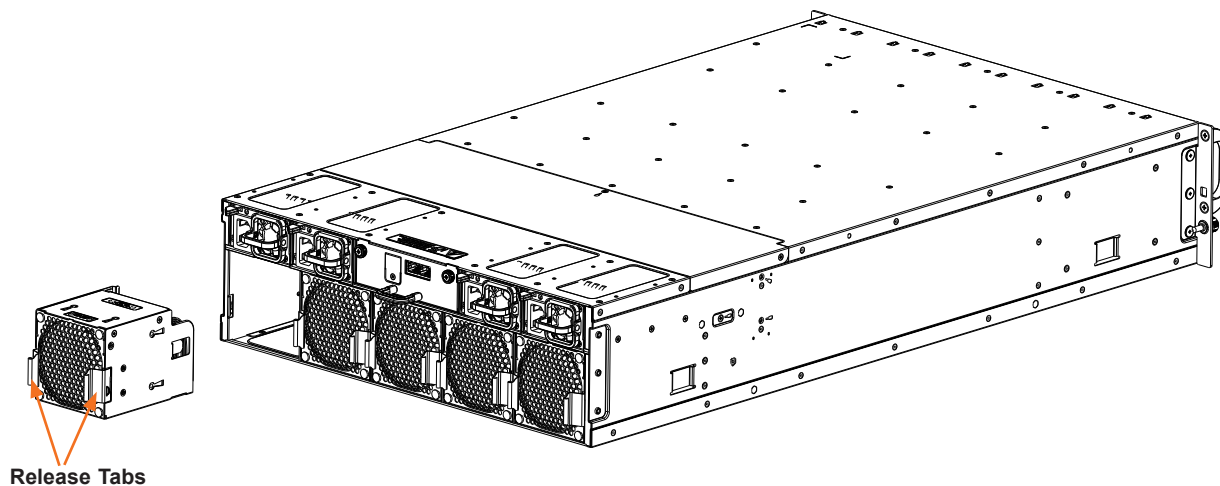


Figure 3-8. Replacing a Fan

Expansion Cards

Each node in the AS -3015MR-H5TNR includes one PCIe 5.0 x4 slot to support a MicroLP 1 GbE/10 GbE/25 GbE LAN card.

Installing Expansion Cards

1. Power down and remove the node from the chassis as described in the previous section, then lay it on a flat surface.
2. Plug the MicroLP LAN card into the slot on the motherboard and secure it with two screws as shown in figure below.
3. Replace the node back into the chassis and power it back on.

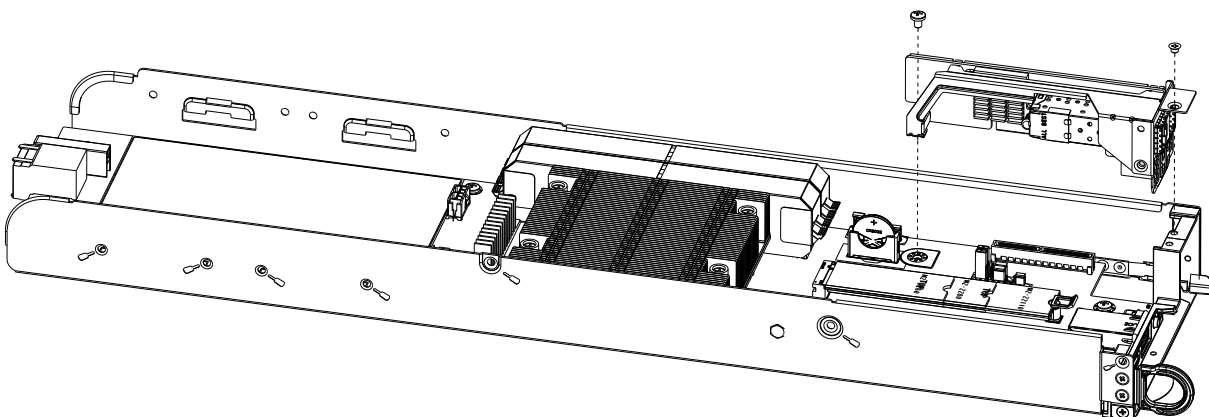


Figure 3-9. Installing a MicroLP LAN Card

GPUs

Installing GPUs

Each of the five nodes in the AS -3015MR-H5TNR can support one double-width PCIe GPU accelerator card. Installation of the GPU into a riser to fit in the chassis bay is shown below.

Installing a GPU

1. Power down and remove the node from the chassis as described in the previous section, then lay it on a flat surface. Remove the PCIe bracket from the node.
2. Install the riser into the bracket with four screws, then insert the GPU into slot 1 and secure it with two screws as shown below.

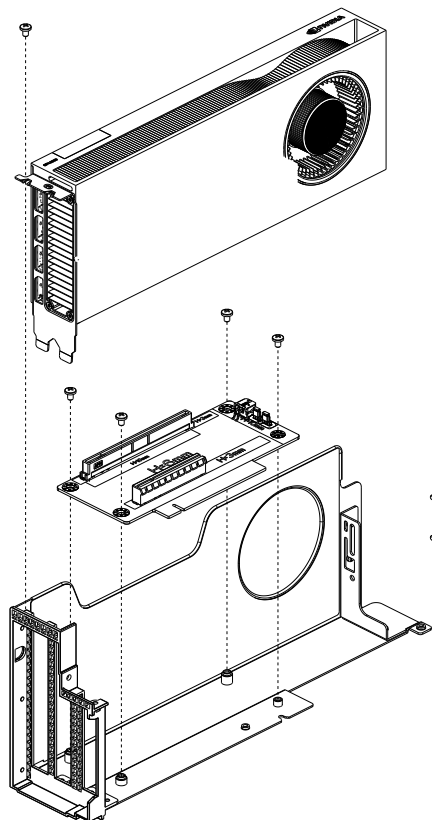


Figure 3-10. Installing a GPU into a Riser

3. Install the GPU/bracket assembly into the node and secure with four screws as shown below.
4. Push the node back into the empty chassis bay.
5. Power up the node.

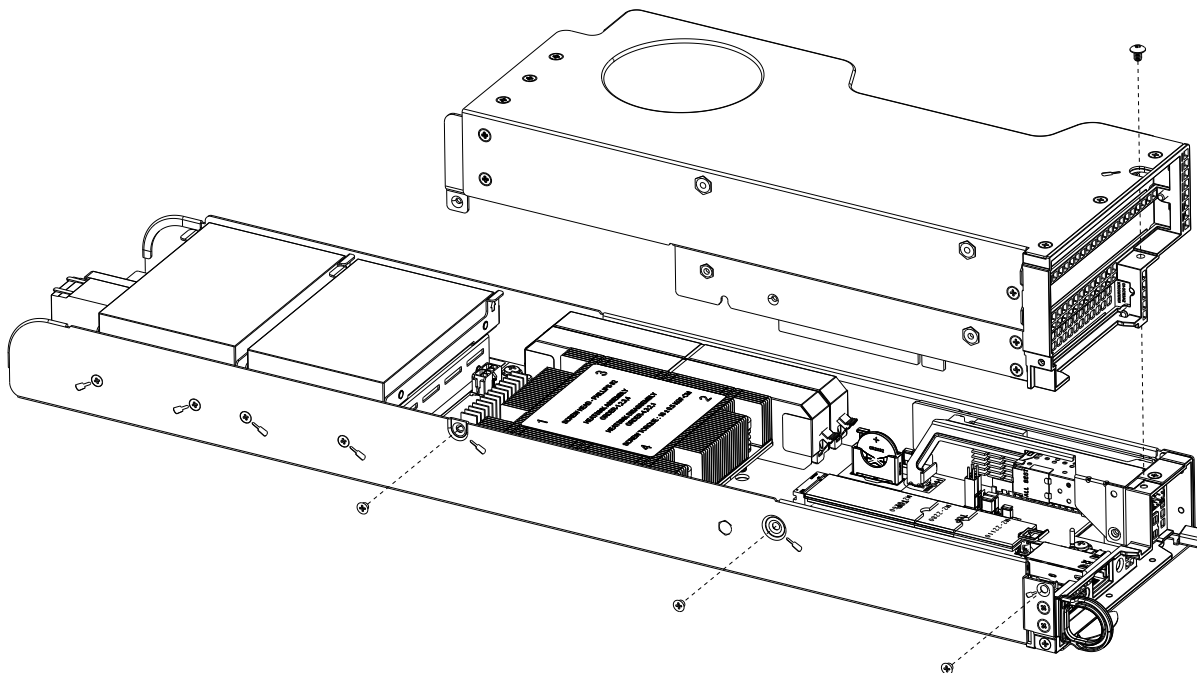


Figure 3-11. Installing a GPU into a Node

Optional: Two PCIe 5.0 x8 Slots for GPU and/or Network AOC Installation

Jumper J3 on the AOM-RSC-S2-7G5 riser comes with an auto-detect setting (pins 1-2 by default). For the option of two PCIe 5.0 x8 slots, jumper J3 needs to be set to pins 2-3. If both add on cards to be installed have a total power consumption of over 70 W, CBL-PWEX-1136-40 needs to be connected between the motherboard connector JGWR1 and the riser connector JPWR1.

Note: The AOM features an "auto-detect" option, which is set to pins 1-2 by default. However, when two AOCs are connected to the riser AOM card, users must switch the jumper to pins 2-3 to avoid any errors. This adjustment is necessary because some AOCs may not fully comply with the PCIe 5.0 specification. Therefore, to properly configure the optional two PCIe 5.0 x8 slots, the jumper must be set to pins 2-3.

Power Supply

The chassis features redundant power supplies. They are hot-swappable, meaning they 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 a 100-120v or 180-240v. An amber light will be illuminated on the power supply when the power is off. An illuminated green light indicates that the power supply is operating.

Note: If removing a failed power supply module, check whether the model number is PWS-2K08A-1R (for Passive Cooling GPUs) or PWS-2K08F-1R (for Active Cooling GPUs) and order the corresponding replacement model from Supermicro.

Changing the Power Supply

1. With the system running, unplug the AC power cord that provide power to the failed module.
2. Press and hold the release tab on the front, top of the power module.
3. Grasp the handle and pull the power supply out of its bay.
4. Push the replacement power supply module into the empty bay until it clicks into the locked position.
5. Plug the AC power cord back into the power supply module.

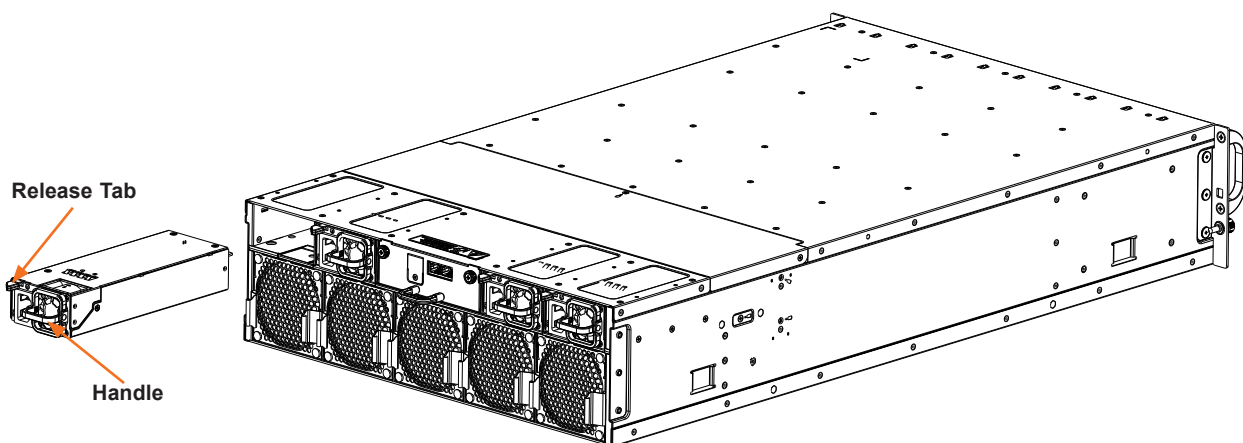


Figure 3-12. Replacing a Power Supply Module

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 Connector

JPWR1 is the 12V input power connector for the backplane power connector. This connection is made automatically when inserting a node into the system.

GPU Power Connector

JGWR1 is the 12 V output power connector for a GPU.

GPU Power Connector Pin Definitions			
Pin#	Definition	Pin#	Definition
1	Ground	5	P12V_GPU
2	Ground	6	P12V_GPU
3	Ground	7	P12V_GPU
4	Ground	8	P12V_GPU

SATA Power Connector

JPH1 is a SATA power connector for when SATA0/SATA1 are used.

SATA Power Connector Pin Definitions	
Pin#	Definition
1	12 V
2	Ground
3	Ground
4	5 V

4.2 Headers and Connectors

Port 80

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

Port 80 Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	+3.3 V	2	SPI_CS#
3	RESET#	4	SPI_MISO
5	SPI_CLK	6	GND
7	SPI_MOSI	8	Key
9	+3.3 V	10	SPI_IRQ#

MicroCloud Backplane Connector

A MicroCloud Backplane connector is located at J12.

SATA Connectors

One SATA connectors (CN1) provides two SATA port connections (SATA0 and SATA1) on the H13SRE-F. A cable is needed to make the connection.

NVMe/SATA Connectors

Two hybrid NVMe/SATA connectors (J22: NVME0/SATA0 and J23: NVME1/SATA1) are located on the H13SRE-F for either NVMe or SATA connections. Note that there are specific SATA and NVME combinations supported when JSATA1 is set to the AUTO mode (default setting). Refer to the following table for details.

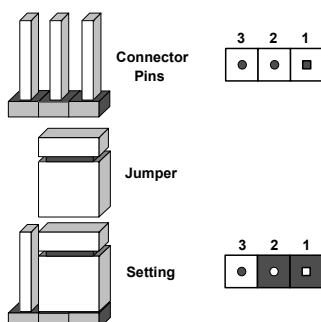
JSATA1: "Auto" NVMe/SATA Supported Configurations			
J22	J23	Cable 1	Cable 2
SATA	NVMe		
NVMe	SATA		
SATA	SATA		
		SATA	
			SATA
		SATA	SATA
NVMe		SATA	
NVMe			SATA
	NVMe	SATA	
	NVMe		SATA
NVMe		SATA	SATA
	NVMe	SATA	SATA
NVMe	NVMe	SATA	
NVMe	NVMe		SATA
NVMe	NVMe	SATA	SATA

4.3 Jumpers

Explanation of Jumpers

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

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



CMOS Clear

JBT1 is used to clear CMOS, 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 and remove the battery from the motherboard.
3. Short the CMOS pads with a metal object such as a small screwdriver for at least four seconds.
4. Remove the screwdriver (or shorting device).
5. Replace the cover, reconnect the power cord(s), and power on the system.

Notes: Clearing CMOS will also clear all passwords. Do not use the PW_ON connector to clear CMOS.

Watch Dog Timer

Watch Dog Timer (JWD1) is a system monitor that can reboot the system when a software application hangs. Close pins 1-2 to reset the system if an application hangs. Close pins 2-3 to generate a non-maskable interrupt (NMI) signal for the application that hangs. Refer to the table below for jumper settings. The Watch Dog Timer must also be enabled in the BIOS.

Watch Dog Timer Jumper Settings	
Jumper Setting	Definition
Pins 1-2	RST (default)
Pins 2-3	NMI
Open	Disabled

CPU Throttle when PWR_Fail

Jumper JPO1 can enable the CPU Throttle mechanism to protect the processor from damage due to excessive heat. This is a safeguard for preventing damage to the system. When an overheating condition occurs, thermal throttling kicks in. Three options are available to handle overheating: Power off, CPU Throttle – decrease CPU frequency to the minimum (800 MHz), and Performance – do nothing.

CPU Throttle when PWR_Fail Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enabled
Pins 2-3	Disabled (Default)

Onboard TPM 2.0 Enable/Disable

Use JPT1 to enable or disable support for the onboard TPM 2.0 module. The default setting is Enabled.

TPM 2.0 Enable/Disable Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enabled (Default)
Pins 2-3	Disabled

SATA Select

The JSATA1 jumper is used to select the function of the NVMe/SATA connections at J22/J23.

SATA Select Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Auto
Pins 2-3	SATA (CN1)
Open	NVMe

IPMI Shared LAN

Set the jumper JBM1 to configure the IPMI shared access on LAN1. The default setting is Enabled.

IPMI Shared LAN Jumper Settings	
Jumper Setting	Definition
Pins 1-2 Open	Enabled (Default)
Pins 1-2 Closed	Disabled

LAN Swap Commands

To swap the dedicated LAN, please use the below commands.

To read the current mode: 0x30 0x70 0x4 0x0

This will return the GPIO S4 mode:

0: Fiber

1: UTP

To set the mode to Fiber (default): 0x30 0x70 0x4 0x1 0x0

This sets GPIO S4 to low, which defaults to Fiber.

To set the mode to UTP: 0x30 0x70 0x4 0x1 0x1

This sets GPIO S4 to high enabling UTP.

By default, the system is configured for the switch module installed at the back(Fiber).You can run these commands using IPMITool or IPMICFG. For more information on IPMICFG, please refer to the following link for the download: <https://www.supermicro.com/en/support/resources/downloadcenter/smsdownload?category=IPMI>

Example: smcipmitool

smcipmitool (IP) (user) (password)

smcipmitool 10.134.4.126 ADMIN ADMIN ipmi raw 30 70 4 0 ←Read status

smcipmitool 10.134.4.126 ADMIN ADMIN ipmi raw 30 70 4 1 0 ←Set Rear Dedicated LAN

smcipmitool 10.134.4.126 ADMIN ADMIN ipmi raw 30 70 4 1 1 ←Set Front Dedicated LAN

Example: IPMICFG

IPMICFG raw 0x30 0x70 0x4 0x0 ←Read status

IPMICFG raw 0x30 0x70 0x4 0x1 0x0 ←Set Rear Dedicated LAN

IPMICFG raw 0x30 0x70 0x4 0x1 0x1 ←Set Front Dedicated LAN

4.4 LED Indicators

UID LED

LED1 is the UID LED.

UID LED	
LED Color	Definition
Solid Blue	Unit Identified

Overheat/Power Fail/Fan Fail LED

LED2 gives indication of an overheat condition, a power fail, or a fan fail.

OH/Power Fail/Fan Fail LED	
Color/State	Definition
Blinking Red	Power fail or fan fail
Solid Red	Overheat

BMC Heartbeat LED

LEDM1 is the BMC Heartbeat LED. When the LED is blinking green, the BMC is working.

BMC Heartbeat LED	
Color/State	Definition
Blinking Green	BMC Normal

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 might be a USB flash or media drive, or the BMC KVM console.
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.

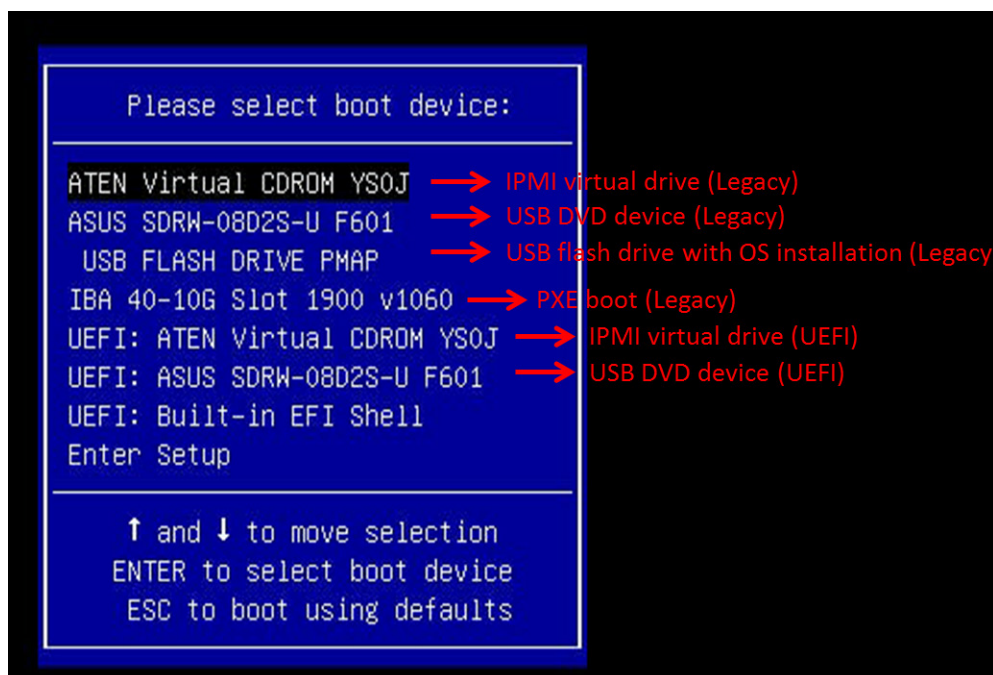


Figure 5-1. Select Boot Device

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.

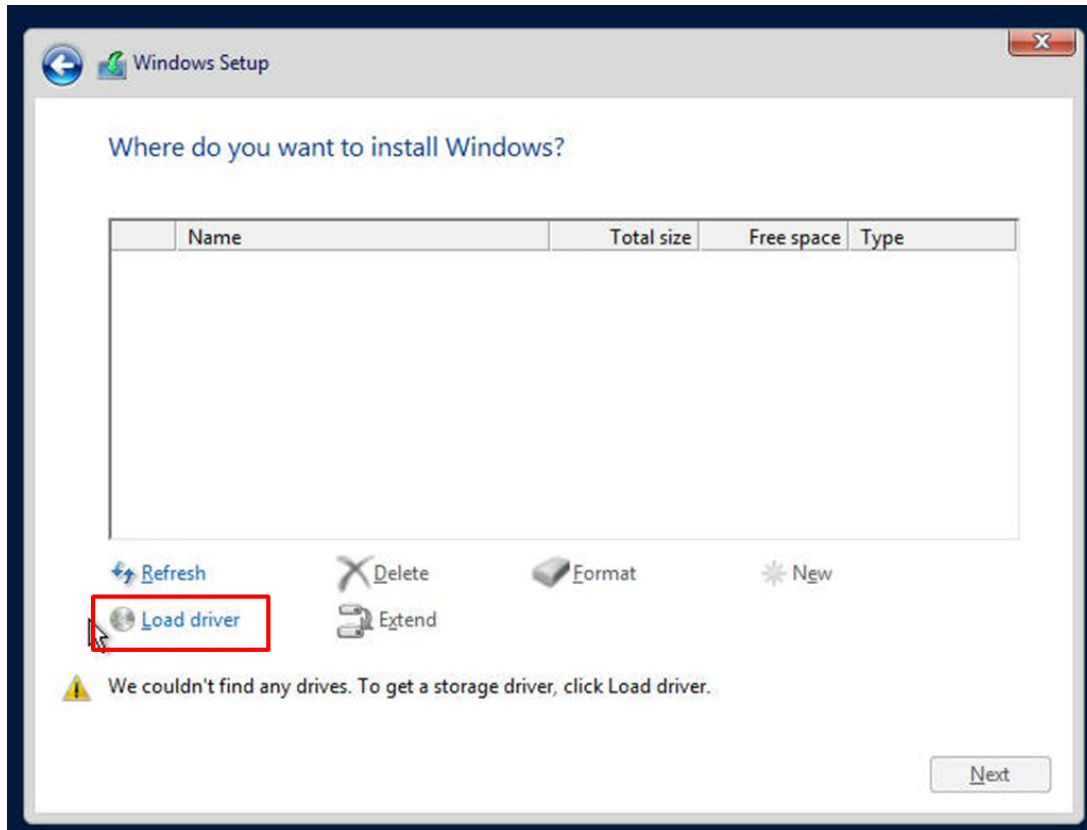


Figure 5-2. Load Driver Link

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.

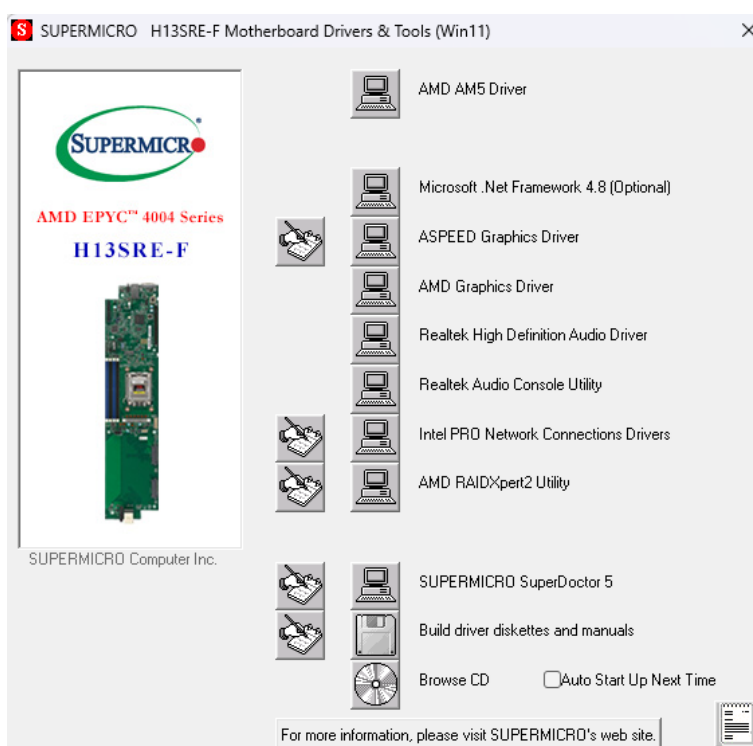


Figure 5-3. Driver & Tool Installation Screen

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 BMC. SuperDoctor 5 Management Server monitors HTTP, FTP, and SMTP services to optimize the efficiency of your operation.

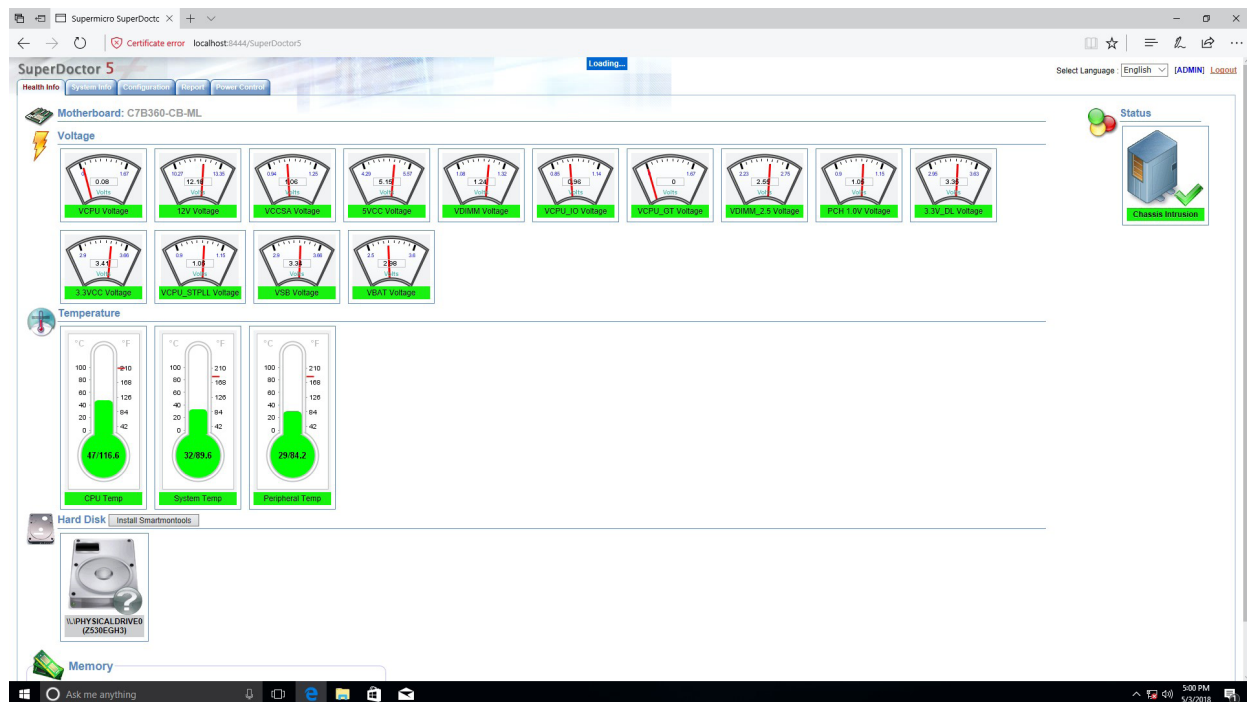


Figure 5-4. SuperDoctor 5 Interface Display Screen (Health Information)

5.4 BMC

The H13SRE-F provides remote access, monitoring and management through the baseboard management controller (BMC) and other management controllers distributed among different system modules. There are several BIOS settings that are related to BMC. For general documentation and information on BMC, visit our website at:

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

BMC ADMIN User Password

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

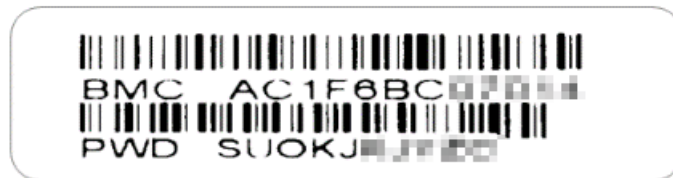


Figure 5-5. BMC Password Label

See [Chapter 1](#) for label location.

Chapter 6

Optional Components

This chapter describes optional system components.

Important: Unverified devices that are not listed in Supermicro's QCL (Qualified Component List) may not function properly.

Note: For the latest information on GPUs and network cards, refer to this system's product page on the Supermicro website.

6.1 GPU Options

GPU Options	
Part Number	Description
GPU-NVL40S	Nvidia Ada L40S 48GB GDDR6 PCIe Gen 4th, 350 W
GPU-NVQRTX6000-ADA	Nvidia Quadro RTX6000 ADA Gen. 48GB GDDR6 PCIe 4-Active
GPU-AMDMI210-PCIE-0008H	AMD Instinct MI210 PCIe 64GB 300W HBM2e PCIe Gen4

6.2 Network Cards

Network Card Options	
Part Number	Description
AOC-CGP-i2	Intel i350 2-port RJ45, 1 Gb Gen2 x4 MicroLP
AOC-CTG-B2T-O	2-port MicroLP 10 G RJ45, based on Broadcom BCM57416
AOC-CTGS-i2T-O	2-port 10 GbE RJ45 Intel X550, Gen3 x4, MicroLP
AOC-X3522-P08G	Xilinx PCIe 2-port 10 GbE DSFP28 Gen4 x8, RoHS
AOC-C25G-I2S-O	2-port PCIe 4.0 25 GbE SFP28 based on Intel E810
AOC-S25GC-I4S-O	4-port PCIe 4.0 25 GbE SFP28 Intel E810-CAM1
AOC-X2522-25G	Xilinx/Solarflare, X2522-25G PCIe 2-port 25 GbE SFP28, HF, R
AOC-X2522P-25G	Xilinx X2522-25G-PLUS PCIe 2-p 25 G SFP28, Gen3 x8
AOC-S25GC-i2S-O	2-port 25 GbE PCIe 4.0 Intel E810-XXVAM2
AOC-631102AC-ADAT	2-port Mellanox PCIe 25 GbE SFP28 Gen 3.0/4.0 x8 RoHS
AOC-S100GC-i2C-O	2-port 100 GbE with QSFP28 based on Intel E810-CAM2, RoHS

6.3 Software

Software Options	
Part Number	Description
SFT-DCMS-Single	DataCenter Management Package (per node license)
SFT-OOB-LIC	License key for enabling OOB BIOS management

<https://www.supermicro.com/en/solutions/management-software>

Chapter 7

Troubleshooting and Support

7.1 Information Resources

Website

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

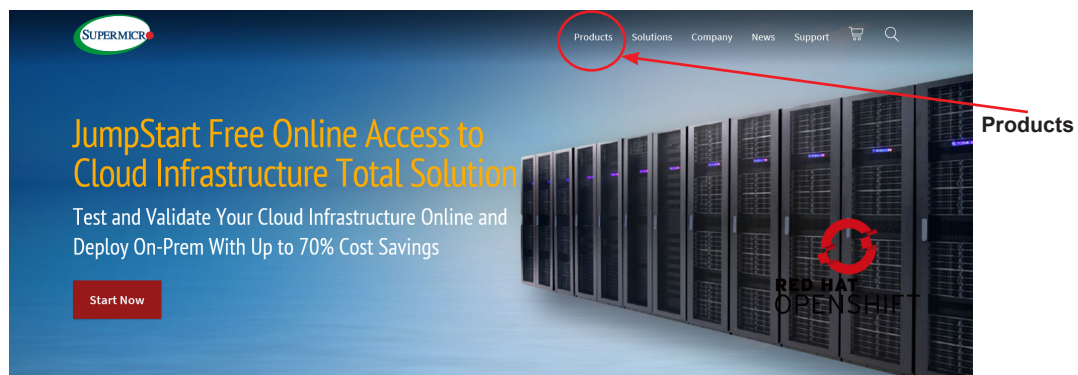


Figure 7-1. Supermicro Website

- Specifications for servers and other hardware are available by clicking the menu icon, then selecting 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 -3015MR-H5TNR System

[SYS-AS -3015MR-H5TNR](#) specifications page

[H13SRE-F](#) 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](#)

[Add-on card descriptions](#)

[TPM User Guide](#)

General Memory Configuration Guide: [X12](#)

[SuperDoctor5 Large Deployment Guide](#)

Direct Links (continued)

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

[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 Baseboard Management Controller Interface

The system supports the Baseboard Management interface. BMC is used to provide remote access, monitoring and management. There are several BIOS settings that are related to BMC.

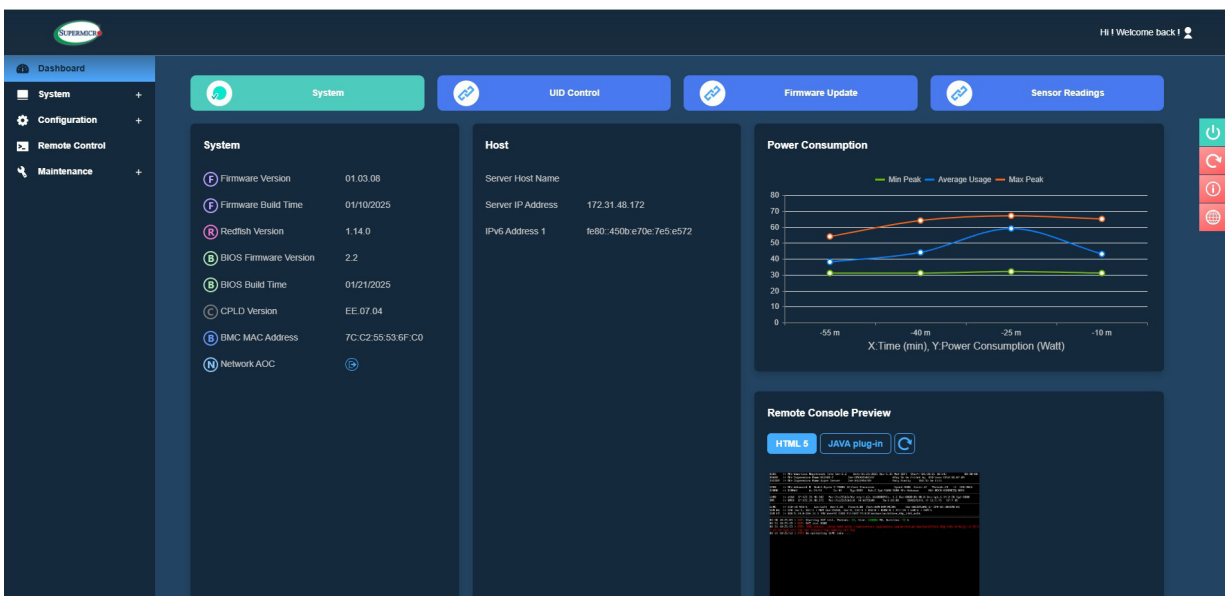


Figure 7-2. BMC Interface: Dashboard View

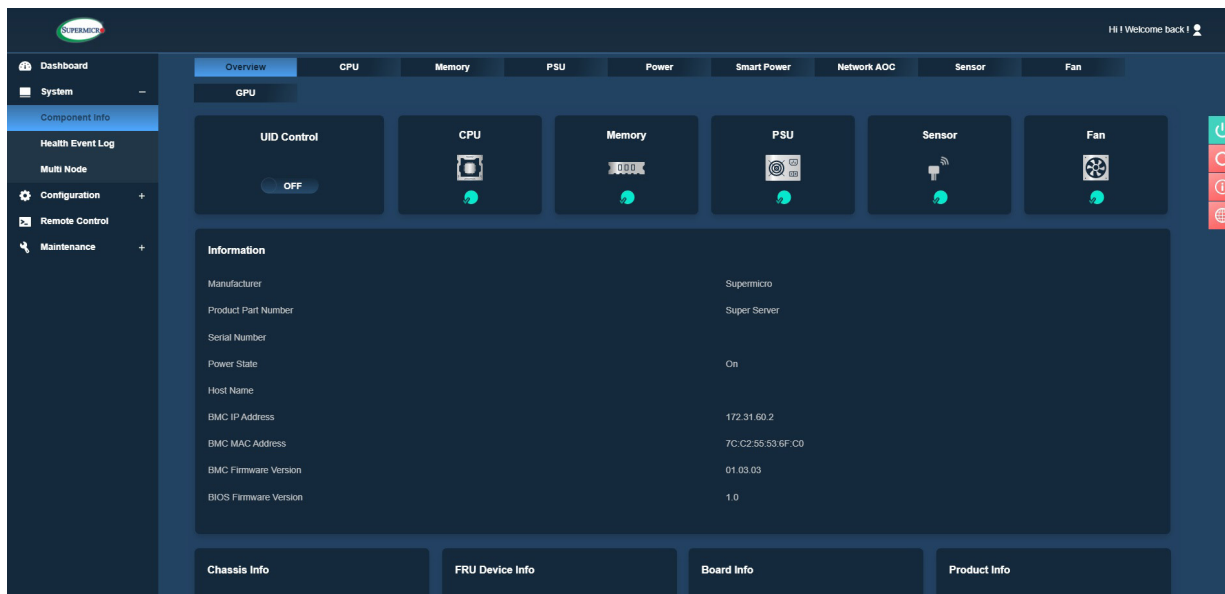


Figure 7-3. BMC Interface: System View

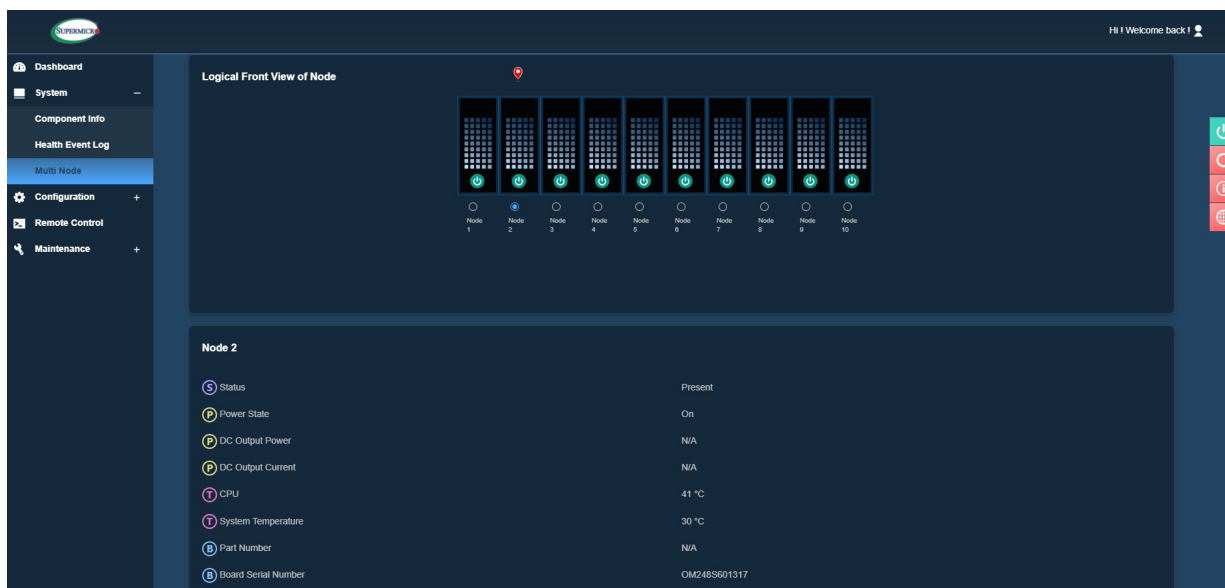


Figure 7-4. BMC Interface: Multi Node View

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](#) or [Returning Merchandise for Service](#) section(s) in this chapter. [Power down](#) the system before changing any non hot-swap hardware components.

No Power

1. As you try to power up the system, note any beep codes. The AMI BIOS supplies additional checkpoint codes, which are documented online at <http://www.supermicro.com/support/manuals/> ("AMI BIOS POST Codes User's Guide").
2. Make sure that the power connector is connected to your power supply.
3. Make sure that no short circuits exist between the motherboard and chassis.
4. Disconnect all cables from the motherboard, including those for the keyboard and mouse.
5. Remove all add-on cards.
6. Install a CPU, a heatsink, connect the internal speaker (if applicable), and the power LED to the motherboard. Make sure that the heatsink is fully seated.
7. Verify that all jumpers are set to their default positions.
8. Check that the power supplies' input voltage operate at 100-120VAC or 180-240VAC.
9. Turn the power switch on and off to test the system

No Video

1. If the power is on but you have no video, remove all the add-on cards and cables.
2. As you try to power up the system, note any beep codes. Refer to the next section for details on [beep codes](#).

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:

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

Memory Errors

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 3.3](#) 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.

Losing the System's Setup Configuration

1. Always replace power supplies with the exact same model that came with the system. A poor quality power supply may cause the system to lose the CMOS setup configuration.
2. The battery on your motherboard may be old. Check to verify that it still supplies approximately 3VDC. 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.

If the System Becomes Unstable

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. Storage drive support: Make sure that all storage drives work properly. Replace any bad drives with good ones.

1. 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 BMC 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.
2. 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.
3. Proper software support: Make sure that the correct drivers are used.

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.
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.

7.4 BIOS Error Beep (POST) Codes

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

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

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

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

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

Additional BIOS POST Codes

The AMI BIOS supplies additional checkpoint codes, which are documented online at <http://www.supermicro.com/support/manuals/> ("AMI BIOS POST Codes User's Guide").

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

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

7.5 Crash Dump Using BMC

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 BMC.

Check BMC 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 web interface. At the top right, there is a 'Host Identification' box containing 'Server: 172.031.040.125' and 'User: ADMIN (Administrator)'. Below this is a navigation bar with tabs: System, Server Health, Configuration, Remote Control, Virtual Media, Maintenance, Miscellaneous, and Help. The 'Server Health' tab is active, and the 'Event Log' sub-tab is selected. On the left, there is a sidebar with 'Server Health', 'Sensor Readings', and 'Event Log' (selected). The main content area shows the 'Event Log' page. It includes a link for special settings, a description of the event log, and buttons for 'Clear Event Log' and 'Save'. Below this is a dropdown menu for 'Select an event log category:' set to 'All Events'. A table displays the event log entries:

Event ID	Time Stamp	Sensor Name	Sensor Type	Description
1	2017/10/19 15:38:37		Processor	IERR - Assertion
2	2017/10/19 15:59:20		Processor	IERR - Assertion

Figure 7-5. BMC Event Log

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

7.6 UEFI BIOS Recovery

Important: 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 storage 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.

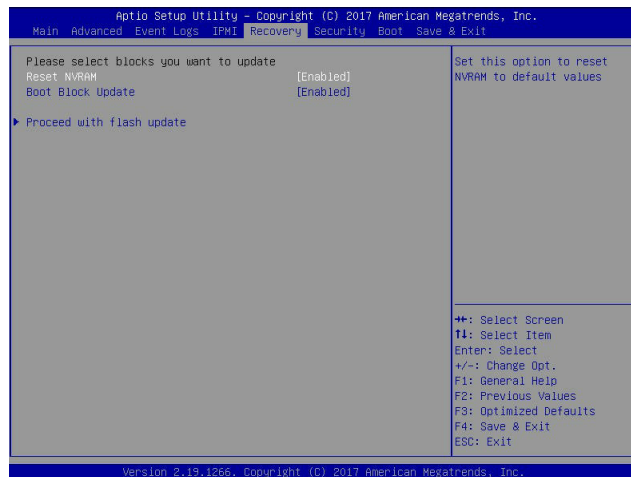
Note 1: If you cannot locate the "Super.ROM" file in your drive disk, visit our website at www.supermicro.com to download the BIOS package. Extract the BIOS binary image into a USB flash device and rename it "Super.ROM" for the BIOS recovery use.

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.



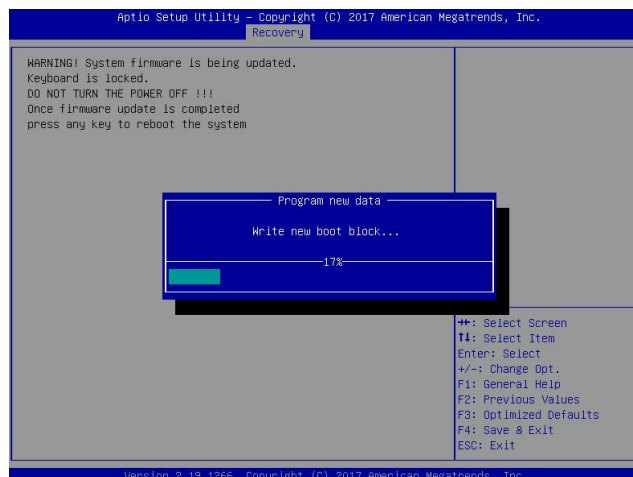
Note: At this point, you may decide if you want to start the BIOS recovery. If you decide to proceed with BIOS recovery, follow the procedures below.



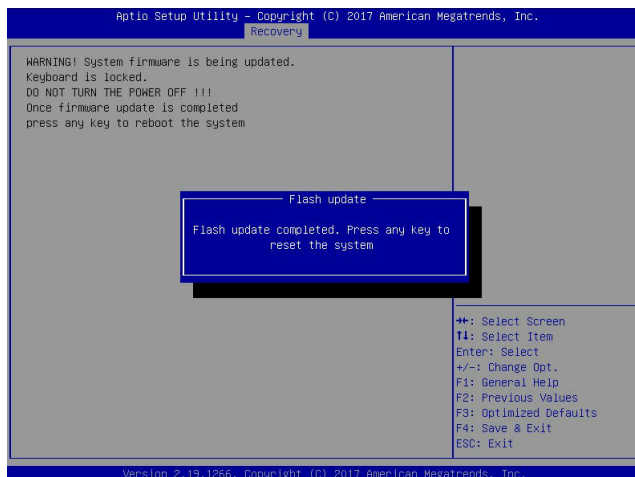
4. When the screen as shown above displays, use the arrow keys to select the item "Proceed with flash update" and press the <Enter> key. You will see the BIOS recovery progress as shown in the screen below.

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

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

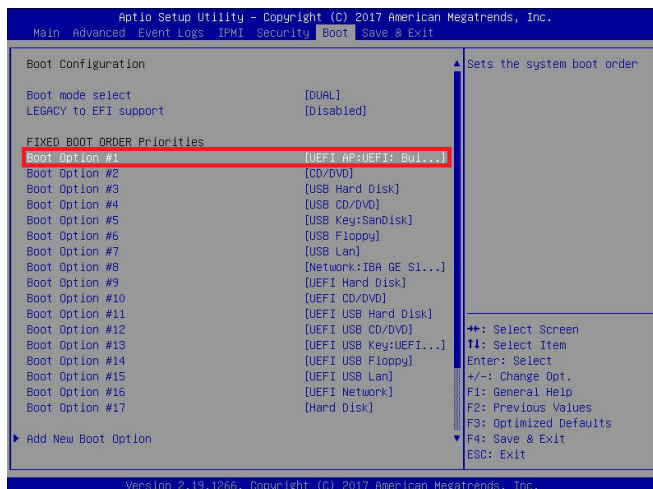


7. Press continuously during system boot to enter the BIOS Setup utility. From the top of the tool bar, select Boot to enter the submenu. From the submenu list, select Boot



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):HD0:0:0: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 F80:\AFUDOS\SNIJPM2_03162017\Fdtv64.efi -> F80:\AFUDOS\SNIJPM2_03162017\
d1.smc
- [ok]
Moving F80:\AFUDOS\SNIJPM2_03162017\Fuef1x64.efi -> F80:\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 "F:\SetupRom"
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.

7.7 CMOS Clear

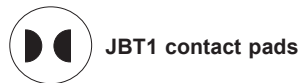
JBT1 is used to clear CMOS, which will also clear any passwords. Instead of pins, this jumper consists of contact pads to prevent accidentally clearing the contents of CMOS.

To Clear CMOS

1. First [power down](#) the system completely.
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.



7.8 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.

Vendor Support Filing System

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

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

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

7.10 Feedback

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

7.11 Contacting Supermicro

Headquarters

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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!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。

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

警告! 此警告符号代表危险。您正处于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。

WICHTIGE SICHERHEITSHINWEISE.

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

INSTRUCCIONES IMPORTANTES DE SEGURIDAD.

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

IMPORTANTES INFORMATIONS DE SÉCURITÉ.

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

תקנון הצהרות אזהרה

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

אֵלָּהּ בַּחַלָּה וְיִי אֵי תִּסְבֵּב בַּאֲבָאָה גִּסְדָּה זֶהָ הַזְהַר עֶּ חֶזֶק! תַּחַזְרֵנִי .
 קִבֵּל אֵי תַּעֲוֵל עַל אֵי הַעֲדָת, יִי עַל עֵלֵן בַּלְּוֶאֶטֶר אֵל אֲגֹוֶה עֵי הַדְּוֹאֵר
 הַכְּהִיבָאֵי

וְיִי עַל דְּרָהּ בַּלְּוֹאֶרְסַת הַנְּקָאֵי לֹו עֶּ וּפְעַח אֵי חֶאֶדַת
 אֵסְתַּחֲזֵם רֶקֶן הַבֵּי אֵי הַלְּוֶסֶס בַּחֶהּ כֵּל תַּחַזְרֵנִי לְלַעֲשֵׁר תַּזְגֹּוֹתָהּ

안전을 위한 주의사항.

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.

警告!

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.

אזהרה!

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

تحذير!

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

경고!

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.

警告!

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250 V、20 A。

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250 V、20 A。

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.

אזהרה!

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

تحذير!

هذا المنتج يعتمد على معدات الحماية من الدوائر القصيرة التي تم تثبيتها في

المبنى

تأكد من أن تقييم الجهاز الوقائي ليس أكثر من : 20 A, 250 V

경고!

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

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).



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!

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

تحذير!

يجب فصل انظاؤ من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد انطاقت قيم
انصل إلى امناطق انداخهيت نههيكم نتشيج أو إزانت مكناث الجهاز

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 쉐시 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.

警告!

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.

تحذير!

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

경고!

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

Waarschuwing!

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

Rack Stability Hazard



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

警告!

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

警告!

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

警告!

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

Warnung!

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

¡Advertencia!

Peligro de inestabilidad. El rack podría volcarse y causar lesiones personales graves. Antes de extender el rack a la posición de instalación, lea las instrucciones de instalación. No coloque ninguna carga sobre el equipo montado sobre rieles deslizantes en la posición de instalación. No deje el equipo montado sobre rieles deslizantes en la posición de instalación. Sólo el personal autorizado y el personal de servicio calificado deben poder instalar, reemplazar o dar servicio a este equipo.

Avertissement!

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

אזהרה!

סכנת חוסר יציבות

המתלה עלול להתהפך ולגרום לפציעה חמורה

לפני הארכת המתלה למצב ההתקנה, קרא את הוראות ההתקנה

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

אל תשאיר את הציוד המותקן על מסילת ההחלקה במצב ההתקנה

تحذير!

خطر عدم الاستقرار.

قد ينقلب الرف مسبباً إصابات جسدية خطيرة.

قبل تمديد الرف إلى موضع التركيب، اقرأ تعليمات التركيب.

لا تضع أي حمولة على الجهاز المثبت على سكة الانزلاق في موضع التركيب.

لا تترك الجهاز المثبت على سكة الانزلاق في موضع التركيب.

경고!

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

Waarschuwing

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

Restricted Area



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

警告！

このユニットは、アクセス制限区域に設置されることを想定しています。アクセス制限区域は、特別なツール、鍵と錠前、その他のセキュリティの手段を用いてのみ出入りが可能です。

警告！

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

警告！

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

Warnung!

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

¡Advertencia!

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

Attention!

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

אזהרה!

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

تحذير!

اتخصيص هذه انحدة نتركُ بها ف مناطق محظورة تم .
مَكن انصل إن منطقت محظورة فقط من خلال استخداو أداة خاصت،
أو أ وس هُت أخري نلالأما قفم ومفتاح

경고!

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

Waarschuwing!

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

Battery Handling



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

警告!

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.

تحذير!

هناك خطر الانفجار إذا تم استبدال البطارية بنوع غير صحيح.

استبدال البطارية

فقط بنفس النوع أو ما يعادلها مما أوصت به الشركة المصنعة

جخلص من البطاريات المسحمة وفقا لتعليمات 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.

警告!

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.

אזהרה!

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

تحذير!

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.

警告!

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，背板上有很危險的電壓或能量，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.

אזהרה!

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

تحذير!

هناك خطر من التيار الكهربائي أو الطاقة المخزنة على اللوحة عندما يكون النظام يعمل. كن 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.

警告!

機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告!

设备安装必须符合本地与本国电气法规。

警告!

設備安裝必須符合本地與本國電氣法規。

Warnung!

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

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

Attention!

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

אזהרה!

תיאום חוקי החשמל הארצי

התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تحذير!

تركيب المعدات الكهربائية يجب أن يمتثل للقوايه المحلية والوطنية 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.

警告!

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.

אזהרה!

סילוק המוצר

אזהרה!

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

تحذير!

عند التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القوانين والأنظمة الوطنية

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.

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!

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

警告!

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

Warnung!

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

¡Advertencia!

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

Attention!

Pieces mobiles dangereuses. Se tenir a l'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!

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.

警告!

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ー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 appropriées. 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.

!הרהזא

רְחוּצָה וּמֵאֲתוֹהּ וְאוֹ שֶׁכֶּרְנֵהּ רֵשָׁא AC מִימֵאֲתָמוּ מִיִּקְפֵס, מִיִּלְבֵּכֵב שֶׁמִּתְשֶׁהֶל שִׁי, רְצוּמָה תֵּא מִיִּנְיֻקְתָּמ רֵשָׁא לֵכֵב שׁוּמִיִּשׁ . עֵקֶתְהוּ לִבְכָה לֶשׁ הַנּוֹכֵחַ הַדִּימ לִלּוֹךְ, תּוֹיִמּוֹקְמָה תּוֹחִיטְבָה תּוֹשִׁירְדֵל וּמֵאֲתוֹהּ רֵשָׁאוּ, הַנִּקְתָּהּ לְמִשְׁחָה יִרְשַׁכְּמָב שׁוּמִיִּשָׁה יִקּוּחֵל מֵאֲתָהֶב . יִלְמִשַׁח רֵצֵק וְאוֹ הִלְקֵתֵל מִוִּרְגֵל לִוְלַע, רְחָא גּוֹסֵמ מֵאֲתָמ וְאוֹ לִבְכָ לֶשׁ דּוֹק מֵהִילַע עִיפּוֹמ רֵשָׁאכּ) UL-בּ וְאוֹ UL-בּ מִיִּכְמִסּוּמָה מִיִּלְבֵּכֵב שֶׁמִּתְשֶׁהֶל רוֹסִיא מִיִּיק, תּוֹחִיטְבָה יִקּוּחוּ דִּבְלָב Supermicro יִ"ע מֵאֲתוֹהּ רֵשָׁא רְצוּמָב קֶר אֵלָא, רְחָא יִלְמִשַׁח רְצוּמָ לֵכּ רוֹבַע UL/CSA)

!رذحت

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

경고!

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 Supermicro가 지정한 제품 이외의 전기 장치에 사용하는 것을 금지합니다.

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*

Single AMD EPYC™ 4005/4004 or Ryzen™ 7000/9000 Series Processors in an AM5 socket; supports CPU TDP up to 170 W
Notes: Refer to the motherboard specifications pages on our website for updates to supported processors. Air-cooled CPUs with a TDP over 120 W only supported under specific conditions. Contact a Supermicro representative for details.

Chipset

AMD System-on-Chip

BIOS*

32 MB AMI BIOS® SPI Flash EEPROM

Memory*

Up to 192 GB of ECC and Non-ECC DDR5 UDIMM memory with speeds of up to 5600 MT/s in four DIMM slots

Storage Drives*

Two internal fixed 2.5" PCIe 5.0 NVMe drive bays

Two internal fixed 2.5" SATA drive bays

One M.2 NVMe slot (M-key 2280/22110)

PCI Expansion Slots*

One PCIe 5.0 x16 FHFL double-width slot

One PCIe 5.0 x4 MicroLP slot (populated with a dual LAN card)

I/O Ports*

Two USB 2.0 ports

One VGA port

One onboard TPM/Port 80 port

Motherboard*

H13SRE-F: 4.72" (W) x 20.76" (L) (12 x 52.74 cm)

Chassis

CSE-MC301G-000NFP: 3U rackmount Rackmount, 5.16 x 17.68 x 30.51 in. / 131 x 449 x 775 mm (HxWxD)

System Cooling

Five 8-cm heavy duty fans

Power Supply

Model PWS-2K08A-1R (for Passive Cooling GPUs): four 2000 W redundant (3+1) Titanium Level (96%) power supplies

Model PWS-2K08F-1R (for Active Cooling GPUs): four 2000 W redundant (3+1) Titanium Level (96%) power supplies

Both of the power supply models above have the following specifications, but the airflow direction is reversed.

AC Input

100-127 Vac, 12-9 A, 50-60 Hz

200-240 Vac, 10-9.8 A, 50-60 Hz

+12 V

83 A (100 Vac-127 Vac)

150 A-166 A (200 Vac-240 Vac)

+12 V standby: 0 A-3.5 A

*per node

Operating Environment

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

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

Applied Directives, Standards

EMC/EMI: 2014/30/EU (EMC Directive) CLASS A

Electromagnetic Compatibility Regulations 2016

FCC Part 15 Subpart B

ICES-003

VCCI-CISPR 32

AS/NZS CISPR 32

BS/EN 55032

BS/EN 55035

CISPR 32

CISPR 35

BS/EN 61000-3-2

BS/EN 61000-3-3

BS/EN 61000-4-2

BS/EN 61000-4-3

BS/EN 61000-4-4

BS/EN 61000-4-5

BS/EN 61000-4-6

BS/EN 61000-4-8

BS/EN 61000-4-11

Product Safety: 2014/35/EU (LVD Directive)

UL/CSA 62368-1 (USA and Canada)

Electrical Equipment (Safety) Regulations 2016

IEC/BS/EN 62368-1

Environment:

Delegated Directive (EU) 2015/863

Directive 2011/65/EU (RoHS)

REACH Regulation EC 1907/2006

WEEE Directive 2012/19/EU

California Proposition 65

Warning! This product can expose you to chemicals including lead, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

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