



SUPERSERVER®
AS -2115HE-FTNR
AS -2115HE-TNR



USER'S MANUAL

Revision 1.0a

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Manual Revision 1.0a

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Preface

About this Manual

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

Please refer to the AS -2115HE-FTNR/TNR server specifications page on our website for updates on supported memory, processors, and operating systems (<http://www.supermicro.com>).

Notes

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

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

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

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

Secure Data Deletion

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

Warnings

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



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



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



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

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Chapter 1

Introduction

1.1 Overview

This chapter provides a brief outline of the functions and features of the A+ Server AS -2115HE-FTNR/TNR. The following provides an overview of the specifications and capabilities.

System Overview	
Motherboard	H13SSH-E
Chassis	CSE-HE211-R000NFP-A
Processor Support	Single AMD EPYC™ 9004/9005 (motherboard revision 2.0 or later is required) Series processor in SP5 socket and TDP unit up to 400 W (TDP depends on thermal validation and system configuration. Contact a Supermicro representative for details.)
Memory	24 DIMM slots with 2DPC that support up to <ul style="list-style-type: none"> • 6 TB of ECC DDR5 RDIMM at 4000 MT/s(1R)/3600 MT/s (2R/3DS) (9004 Series CPU) • 6 TB of ECC DDR5 RDIMM at 4400 MT/s(1R)/4000 MT/s (2R/3DS) (MB Rev. 2.00 or later is required and 9005 Series CPU only) -or- 12 DIMM slots with 1DPC that support up to <ul style="list-style-type: none"> • 3 TB of ECC DDR5 RDIMM at 4800 MT/s (9004 Series CPU) • 3 TB of ECC DDR5 RDIMM at 5200 MT/s (MB Rev. 2.00 or later is required and 9005 Series CPU only)
Drive Support	Six 2.5" hot-swappable NVMe drive bays One M.2-C1 PCIe 3.0 x4 and one M.2-C2 PCIe 3.0 x2 NVMe slots (with support for M-Key 2280 and 22110)
Expansion Slots	Four PCIe 5.0 x16 slots <i>or</i> Five PCIe 5.0 x8 slots + three PCIe 4.0 x8 slots <i>or</i> Three PCIe 5.0 x16 slots + two PCIe 4.0 x8 slots
I/O Ports	One AIOM slot for flexible networking (OCP 3.0 compatible) One RJ45 dedicated BMC LAN port Two USB 3.2 Gen1 ports One VGA port
System Cooling	Six 6-cm heavy duty fans with optimal fan speed control
Power	Two 2000 W redundant power supplies (Full redundancy based on configuration and application load)
Form Factor	2U rackmount: 3.5 x 17.2 x 29.9 in. / 88.9 x 437 x 760 mm (HxWxD)

Note: A Quick Reference Guide can be found on the product page of the Supermicro website. The following safety models associated with the AS -2115HE-FTNR/TNR have been certified as compliant with UL or CSA: HE211-R20H13, HE211-20, HE211-R13DH13, or HE211-13D.

1.2 System Features

The following views of the system display the main features. Refer to [Appendix B](#) for additional specifications.

Front View



Figure 1-1. Front View (AS -2115HE-TNR shown)

System Features: Front	
Feature	Description
Control Panel	Front control panel with LEDs and buttons (see Control Panel for details)
System Fans	Six 6-cm heavy duty fans with optimal fan speed control

Logical Storage Drive Numbers	
Item	Description
0 _ 5	2.5" hot-swappable NVMe Gen5 drive bays

Drive Carrier Indicators

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

Drive Carrier LED Indicators			
	Color	Blinking Pattern	Behavior for Device
Activity LED	Blue	Solid On	Idle NVMe drive installed
	Blue	Blinking	I/O activity
	Off		Idle or no drive
Status LED	Red	Solid On	Drive failure
	Red	Blinking at 1 Hz	Rebuilding drive
	Red	Blinking with two blinks and one stop at 1 Hz	Hot spare for drive
	Red	On for five seconds, then off	Power on for drive
	Red	Blinking at 4 Hz	Identifying drive
	Green	Solid on	Safe to remove NVMe drive
	Amber	Blinking at 1 Hz	Do not remove NVMe drive
	Off		Idle or no drive

Control Panel

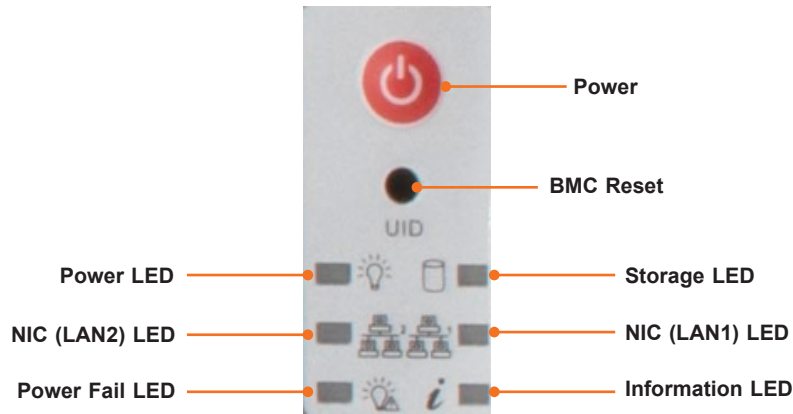


Figure 1-2. Control Panel

Control Panel Features	
Feature	Description
Power Button	Button applying/removing main power Standby power maintained when LED is off
BMC Reset	BMC firmware reset button
Power LED	LED indicating power on (steady)
Storage LED	LED indicating activity on the storage drives when flashing
NIC (LAN1) LED	LED indicating network activity on LAN1 when flashing
NIC (LAN2) LED	LED indicating network activity on LAN2 when flashing
Power Fail LED	LED indicating power supply module failure (flashing) LED is off during normal operation
Information LED	LED indicating system states (see information LED table below for details)

Information LED	
Status	Description
Solid red	Overheating condition
Blinking red (1 Hz)	Fan failure (check for an inoperative fan)
Blinking red (0.25 Hz)	Power failure (check for an inoperative power supply).
Solid blue	UID activated locally to locate the server in a rack environment
Blinking blue (1 Hz)	UID activated via BMC to locate the server in a rack environment

Rear View

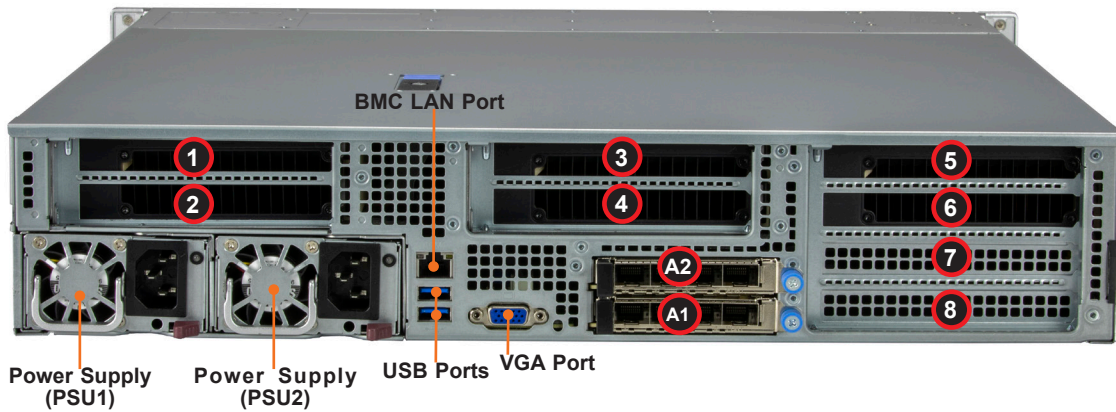


Figure 1-3. Rear View (AS -2115HE-TNR shown)

System Features: Rear	
Feature	Description
Power Supplies	Two (redundant) power supply modules, PSU1, and PSU2 on the left
USB	Two USB 3.0 ports
BMC LAN Port	One RJ45 dedicated BMC LAN port
VGA Port	One Video port
Control Panel	One control panel (see Control Panel for details)
A1	AIOM/OCP NIC 3.0 Slot
A2	AIOM/OCP NIC 3.0 Slot
1 – 4	1 - PCIe 5.0 x16 (FHFL 10.5") or PCIe 5.0 x8 (in x16) 2 - Optional: PCIe 4.0 x8 (in x16) slot (FHFL 10.5", slot 2 is disabled if slot 1 is configured as PCIe 5.0 x16) 3 - PCIe 5.0 x16 (FHFL 10.5") or PCIe 5.0 x8 (in x16) 4 - Optional: PCIe 5.0 x8 (in x16) (FHFL 10.5", slot 4 is disabled if slot 3 is configured as PCIe 5.0 x16)
5 – 8	5 - PCIe 5.0 x16 (FHFL 10.5") or PCIe 5.0 x8 (in x16) 6 - Optional: PCIe 5.0 x8 (in x16) (FHFL 10.5"), slot 6 is disabled if slot 5 is configured as PCIe 5.0 x16) 7 - PCIe 4.0 x8 (FHHL) 8 - PCIe 4.0 x8 (FHHL)

Note: FHFL = full height, full length, FHHL = full height, half length

Power Supply Indicators		
Power Supply Condition	Green LED	Amber LED
No Power to Power Supply	Off	Off
Power Supply critical events causing a shutdown/ failure/ OCP/ OVP/ Fan Fail/ OTP/ UVP	Off	On
Power Supply Warning Events Where the power supply continues to operate; High temperature; Over voltage; under voltage, etc.	Off	1 Hz blinking
AC or DC present only 12 VSB ON (PS off)	1 Hz blinking	Off
Output on and ok	On	Off
One of the power cords is unplugged and in redundant mode	Off	On

1.3 System Architecture

This section shows the locations of the system's main components and a system block diagram.

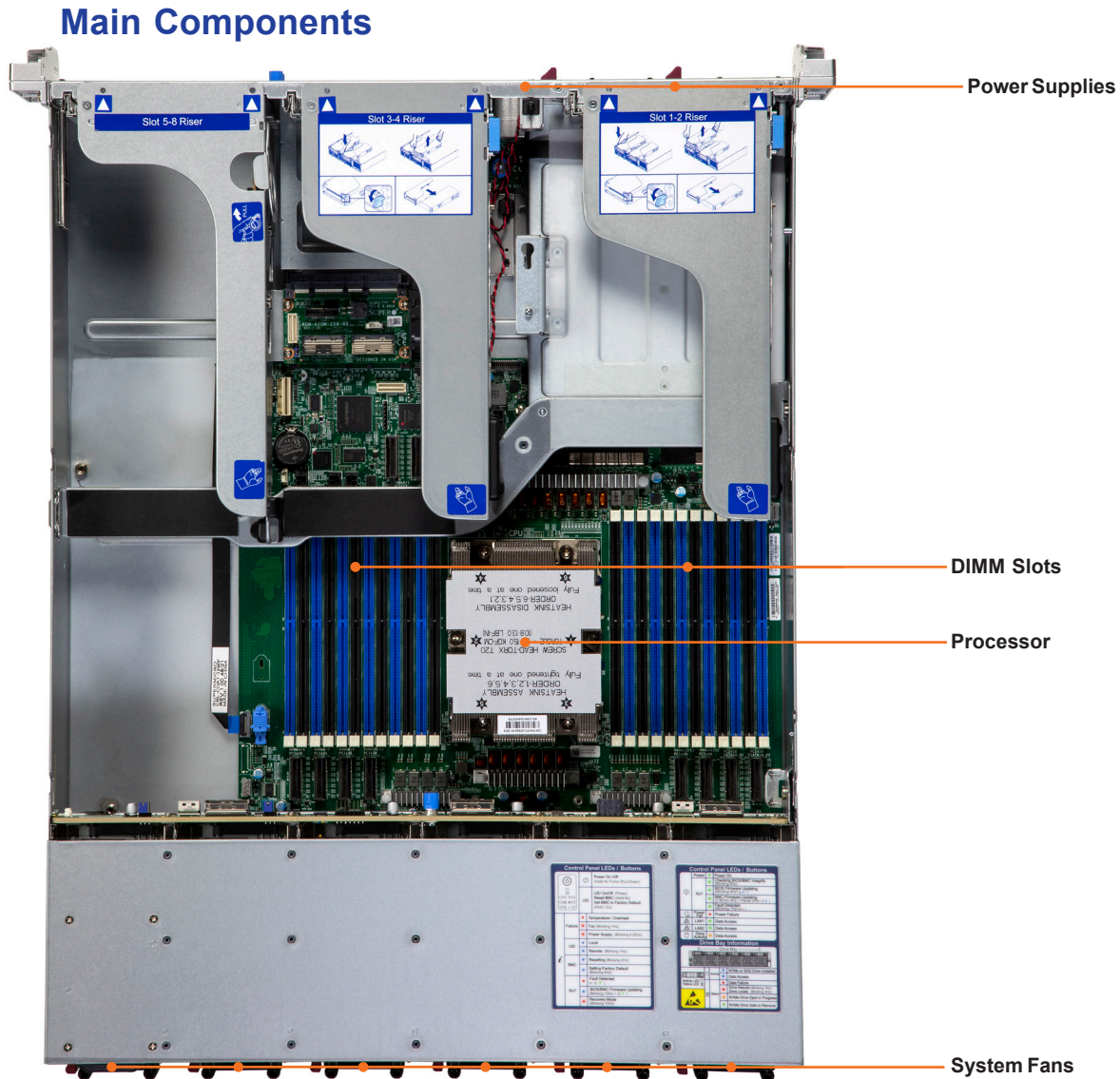


Figure 1-5. Main Components

Main Components	
Feature	Description
Power Supplies	Two 2000 W redundant power supplies (PWS-2K08F-1R) or 2000 W 80Plus Titanium Level power supplies (PWS-2K08A-1R).
DIMM slots	24 DDR5 DIMM slots
Processor	Single AMD EPYC™ 9004/9005 (motherboard revision 2.0 or later is required) Series processor in SP5 socket
System Fans	Six 6-cm heavy-duty PWM fans: FAN-0215L4 (AS -2115HE-FTNR) or FAN-0224L4 (AS -2115HE-TNR)

System Block Diagram

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

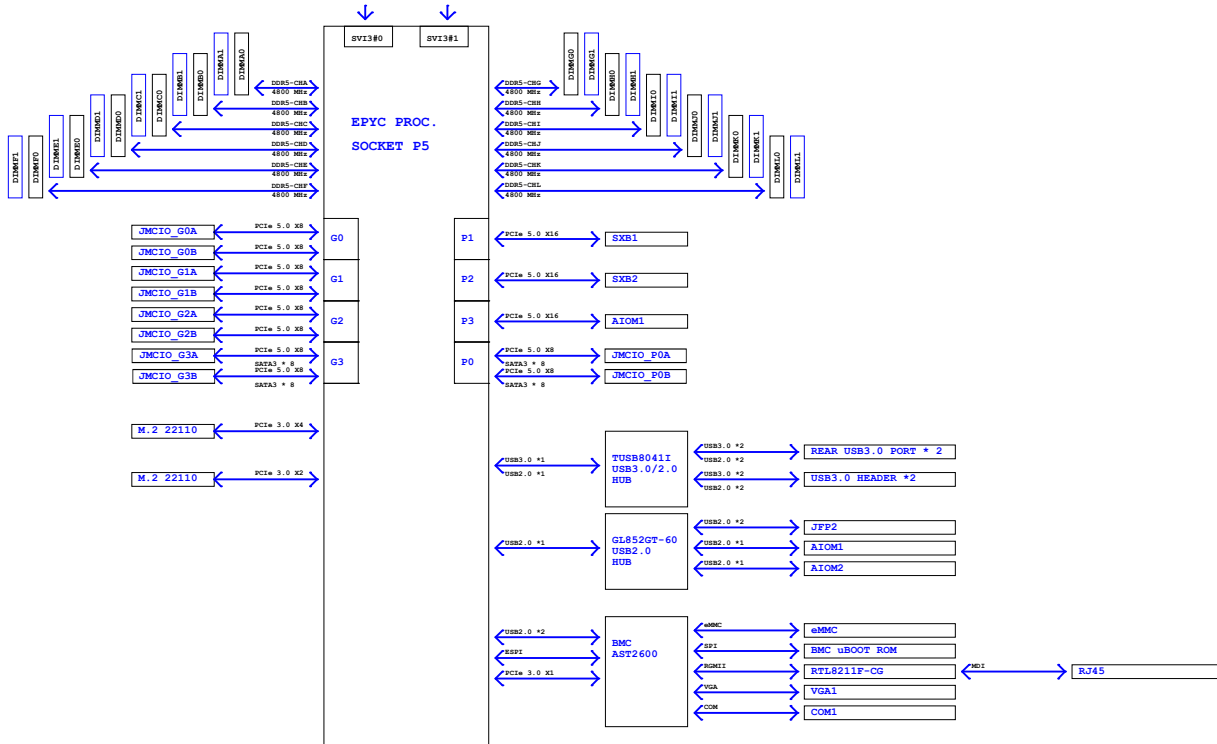


Figure 1-6. System Block Diagram

1.4 Motherboard Layout

Below is a layout of the H13SSH-E motherboard with the jumper, connector and LED locations shown. See the table on the following page for descriptions. For detailed descriptions, pinout information and jumper settings, refer to [Chapter 4](#) or the [Motherboard Manual](#).

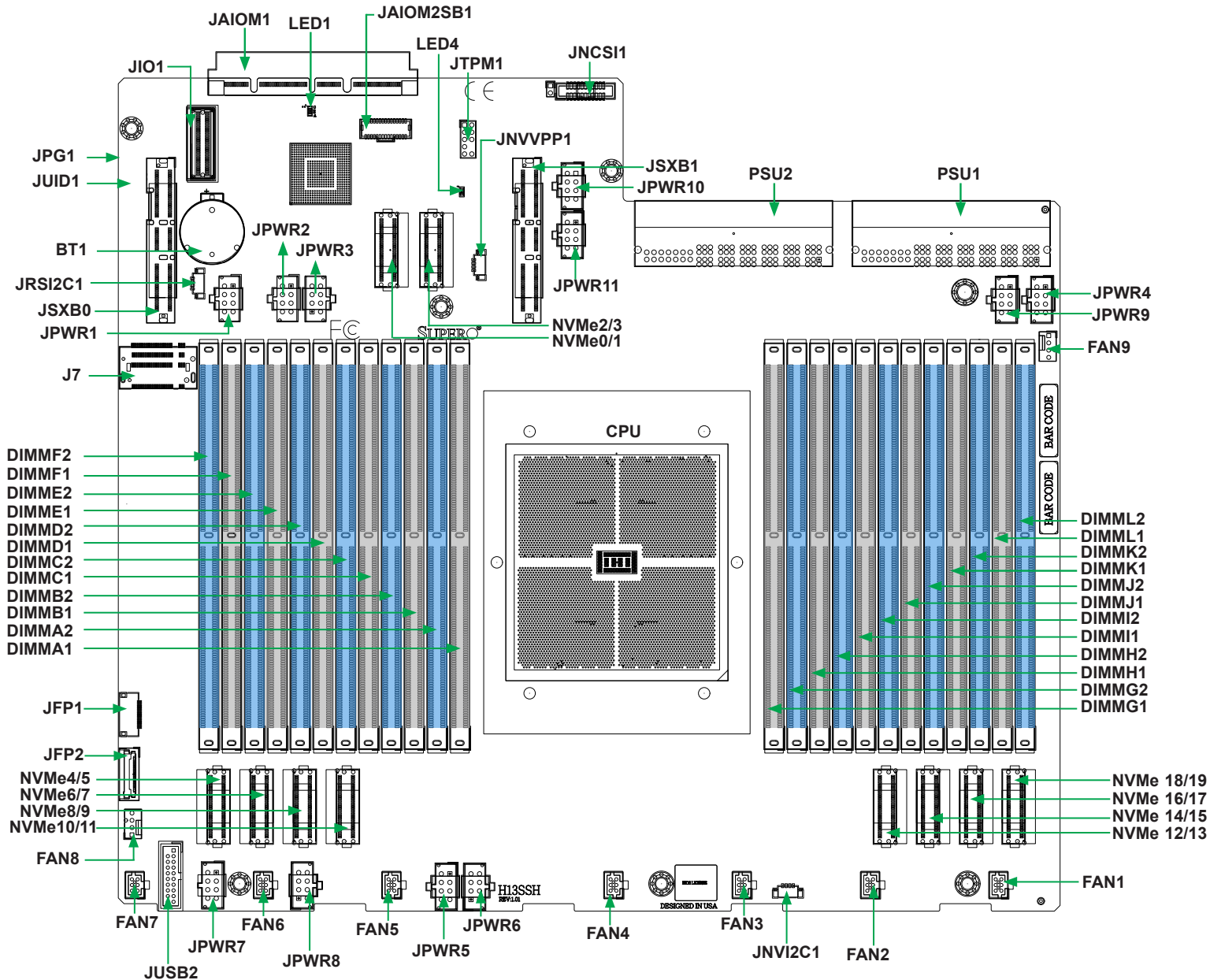


Figure 1-7. H13SSH-E Motherboard Layout

Quick Reference Table

Jumper	Description	Default Setting
JUID1	Switch function UID / Reset	Pins 1-2 (UID)
JPG1	VGA Enable / Disable	Pins 1-2 (Enable)
LED	Description	Status
LED4	Power LED	Solid Green: Power On
LED1	BMC Heartbeat LED	Green: Blinking (BMC Normal) Green: Fast Blinking (BMC Initializing)
Connector	Description	
JNCSI1	NCSI Connector	
JPWR1-11	12 V 8-Pin GPU / BPN / AOC Power Connector	
BT1	Onboard Battery	
JTPM1	TPM (Trusted Platform Module) / Port 80	
FAN1-FAN7	Hot-swappable system fan	
FAN8	4-pin system fan header	
FAN9	Active CPU heatsink fan header	
JAIOM1	Supermicro® Advanced I/O Module (AIOM PCIe 5.0x16) Slot	
JFP1, JFP2	Front Control Panel Headers 1 and 2	
JUSB2	USB 3.0 header	
NVMe 0/1	PCIe1A / SATA0-7	
NVMe 2/3	PCIe1B / SATA8-15	
NVMe 16/17	PCIe5B / SATA24-31	
NVMe 18/19	PCIe5A / SATA16-23	
NVMe 4/5-14/15	PCIe2B / PCIe2A / PCIe3B / PCIe3A / PCIe4B / PCIe4A	
PSU1/PSU2	Motherboard Main Power Supply Connector	
JIO1	Front BMC and Onboard VGA / USB / LAN Module Connector	
JSXB0-1	Slot1-2 PCIe 5.0 x16	
J7	M.2-C1 PCIe 3.0 x4 / M.2-C2 PCIe 3.0 x2	
JRSI2C1	Auxiliary I ² C header used for PCIe cards to allow the BMC/BIOS to read information from internal drives or FRUs (Field Replace Units) effectively	

Note: Jumpers, connectors, switches, and LED indicators that are not described in the preceding tables are for manufacturing testing purposes only, and are not covered in this manual.

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

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

2.3 Preparing for Setup

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

Choosing a Setup Location

- The system should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise, and electromagnetic fields are generated.
- Leave enough clearance in front of the rack so that you can open the front door completely (approximately 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

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:



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. Ne pas laisser l'équipement monté sur rail de glissière en position d'installation.

- If this unit is the only unit in the rack, it should be mounted at the bottom of 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.
- Do not pick up the server with the front handles. They are designed to pull the system from a rack only.

Ambient Operating Temperature

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

Airflow

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

Mechanical Loading

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

Circuit Overloading

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

Reliable Ground

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

2.4 Installing the Rails

This section provides information on installing the chassis into a rack unit with the rails provided. There are a variety of rack units on the market, which may mean that the assembly procedure will differ slightly from the instructions provided. You should also refer to the installation instructions that came with the rack unit you are using. **Note:** This rail will fit a rack between 19.2" and 26.4" deep.

Identifying the Rails

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

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

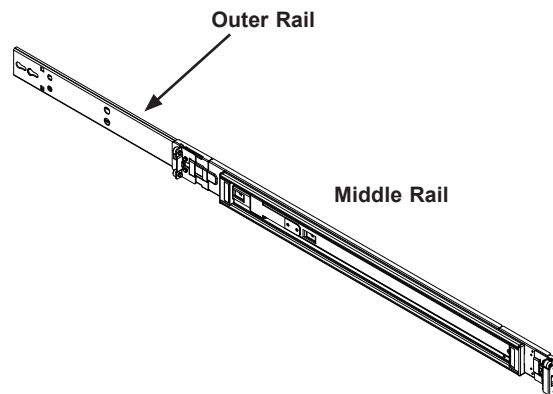


Figure 2-1. Identifying the Outer Rail and Middle Rail
(Left Rail Assembly Shown)

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

Releasing the Inner Rail

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

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

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

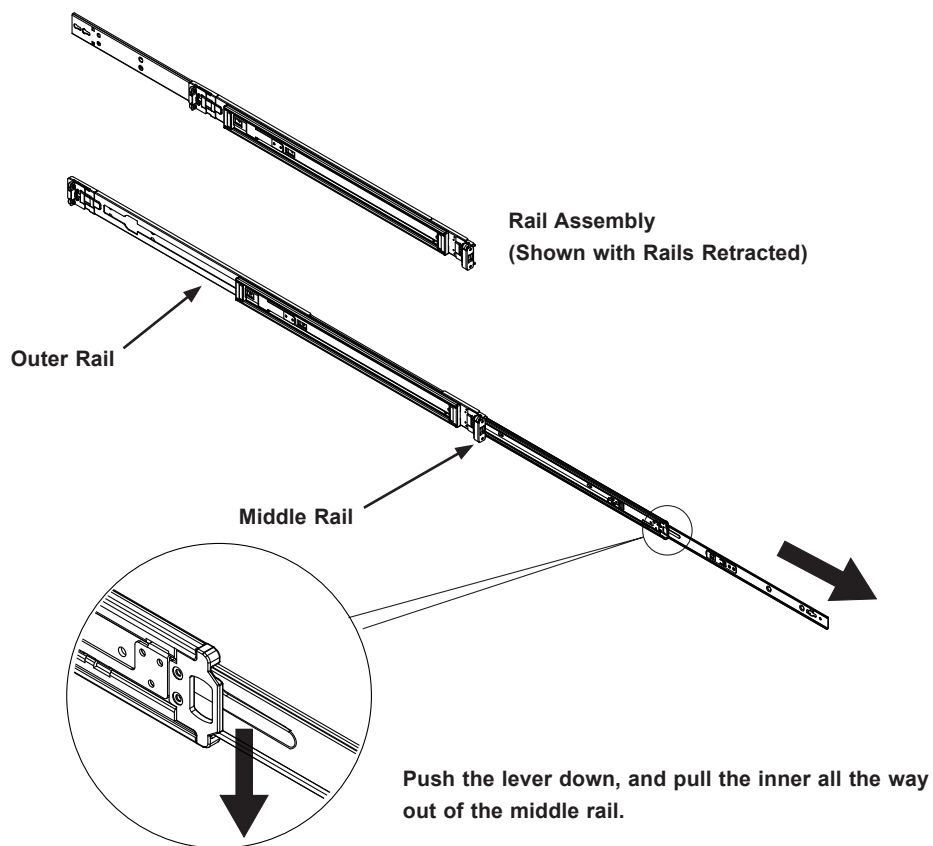


Figure 2-2. Extending and Releasing the Inner Rail

Installing the Inner Rails

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

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

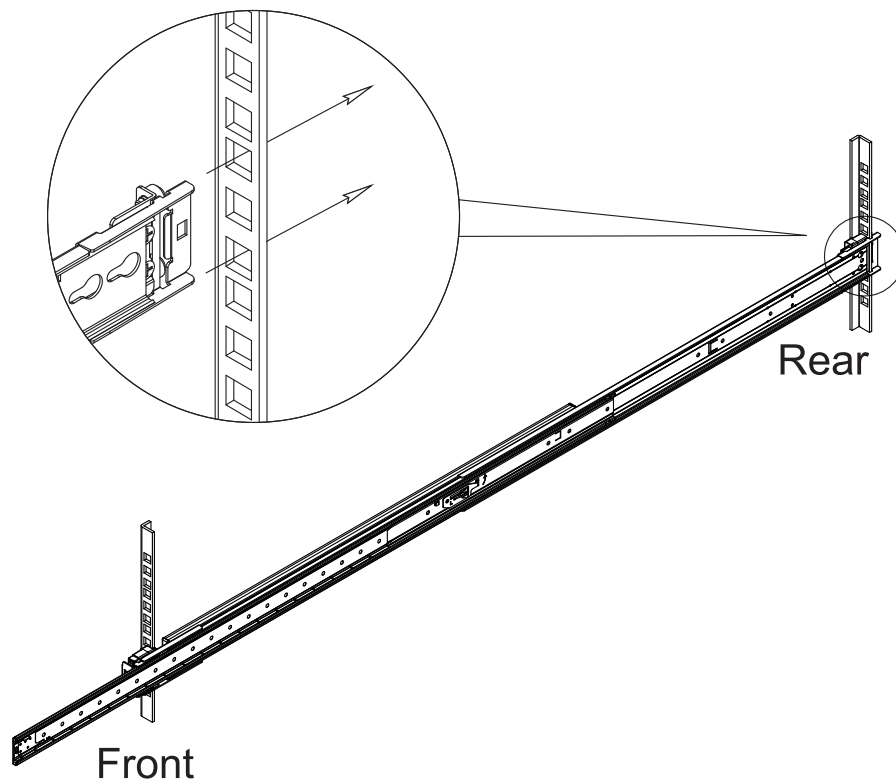


Figure 2-3. Installing the Rails

Installing the Outer Rails onto the Rack

Installing the Outer Rails

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

Important: This figure is for illustrative purposes only. Always install servers to the bottom of a rack first.

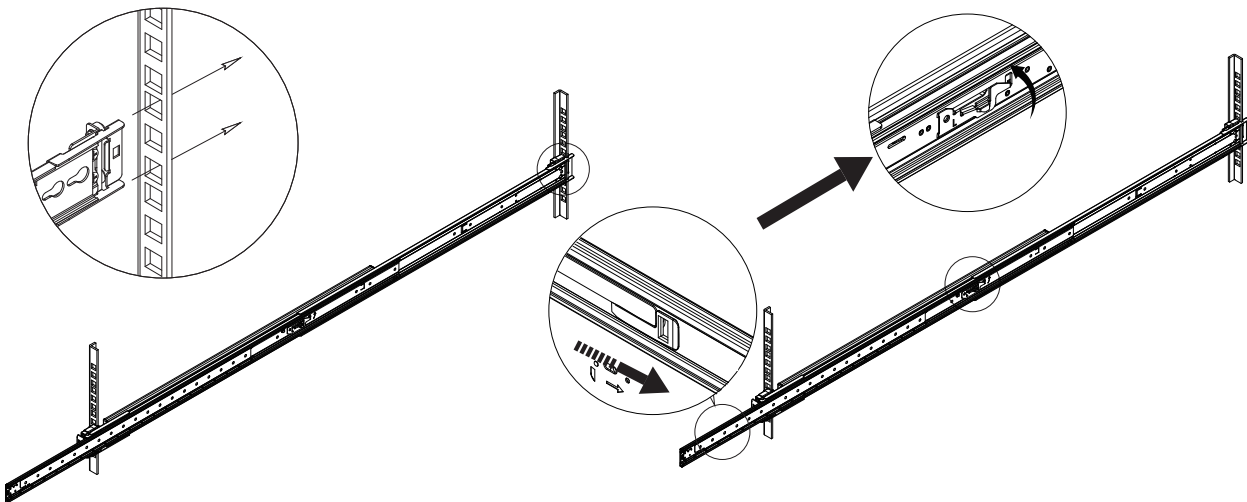


Figure 2-4. Installing the Outer Rails to the Rack

2.5 Installing the Server into a Rack

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

Installing the Chassis into a Rack

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

Important: This figure is for illustrative purposes only. Always install servers to the bottom of a rack first.

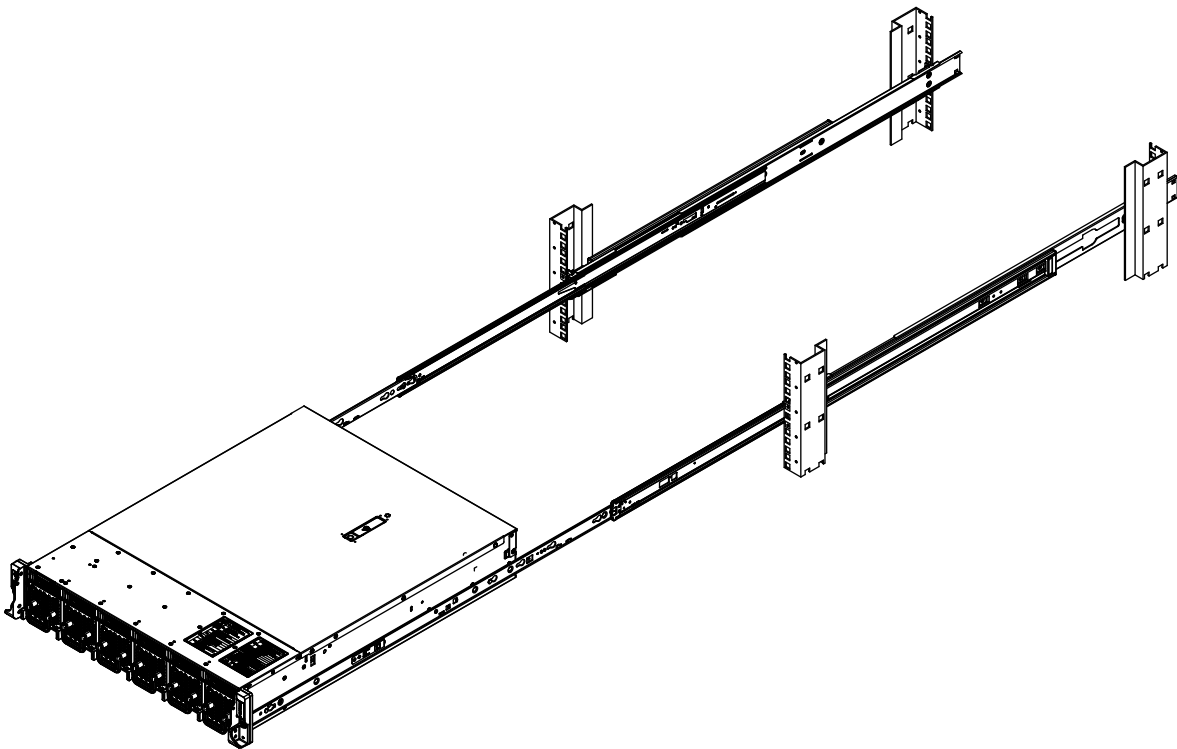


Figure 2-5. Installing the Server into the Rack

Removing the Server from the Rack

Important: Use caution when mounting or removing the system from the rack. For large systems, at least one other person must assist during installation or removal. Follow the safety recommendations printed on the rails. Depending on the size of the system, you might need to use a lift..

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

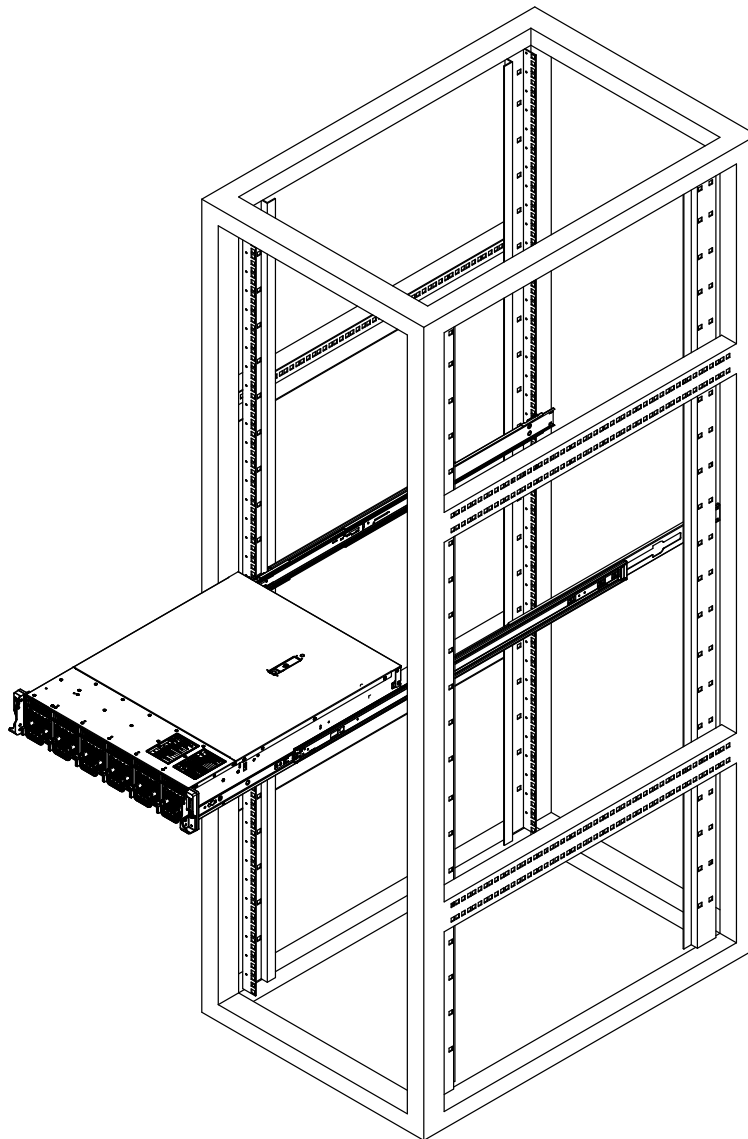


Figure 2-6. Removing the Server from the Rack

Chapter 3

Maintenance and Component Installation

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

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

3.1 Removing Power

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

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

3.2 Accessing the System

The CSE-HE211-R000NFP-A chassis features a removable top cover, which allows easy access to the inside of the chassis.

Removing the Top Cover

1. Press the release button and slide the cover toward the rear.
2. Lift the top cover-up.

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

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

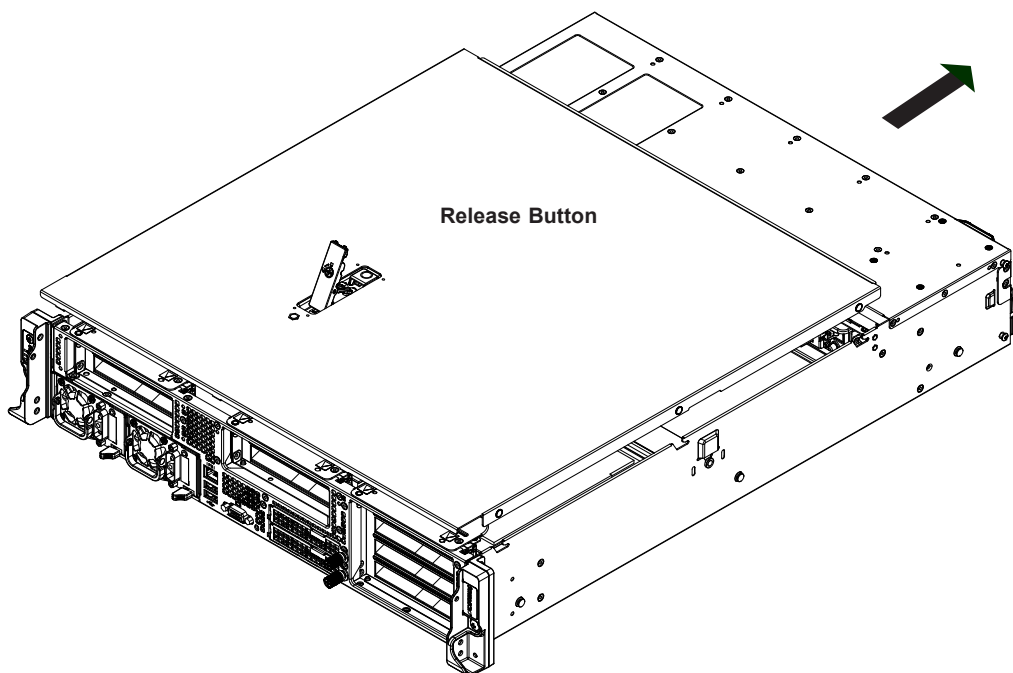


Figure 3-1. Removing the Chassis Cover

3.3 Static-Sensitive Devices

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

Precautions

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

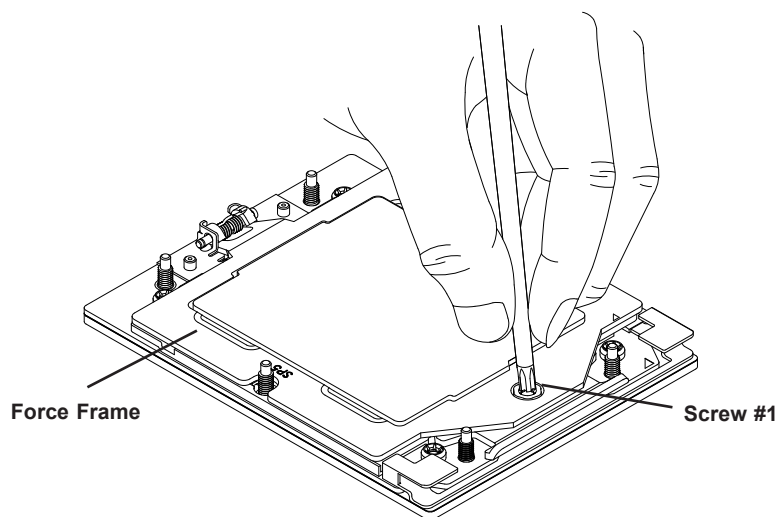
3.4 Processor and Heatsink Installation

Important:

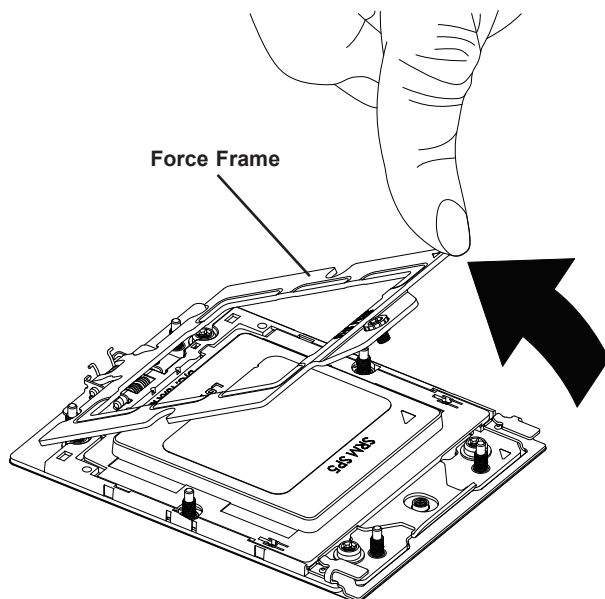
- Always connect the power cord last, and always remove it before adding, removing or changing any hardware components. Make sure that you install the processor into the CPU socket before you install the CPU heatsink.
- If you buy a CPU separately, make sure that you use an AMD-certified multi-directional heatsink only.
- Make sure to install the motherboard into the chassis before you install the CPU heatsink.
- When receiving a motherboard without a processor pre-installed, make sure that the plastic CPU socket cap is in place and none of the socket pins are bent; otherwise, contact your retailer immediately.
- Refer to the Supermicro website for updates on CPU support.
- When installing the processor and heatsink, ensure a torque driver set to the correct force is used for each screw.
- When handling the processor package, avoid placing direct pressure on the label area of the fan

Installing the Processor and Heatsink

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

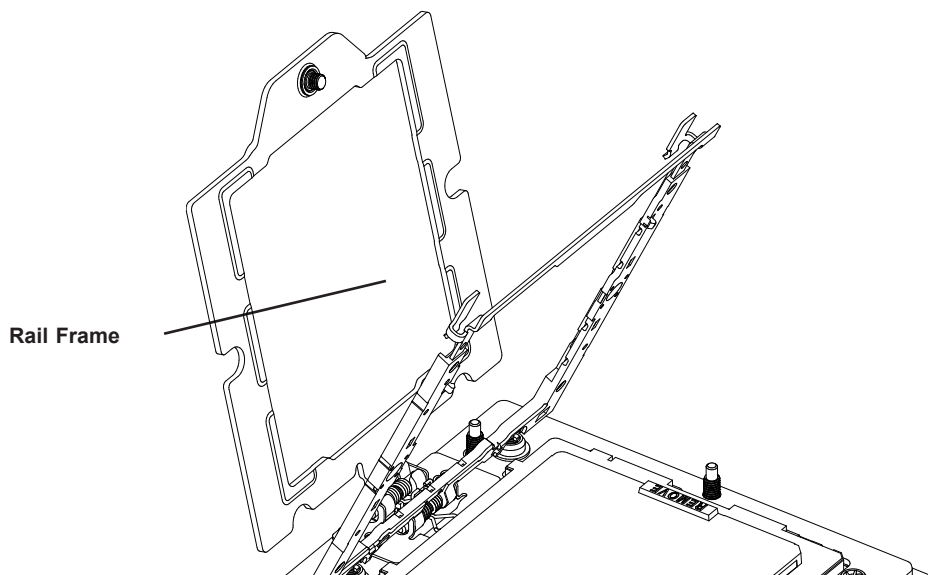


2. The spring-loaded force frame will raise up after the screw securing it (#1) is removed. Gently allow it to lift up to its stopping position.

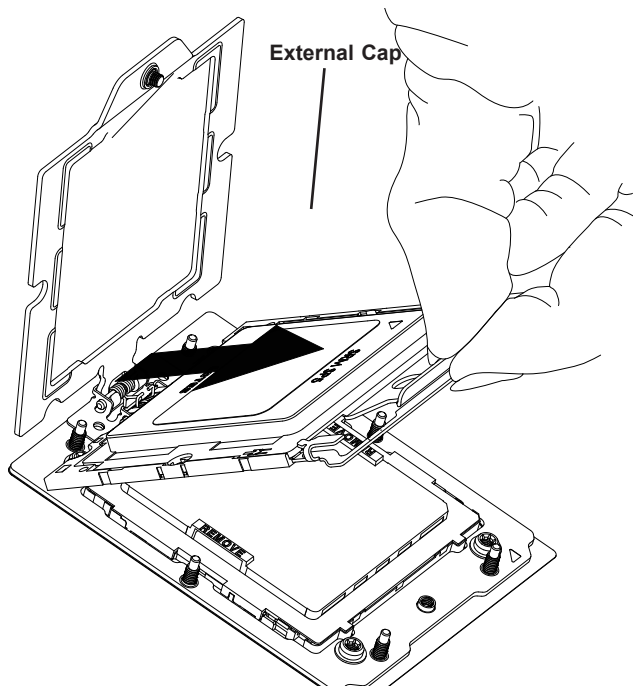


3. Lift the rail frame up by gripping the lift tabs near the front end of the rail frame. While keeping a secure grip of the rail frame, lift it to a position so you can do the next step of removing the external cap.

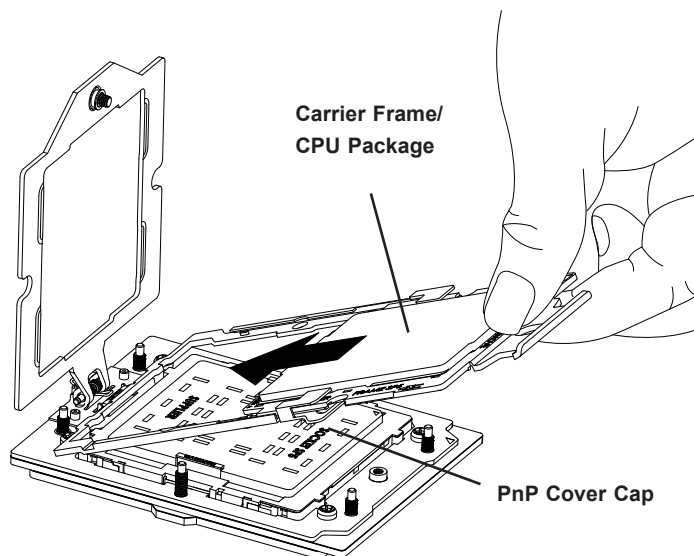
Note: The rail frame is spring loaded, so keep a secure grip on it as you lift it so it does not snap up.



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

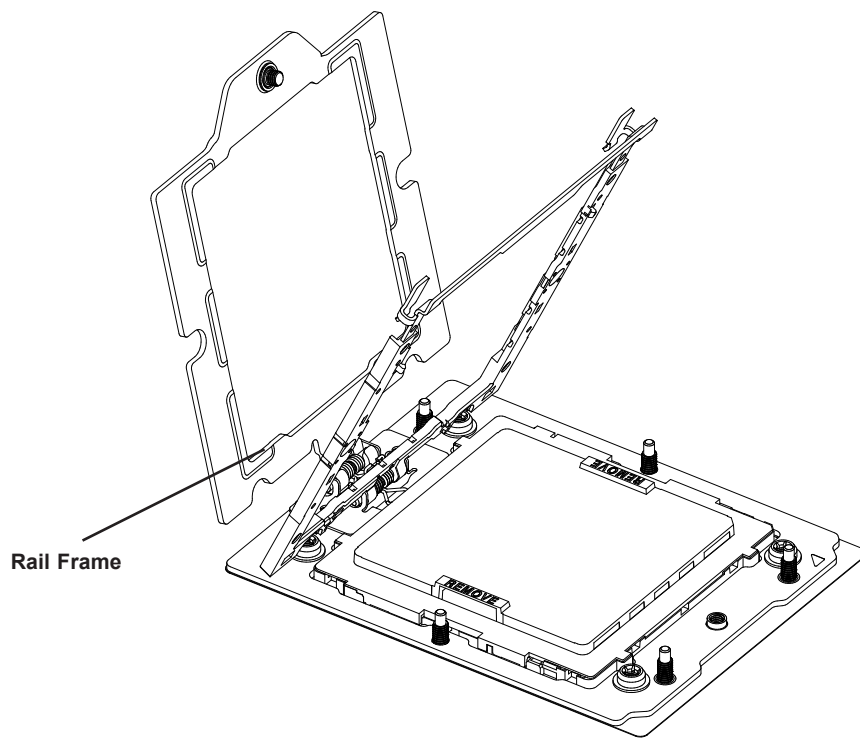


5. The CPU package is shipped from the factory with the carrier frame pre-assembled. Grip the handle of the carrier frame/CPU package assembly from its shipping tray, and while gripping the handle, align the flanges of the carrier frame onto the rails of the rail frame so its pins will be at the bottom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



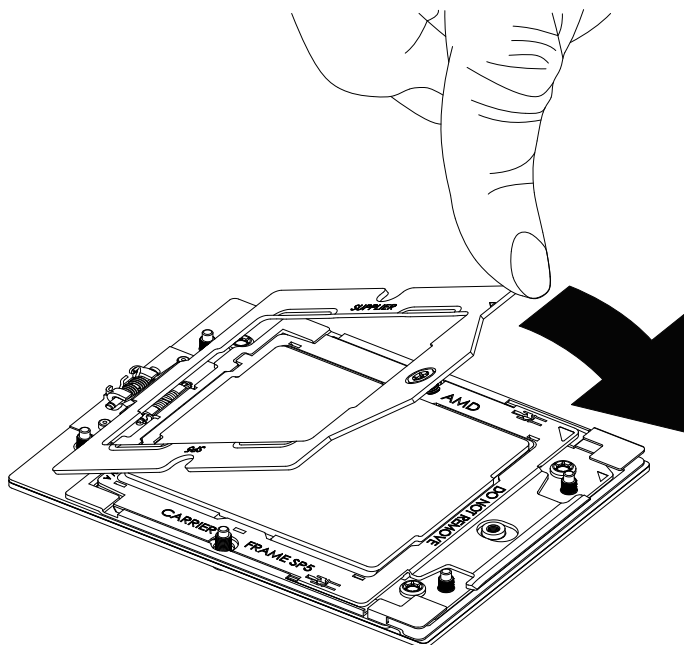
Note: You can only install the CPU inside the socket in one direction with the handle at the top. Make sure that it is properly inserted into the CPU socket before closing the rail frame plate. If it doesn't close properly, do not force it as it may damage your CPU. Instead, open the rail frame plate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

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

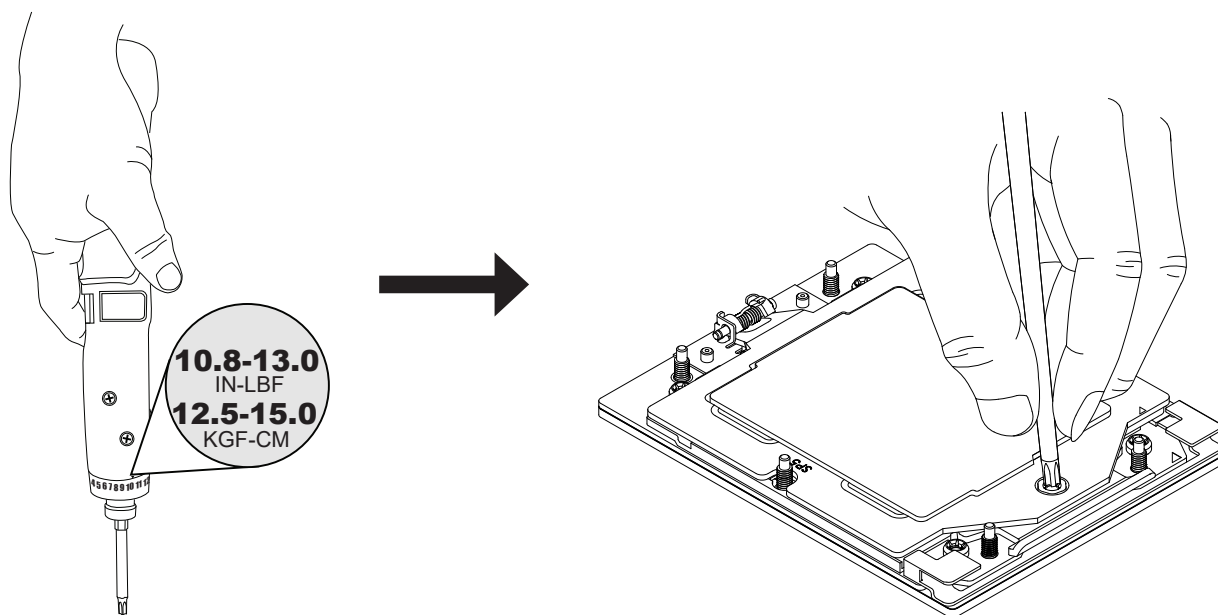


Warning! The exposed socket contacts are extremely vulnerable and can be damaged easily. Do not touch or drop objects onto the contacts and be careful removing the PnP cover cap and when placing the rail frame over the socket.

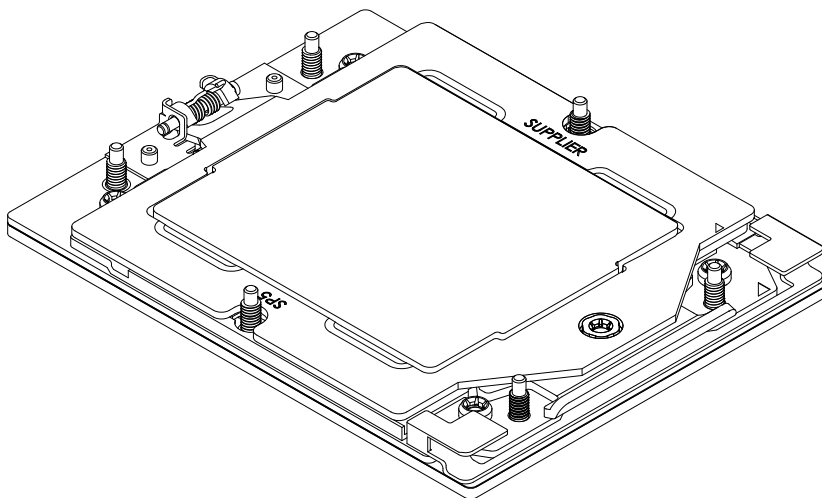
8. Gently lower the rail frame down onto the socket until the latches on the rail frame engage with the socket housing and it rests in place. **DO NOT** force it into place!



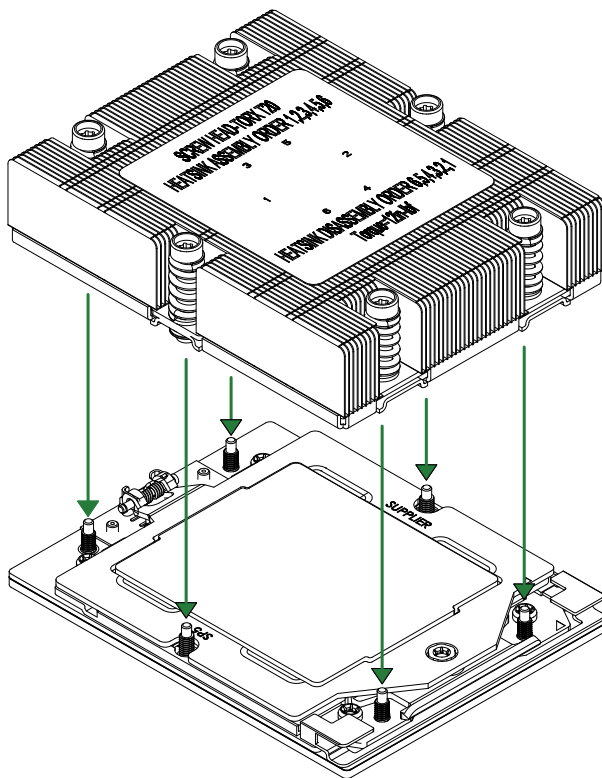
9. The force frame is spring loaded and has to be held in place before it is secured. **Important: Use a T20 bit torque driver with a torque of 12.5-15.0 kgf-cm (10.8-13.0 lbf-in) to prevent damage to the processor.**



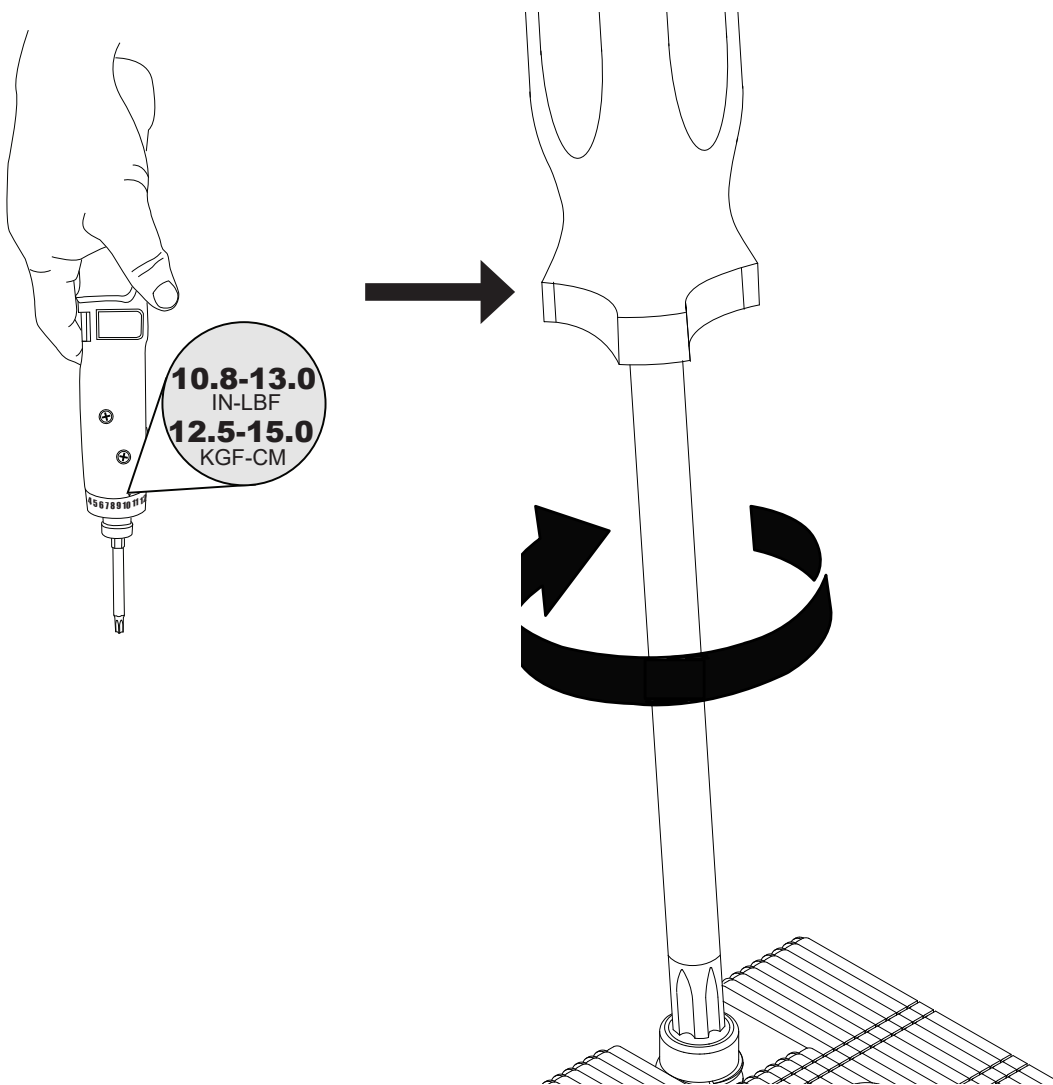
10. Replace and tighten the screws in the same order they were removed. When finished, the force frame will be secure over both the rail frame and CPU package.



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



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



Un-installing the Processor and Heatsink

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

3.5 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 H13SSH-E supports RDIMM / 3DS RDIMM in 24 DIMM slots. Up to 4.5 TB of ECC DDR5 4800 MT/s speed in 12 DIMM slots (1DPC) or up to 9 TB of ECC DDR5 4400 MT/s / 4000 MT/s speed in 24 DIMM slots (2DPC) condition (Motherboard revision 2.0 or above is required). Refer to the table below for additional memory information.

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

DIMM Population Guide (1DPC)																									
Type	Channel																								
	F2	F1	E2	E1	D2	D1	C2	C1	B2	B1	A2	A1	G1	G2	H1	H2	I1	I2	J1	J2	K1	K2	L1	L2	
CPU & 1 DIMM											✓														
CPU & 2 DIMMs											✓			✓											
CPU & 4 DIMMs							✓				✓			✓				✓							
CPU & 6 DIMMs							✓		✓		✓			✓		✓		✓							
CPU & 8 DIMMs			✓				✓		✓		✓			✓		✓		✓					✓		
CPU & 10 DIMMs			✓		✓		✓		✓		✓			✓		✓		✓		✓		✓			
CPU & 12 DIMMs	✓		✓		✓		✓		✓		✓			✓		✓		✓		✓		✓			✓

DIMM Population Guide (2DPC)																									
Type	Channel																								
	F2	F1	E2	E1	D2	D1	C2	C1	B2	B1	A2	A1	G1	G2	H1	H2	I1	I2	J1	J2	K1	K2	L1	L2	
CPU & 16 DIMMs			✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓			
CPU & 20 DIMMs			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
CPU & 24 DIMMs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Populating RDIMM/RDIMM 3DS DDR5 Memory Modules with AMD EPYC™ 9004 series Processor				
Type	DIMM Population		Maximum Frequency (MT/s)	
	DIMM1	DIMM2	5600 MT/s Grade DIMM	4800 MT/s Grade DIMM
RDIMM	-	1R	4800	4800
	1R	1R	4000	4000
	-	2R	4400	4400
	2R	2R	3600	3600
3DS RDIMM	-	2S2R (4 ranks)	4400	4400
	-	2S4R (8 ranks)	4400	4400
	2S2R (4 ranks)	2S2R (4 ranks)	3600	3600
	2S4R (8 ranks)	2S4R (8 ranks)	3600	3600

Populating RDIMM/RDIMM 3DS DDR5 Memory Modules with AMD EPYC™ 9005 series Processor (Motherboard revision 2.0 or above is required)					
Type	DIMM Population		Maximum Frequency (MT/s)		
	DIMM0	DIMM1	6400 MT/s Grade DIMM	5600 MT/s Grade DIMM	4800 MT/s Grade DIMM
RDIMM	-	1R	5200	4800	4800
	1R	1R	4400	4000	4000
	-	2R	5200	4800	4800
	2R	2R	4000	3600	3600
3DS RDIMM	-	2S2R (4 ranks)	5200	4800	4800
	2S2R (4 ranks)	2S2R (4 ranks)	4000	3600	3600
		2S4R (8 ranks)	5200	4800	4800
	2S4R (8 ranks)	2S4R (8 ranks)	4000	3600	3600

DIMM Module Population Sequence

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

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

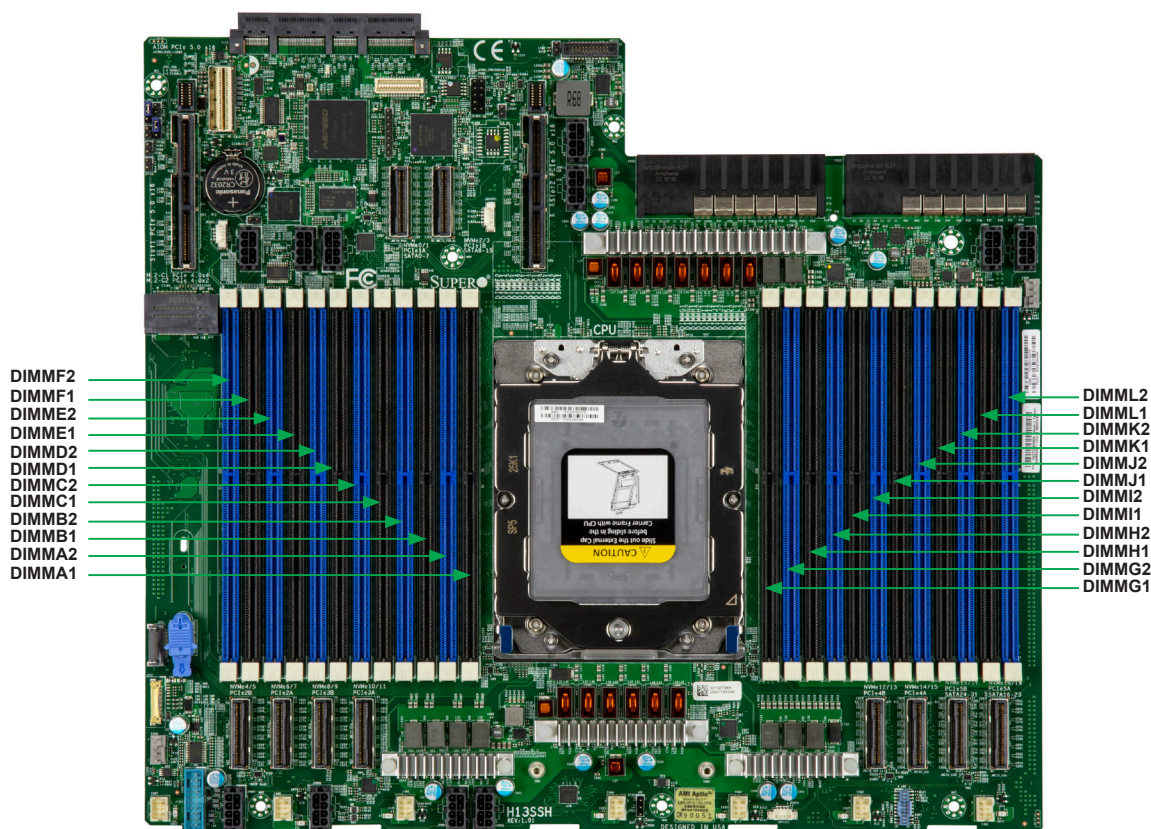
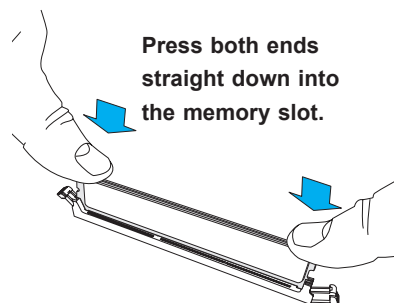
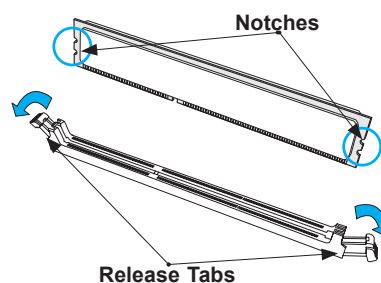
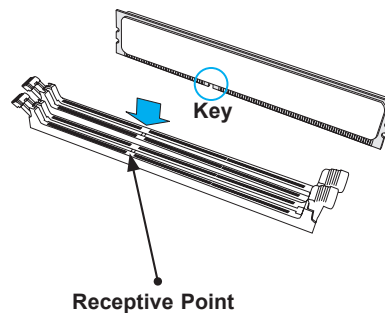


Figure 3-2. DIMM Numbering

DIMM Installation

1. Insert the desired number of DIMMs into the memory slots. See [Memory Support](#) for details on memory population guidelines.
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. Press 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.

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.

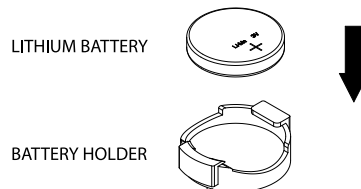


Figure 3-3. Installing the Onboard Battery

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 Storage Drives

The system supports six hot-swappable NVMe hybrid drive bays and two M.2 SSDs. For compatible storage drives, see the [H13SSH-E motherboard page](#).

The drives are mounted in toolless drive carriers that simplify their removal from the chassis. These carriers also help promote proper airflow.

Note: Enterprise-level storage drives are recommended for use in Supermicro chassis and servers.

Checking the Temperature of an NVMe Drive

There are two ways to check using BMC.

Checking a Drive

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

Installing Drives

The front of the system has six hard drive bays that support NVMe drives.



Figure 3-4. Logical Drive Numbers

Removing a Hot-Swappable Drive Carrier from the Chassis

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

Installing a Drive into a Drive Carrier

1. Insert a drive into the carrier with the PCB side facing down and the connector end toward the rear of the carrier.
2. Align the drive in the carrier so that the screw holes of both lineup. Note that there are holes in the carrier marked "SATA" to aid incorrect installation.
3. Secure the drive to the carrier with four screws.
4. Insert the drive carrier into its bay, keeping the carrier oriented so that the drive is on the top of the carrier and the release button is on the right side. When the carrier reaches the rear of the bay, the release handle will retract.
5. Push the handle in until it clicks into its locked position.

Note: Your operating system must have RAID support to enable the hot-plug capability of the drives.

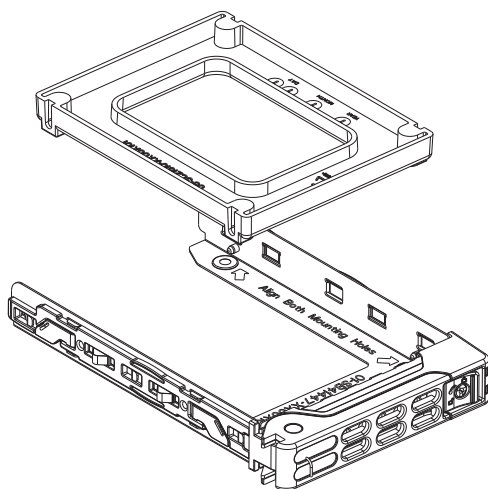


Figure 3-5. Removing the Dummy Drive from a Carrier

Hot-Swap for NVMe Drives

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

Note: If you are using VROC, see the VROC appendix in this manual instead.

Ejecting a Drive

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

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

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

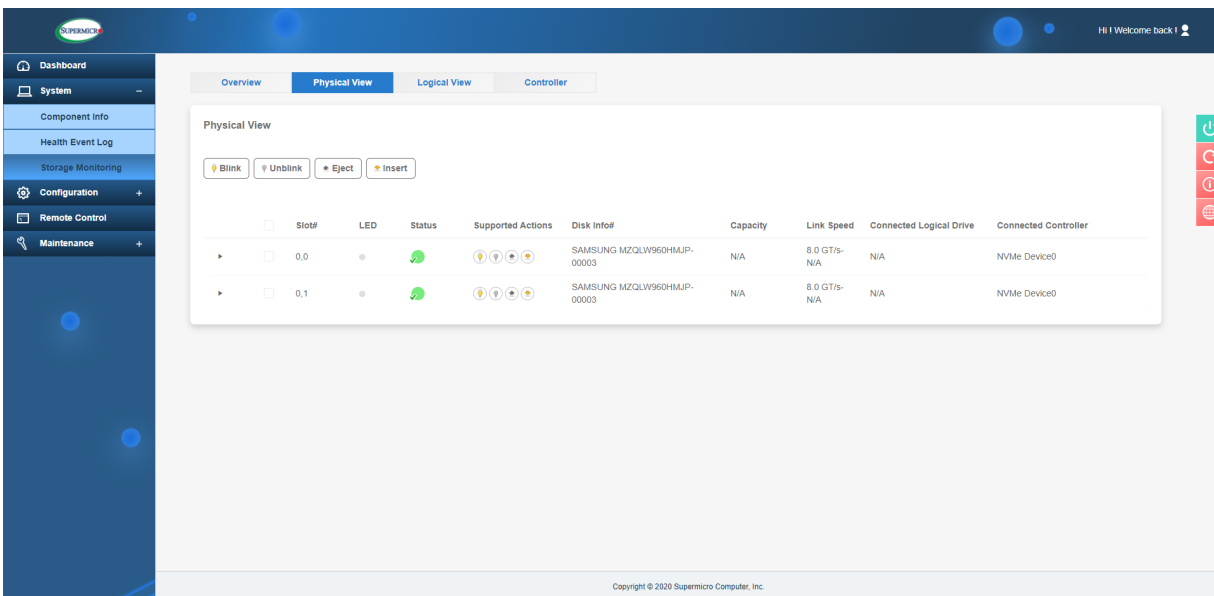


Figure 3-7. BMC Screenshot

Replacing the Drive

1. Insert the replacement drive.
2. **BMC > System > Storage Monitor > Physical View**
3. Select Device, Group, and slot and click **Insert**. The drive Status LED indicator flashes red, then turns off. The Activity LED turns blue.

3.8 System Cooling

Fans

Six 6-cm heavy-duty fans provide cooling for the system. Fans are hot-swappable and can be replaced without powering down the system. The electrical connections are automatically made when a fan is inserted into its slot.

Make sure the chassis cover is only off for a short time and makes a good seal when replaced for the cooling air to circulate properly through the system.

Changing a System Fan

1. Determine which fan is failing using BMC if possible. If not, remove the chassis cover while the power is on and examine the fans to determine which one has failed.
2. Pull the system partially out from the rack.
3. With the top cover partially pushed back, depress the release buttons on the front section of the top cover to swing it open on its hinges.
4. Squeeze the fan tabs of the failed fan and lift the fan housing up and out of the chassis.
5. To install a fan, push it into the proper location until it clicks.
6. Finish by fully closing the cover and pushing the system back into the rack.

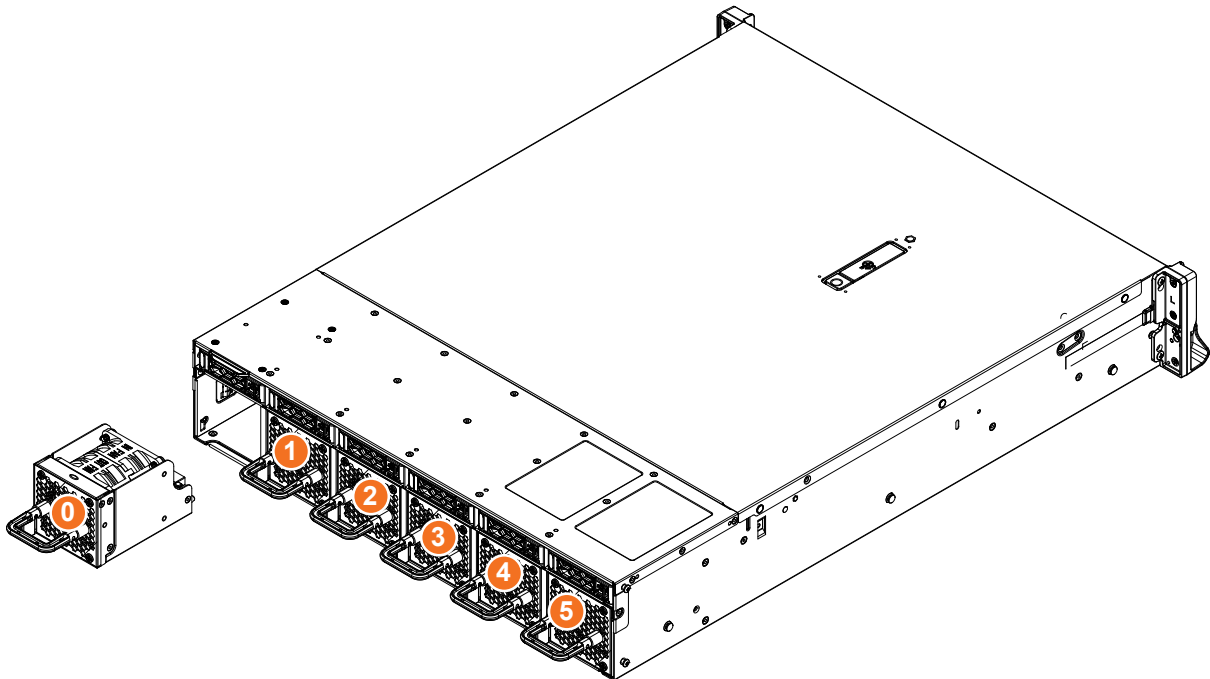


Figure 3-8. Installing a Fan (logical locations indicated)

Air Shrouds

Air shrouds concentrate airflow to maximize fan efficiency.

Air Shroud for Memory (CPU1)

One 2U air shroud is used to cool the DIMM slots.

1. Remove the system from the rack and remove the cover as described [previously](#).
2. Remove riser card brackets and riser card supporting bar.
3. Place the air shroud over all 24 DIMM slots for both banks of CPU1-controlled DIMM slots, as illustrated below.
4. Re-assemble riser card supporting bar and riser card brackets.
5. Close the cover and push the system back into the rack.

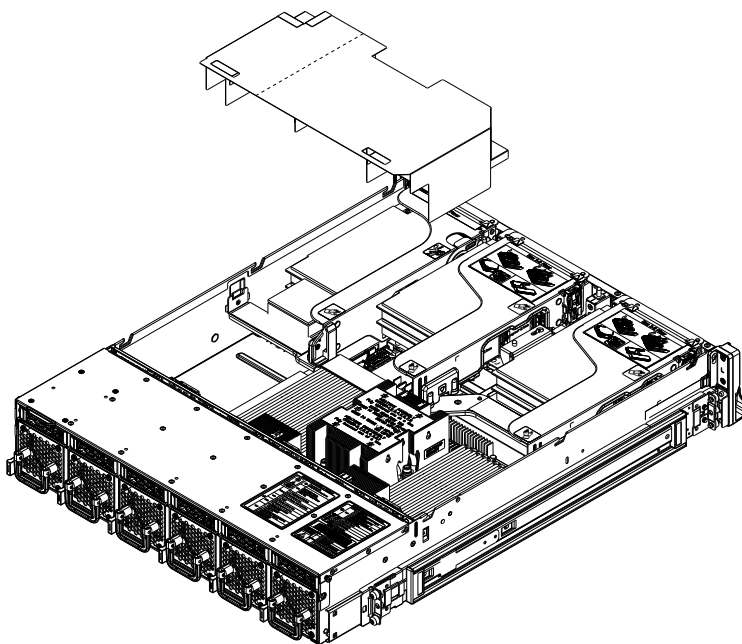


Figure 3-9. Air Shroud for CPU1 DIMMs

3.9 Expansion Cards

The AS -2115HE-FTNR/TNR includes three riser cards to support the use of expansion (add-on) cards. The system also has flexible networking options with two AIOM networking slot (OCP NIC 3.0 compatible).

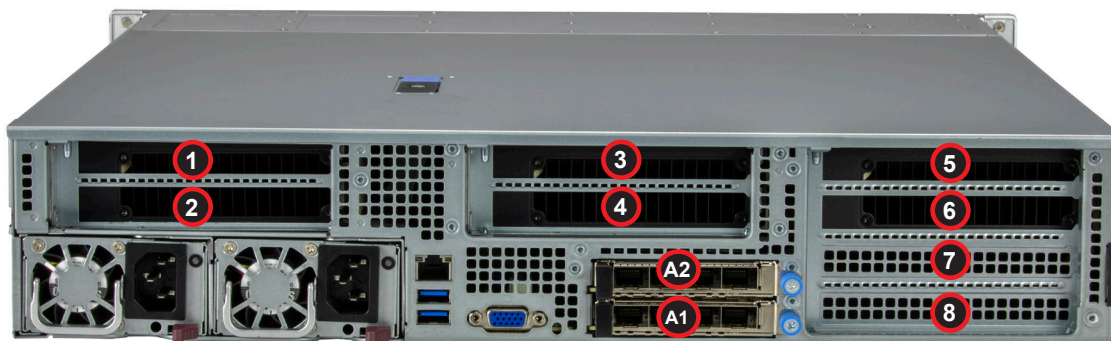


Figure 3-10. Expansion Card Chassis Slots

Riser Cards

This system include riser cards that provide PCIe capabilities.

PCIe Slots per Riser Card			
Riser Card	Part Number	Slot	Description
Left-facing riser card	RSC-H2-68G5	1 - 2	x16 or 2 x8 FHFL (10.5")
Middle-facing riser card	RSC-H2-68G5	3 - 4	x16 or 2 x8 FHFL (10.5")
Right-facing riser card	RSC-H2-6888G5S (default)	5 - 8	Slot 5: x16 FHFL (10.5") or x8 FHFL (10.5") Slot 6: disabled or x8 FHFL (10.5") Slot 7: x8 FHHL Slot 8: x8 FHHL
	RSC-H2-668G5S (option)	5 - 7	Slot 5: x16 FHFL (10.5") Slot 6: disabled Slot 7: x16 FHHL

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

The AS -2115HE-FTNR/TNR includes three riser cards (two RSC-H2-68G5 risers and one RSC-H2-6888G5S riser) to support the use of expansion (add-on) cards. The riser cards have already been pre-installed into the motherboard. Below are the riser cards and their respective PCIe slots and cable connections details.

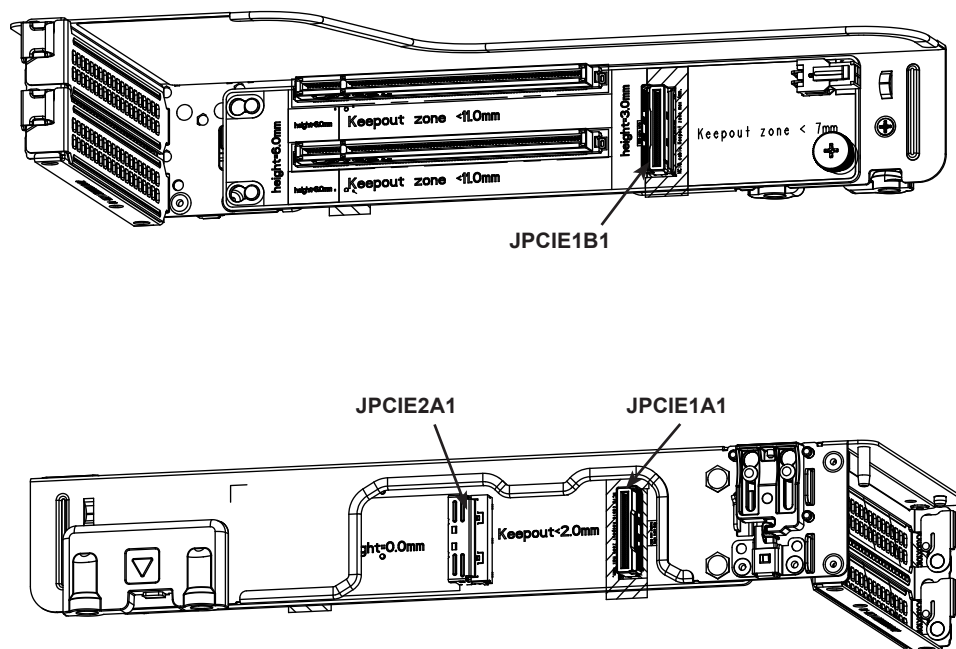


Figure 3-11. RSC-H2-68G5 Riser Card

Cables for PCIe Slots					
	PCIe Slot 1/3	PCIe Slot 2/4	JPCIE1A1	JPCIE1B1	JPCIE2A1
Config. 1	PCIe 5.0 x16	N/A	Right Angle Connector	Right Angle Connector	Straight Connector
Config. 2	PCIe 5.0 x8	Slot 2:PCIe 4.0 x8 Slot 4:PCIe 5.0 x8	Right Angle Connector	N/A	Straight Connector

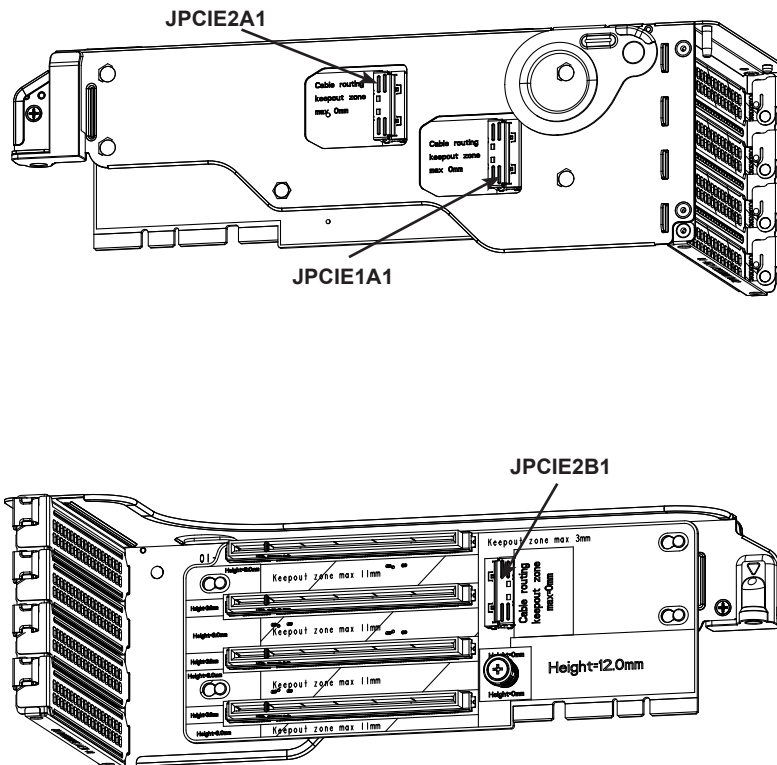


Figure 3-12. RSC-H2-6888G5S Riser Card

Cables for PCIe Slots					
	PCIe Slot 5	PCIe Slot 6	JPCIE1A1	JPCIE2B1	JPCIE2A1
Config. 1	PCIe 5.0 x16	N/A	N/A	Straight Connector	Straight Connector
Config. 2	PCIe 5.0 x8	PCIe 5.0 x8	Straight Connector	Straight Connector	N/A

Cables for PCIe Slots		
	PCIe Slot 7	PCIe Slot 8
Configuration 1	PCIe 4.0 x8	PCIe 4.0 x8
Configuration 2	PCIe 4.0 x8	PCIe 4.0 x8

Before following the procedure below to install expansion cards, first turn off and remove power from the system as described in section 3.1 then remove the top cover.

Installing Expansion Cards

1. Remove the top cover and pull up the riser card brackets.
 - For the right side (looking from the node front), open the clip of each slot on the right.
2. Remove the blank PCI shield from the chassis.
3. Slide the expansion card shield into the open shield slot while plugging the expansion card into the riser card.

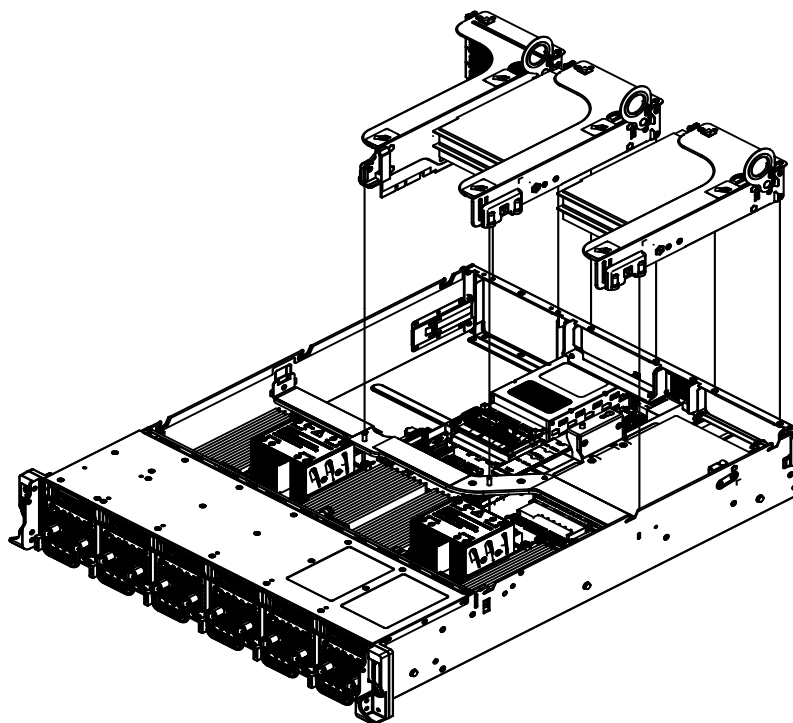


Figure 3-13. Installing Riser Cards

3.10 Power Supply

The system includes two hot-plug power supply modules. These modules will automatically sense the AC power supply and operate at an input voltage between 100 to 240 V. Note that different input voltages will result in different maximum power output levels.

In the event of a power module failure, the other power module will continue to power the system on its own. Failed power supply modules can be replaced without powering down the system. Replacement modules can be ordered directly from Supermicro.

An amber light on the power supply is illuminated when the power is switched off. A green light indicates that the power supply is operating.

Replacing the Power Supply

1. Unplug the AC power cord from the failed power supply module.
2. Push and hold the release tab on the back of the power supply.
3. Grasp the handle of the power supply and pull it out of its bay.
4. Push the new power supply module into the power bay until it clicks into the locked position.
5. Plug the AC power cord back into the power supply module.

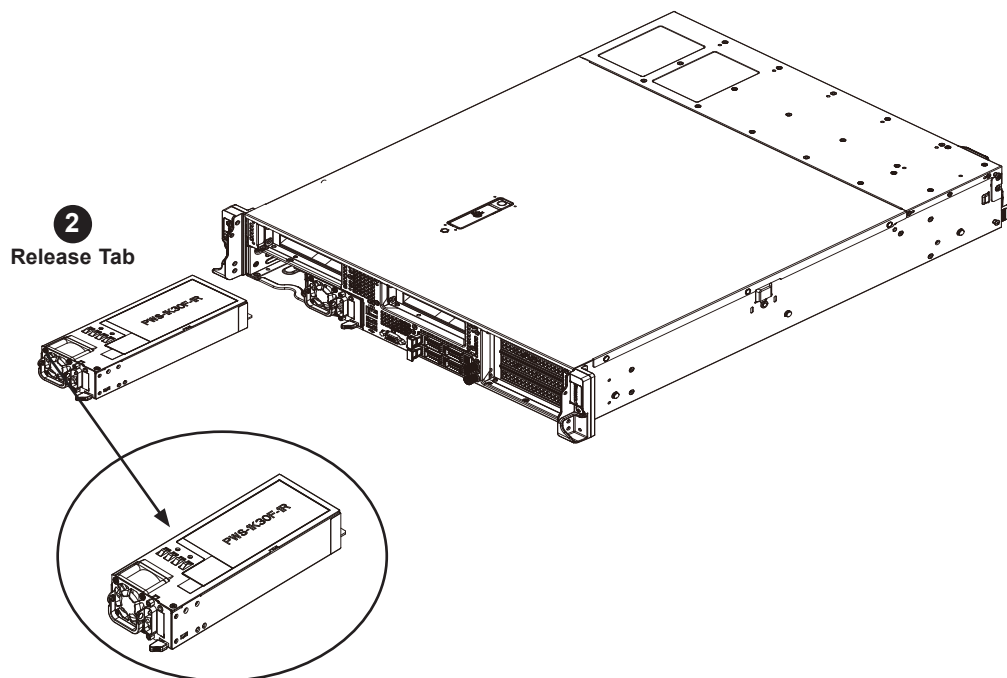


Figure 3-14. Installing a Power Supply Module

3.11 BMC

The BMC can be reset using the button on the front control panel or on the chassis rear.

- **Reset**—Press and hold the button. After six seconds, the LED blinks at 2 Hz. The BMC resets with a reset duration of approximately 250 ms before it starts to boot.
- **Restore factory default configuration**—Hold the button for twelve seconds. The LED blinks at 4 Hz while defaults are configured.
- **Firmware update**—the UID LED blinks at 10 Hz during a firmware update.

BMC Reset Options	
Event	LED (Green)
Reset	Blinks at 2 Hz
Restore Defaults	Blinks at 4 Hz
Update	Blinks at 10 Hz

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](#).

Please review the Safety Precautions in [Appendix A](#) before installing or removing components.

4.1 Power Connections

12 V 8-pin Auxiliary Power Connector (JPWR1-11)

JPWR1-11 is an 8-pin Micro-Hi power input to provide power to GPU. Refer to the table below for pin definitions.

12 V 8-pin Power Connector Pin Definitions			
Pin#	Definition	Pin#	Definition
1	Ground	5	+12 V
2	Ground	6	+12 V
3	Ground	7	+12 V
4	Ground	8	+12V

4.2 Headers and Connectors

NC-SI Connector

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

TPM/Port 80 Header

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

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

Expansion Slots

The motherboard features two expansion slots (JSXB0 and JSXB1). These are both PCIe 5.0 x16 slots (JSXB0 is for a left-hand riser card and JSXB1 is for a right-hand riser card).

AIOM Slot

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

4.3 Input/Output Ports

I/O Ports

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

I/O Ports from AOM-HS119-IO	
#	Description
1	BMC_LAN Port
2	USB 0 (3.2 Gen 1)
3	USB 1 (3.2 Gen 1)
4	VGA Port
5	COM Port Header

VGA Connection

A VGA header is located at JFP2 on the motherboard.

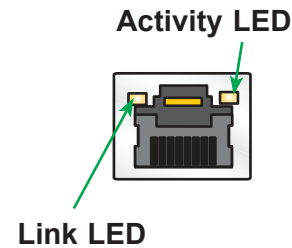
4.4 LED Indicators

BMC LAN Port LEDs

A dedicated BMC LAN is located on the rear I/O panel and has two LED indicators. The LED on the right indicates connection and activity, while the LED on the left indicates the speed of connection. The Link LED may amber, green, or off to indicate the speed of the connection. Refer to the tables below for more information.

Link LED, Connection Link Speed Indicator	
LED Color	Definition
Amber	1 Gb/s
Green	100 Mb/s
Off	10 Mb/s

Activity LED		
Color	State	Definition
None	No Connection	
Yellow	Solid On	Link
Yellow	Flashing	Active



UID LED Indicator (LED4)

The rear LED4 is located next to the UID switch. The front UID LED is located on the front panel. When you press the UID switch, both rear LED4 and front UID LED indicators will turn on. Press the UID switch again to turn off the LED indicators. Use this UID Indicator to 'mark' the system, so the system can be easily identified whether on the front or back (e.g., a system rack with multiple units installed).

UID LED Indicator		
Color	State	Definition
None	Off	UID Off
Blue	Solid On	Unit Identified by Local Site
Blue	Slow Blinking	Unit Identified by Remote Site
Blue	Slow Blinking	System Recovery

BMC Heartbeat LED (LED1)

A BMC Heartbeat LED is located at LED1 on the motherboard. When LED1 is blinking, the BMC is functioning normally. See the table below for more information.

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

4.5 M.2 Solid State Drive Installation

Installing Dual M.2 SSDs

1. Disconnect power from the system.
2. Refer to the [motherboard layout](#) and locate the M.2 dual slot (J7).
3. Insert the lower M.2 sideways into the connector so that it lays flat, then follow the instructions below from ① to ③.
4. Insert the upper M.2 sideways into the connector so that it lays flat, then follow the instructions below from ④ to ⑥.

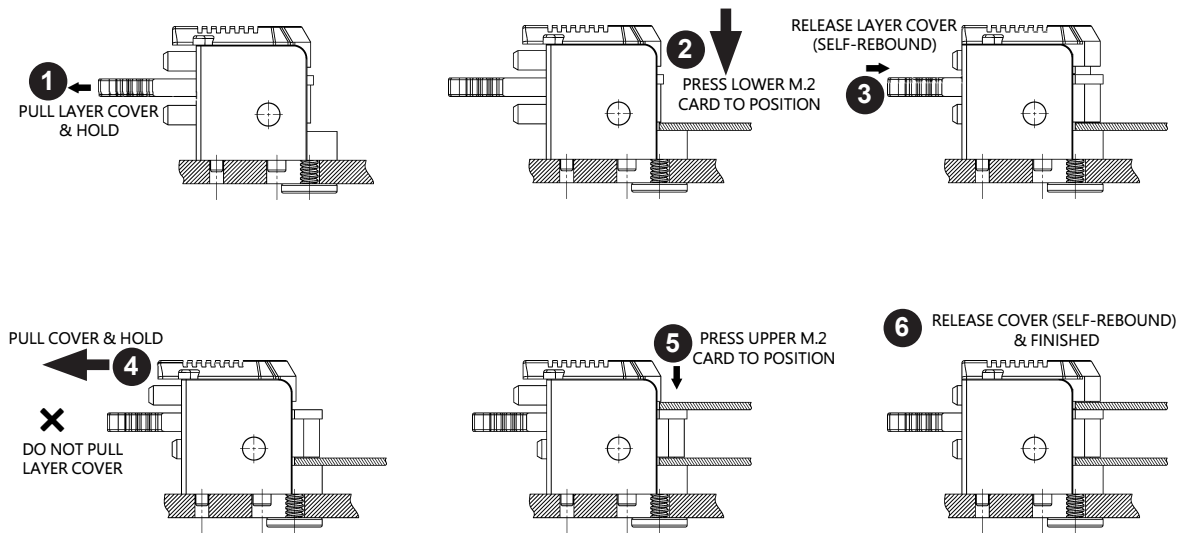


Figure 4-1. Installing Dual M.2 SSDs

Releasing Dual M.2 SSDs

1. Follow the instructions below from ① to ⑤ to remove M.2 SSDs.

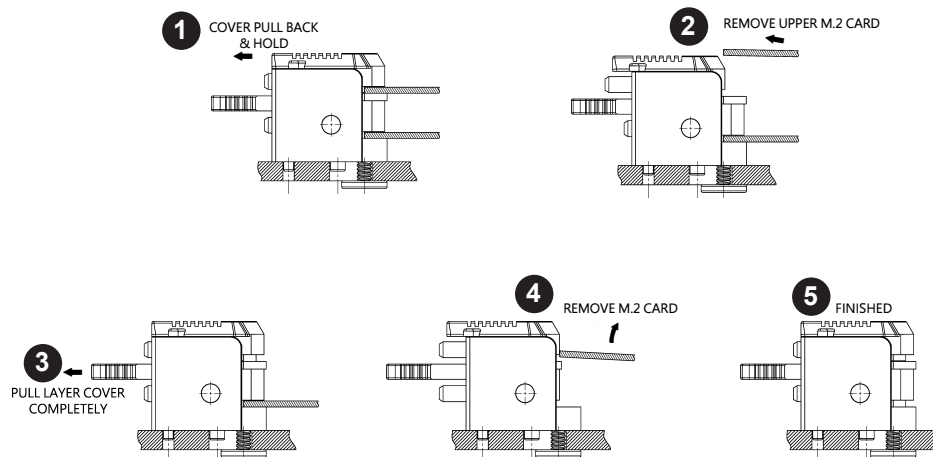


Figure 4-2. Releasing Dual M.2 SSDs

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.supermicro.com/support/manuals.

Installing the OS

1. Create a method to access the Microsoft Windows installation ISO file. That might be a Media drive, perhaps using an external USB/SATA media drive, a USB flash drive, or the BMC KVM console.
2. Retrieve the proper drivers. 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 bootup.

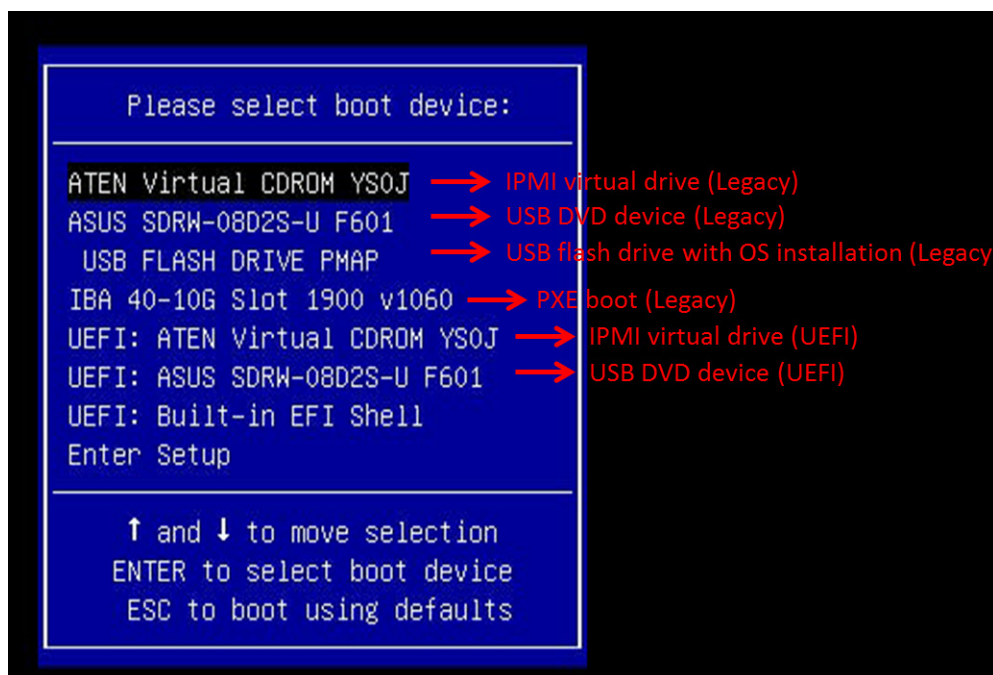


Figure 5-1. Select Boot Device

4. During Windows Setup, continue to the dialog box 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.

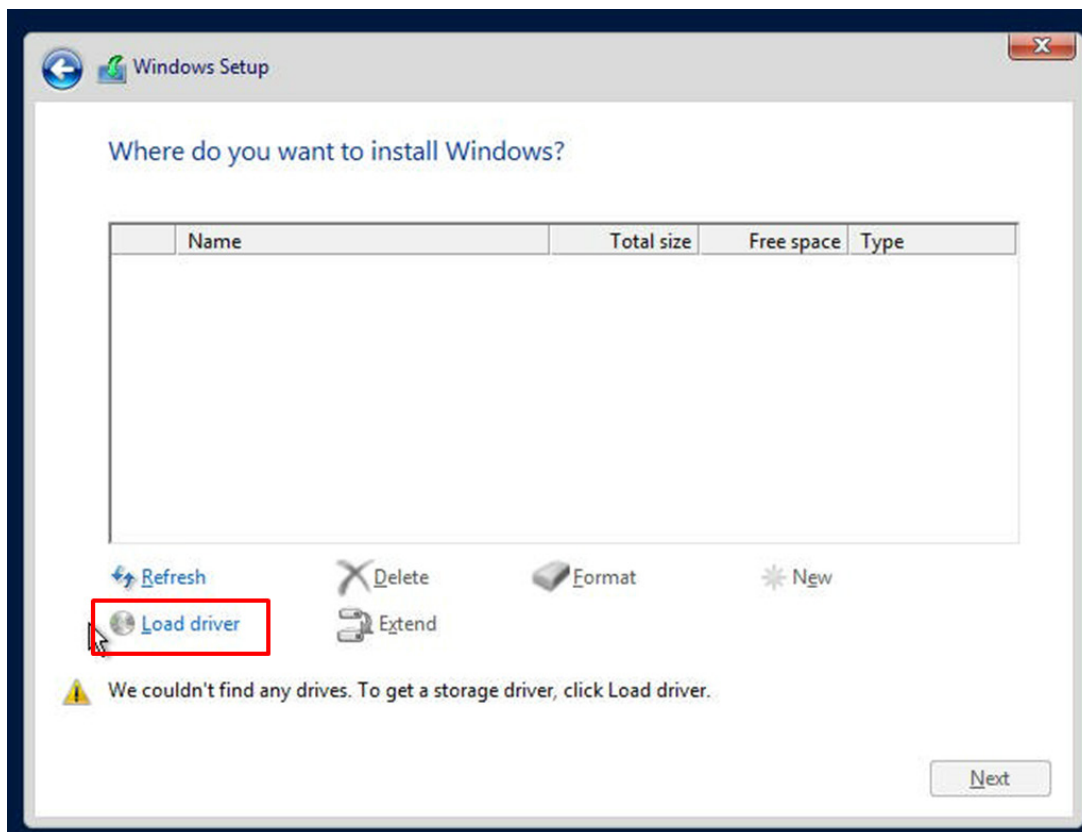


Figure 5-2. Load Driver Link

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

- Choose the SATA/sATA AHCI driver indicated and 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 for system updates.

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 a 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.

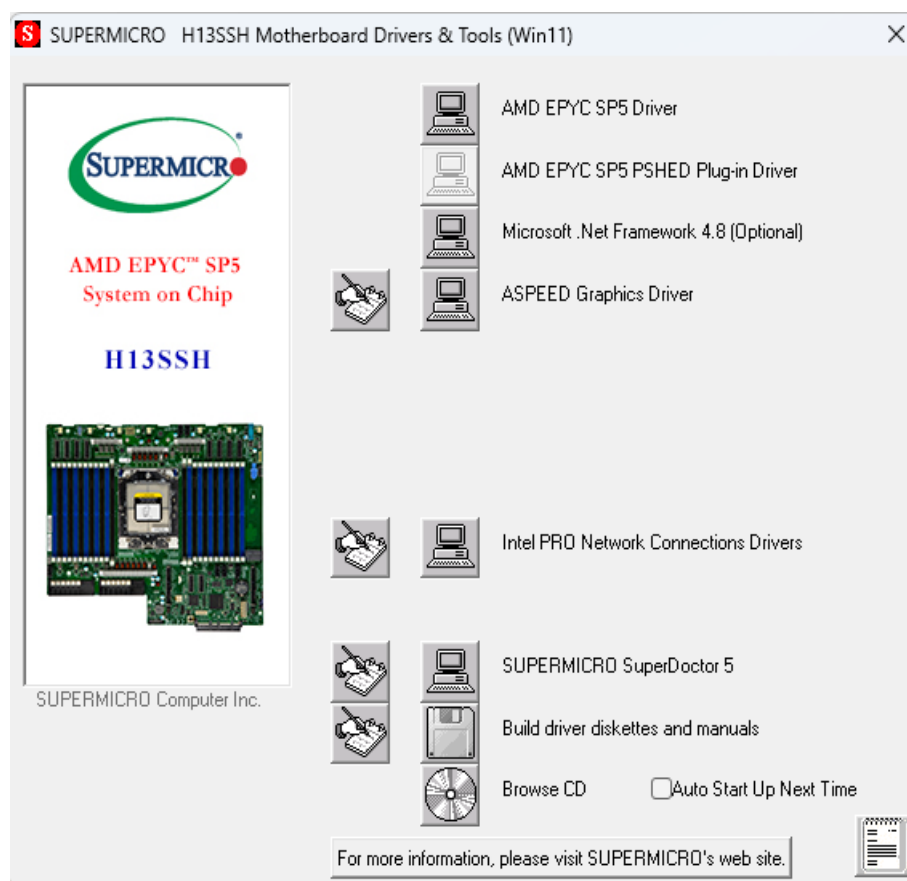


Figure 5-3. Driver and Tool Installation Screen

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

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

[SuperDoctor® Manual and Resources](#)

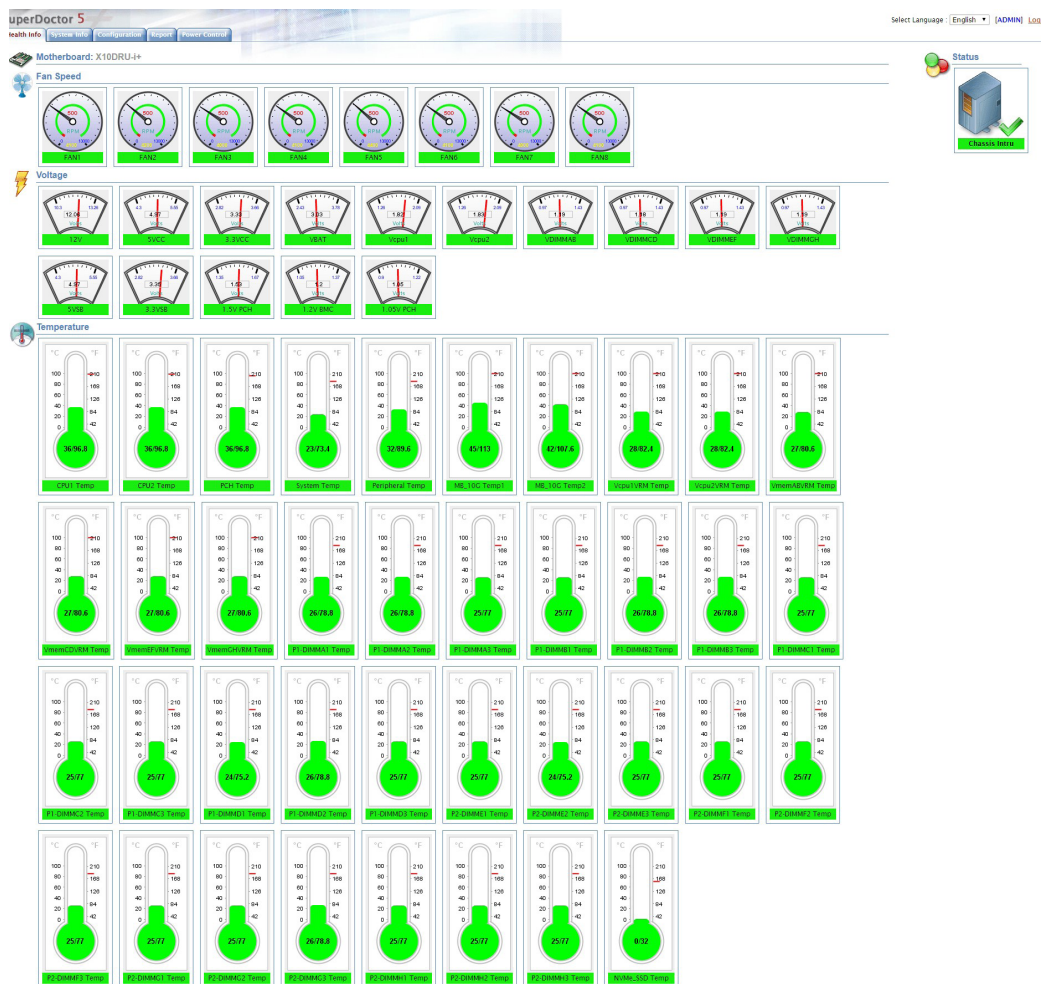


Figure 5-4. SuperDoctor 5 Interface Display Screen (Health Information)

5.4 IPMI

The H13SSH-E supports the Intelligent Platform Management Interface (IPMI). IPMI is used to provide remote access, monitoring and management. There are several BIOS settings that are related to IPMI.

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

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

5.5 BMC

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

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 Label

Chapter 6

Optional Components

This chapter describes alternate configurations and optional system components.

6.1 Cable Management Arm

The system supports a cable management arm (CMA, p/n MCP-290-00168-0N), which keeps the rear cables organized and clear of the rail mechanisms when the system is extended out the front of the rack for maintenance.

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

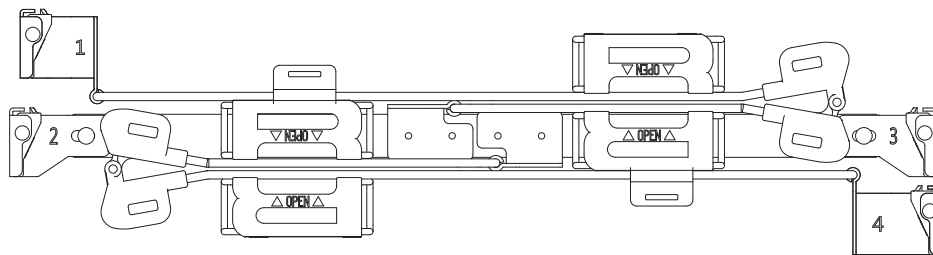


Figure 6-1. Cable Management Arm

Installing the Cable Management Arm

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

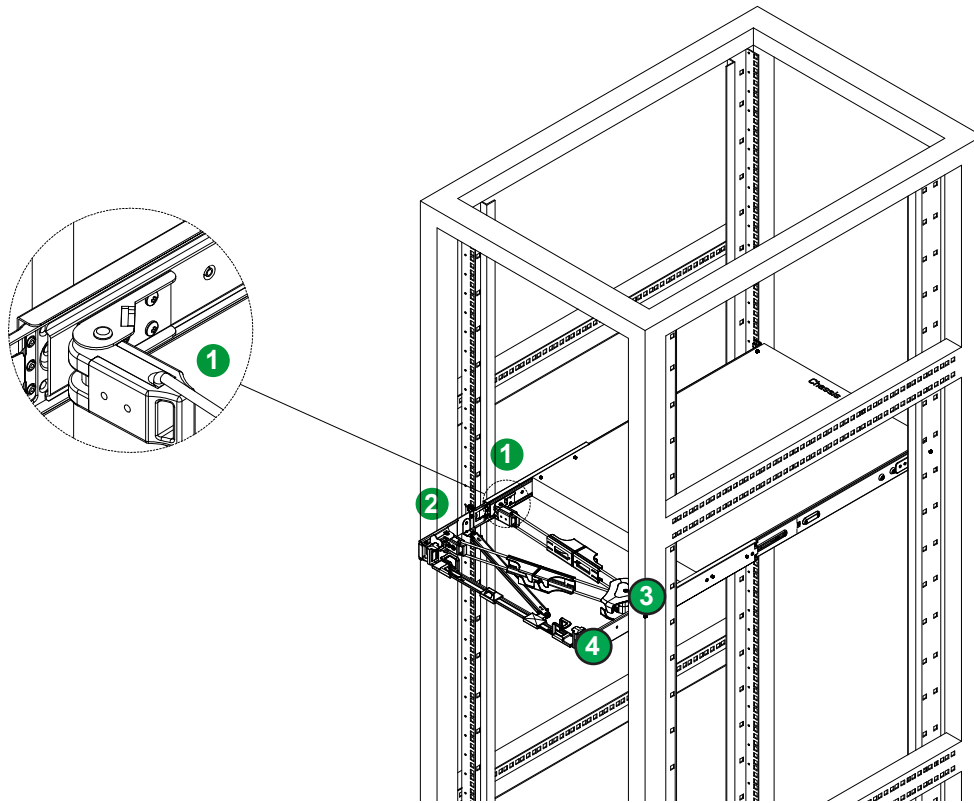


Figure 6-2. Installing the Connectors

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

3. Slide CMA connector #3 forward onto the two posts on the rear of the left middle rail. It snaps into place.
4. For CMA connector #4, align the metal tabs with the slots on the rear of the left outer rail and push it forward. It snaps into place.
5. Route the cables through the holding brackets, leaving enough slack.

Removing the Cable Management Arm

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

6.2 TPM Security Module

SPI capable TPM 2.0 (or 1.2) with Infineon 9670 controller, horizontal form factor

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

Details and installation procedures are at:

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

- AOM-TPM-9670V (TCG 2.0)
- AOM-TPM-9671V (TCG 1.2)

Chapter 7

Troubleshooting and Support

7.1 Information Resources

Website

A great deal of information is available on the Supermicro [website](#).

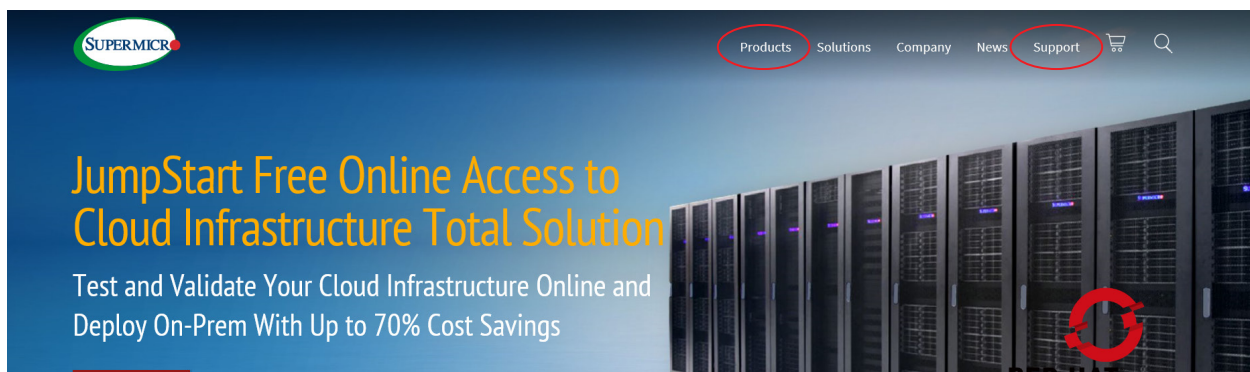


Figure 7-1. Supermicro Website

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

Direct Links for the AS -2115HE-FTNR/TNR System

[AS -2115HE-FTNR](#) and [AS -2115HE-TNR](#) specifications page

[H13SSH-E](#) motherboard page for links to the Quick Reference Guide, User Manual, validated storage drives, etc.

Direct Links for General Support and Information

[Frequently Asked Questions](#)

[TPM User Guide](#)

[BMC User Guide](#)

[SuperDoctor5 Large Deployment Guide](#)

Direct Links (continued)

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

[Security Center](#) for recent security notices

[Supermicro Phone and Addresses](#)

7.2 Baseboard Management Controller (BMC)

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

For general documentation and information on BMC, please visit our website at: https://www.supermicro.com/manuals/other/BMC_IPMI_X13_H13.pdf.

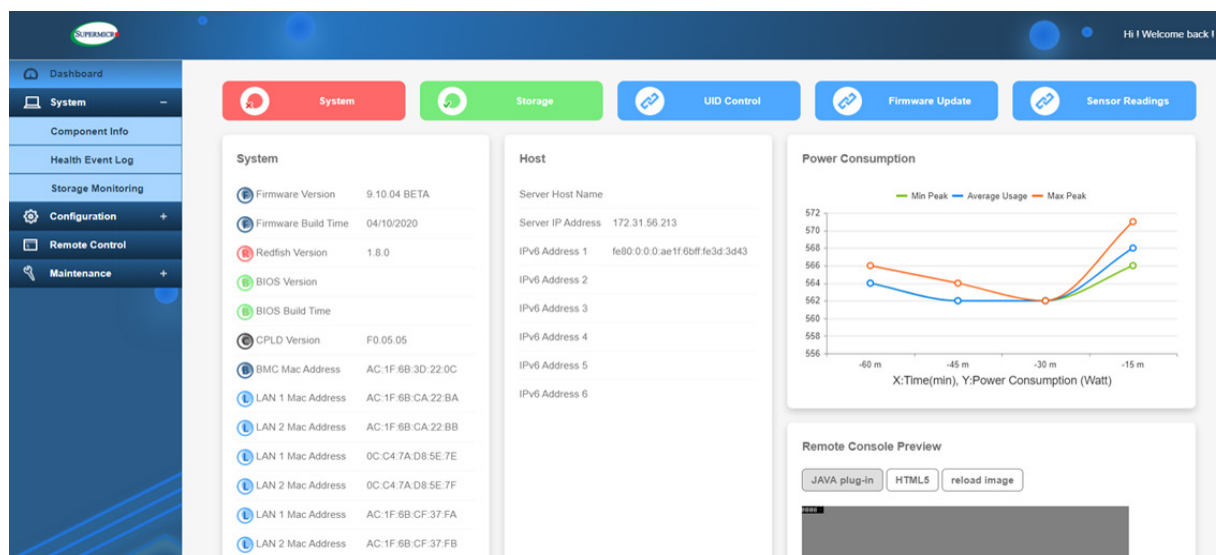


Figure 7-2. BMC Dashboard

7.3 Troubleshooting Procedures

Use the following procedures to troubleshoot your system. If you have followed all of the procedures below and still need assistance, refer to the 'Technical Support Procedures' and/or 'Returning Merchandise for Service' section(s) in this chapter. Always disconnect the AC power cord before adding, changing or installing any non-hot-swappable hardware components.

Before Power On

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

No Power

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

No Video

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

3. Reseat the memory DIMM modules.

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

System Boot Failure

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

1. Clear the CMOS settings by unplugging the power cord and contacting both pads on the CMOS Clear Jumper (JBT1).
2. Remove all components from the motherboard, especially the DIMM modules.
3. Turn on the system with only one DIMM module installed. If the system boots, check for bad DIMM modules or slots by following the Memory Errors Troubleshooting procedure in this Chapter.

Memory Errors

1. Make sure that the DIMM modules are properly and fully installed.
2. Confirm that you are using the correct memory. Also, it is recommended that you use the same memory type and speed for all DIMMs in the system. See [Section 3.5](#) for memory details.
3. Check for bad DIMM modules or slots by swapping modules between slots and noting the results.
4. Check the power supply voltage 115 V/230 V switch.

The System Cannot Retain the Setup Configuration

1. Make sure that you are using a high quality power supply. A poor quality power supply may cause the system to lose the CMOS setup information. Refer to [Section 3.10](#) for details on power supplies.
2. The battery on your motherboard may be old. Check to verify that it still supplies approximately 3 VDC. If it does not, replace it with a new one.
3. If the above steps do not fix the setup configuration problem, contact your vendor for repairs.

If the System Becomes Unstable

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

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

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

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

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

1. Source of installation: Make sure that the devices used for installation are working properly, including boot devices such as USB flash or media drives.
2. Cable connection: Check to make sure that all cables are connected and working properly.
3. Using the minimum configuration for troubleshooting: Remove all unnecessary components (starting with add-on cards first), and use the minimum configuration (but with a CPU and a memory module installed) to identify the trouble areas. Refer to the steps listed in Section A above for proper troubleshooting procedures.
4. Identifying bad components by isolating them: If necessary, remove a component in question from the chassis, and test it in isolation to make sure that it works properly. Replace a bad component with a good one.
5. Check and change one component at a time instead of changing several items at the same time. This will help isolate and identify the problem.
6. To find out if a component is good, swap this component with a new one to see if the system will work properly. If so, then the old component is bad. You can also install the component in question in another system. If the new system works, the component is good and the old system has problems.

7.4 Crash Dump Using 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. The BMC manual is available at https://www.supermicro.com/manuals/other/BMC_IPMI_X13_H13.pdf.

Check BMC Error Log

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

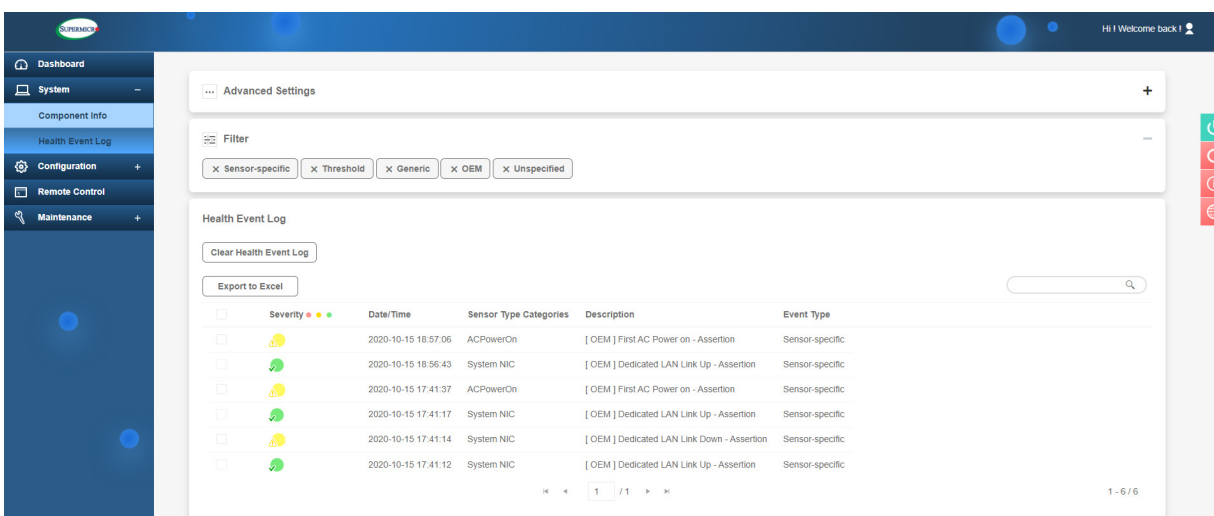


Figure 7-4. BMC Event Log

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

7.5 UEFI BIOS Recovery

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

Overview

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

Recovering the UEFI BIOS Image

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

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

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

Recovering the Main BIOS Block with a USB Device

This feature allows the user to recover the main BIOS image using a USB-attached device without additional utilities used. A USB flash device device can be used for this purpose. However, a USB Hard Disk drive cannot be used for BIOS recovery at this time.

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

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

1. Using a different machine, copy the "Super.ROM" binary image file into the Root "\\" directory of a USB flash or media drive.

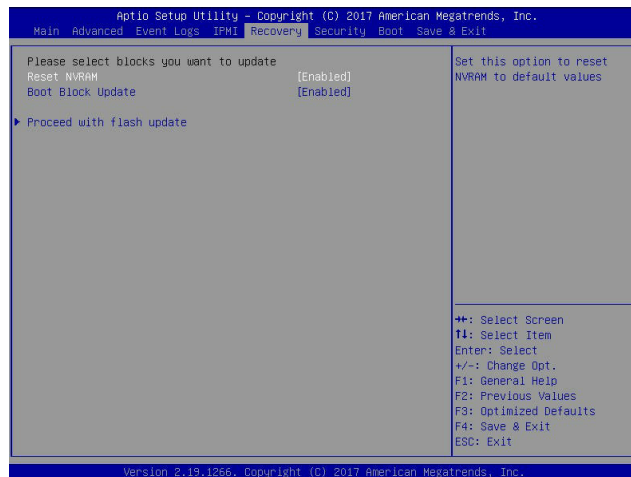
Note 1: If you cannot locate the "Super.ROM" file in your drive disk, visit our website at www.supermicro.com to download the BIOS package. Extract the BIOS binary image into a USB flash device and rename it "Super.ROM" for the BIOS recovery use.

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.



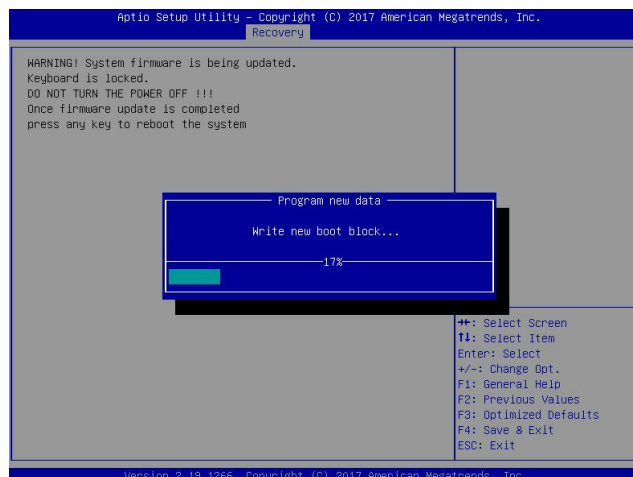
Note: At this point, you may decide if you want to start the BIOS recovery. If you decide to proceed with BIOS recovery, follow the procedures below.



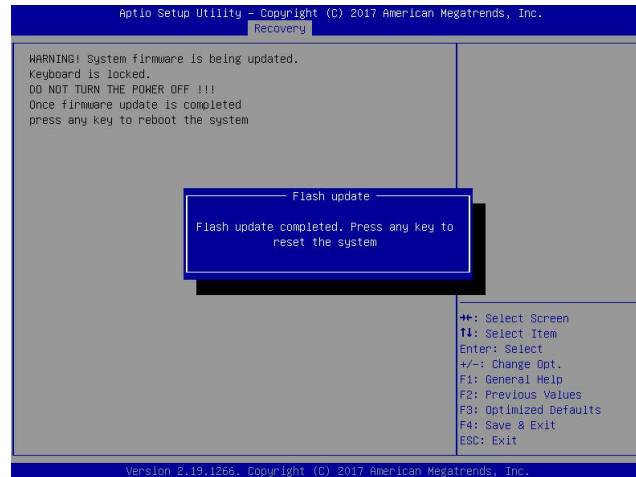
1. When the screen as shown above displays, use the arrow keys to select the item "Proceed with flash update" and press the <Enter> key. You will see the BIOS recovery progress as shown in the screen below.

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

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

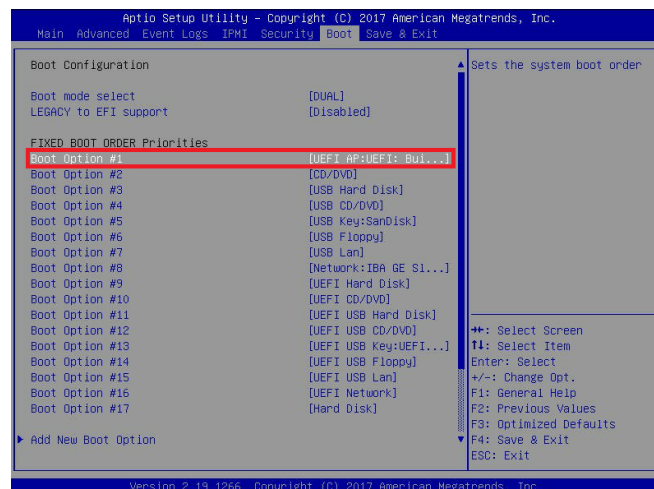


1. Press continuously during system boot to enter the BIOS Setup utility. From the top of the tool bar, select Boot to enter the submenu. From the submenu list, select Boot



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.

2. 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, 0x00050000)
Mapping table
FS0: Alias(s):HD0Part0:BLK1:
PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)/HD(1,MBR,0x37901072,0x800,0x1
0h3592)
BLK0: Alias(s):
PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)
Press F8 to 1 seconds to skip startup.nsh or any other key to continue.
Shell: fs0:
FS0> cd \AFUD05
FS0:\AFUD05> cd SKJFME2_03162017
FS0:\AFUD05\SKJFME2_03162017> flash.nsh X110PU7.314

```

3. 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: 0x18

Done.
*****
* Program BIOS and ME (including FDT) regions...
*****
| AMI Firmware Update Utility v5.09.01.1317 |
| 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.

4. 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 OPRx11
- Successful Update MFSB11
- Successful Update FPR11
- Successful Update MFS, IVB1 and IVB211
- Successful Update FLOS and UTOX11
- ME Entire Image update success !!
WARNING : System must power-off to have the changes take effect!
Moving FS0:\AFUD05\SKJFME2_03162017\Fdtx64.efi -> FS0:\AFUD05\SKJFME2_03162017\F
dt.smc
- [ok]
Moving FS0:\AFUD05\SKJFME2_03162017\afueflx64.efi -> FS0:\AFUD05\SKJFME2_0316201
7\afuefl.smc
- [ok]
*****
* Please ignore this 'Shell: Cannot read from file - Device Error'
* warning message due to it does not impact flashing process.
*****
Deleting "FS0:\afuefl.smc"
Delete successful.
FS0>

```

5. Press <F3> to load the default settings.
6. After loading the default settings, press <F4> to save the settings and exit the BIOS Setup utility.

7.6 CMOS Clear

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

To Clear CMOS

1. First [power down](#) the system completely.
2. [Remove chassis cover](#) 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. Re-install the battery.
7. 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.



JBT1 contact pads

7.7 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.

7.8 BMC

The BMC can be reset using the button on the front control panel or on the chassis rear.

- Reset—Press and hold the button. After six seconds, the LED blinks at 2 Hz. The BMC resets and the reset duration is approximately 250 ms. Then the BMC starts to boot.
- Restore factory default configuration—Hold the button for twelve seconds. The LED blinks at 4 Hz while defaults are configured.
- Firmware update—the UID LED blinks at 10 Hz during a firmware update.

BMC Reset Options	
Event	LED (Green)
Reset	Blinks at 2 Hz
Restore Defaults	Blinks at 4 Hz
Update	Blinks at 10 Hz

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.

Appendix A

Standardized Warning Statements for DC 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 section in its entirety before installing or configuring components in the Supermicro AS -2115HE-FTNR/TNR system.

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

Standard 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 familiar with standard practices for preventing accidents.

تحذير! هذا الرمز التحذيري يعني خطر. إنك في موقف قد يتسبب في إصابة جسدية. قبل العمل على أي أجهزة يجب أن تكون على دراية بالممارسات القياسية للحيلولة دون وقوع حوادث.

警告！此警告符号代表危险，表示正处于可能遭受严重身体伤害的工作环境。在使用任何设备开始工作之前，务必熟悉防止事故发生的标准工作规范。

警告！此警告符號代表危險。您正處於可能身體可能會受損傷的工作環境中。操作任何設備之前，請熟悉標準做法以預防事故發生。

Advarsel! Dette advarselssymbol betyder fare. Du er i en situation, der kan føre til personskader. Før du arbejder på noget udstyr, skal du være bekendt med standardpraksis for at forebygge ulykker.

Waarschuwing! Dit waarschuwingssymbool betekent gevaar. U bevindt zich in een situatie die lichamelijke letsels zou kunnen veroorzaken. Voordat u aan enige apparatuur gaat werken, moet u vertrouwd zijn met standaard praktijken voor het voorkomen van ongevallen.

Varoitus! Tämä varoitussymboli tarkoittaa vaaraa. Olet tilanteessa, joka voi aiheuttaa ruumiinvammoja. Ennen kuin ryhdyt työskentelemään laitteiden parissa, tutustu onnettomuuksien ehkäisemisen vakiintuneisiin käytäntöihin.

Attention! 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, familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents.

Warnung! Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Körperverletzungen führen kann. Bevor Sie an Geräten arbeiten, machen Sie sich mit den üblichen Verfahren zur Unfallverhütung vertraut.

אזהרה! סמל אזהרה זה מסמן סכנה. אתה נמצא במצב שעלול לגרום לפגיעה גופנית. לפני שתתחיל לעבוד על כל ציוד, הכר את הנהלים הסטנדרטיים למניעת תאונות.

चेतावनी! यह चेतावनी चहिन खतरे का प्रतीक है। आप ऐसी स्थिति में हैं जिससे शारीरिक चोट लग सकती है। किसी भी उपकरण पर काम करने से पहले, दुर्घटनाओं को रोकने के लिए मानक प्रथाओं से परिचित हो लें।

警告!この警告記号は危険を意味します。人身事故につながる可能性のある状況にあります。機器で作業を行う前に、標準的な事故防止策に精通してください。

경고! 이 경고 기호는 위험이 있음을 알려 줍니다. 신체 상해를 초래할 수 있는 상황입니다. 장비에서 작업하기 전에 사고 예방을 위한 표준 수칙을 숙지하십시오.

Advarsel! Dette advarselsymbolet betyr fare. Du er i en situasjon som kan forårsake kroppsskade. Før du arbeider på noe utstyr, må du gjøre deg kjent med standardrutiner for å forhindre ulykker.

¡Advertencia! Este símbolo de advertencia significa peligro. Se encuentra en una situación que podría provocar lesiones corporales. Antes de trabajar con cualquier equipo, familiarícese con las prácticas estándar para prevenir accidentes.

Varning! Denna varningssymbol betyder fara. Du befinner dig i en situation som kan orsaka personskada. Innan du arbetar på någon utrustning måste du bekanta dig med standardrutiner för att förhindra olyckor.

Electrical Warning Definition



Warning! This warning symbol indicates high voltage may be encountered when performing a procedure. Before you work on any equipment, be aware of the hazards involved with electrical circuitry.

تحذير! يشير رمز التحذير هذا إلى احتمالية مواجهة جهد كهربائي عالٍ عند إجراء عملية ما. قبل البدء في العمل على أي أجهزة كن على دراية بالمخاطر المرتبطة بالدوائر الكهربائية.

警告！此警告符号表示作业过程中可能会遇到高电压。操作任何设备之前，请务必了解电路的危险。

警告！此警告符號表示執行程序時可能會遇到高電壓。操作任何設備之前，請瞭解與電路相關的危害。

Advarsel! Dette advarselssymbol indikerer, at der kan opstå høj spænding under udførelsen af en procedure. Før du arbejder på noget udstyr, skal du være opmærksom på de farer, der er forbundet med elektriske kredsløb.

Waarschuwing! Dit waarschuwingssymbool geeft aan dat men hoge spanning tegen kan komen bij het uitvoeren van een procedure. Voordat u aan enige apparatuur gaat werken, moet u zich bewust zijn van de gevaren van elektrische schakelsystemen.

Varoitus! Tämä varoitussymboli osoittaa, että toimenpiteen suorittamisen aikana voi esiintyä korkeaa jännitettä. Ennen kuin ryhdyt työskentelemään laitteiden parissa, ota huomioon sähköpiireihin liittyvät vaarat.

Attention! Ce symbole d'avertissement indique un risque d'exposition à une tension élevée lors de l'exécution d'une procédure. Avant de travailler sur un équipement, prenez connaissance des dangers liés aux circuits électriques.

Warnung! Dieses Warnsymbol weist darauf hin, dass bei der Durchführung eines Vorgangs Hochspannung auftreten kann. Bevor Sie an Geräten arbeiten, machen Sie sich mit den Gefahren elektrischer Schaltungen vertraut.

אזהרה! סמל אזהרה זה מציין כי ייתכן שתיתקל במתח גבוה בעת ביצוע הליך. לפני עבודה על ציוד כלשהו, עליך להיות מודע לסכנות הכרוכות במעגלים חשמליים.

चेतावनी! यह चेतावनी चहिन इंगति करता है कि प्रक्रिया को नष्पादति करते समय उच्च वोल्टेज का सामना करना पड़ सकता है। किसी भी उपकरण पर काम करने से पहले, वदियुत सर्कटिरी से जुड़े खतरो के प्रतिसचेत रहे।

警告!この警告記号は、手順を実行する際に高電圧が発生する可能性があることを示しています。機器で作業を行う前に、電気回路に関連する危険に注意してください。

경고! 이 경고 기호는 절차 수행 중 고전압에 노출될 수 있음을 알려 줍니다. 장비에서 작업하기 전에 전기 회로와 관련된 위험 요소를 충분히 인지하십시오.

Advarsel! Dette varselsymbolet indikerer at det kan oppstå høy spenning når en prosedyre utføres. Før du arbeider på utstyr, må du være oppmerksom på farene forbundet med elektriske kretser.

¡Advertencia! Este símbolo de advertencia indica que puede haber alto voltaje al realizar un procedimiento. Antes de trabajar con cualquier equipo, tenga en cuenta los peligros que conllevan los circuitos eléctricos.

Varning! Denna varningssymbol indikerar att hög spänning kan förekomma när en procedur utförs. Innan du arbetar med någon utrustning ska du vara medveten om de faror som är förknippade med elektriska kretsar.

Installation Instructions



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

تحذير! اقرأ تعليمات التثبيت قبل توصيل النظام بمصدر الطاقة.

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。

Advarsel! Læs monteringsvejledningen, før systemet slttes til strømforsyningen.

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

Varoitus! Lue asennusohjeet ennen järjestelmän liittämistä virtalähteeseen.

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

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

אזהרה! יש לקרוא את הוראות ההתקנה לפני חיבור המערכת למקור המתח.

चेतावनी! ससि्टम को बजिली के स्रोत से जोड़ने से पहले स्थापना नरिदेश पढ़े ।

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。

경고! 시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Advarsel! Les installasjonsinstruksjonene før du kobler systemet til strømkilden.

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

Varning! Läs installationsanvisningarna innan du ansluter systemet till strömkällan.

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 VAC, 20 A.

تحذير! يعتمد هذا المنتج على التركيبات الكهربائية في المبنى للحماية من حدوث قصر دائرة (تيار زائد). تأكد من أن تصنيف جهاز الحماية لا يتجاوز: 250 فولت تيار متردد, 20 أمبير.

警告! 此产品由建筑物的供电系统提供短路 (过载) 保护, 并确保额定电压/电流不大于 250 VAC/20 A。

警告! 此产品的短路 (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 VAC、20 A。

Advarsel! Dette produkt forudsætter, at bygningens elinstallation sørger for kortslutningsbeskyttelse (overstrøm). Sørg for, at beskyttelsesanordningen ikke er klassificeret til mere end: 250 VAC, 20 A.

Waarschuwing! Dit product vertrouwt op de installatie van het gebouw voor kortsluitbeveiliging (overstroombeveiliging). Zorg ervoor dat de beveiligingsvoorziening is gespecificeerd voor niet meer dan: 250 VAC, 20 A.

Varoitus! Tämä tuote on riippuvainen rakennuksen asennuksesta oikosulku- (ylivirta-) suojauksen osalta. Varmista, että suojalaitteen nimellisarvot eivät ylitä seuraavia arvoja: 250 VAC, 20 A.

Attention! Ce produit dépend de l'installation du bâtiment pour la protection contre les courts-circuits (surintensité). Assurez-vous que le dispositif de protection n'est pas supérieur à : 250 VAC, 20 A.

Warnung! Dieses Produkt ist auf den Kurzschluss- bzw. Überstromschutz der Gebäudeinstallation angewiesen. Stellen Sie sicher, dass die Schutzvorrichtung für maximal 250 VAC, 20 A ausgelegt ist.

אזהרה! מוצר זה מסתמך על תשתית החשמל של המבנה להגנה מפני קצר חשמלי (זרם יתר). ודא שדירוג התקן ההגנה אינו עולה על: 250 VAC, 20 A.

चेतावनी! यह उत्पाद शॉर्ट-सर्किट (ओवरकरंट) सुरक्षा के लिए भवन की स्थापना पर निर्भर करता है। सुनिश्चित करें कि सुरक्षात्मक उपकरण की रेटिंग नमिनलखिति से अधिक न हो: 250 VAC, 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。保護装置の定格が次の値以下であることを確認ください:250 VAC、20 A。

경고! 이 제품은 단락(과전류) 방지에 대해서 전적으로 건물의 관련 설비에 의존합니다. 보호 장치의 정격이 다음 값을 초과하지 않도록 하십시오: 250 VAC(볼트), 20 A(암페어).

Advarsel! Dette produktet er avhengig av bygningens installasjon for kortslutningsbeskyttelse (overstrømsbeskyttelse). Sørg for at beskyttelsesanordningen ikke er klassifisert som høyere enn: 250 V vekselstrøm, 20 A.

¡Advertencia! Este producto depende de la instalación del edificio para protección contra cortocircuitos (sobrecorriente). Asegúrese de que el dispositivo de protección tenga una clasificación no mayor a: 250 VAC, 20 A.

Varning! Denna produkt är beroende av byggnadens installation för kortslutningsskydd (överströmsskydd). Se till att skyddsanordningen inte är märkt för mer än: 250 VAC, 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-swappable components).

تحذير! يجب فصل النظام عن جميع مصادر الطاقة، وإزالة سلك الطاقة من وحدة/وحدات إمداد الطاقة قبل الدخول إلى الجزء الداخلي من الهيكل لتثبيت أو فك مكونات النظام (باستثناء المكونات القابلة للاستبدال السريع).

警告！在打开机箱并安装或移除内部器件（热插拔器件除外）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（熱插拔元件除外）前，必須將系統完全斷電，並移除電源線。

Advarsel! Systemet skal afbrydes fra alle strømkilder, og strømkablet skal fjernes fra strømforsyningsmodulerne, før der gives adgang til kabinettet for at montere eller fjerne systemkomponenter (undtagen hot-swap-komponenter).

Waarschuwing! Het systeem moet worden losgekoppeld van alle voedingen en het stroomsnoer moet uit de voedingsmodule(s) worden gehaald voorafgaand aan toegang tot de binnenkant van het chassis voor installeren of verwijderen van systeemcomponenten (behalve hot-swap componenten).

Varoitus! Järjestelmä on irrotettava kaikista virtalähteistä ja virtajohto on irrotettava virtalähdemuulista (moduuleista) ennen kotelon sisälle pääsyä järjestelmän komponenttien asentamista tai poistamista varten (lukuun ottamatta hot-swap-komponentteja).

Attention! Le système doit être déconnecté de toutes les sources d'alimentation et le cordon d'alimentation doit être débranché du/des modules d'alimentation avant d'accéder à l'intérieur du châssis pour installer ou retirer des composants du système (à l'exception des composants remplaçables à chaud).

Warnung! Das System muss von allen Stromquellen getrennt und das Netzkabel von den Netzteilmodulen entfernt werden, bevor auf den Innenraum des Chassis zugegriffen wird, um Systemkomponenten zu installieren oder zu entfernen (ausgenommen Hot-Swap-Komponenten).

אזהרה! יש לנתק את המערכת מכל מקורות הכוח ולהסיר את כבל החשמל ממודול/י אספקת החשמל לפני הגישה לחלק הפנימי של המארז לצורך התקנה או הסרה של רכיבי המערכת (למעט רכיבים הניתנים להחלפה חמה).

चेतावनी! सस्टिम के घटकों को इंस्टॉल करने या निकालने (हॉट-स्वैप घटकों को छोड़कर) के लिए चैसिस के आंतरिकि भाग तक पहुँचने से पहले, सस्टिम को बजिली के सभी स्रोतों से डिस्कनेक्ट किया जाना चाहिए और बजिली की आपूर्ति मॉड्यूल से पावर कॉर्ड को निकाल दिया जाना चाहिए।

警告!システムコンポーネント(ホットスワップコンポーネントを除く)の取り付けまたは取り外しを行うために、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。

경고! (핫스왑 구성품을 제외하고) 시스템에 부품들을 장착하거나 제거하기 위해서는 쉐시 내부에 접근하기 전에 반드시 전원 공급장치로부터 연결되어있는 모든 전원과 전기코드를 분리해주어야 합니다.

Advarsel! Systemet må kobles fra alle strømkilder, og strømledningen må fjernes fra strømforsyningsmodulen(e) før man går inn i kabinettet for å installere eller fjerne systemkomponenter (unntatt komponenter som kan byttes ut under drift).

¡Advertencia! El sistema debe estar desconectado de todas las fuentes de energía y el cable de alimentación debe retirarse de los módulos de fuente de alimentación antes de acceder al interior del chasis para instalar o quitar componentes del sistema (excepto los componentes reemplazables en caliente).

Varning! Systemet måste vara fränkopplat från alla strömkällor och strömsladden måste vara borttagen från strömförsörjningsmodulerna innan du öppnar chassit för att installera eller ta bort systemkomponenter (med undantag för hot-swap-komponenter).

Equipment Installation



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

تحذير! لا يُسمح إلا للعاملين المعتمدين وفنيي الخدمة المؤهلين بتركيب هذا الجهاز أو استبداله أو صيانته.

警告！仅限经过授权培训且拥有相关资质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。

Advarsel! Dette udstyr må kun installeres, udskiftes eller serviceres af autoriseret personale og kvalificerede servicemedarbejdere.

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

Varoitus! Vain valtuutetut henkilöt ja pätevät huoltoteknikot saavat asentaa, vaihtaa tai huoltaa tätä laitetta.

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

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

אזהרה! רק אנשי צוות מורשים ואנשי שירות מוסמכים רשאים להתקין, להחליף או לטפל בצידוד זה.

चेतावनी! केवल अधिकृत कर्मचियों और योग्य सेवा व्यक्तियों को ही इस उपकरण को स्थापति करने, बदलने या सेवा देने की अनुमति दी जानी चाहिए।

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

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

Advarsel! Kun autorisert personell og kvalifiserte servicefolk skal ha tillatelse til å installere, bytte ut eller utføre service på dette utstyret.

¡Advertencia! Sólo el personal autorizado y el personal de servicio calificado pueden instalar, reemplazar o dar servicio a este equipo.

Varning! Endast auktoriserad personal och kvalificerade servicetekniker får installera, byta ut eller utföra service på denna utrustning.

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. 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.

تحذير! خطر عدم الاستقرار. قد ينقلب الحامل، مما قد يتسبب في إصابات شخصية خطيرة. قبل تمديد الحامل إلى موضع التركيب اقرأ إرشادات التركيب. لا تضع أي حمولة على الأجهزة المركبة على حوامل منزلقة في وضع التركيب. لا تترك الأجهزة المركبة على حوامل منزلقة في وضع التركيب.

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

警告！稳定性危险。机架可能会翻倒，造成严重的人身伤害。将机架延伸至安装位置前，请先阅读安装说明。请勿在安装位置的滑轨安装设备上放置任何负载。请勿将滑轨安装设备留在安装位置。

Advarsel! Stabilitetsfare. Udstyrsskabet kan vælte, hvilket kan føre til alvorlige personskader. Læs monteringsvejledningen, før udstyrsskabet trækkes ud til monteringsstedet. Anbring ikke nogen belastning på udstyr monteret på skinner, når det er på monteringsstedet. Efterlad ikke udstyr monteret på skinner på monteringsstedet.

Waarschuwing! Gevaar voor instabiliteit. Het rack kan kantelen en ernstig persoonlijk letsel veroorzaken. Lees de installatie-instructies voordat u het rack 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.

Varoitus! Vakausvaara. Teline voi kaatua ja aiheuttaa vakavia henkilövahinkoja. Ennen telineen asettamista asennusasentoon, lue asennusohjeet. Älä aseta mitään kuormitusta liukukiskoon asennettuihin laitteisiin asennusasennossa. Älä jätä liukukiskoon asennettuja laitteita asennusasentoon.

Attention! 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.

Warnung! Gefahr der Instabilität. Das Rack kann umkippen und schwere Verletzungen verursachen. Lesen Sie vor dem Ausziehen des Racks in die Installationsposition die Installationsanweisungen. Belasten Sie in der Installationsposition keine auf Gleitschienen montierten Geräte. Lassen Sie auf Gleitschienen montierte Geräte nicht unbeaufsichtigt in der Installationsposition.

אזהרה! סכנת יציבות. הארון עלול להתהפך ולגרום לפציעה גופנית חמורה. לפני הארכת הארון למצב התקנה, יש לקרוא את הוראות ההתקנה. אין להניח עומס כלשהו על הציוד המותקן על מסילות ההחלקה, יש לקרוא במצב התקנה. אין להשאיר את הציוד המותקן על מסילות ההחלקה במצב התקנה.

चेतावनी! स्थिरता का खतरा। रैक पलट सकता है जिससे गंभीर व्यक्तिगत चोट लग सकती है। रैक को इंस्टालेशन स्थिति तक बढ़ाने से पहले, स्थापना निर्देश पढ़ें। स्थापना स्थिति में स्लाइड-रेल पर लगे उपकरणों पर कोई भार न डालें। स्लाइड-रेल पर लगे उपकरणों को स्थापना स्थिति में न छोड़ें।

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。

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.

Advarsel! Stabilitetsfare. Stativet kan velte og forårsake alvorlig personskade. Les installasjonsanvisningen før du forlenger stativet til installasjonsposisjonen. Ikke belast utstyret som er montert på glideskinnen i installasjonsposisjon. Ikke la utstyret som er montert på glideskinnen stå i installasjonsposisjon.

¡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.

Varning! Stabilitetsrisk. Racket kan välta och orsaka allvarliga personskador. Läs monteringsanvisningarna innan du skjuter ut racket till monteringspositionen. Belasta ej utrustning som är monterad på glidskena i installationsläget. Lämna ej utrustning som är monterad på glidskena i monteringsläget.

Rack-Mounted Equipment Warning



Warning! Rack-mounted equipment should not be used as a shelf or work space.

تحذير! لا ينبغي استخدام المعدات المثبتة على حوامل كرف أو مساحة عمل.

警告！机架式设备不应用作货架或工作空间。

警告！不得將機架式設備當作置物架或工作空間使用。

Advarsel! Udstyr, der er monteret i udstyrsskabe, må ikke bruges som hylder eller arbejdsflader.

Waarschuwing! In rack gemonteerde apparatuur moet niet worden gebruikt als plank of werkruimte.

Varoitus! Telineasennettavia laitteita ei saa käyttää hyllyinä tai työtasoina.

Attention! Un équipement installé en rack ne doit pas être utilisé comme une étagère ou un espace de travail.

Warnung! In Racks montierte Geräte dürfen nicht als Ablagefläche oder Arbeitsfläche verwendet werden.

אזהרה! אין להשתמש בצידוד המותקן במסד (Rack) כמדף או כמשטח עבודה.

चेतावनी! रैक-माउंटेड उपकरण का उपयोग शेल्फ या कार्यक्षेत्र के रूप में नहीं किया जाना चाहिए।

警告!ラックマウント機器を棚や作業スペースとして使用しないでください。

경고! 랙 장착 장비를 선반 또는 작업대처럼 사용하지 마십시오.

Advarsel! Rackmontert utstyr skal ikke brukes som hylle eller arbeidsområde.

¡Advertencia! Los equipos montados en rack no deben utilizarse como estante o espacio de trabajo.

Varning! Rackmonterad utrustning ska inte användas som hylla eller arbetsyta.

Restricted Access Location



Warning! This unit is intended for installation in restricted access areas. A restricted access area can be accessed only by an instructed person or a skilled person.

تحذير! هذه الوحدة مخصصة للتركيب في المناطق الممنوع الدخول إليها. يقتصر الدخول إلى منطقة منع الدخول إلا للأشخاص المدربين أو المهرة.

警告！此装置应安装在限制进出的场所。此类场所仅限经过相关训练或技术熟练的人员进出。

警告！此部件應安裝在限制進出區域。只有受過指導的人員或專業人員才可進出限制進出區域。

Advarsel! Denne enhed er beregnet til montering i områder med begrænset adgang. Et område med begrænset adgang må kun tilgås af en instrueret person eller en fagkyndig person.

Waarschuwing! Deze eenheid is bedoeld voor installatie in gebieden met beperkte toegang. Er kan alleen toegang worden verkregen tot een gebied met beperkte toegang door een geïnstrueerde persoon of een ervaren persoon.

Varoitus! Tämä laite on tarkoitettu asennettavaksi rajoitetun pääsyn alueille. Rajoitetun pääsyn alueelle pääsee vain koulutettu tai ammattitaitoinen henkilö.

Attention! Cet appareil est destiné à être installé dans des zones à accès restreint. Une zone à accès restreint n'est accessible qu'à une personne formée ou qualifiée.

Warnung! Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Ein Bereich mit beschränktem Zutritt darf nur von unterwiesenen oder fachkundigen Personen betreten werden.

אזהרה! יחידה זו מיועדת להתקנה באזורים עם גישה מוגבלת. ניתן לגשת לאזור עם גישה מוגבלת רק על ידי אדם שהוכשר לכך או אדם מיומן.

चेतावनी! यह इकाई प्रतबंधित पहुँच वाले क्षेत्रों में स्थापना के लिए ही है। प्रतबंधित पहुँच वाले क्षेत्र में केवल एक निर्देशित व्यक्ति या कुशल व्यक्तिद्वारा ही पहुँचा जा सकता है।

警告!このユニットはアクセス制限区域に設置することを想定しています。アクセス制限区域は、トレーニングを受けた人または熟練者だけが出入り可能です。

경고! 본 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 교육을 받은 사람 또는 숙련된 사람만 접근 제한 구역에 들어갈 수 있습니다.

Advarsel! Denne enheten er beregnet for installasjon i områder med begrenset tilgang. Et område med begrenset tilgang kan kun nås av en person som har fått instruksjoner eller en fagperson.

¡Advertencia! Esta unidad está diseñada para su instalación en áreas de acceso restringido. A un área de acceso restringido solo puede acceder una persona instruida o una persona capacitada.

Varning! Denna enhet är avsedd för installation i områden med begränsad åtkomst. Ett område med begränsad åtkomst får endast beträdas av en instruerad eller kvalificerad person.

Battery Handling



Warning! 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.

تحذير! يوجد خطر حدوث انفجار إذا تم استبدال البطارية بنوع غير صحيح. استبدل البطارية بنفس النوع أو نوع مكافئ موصى به من قبل الشركة المصنعة فقط. يجب التخلص من البطاريات المستخدمة وفقاً لإرشادات الجهة المصنعة.

警告！如果更换的电池类型不正确，有爆炸危险。更换电池时，请使用制造商推荐的相同或同等型号的电池。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，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。

Advarsel! Der er risiko for eksplosion, hvis batteriet skiftes med et batteri af den forkerte type. Batteriet må kun skiftes med et batteri af samme eller tilsvarende type, der anbefales af producenten. Opbrugte batterier skal bortskaffes i henhold til vejledningerne fra producenten.

Waarschuwing! Er bestaat een explosiegevaar als de batterij wordt vervangen door een onjuist type. Vervang de batterij alleen door hetzelfde type of een soortgelijk type aanbevolen door de fabrikant. Verwijder gebruikte batterijen overeenkomstig de instructies van de fabrikant.

Varoitus! Väärän tyyppisen akun käyttö voi aiheuttaa räjähdysvaaran. Vaihda akku vain valmistajan suosittelemaan samaan tai vastaavaan tyyppiseen akkuun. Hävitä käytetyt paristot valmistajan ohjeiden mukaisesti.

Attention! Il y a un risque d'explosion si la batterie est remplacée par une d'un type incorrect. Remplacez la batterie uniquement par une d'un type identique ou équivalent recommandé par le fabricant. Éliminez les batteries usagées conformément aux instructions du fabricant.

Warnung! Es besteht Explosionsgefahr, wenn die Batterie durch einen falschen Typ ersetzt wird. Ersetzen Sie die Batterie ausschließlich durch denselben oder einen vom Hersteller empfohlenen gleichwertigen Typ. Entsorgen Sie gebrauchte Batterien gemäß den Anweisungen des Herstellers.

אזהרה! קיימת סכנת פיצוץ אם הסוללה תוחלף בסוללה מסוג שגוי. החלף את הסוללה רק בסוללה מאותו סוג או בסוללה מקבילה המומלצת על ידי היצרן. השלך סוללות משומשות בהתאם להוראות היצרן.

चेतावनी! यदि बैटरी को गलत प्रकार से बदला जाता है तो वस्फोट का जोखिम है। बैटरी को केवल निर्माता द्वारा अनुशंसित समान या समकक्ष प्रकार से ही बदलें। इस्तेमाल की गई बैटरियों का नपिटान निर्माता के निर्देशों के अनुसार करें।

警告! 電池を間違ったタイプに交換すると爆発する危険があります。交換する電池はメーカーが推奨するタイプ、または同等のものを使用してください。使用済み電池は、メーカーの指示に従って廃棄してください。

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.

Advarsel! Det er fare for eksplosjon hvis batteriet byttes ut med et av feil type. Batterier skal kun byttes ut med et av lik eller tilsvarende type, som anbefalt av produsenten. Kast brukte batterier i henhold til produsentens instruksjoner.

¡Advertencia! Existe riesgo de explosión si se sustituye la batería por una de tipo incorrecto. Reemplace la batería únicamente con el mismo tipo o uno equivalente recomendado por el fabricante. Deseche las baterías usadas de acuerdo con las instrucciones del fabricante.

Varning! Det finns risk för explosion om batteriet byts ut mot en felaktig typ. Byt endast ut batteriet mot ett batteri av samma eller likvärdig typ som rekommenderas av tillverkaren. Kassera förbrukade batterier i enlighet med tillverkarens anvisningar.

Redundant Power Supplies



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

تحذير! قد تحتوي هذه الوحدة على أكثر من وصلة لإمداد الطاقة. يجب فصل جميع التوصيلات لفصل الطاقة عن الوحدة.

警告! 本设备可能有多个电源连接。必须切断所有连接，才能使设备断电。

警告! 此裝置連接的電源可能不只一個。必須切斷所有電源才能停止對該裝置的供電。

Advarsel! Denne enhed kan have mere end én strømforsyningsforbindelse. Alle forbindelser skal fjernes for at deaktivere spændingen.

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

Varoitus! Laitteessa voi olla useampi kuin yksi virtalähteen liitäntä. Laitteen virta on katkaistava irrottamalla kaikki liitännät.

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.

Warnung! Diese Einheit kann über mehr als eine Stromversorgungsanschluss verfügen. Um sicherzustellen, dass die Einheit spannungsfrei ist, müssen alle Verbindungen entfernt werden.

אזהרה! יחידה זו עשויה לכלול יותר מחיבור אחד לספק כוח. יש לנתק את כל החיבורים כדי להפסיק את הזנת המתח ליחידה.

चेतावनी! इस इकाई में एक से अधिक पावर सप्लाय कनेक्शन हो सकते हैं। इकाई को ऊर्जा-मुक्त (डी-एनर्जाइज) करने के लिए सभी कनेक्शन हटा दिए जाने चाहिए।

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。

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

Advarsel! Denne enheten kan ha mer enn én strømforsyningstilkobling. Alle tilkoblinger må fjernes for å gjøre enheten strømløs.

¡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.

Varning! Denna enhet kan ha mer än en strömförsörjningsanslutning. Alla anslutningar måste tas bort för att enheten ska bli strömlös.

Backplane Voltage



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

تحذير! يوجد جهد أو طاقة خطيرة على اللوحة الخلفية أثناء تشغيل النظام. توخ الحذر عند إجراء الصيانة. اقرأ التعليمات قبل إجراء الصيانة.

警告! 当系统运行时, 背板上存在危险电压或能量, 进行维修时务必小心。维修前请阅读使用说明。

警告! 系統運作時, 背板上存在危險電壓或能量。維修時請小心。維修前請閱讀說明書。

Advarsel! Når systemet er i drift, er farlig spænding eller energi til stede på bagpladen. Vær forsigtig ved servicering. Læs instruktionerne før service.

Waarschuwing! Gevaarlijke spanning of energie is aanwezig op de achterzijde wanneer het systeem in bedrijf is. Wees voorzichtig bij service. Lees de instructies voorafgaand aan service.

Varoitus! Järjestelmän ollessa käynnissä takapaneelissa on vaarallista jännitettä tai energiaa. Ole varovainen huoltotöiden aikana. Lue ohjeet ennen huoltoa.

Attention! Une tension ou de l'énergie dangereuse est présente sur le panneau arrière lorsque le système est en fonctionnement. Soyez prudent lors de l'entretien. Lisez les instructions avant d'effectuer un entretien.

Warnung! Bei eingeschaltetem System liegt an der Backplane gefährliche Spannung oder Energie an. Seien Sie bei Wartungsarbeiten vorsichtig. Lesen Sie vor der Wartung die Anweisungen.

אזהרה! מתח או אנרגיה מסוכנים קיימים בלוח האחורי כאשר המערכת פועלת. יש לנקוט בזהירות בעת ביצוע תחזוקה. קרא את ההוראות לפני ביצוע תחזוקה.

चेतावनी! जब सस्टिम चालू होता है, तो बैकप्लेन पर खतरनाक वोल्टेज या ऊर्जा मौजूद होती है। सर्वसिगि करते समय सावधानी बरते। सर्वसिगि से पहले नर्दिश पढ़े।

警告!システムの稼働中は、危険な電圧または電流がバックプレーン上にかかっています。修理を行う際には注意してください。修理を行う前に取扱説明書をお読みください。

경고! 시스템이 동작 중일 때 후면판(Backplane)에는 위험한 전압이나 에너지가 발생합니다. 서비스 작업 시 주의하십시오. 서비스 작업 전에 지침을 읽으십시오.

Advarsel! Det er farlig spenning eller energi på bakplaten når systemet er i drift. Vær forsiktig ved service. Les instruksjonene før service.

¡Advertencia! Hay voltaje o energía peligrosos presentes en la placa posterior cuando el sistema está en funcionamiento. Tenga cuidado al realizar el mantenimiento. Lea las instrucciones antes de realizar el mantenimiento.

Varning! Farlig spänning eller energi finns på backplane när systemet är i drift. Var försiktig vid service. Läs instruktionerna före service.

Comply with Local and National Electrical Codes



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

تحذير! يجب أن يتوافق تركيب الأجهزة مع لوائح الكهرباء المحلية والوطنية.

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。

Advarsel! Alle lokale og nationale el-regler skal overholdes under montering af udstyret.

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

Varoitus! Laitteiden asennus on suoritettava paikallisten ja kansallisten sähkömääräysten mukaisesti.

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

Warnung! Die Installation des Geräts muss den lokalen und nationalen elektrotechnischen Vorschriften entsprechen.

אזהרה! התקנת הציוד חייבת להתבצע בהתאם לתקני החשמל המקומיים והארציים.

चेतावनी! उपकरण की इंस्टालेशन स्थानीय और राष्ट्रीय वदियुत कोड के अनुरूप होनी चाहिए।

警告!機器の取り付けはその地域および国の電気規定に準拠する必要があります。

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

Advarsel! Installasjon av utstyret må være i samsvar med lokale og nasjonale elektriske forskrifter.

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

Varning! Installation av utrustningen måste följa lokala och nationella elektriska föreskrifter.

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.



تحذير! تجنب خطر الأجزاء المتحركة. ابتعد عن شفرات المروحة المتحركة. قد تستمر المراوح في الدوران بعد فك مجموعة المراوح من الهيكل. أبقِ أصابعك ومفكات البراغي والأغراض الأخرى بعيدة عن الفتحات الموجودة في مبيت مروحة التبريد.

警告! 危险的活动零部件。请务必与转动的风扇叶片保持距离。从机箱移除风扇装置时，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外壳开口。

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。

Advarsel! Farlige bevægelige dele. Hold dig væk fra ventilatorblade i bevægelse. Ventilatorerne kan stadig køre, når du tager ventilatorsamlingen af kabinettet. Hold fingre, skruetrækkere og andre genstande væk fra åbningerne i ventilatorkabinettet.

Waarschuwing! Gevaarlijke 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.

Varoitus! Vaaralliset liikkuvat osat. Pysy kaukana liikkuvista tuulettimen siivistä. Tuulettimet saattavat edelleen pyöriä, kun irrotat tuulettimen kokoonpanon kotelosta. Pidä sormet, ruuvimeisselit ja muut esineet poissa tuulettimen kotelon aukkojen läheltä.

Attention! Pièces mobiles dangereuses. Se tenir à 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.

Warnung! Gefährliche bewegliche Teile. Halten Sie Abstand von rotierenden Lüfterblättern. Die Lüfter können sich noch drehen, wenn Sie die Lüfterbaugruppe aus dem Chassis entfernen. Halten Sie Finger, Schraubendreher und andere Gegenstände von den Öffnungen des Lüftergehäuses fern.

אזהרה! חלקים נעים מסוכנים. יש להתרחק מלהבי מאוורר נעים. המאווררים עשויים להמשיך להסתובב בעת הסרת מכלול המאוורר מהמארז. יש להרחיק אצבעות, מברגים וחפצים אחרים מהפתחים שבבית מכלול המאוורר.

चेतावनी! खतरनाक चलते हुए भाग। चलते हुए पंखे के ब्लेड से दूर रहे। जब आप चैसिस से पंखे की असेंबली निकालते हैं, तब भी पंखे घूम रहे हो सकते हैं। उंगलियों, स्क्रूड्राइवर और अन्य वस्तुओं को पंखे की असेंबली के हाउसिंग के छद्दों से दूर रखें।

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。シャーシからファンアセンブリを取り外す際、ファンがまだ回転している可能性があります。ファンアセンブリの開口部に、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。

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.

Advarsel! Farlige bevegelige deler. Hold deg unna vifteblader i fart. Viftene kan fortsatt gå rundt når du fjerner vifteenheten fra kabinettet. Hold fingre, skrutrekkere og andre gjenstander unna åpningene i viftehuset.

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

Varning! Farliga rörliga delar. Håll dig borta från rörliga fläktblad. Fläktarna kan fortfarande snurra när du tar bort fläktenheten från chassit. Håll fingrar, skruvmejslar och andra föremål borta från öppningarna i fläktenhetens hölje.

Connection to Earth



Warning! Equipment shall be connected to an Earth mains socket-outlet.

تحذير! يجب توصيل الأجهزة بمقبس كهربائي أرضي.

警告！设备应连接到接地电源插座。

警告！應將設備連接至接地電源插座。

Advarsel! Dette udstyr skal sluttes til en jordforbundet stikkontakt.

Waarschuwing! De apparatuur moet worden aangesloten op een geaard netstopcontact.

Varoitus! Laitteet on kytkettävä maadoitettuun pistorasiaan.

Attention! L'équipement doit être connecté à une prise de courant avec mise à la terre.

Warnung! Das Gerät muss an eine geerdete Netzsteckdose angeschlossen werden.

אזהרה! יש לחבר את הציוד לשקע חשמל עם הארקה.

चेतावनी! उपकरण को एक अर्थ मेन्स सॉकेट-आउटलेट से जोड़ा जाना चाहिए।

警告!機器は、接地主電源コンセントに接続するものとします。

경고! 장비는 접지된 전원 콘센트에 연결해야 합니다.

Advarsel! Utstyret skal kobles til en jordet stikkontakt.

¡Advertencia! El equipo deberá conectarse a una toma de corriente con conexión a tierra.

Varning! Utrustningen ska vara ansluten till ett jordat eluttag.

DC Power Supply



Warning! When stranded wiring is required, use approved wiring terminations, such as closed-loop or spade-type with upturned lugs. These terminations should be the appropriate size for the wires and should securely clamp both the insulation and the conductor.

تحذير! عند الحاجة إلى توصيل أسلاك مجدولة استخدم نهايات معتمدة، مثل الحلقة المغلقة أو نوع شوكي مع أطراف مقلوبة لأعلى. ينبغي أن تكون هذه النهايات بحجم مناسب للأسلاك، ويجب أن تثبت العازل والموصل بإحكام.

警告! 需要使用绞线连接时，请使用经认可的连接端子，如闭环端子或具有接线柱的铲形端子。这些端子的大小应适合线缆，并且可以将绝缘部分和导体夹紧固定。

警告! 需要多股佈線時，請使用經核准的佈線終端，例如閉環或鑷型接線片。這些終端的大小應適合線路，並且應牢固夾緊絕緣體和導體。

Advarsel! Hvis der skal bruges en flertrådet leder, skal der anvendes godkendte kabelsko, såsom ringkabelsko eller gaffelkabelsko med opadbøjede tunger. Disse kabelsko skal have korrekt størrelse til lederne og skal fastholde både isoleringen og lederen sikkert.

Waarschuwing! Wanneer gevlochten bedrading vereist is, moet u goedgekeurde bedradingsafsluitingen gebruiken, zoals gesloten lus of plat met omgekeerde kabelschoenen. Deze afsluitingen moeten de juiste maat hebben voor de draden en moeten zowel de isolatie als de geleider stevig klemmen.

Varoitus! Kun tarvitaan säikeinen johdotus, käytä hyväksytyjä johdotuksen päätteitä, kuten suljettu silmukka tai haarukkakärkinen, jossa on ylöspäin kääntyneet korvakkeet. Näiden liittimien tulee olla sopivan kokoisia johtimille ja niiden tulee kiinnittää tiukasti sekä eriste että johdin.

Attention! Lorsqu'un câblage toronné est nécessaire, utilisez des terminaisons de câblage approuvées, telles que à boucle fermée ou de type fourche avec des cosses retournées. Ces terminaisons doivent être de taille appropriée pour les fils et doivent serrer fermement les fils d'isolation et le conducteur.

Warnung! Wenn Litzenverdrahtung erforderlich ist, verwenden Sie zugelassene Verdrahtungsabschlüsse, z. B. geschlossene Ringkabelschuhe oder Gabelkabelschuhe mit nach oben gerichteten Laschen. Diese Abschlüsse müssen die geeignete Größe für die Leitungen haben und sowohl Isolierung als auch Leiter sicher klemmen.

אזהרה! כאשר נדרש חיווט רב-גידי, השתמש בסיומות חיווט מאושרות, כגון לולאה סגורה או מסוג כף (Spade) עם זיזים מכופפים כלפי מעלה. סיומות אלה צריכות להיות בגודל המתאים לחוטים, ועליהן להדק היטב את הבידוד ואת המוליך.

चेतावनी! जब स्ट्रैडेड वायरिंग की आवश्यकता हो, तो अनुमोदित वायरिंग टर्मिनेशन का उपयोग करें, जैसे कि क्लोज्ड-लूप या ऊपर की ओर मुड़े हुए लग्स वाले स्पेड-टाइप। ये टर्मिनेशन तारों के लिए उपयुक्त आकार के होने चाहिए और इंसुलेशन और कंडक्टर दोनों को सुरक्षित रूप से जकड़ने चाहिए।

警告!より線配線が必要な場合は、承認済みの配線終端(上向きの端子を備えたクローズループ型{2}またはU字型など)を使用してください。ワイヤーに適したサイズで、絶縁体および導体が両方ともしっかりとクランプされている終端でなければなりません。

경고! 꼬인 배선이 요구될 때에는 폐회로나 돌출부가 위로 튀어 나온 Spade 형태의 승인된 배선 터미네이션들을 사용하세요. 이 터미네이션들은 배선들을 위해 적절한 크기여야 하고, 절연체와 도체 모두를 고정시킬 수 있어야 합니다.

Advarsel! Når man må bruke flertrådet kabling, brukes godkjente ledningstermineringer, for eksempel lukket sløyfe eller spadetype med oppoverbøyde kabelsko. Disse termineringene skal ha riktig størrelse for ledningene og skal klemme både isolasjonen og ledaren sikkert.

¡Advertencia! Cuando se requiere cableado trenzado, utilice terminaciones de cableado aprobadas, como bucle cerrado o tipo horquilla con terminales hacia arriba. Estas terminaciones deben tener el tamaño adecuado para los cables y deben sujetar de forma segura tanto el aislamiento como el conductor.

Varning! När fintrådiga kablar krävs ska godkända kabelavslutningar användas, t.ex. sluten slinga eller gaffelkabelsko med uppvikta flikar. Dessa avslutningar ska vara av lämplig storlek för ledarna och ska klämma fast både isoleringen och ledaren ordentligt.

Hazardous Voltage or Energy Present on DC Power Terminals



Warning! Hazardous voltage or energy may be present on DC power terminals. Always replace cover when terminals are not in service. Be sure uninsulated conductors are not accessible when cover is in place.

تحذير! قد توجد فولتية أو طاقة خطيرة على أطراف توصيل التيار المستمر. احرص دائماً على إعادة الغطاء عندما لا تكون الأجهزة الطرفية قيد الاستخدام. تأكد من عدم إمكانية الوصول إلى الموصلات غير المعزولة عند وضع الغطاء.

警告！直流电源端子可能会产生危险电压或能量。端子不使用时，务必合上防护盖。合上后，请确保导体未绝缘部分不会被接触到。

警告！直流電源終端可能產生危險的電壓或能量。終端不使用時，請務必蓋上機蓋。當蓋上機蓋，確認不絕緣導體無法使用。

Advarsel! Der kan være farlig spænding eller energi på jævnstrømsterminaler (DC). Sæt altid dækslet på igen, når terminalerne ikke er i brug. Sørg for, at uisolerede ledere ikke kan tilgås, når dækslet er monteret.

Waarschuwing! Gevaarlijke spanning of energie kan aanwezig zijn op DC-voedingsklemmen. Plaats de kap altijd terug wanneer klemmen niet in bedrijf zijn. Zorg ervoor dat niet-geïsoleerde geleiders niet toegankelijk zijn wanneer de kap is geplaatst.

Varoitus! DC-virtaliittimissä voi olla vaarallista jännitettä tai energiaa. Aseta kansi aina paikalleen, kun liittimet eivät ole käytössä. Varmista, että eristämättömät johtimet eivät ole käytettävissä, kun kansi on paikoillaan.

Attention! Une tension ou une énergie dangereuse peut être présente sur les bornes d'alimentation CC. Remettez toujours le couvercle en place lorsque les bornes ne sont pas utilisées. Assurez-vous que les conducteurs non isolés ne sont pas accessibles lorsque le couvercle est installé.

Warnung! An Gleichstrom-Netzanschlussklemmen kann gefährliche Spannung oder Energie anliegen. Bringen Sie die Abdeckung immer an, wenn die Klemmen nicht in Betrieb sind. Stellen Sie sicher, dass bei angebrachter Abdeckung keine nicht isolierten, stromführenden Leiter zugänglich sind.

אזהרה! מתח או אנרגיה מסוכנים עלולים להיות נוכחים בהדקי מתח DC. יש להחזיר תמיד את הכיסוי למקומו כאשר ההדקים אינם בשימוש. יש לוודא שמוליכים לא מבודדים אינם נגישים כאשר הכיסוי מונח במקומו.

चेतावनी! DC पावर टर्मिनलों पर खतरनाक वोल्टेज या ऊर्जा मौजूद हो सकती है। जब टर्मिनल उपयोग में न हों तो हमेशा कवर को वापस लगा दें। सुनिश्चिती करें कविवर लगे होने पर गैर-इंसुलेटेड कंडक्टरो तक पहुँच न हो।

警告!DC電源端子には危険な電圧やエネルギーが発生している可能性があります。端子を使用しないときは、必ずカバーを元に戻してください。カバーを取り付けた状態では、絶縁されていない導体に手が届かないことを確認してください。

경고! DC 전원 단자들에 위험한 전압이나 에너지가 발생할 수 있습니다. 단말기들을 운영하지 않을 때에는 덮개로 다시 덮어 놓아 주십시오. 덮개가 제자리에 있어야만 절연되지 않은 도체들의 접근을 막을 수 있습니다.

Advarsel! Det kan være farlig spenning eller energi på likestrømsterminalene. Sett alltid på dekselet når terminalene ikke er i bruk. Sørg for at uisolerte ledere ikke er tilgjengelige når dekselet er på plass.

¡Advertencia! Puede haber voltaje o energía peligrosos presentes en los terminales de alimentación de CC. Vuelva a colocar siempre la cubierta cuando los terminales no estén en mantenimiento. Asegúrese de que los conductores no aislados no sean accesibles cuando la cubierta esté en su lugar.

Varning! Farlig spänning eller energi kan finnas på likströmsterminalerna. Sätt alltid tillbaka kåpan när terminalerna inte är i bruk. Se till att oisolerade ledare inte är åtkomliga när kåpan är på plats.

Product Disposal



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

تحذير! يجب التخلص النهائي من هذا المنتج وفقاً لجميع القوانين واللوائح الوطنية.

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。

Advarsel! Dette produkt skal bortskaffes i henhold til alle nationale love og regler.

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

Varoitus! Tämän tuotteen lopullinen hävittäminen on suoritettava kaikkien kansallisten lakien ja määräysten mukaisesti.

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.

Warnung! Die endgültige Entsorgung dieses Produkts muss gemäß allen nationalen Gesetzen und Vorschriften erfolgen.

אזהרה! סילוק סופי של מוצר זה חייב להתבצע בהתאם לכל החוקים והתקנות הלאומיים.

चेतावनी! इस उत्पाद का अंतिम निपटान सभी राष्ट्रीय कानूनों और नयिमों के अनुसार किया जाना चाहिए।

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。

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

Advarsel! Når produktet til slutt skal kasseres, må det håndteres i henhold til alle nasjonale lover og forskrifter.

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

Varning! Slutgiltigt bortskaffande av denna produkt ska ske i enlighet med alla nationella lagar och förordningar.

Appendix B

System Specifications

Processors

Single AMD EPYC™ 9004/9005 (motherboard revision 2.0 or later is required) Series processors in Socket SP5

Chipset

System on Chip

BIOS

- 256Mb SPI AMI BIOS® SM Flash UEFI BIOS
- ACPI 6.4, SMBIOS 3.5.0, Plug-and-Play (PnP), RTC (Real Time Clock) wakeup, Riser Card Auto-Detection Support

Memory

24 DIMM slots with 2DPC that support up to

- 6 TB of ECC DDR5 RDIMM at 4000 MT/s (1R)/3600 MT/s (2R/3DS) (9004 Series CPU)
- 6 TB of ECC DDR5 RDIMM at 4400 MT/s (1R)/4000 MT/s (2R/3DS) (MB Rev. 2.00 or later is required and 9005 Series CPU only)

-or-

12 DIMM slots with 1DPC that support up to

- 3 TB of ECC DDR5 RDIMM at 4800 MT/s (9004 Series CPU)
- 3 TB of ECC DDR5 RDIMM at 5200 MT/s (MB Rev. 2.00 or later is required and 9005 Series CPU only)

For details, please refer to [Section 3.5](#).

Storage Drives

Six 2.5" hot-swappable NVMe drive bays

One M.2-C1 PCIe 3.0 x4 and one M.2-C2 PCIe 3.0 x2 NVMe slots (with support for M-Key 2280 and 22110)

PCI Expansion Slots

Slot configuration options for 24 SATA/SAS and 16 SATA/SAS setup:

- Four PCIe 5.0 x16 slots or
- Eight PCIe 5.0 x8 slots or
- Three PCIe 5.0 x16 slots + two PCIe 5.0 x8 slots

Slot configuration options for 24 NVMe setup:

- One PCIe 5.0 x16 slot or two PCIe 5.0 x8 slots

Slot configuration options for 20 NVMe setup:

- Two PCIe 5.0 x16 slot or four PCIe 5.0 x8 slots

Input/Output

One AIOM slot for flexible networking (OCP 3.0 compatible)

One RJ45 dedicated BMC LAN port

Two USB 3.2 Gen1 ports

One VGA port

Motherboard

H13SSH-E; 17.0" (W) x 11.5" (L) (431.8 mm x 292.1 mm)

Chassis

CSE-HE211-R000NFP-A; 2U rackmount, 3.5 x 17.2 x 29.9 in. / 88.9 x 437 x 760 mm (HxWxD)

System Cooling

Six 6-cm heavy duty fans with optimal fan speed control

Power Supply

Model: (default) PWS-2K08F-1R, 2000 W redundant modules, 80Plus Titanium level

AC Input

1000 W: 100-127 Vac / 50-60Hz

1800 W: 200-220 Vac / 50-60Hz

1980 W: 220-230 Vac / 50-60Hz

2000 W: 220-240 Vac / 50-60Hz

2000 W: 230-240 Vac / 50-60Hz

+12 V

Max: 83 A (100 Vac-127 Vac)

Max: 150 A (200 Vac-220 Vac)

Max: 165 A (220 Vac-230 Vac)

Max: 166 A (220 Vac-240 Vac)

Max: 166 A (230 Vac-240 Vac)

12 V SB

Max: 3.5 A / Min: 0 A

DC Input

1300 W: Input voltage operates at -48 Vdc

+12 V

Max: 108.3 A

12 V SB

Max: 2.1 A / Min: 0 A

Model: (optional) PWS-2K08A-1R: 2000 W redundant modules, Titanium Level (96%) power supplies

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

Operating Environment

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

Non-operating Temperature: -40 to 70 °C (-40 to 158 °F)

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

Non-operating Relative Humidity: 5% to 95% (non-condensing)

* Operating Temperature based on configurations

Regulatory Compliance

FCC, ICES, CE, UKCA, VCCI, RCM, 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