



SYS-521C-NR



USER'S MANUAL

Revision 1.0b

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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 SYS-521C-NR. Installation and maintenance should be performed by experienced technicians only.

Please refer to the SYS-521C-NR 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.

Contents

Chapter 1 Introduction

1.1 Overview.....	8
1.2 Unpacking the System	9
1.3 Server Chassis Features.....	10
Front Features.....	10
Drive Carrier Indicators.....	10
Control Panel	11
Rear Features	13
Power Supply Indicators.....	14
1.4 Motherboard Layout	15
Quick Reference Table.....	16

Chapter 2 Server Installation

2.1 Overview.....	19
2.2 Preparing for Setup.....	19
Choosing a Setup Location.....	19
Rack Precautions	20
Server Precautions.....	20
Rack Mounting Considerations	20
Ambient Operating Temperature.....	20
Airflow	20
Mechanical Loading.....	21
Circuit Overloading	21
Reliable Ground.....	21
2.3 Installing the Rails.....	22
Identifying the Rails.....	22
Releasing the Inner Rail.....	23
Releasing Inner Rail from the Outer Rails	23
Installing the Inner Rails on the Chassis	24
Installing the Inner Rails.....	24
Installing the Outer Rails onto the Rack.....	25
2.4 Installing the Server into the Rack.....	26

Removing the Chassis from the Rack	27
Chapter 3 Maintenance and Component Installation	
3.1 Removing Power	28
3.2 Accessing the System.....	29
Removing the Top Cover	29
3.3 Motherboard Components.....	30
Processor and Heatsink Installation.....	30
The 4th and 5th Generation Intel Xeon Scalable Processor	30
Overview of the Processor Carrier Assembly	31
Overview of the CPU Socket	31
Overview of the Processor Heatsink Module.....	32
Creating the Processor Carrier Assembly.....	33
Assembling the Processor Heatsink Module	34
Preparing the CPU Socket for Installation	35
Installing the Processor Heatsink Module.....	36
Removing the Processor Heatsink Module.....	37
Memory Support.....	38
Memory Support	38
General Guidelines for Optimizing Memory Performance	41
DIMM Installation	42
DIMM Removal	42
PCI Expansion Cards	43
Limitations for Slots 1, 2, 4, and 5	43
Installing Expansion Cards.....	44
AIOM Network Cards	45
Motherboard Battery	46
3.4 Chassis Components	47
Storage Drives	47
Installing Drives.....	47
Hot-Swap for NVMe Drives	51
System Cooling	52
Changing a System Fan	52
Checking the Server Air Flow	53

Overheating	53
Power Supply	54
Power Supply LEDs.....	54
Chapter 4 Motherboard Connections	
4.1 Power Connections	56
Power Connections	56
4.2 Headers and Connectors	57
4.3 Front Control Panel	60
4.4 Ports	63
Rear I/O Ports.....	63
4.5 Jumpers	66
Explanation of Jumpers	66
4.6 LED Indicators	68
Chapter 5 Software	
5.1 Microsoft Windows OS Installation.....	69
5.2 Driver Installation.....	71
5.3 SuperDoctor® 5.....	72
5.4 BMC.....	73
BMC ADMIN User Password	73
Chapter 6 Optional Components	
6.1 Optional Parts List.....	74
6.2 TPM Security Module	74
6.3 Intel Virtual RAID on CPU (VROC).....	75
Requirements and Restrictions	75
Supported SSDs and Operating Systems	75
Additional Information	76
Hardware Key	76
Configuring NVMe RAID Manually.....	77
Status Indications.....	80
Hot Swap Drives	80
Hot-unplug	80
Hot-plug	80
Chapter 7 Troubleshooting and Support	

7.1 Information Resources	81
Website	81
Direct Links for the SYS-521C-NR System.....	81
Direct Links for General Support and Information	81
7.2 BMC Interface	82
7.3 Troubleshooting Procedures	83
General Technique	83
No Power	83
No Video	84
System Boot Failure	84
Memory Errors	84
Losing the System Setup Configuration	84
When the System Becomes Unstable	84
7.4 Crash Dump Using the BMC Dashboard.....	86
7.5 CMOS Clear	87
7.6 Where to Get Replacement Components	88
7.7 Reporting an Issue	88
Technical Support Procedures	88
Returning Merchandise for Service.....	88
Vendor Support Filing System	89
7.8 Feedback.....	89
7.9 Contacting Supermicro.....	90
<i>Appendix A Standardized Warning Statements for AC Systems</i>	
<i>Appendix B System Specifications</i>	
<i>Appendix C UEFI BIOS Recovery and IPMI Crash Dump</i>	

Chapter 1

Introduction

1.1 Overview

This chapter provides a brief outline of the functions and features of the SYS-521C-NR. The SYS-521C-NR is based on the X13SEDW-F motherboard and the CSE-LA26TS-R1K23AWP1 chassis.

The following table provides you with an overview of the main features of the SYS-521C-NR. Please refer to [Appendix B](#) for additional specifications.

System Overview	
Chassis	CSE-LA26TS-R1K23AWP1
Motherboard	X13SEDW-F
Processor Support	Single 4th and 5th Gen Intel Xeon Scalable processor
Memory	16 DIMM slots, DDR4 RDIMM (up to 4TB for DDR4) up to 5600 MT/s
Chipset	C741
Drive Support	Twelve hot-swap 3.5" SATA (default) drive bays Optional NVMe drive bays by additional cables or SAS3 via optional AOC Two M.2 connectors (PCIe 3.0 x2 from PCH)
Expansion Slots	Two PCIe 5.0 x16 slots Four PCIe 5.0 x8 slots (default) One PCIe 5.0 x16 AIOM (default)
System Cooling	Three 8-cm PWM fans
Power	Redundant 1200W hot-swap power supply modules (full redundancy based on configuration and application load)
Form Factor	2U rackmount
Dimensions	(WxHxD) 17.2 x 3.5 x 25.5 in. (43.7 x 8.6 x 64.8 cm)

Note: The following safety models associated with the SYS-521C-NR have been certified as compliant with UL or CSA: LA26-12, LA26-R12X13

1.2 Unpacking the System

Inspect the box the SuperServer SYS-521C-NR was shipped in and note if it was damaged in any way. If any equipment appears damaged, please file a damage claim with the carrier who delivered it.

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

1.3 Server Chassis Features

Front Features

The CSE-LA26TS-R1K23AWP1 is a 2U chassis. See the illustration below for the features included on the front of the chassis.



Figure 1-2. System Front View

Logical Storage Drive Numbers	
Item	Description
0-11	Twelve 3.5-inch 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 SAS/NVMe drive installed
	Blue	Blinking	I/O activity
	Blue	Off	Idle SATA drive installed
Status LED	Green	Solid Green LED	Safe to remove NVMe device
	Amber	Blinking at 1Hz	Do not remove NVMe device

Control Panel

A power button and a UID button as well as status LEDs are located on the control panel at the front of the chassis. The locations and descriptions of these buttons and LEDs are provided below. See [Chapter 4](#) for details on the control panel connections.

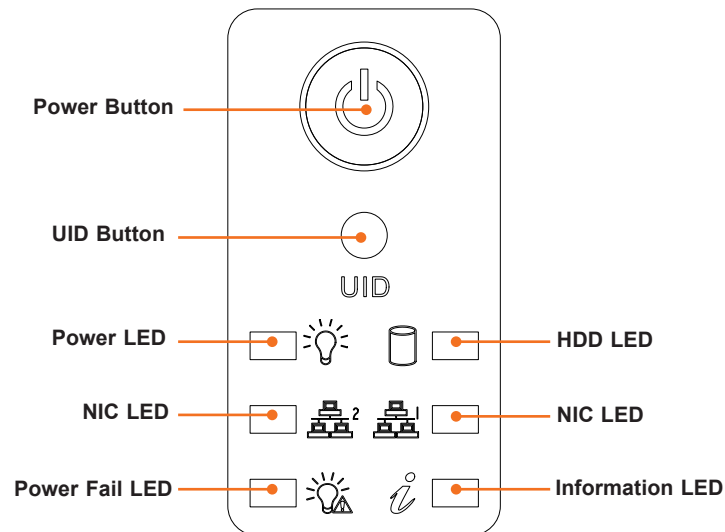


Figure 1-1. Control Panel

Control Panel Features	
Features	Description
Power Button	The main power switch applies or removes primary power from the power supply to the server but maintains standby power.
UID Button	The unit identification (UID) button turns on or off the blue light function of the Information LED and a blue LED on the rear of the chassis. This is useful for finding a system in a rack environment.
Power LED	Steady on – Power on Blinking at 4Hz – Checking BIOS/BMC integrity Blinking at 4Hz and "i" LED is blue – BIOS firmware updating Two blinks at 4Hz, one pause 2hz and "i" LED blue – BMC firmware updating Blinking at 1Hz and "i" LED red – Fault detected
NIC LEDs	Indicates network activity on a LAN when flashing.
Power Fail LED	Indicates a power supply module has failed.
HDD LED	Indicates activity on the hard drive when flashing.
Information LED	Alerts operator to several states (noted in the table below).

Information LED	
Color, Status	Description
Red, solid	An overheat condition has occurred.
Red, blinking at 1Hz	Fan failure, check for an inoperative fan.
Red, blinking at 0.25Hz	Power failure, check for a non-operational power supply.
Red, solid, with Power LED blinking green	Fault detected
Blue and red, blinking at 10 Hz	Recovery mode
Blue, solid	UID has been activated locally to locate the server in a rack environment.
Blue, blinking at 1Hz	UID has been activated using the BMC to locate the server in a rack environment.
Blue, blinking at 2Hz	BMC is resetting
Blue, blinking at 4Hz	BMC is setting factory defaults
Blue, blinking at 10Hz with Power LED blinking green	BMC/BIOS firmware is updating

Rear Features

The illustration below shows the features included on the rear of the chassis. The power supply modules also have status LEDs (see Chapter 3 for details).

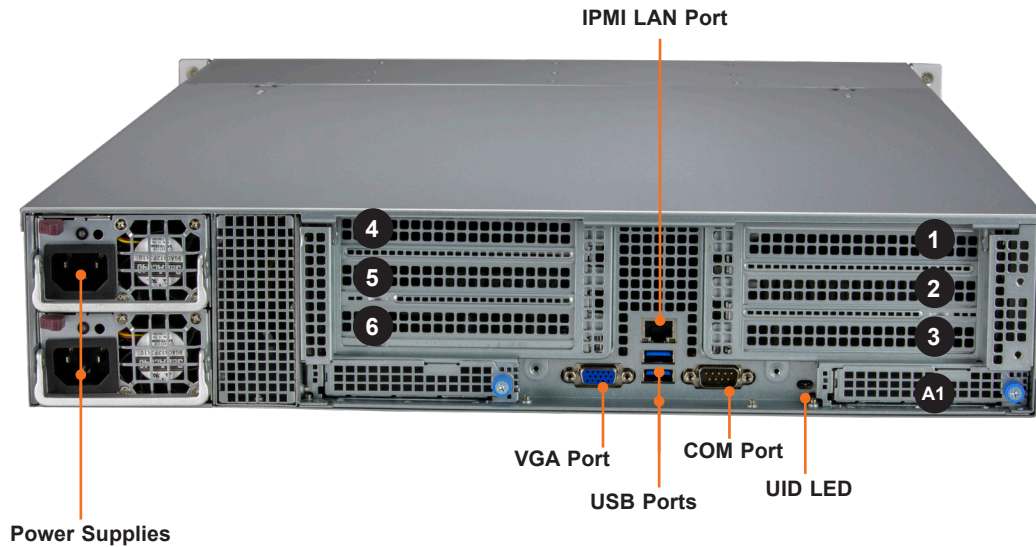


Figure 1-3. System Rear View

Chassis Rear Features	
Feature	Description
Power Supplies	Two redundant power supply modules
VGA Port	Video port, When the UID LED is on, the rear VGA may be disabled to enable the front VGA port, if available.
USB Ports	Two USB 3.2 ports
IPMI LAN Port	Dedicated port to access the IPMI
COM Port	Serial port
UID LED	The unit identifier (UID) indicator light

Expansion Slot Descriptions	
Item	Description
1	PCIe 5.0 x8 (FH, 10.5" L)
2	PCIe 5.0 x8 (FH, 10.5" L)
3	PCIe 5.0 x16 (FHHL)
4	PCIe 5.0 x8 (FH, 10.5" L)
5	PCIe 5.0 x8 (FH, 10.5" L)
6	PCIe 5.0 x16 (FHHL)
A1	PCIe 5.0 x16 AIOM slot (default with NCSI)

Power Supply Indicators

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

1.4 Motherboard Layout

Below is a layout of the X13SEDW-F with jumper, connector and LED locations shown. See the table on the following pages for descriptions. For detailed descriptions, pinout information, and jumper settings, refer to [Chapter 4](#).

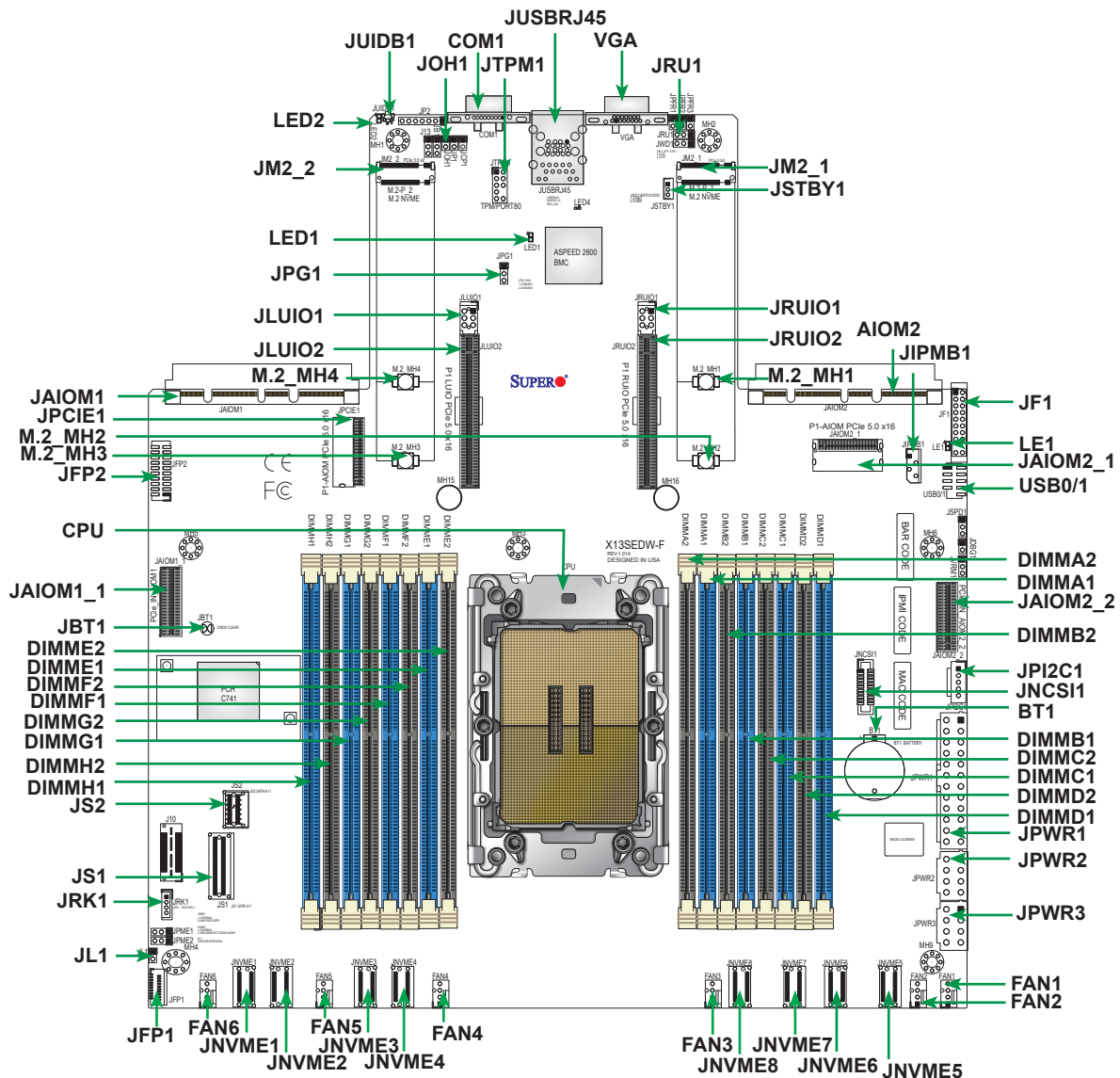


Figure 1-5. Motherboard Layout

Notes:

- "■" indicates the location of pin 1.
- Jumpers/LED indicators not indicated are unused or used for testing only and are not covered in this manual.

Quick Reference Table

Jumper	Description	Default Setting
JBT1	CMOS Clear	Open (Normal)
JPG1	VGA Enable/Disable	Pins 1–2 (Enabled)
JRU1	Front Control Board (JFP1) Signal Reset	Pins 1–2 UID (Default) Pins 2–3 Reset

LED	Description	Status
LE1	Power LED	LED On: Onboard Power On
LED1	BMC Heartbeat LED	Blinking Green: BMC Normal
LED2	UID LED	Solid Blue: Unit Identified

Connector	Description
BT1	Onboard Battery
COM1	COM Port
FAN1–FAN6	CPU/System Fan Headers (FAN1: CPU Fan)
JAIOM1	PCIe 5.0 (default x8) AIOM (Advanced I/O Module)
JAIOM2	PCIe 5.0 (default x0) AIOM (Advanced I/O Module)
JAIOM1_1	PCIe 5.0 x8 Input Connector for Upgrading AIOM1 to PCIe 5.0 x16
JAIOM2_1	Right-Angle PCIe 5.0 x8 Input Connector for Upgrading AIOM2 to PCIe 5.0 x8
JAIOM2_2	PCIe 5.0 x8 Input Connector for Upgrading AIOM2 to PCIe 5.0 x16 (with JAIOM2_1 in use)
JF1	Front Control Panel Header
JFP1	Front Control Board Header for Signals (can be used independently)
JFP2	Front Control Board Header for VGA and USB (to be used in conjunction with JFP1)
JIPMB1	4-Pin BMC External I ² C Header
JL1	Chassis Intrusion Header
JLUIO1, JLUIO2	Left LUIO PCIe 5.0 x16
JM2_1, JM2_2	PCIe 3.0 x2 M.2 Slots from PCH (Support M-Key 2280 and 22110)
JOH1	Overheat/Fan Fail LED Header
JNCSI1	NC-SI Header for IPMI Support
JNVME1–JNVME8	PCIe 5.0 x4 MCIO Ports with Support of NVMe Connections (0/1/2/3/4/5/6/7) or Upgrading for Riser and AIOM
JPCIE1	PCIe 5.0 x8 Upgrading Connector for AIOM, NVMe, or Riser
JPI ² C1	Power I ² C System Management Bus (Power SMB) Header
JPWR1	24-pin ATX Power Connector (Required)
JPWR2, JPWR3	12 V 8-pin CPU Power Connector (To provide alternative power for special enclosure when the 24-pin ATX power is not in use.)
JRK1	Intel RAID Key Header
JRUIO1, JRUIO2	Right LUIO PCIe 5.0 x16
JS1	SATA0–SATA7 Intel PCH SATA 3.0 Ports (with RAID 0, 1, 5, and 10)

Connector	Description
JS2	SATA8–SATA11 Intel PCH SATA 3.0 Ports (with RAID 0, 1, 5, and 10)
JSTBY1	Standby Power Header
JTPM1	Trusted Platform Module/Port 80 Header
JUIDB1	Unit Identifier Switch
JUSBRJ45	Rear I/O USB2/3 Ports (USB 3.2 Gen 1) and Dedicated BMC LAN Port
M.2_MH1–M.2_MH4	M.2 Mounting Holes
USB0/1	Front Accessible USB 2.0 Headers
VGA	VGA Port

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

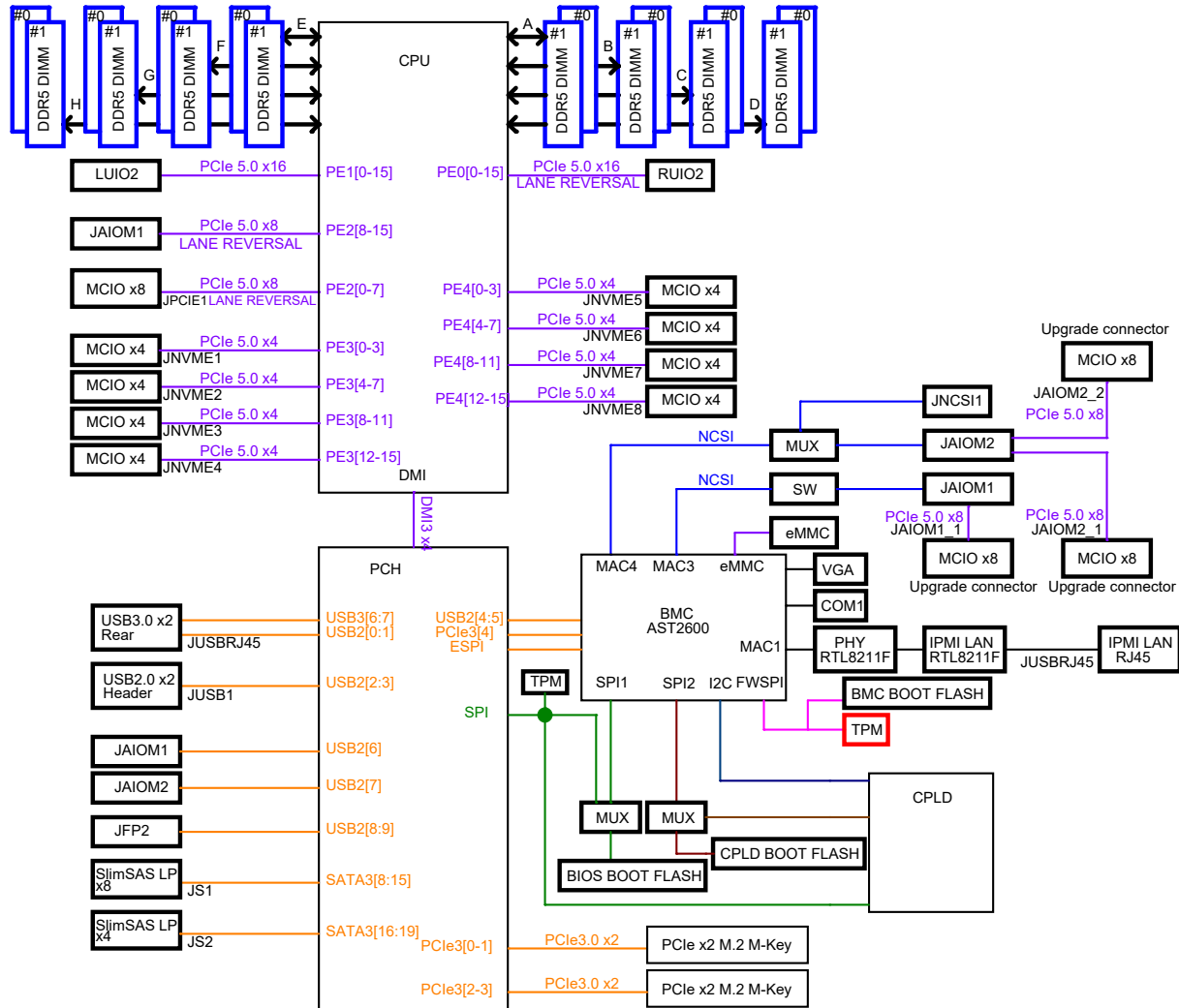


Figure 1-6. System Block Diagram

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

Chapter 2

Server Installation

2.1 Overview

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

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

2.2 Preparing for Setup

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

Choosing a Setup Location

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

Rack Precautions

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

Server Precautions

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

Rack Mounting Considerations

Ambient Operating Temperature

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

Airflow

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

Mechanical Loading

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

Circuit Overloading

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

Reliable Ground

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



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

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

2.3 Installing the Rails

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

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

Identifying the Rails

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

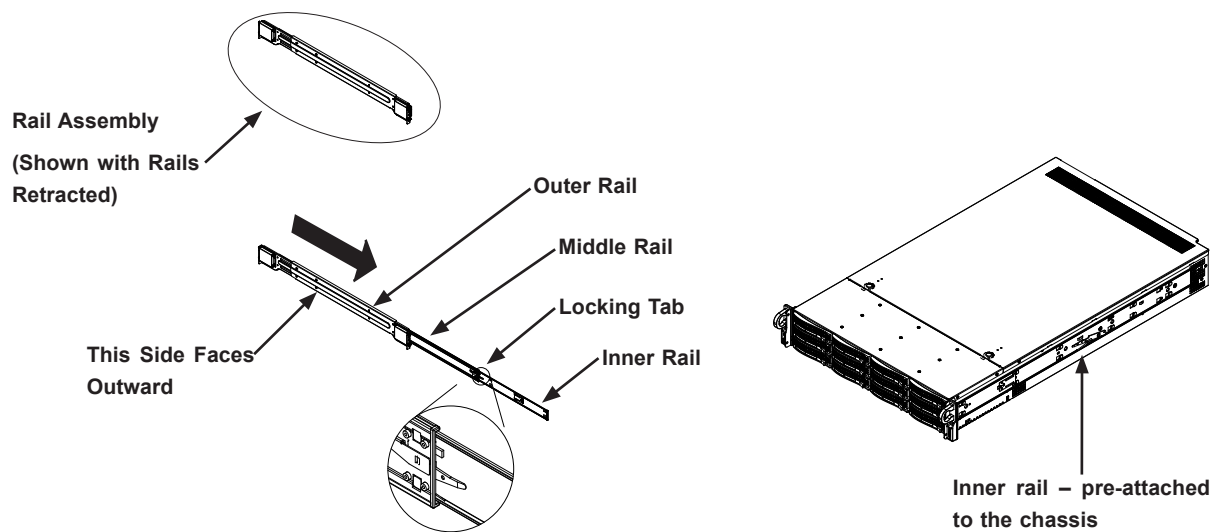


Figure 2-1. Identifying the Sections of the Rack Rails

(Figure on Left is Left Rail Assembly Shown)

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

Releasing the Inner Rail

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

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

Releasing Inner Rail from the Outer Rails

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

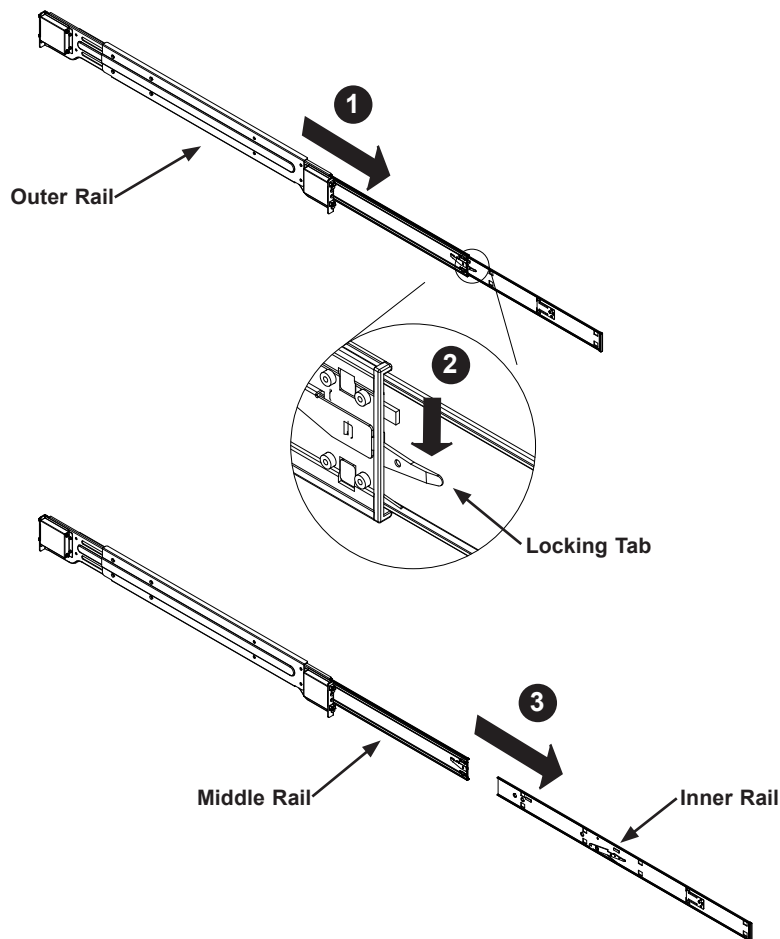


Figure 2-2. Extending and Releasing the Inner Rail

Installing the Inner Rails on the Chassis

Installing the Inner Rails

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

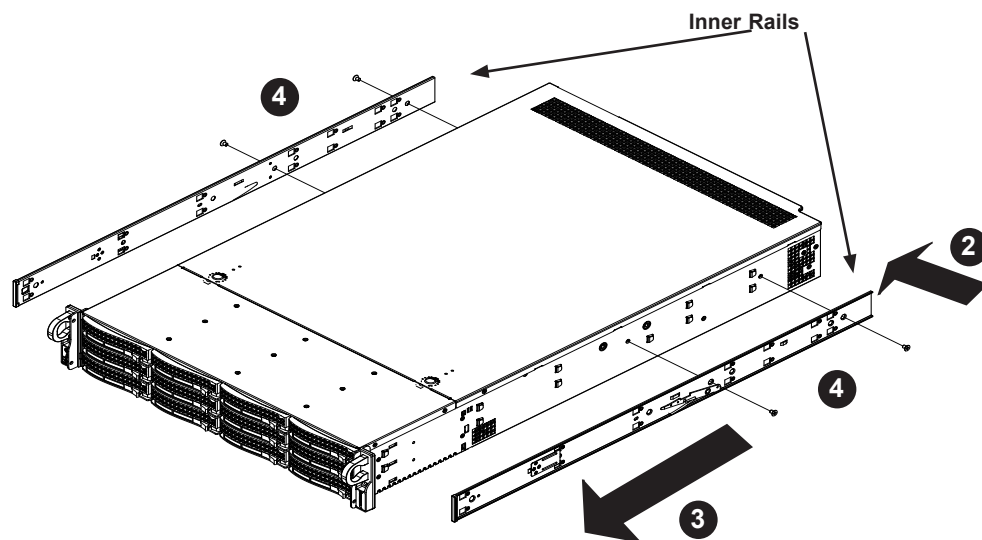


Figure 2-3. Installing the Inner Rails

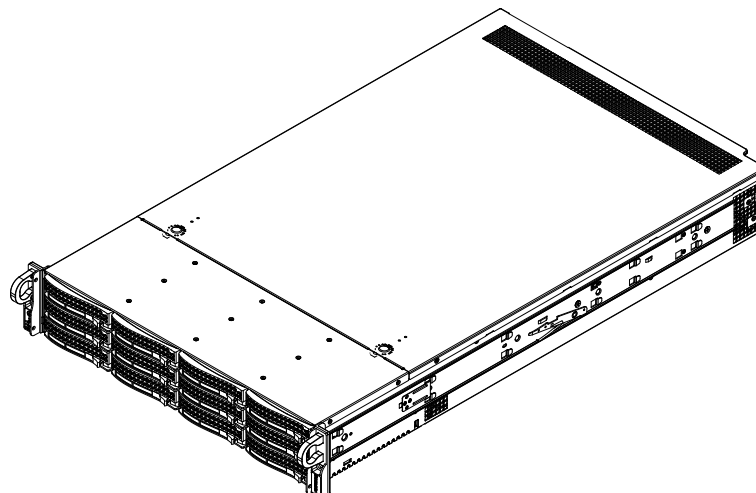


Figure 2-4. Inner Rails Installed on the Chassis

Installing the Outer Rails onto the Rack

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

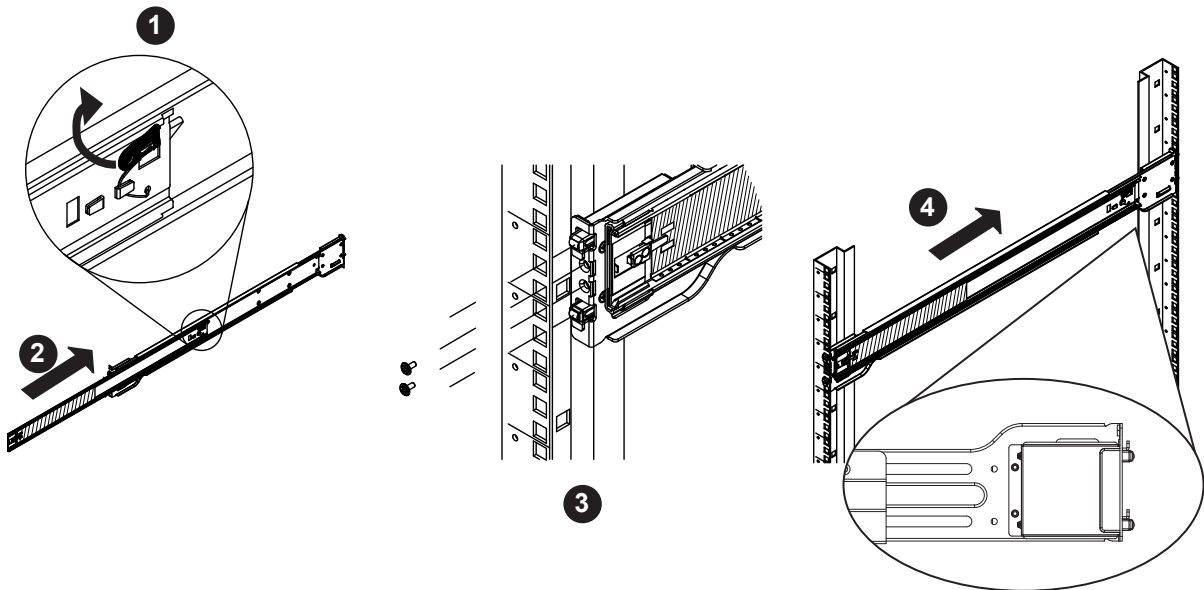


Figure 2-5. Extending and Mounting the Outer Rails

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



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

Do not use a two post "telco" type rack.

2.4 Installing the Server into the Rack

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

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

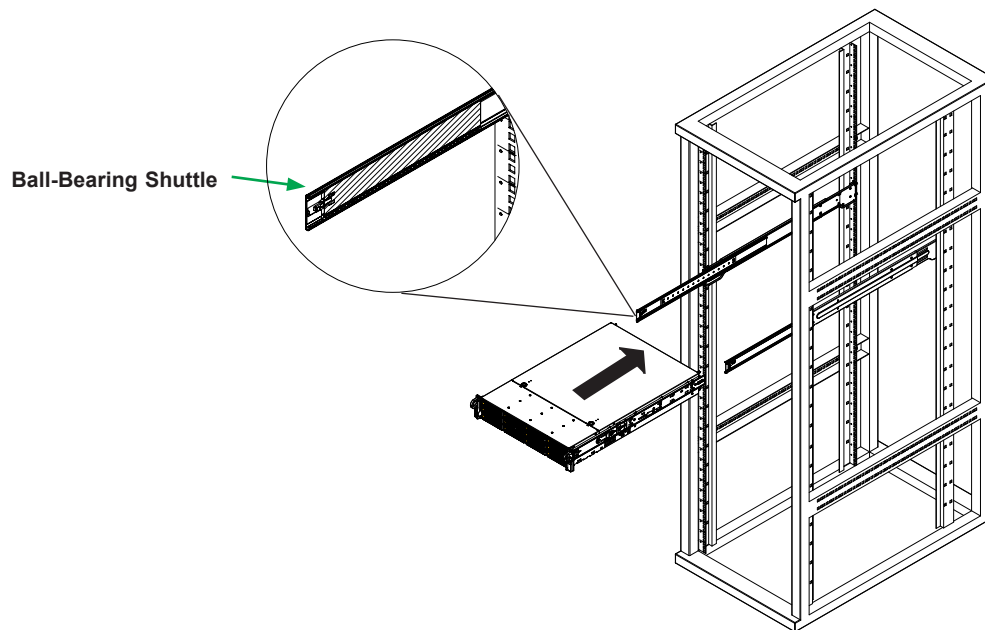


Figure 2-6. Installing into a Rack

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



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



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

Removing the Chassis from the Rack

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

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

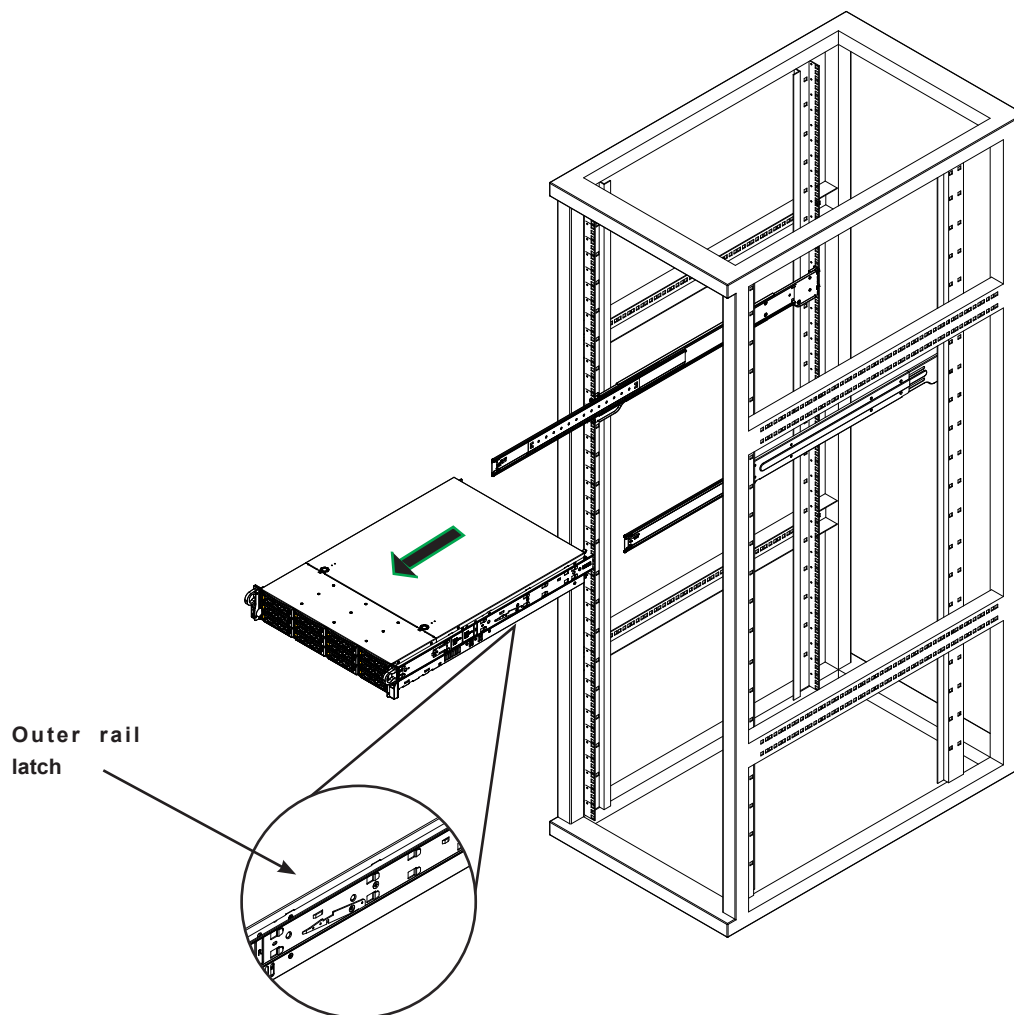


Figure 2-7. Removing the Chassis From the Rack

Chapter 3

Maintenance and Component Installation

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

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

3.1 Removing Power

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

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

3.2 Accessing the System

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

Removing the Top Cover

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

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

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

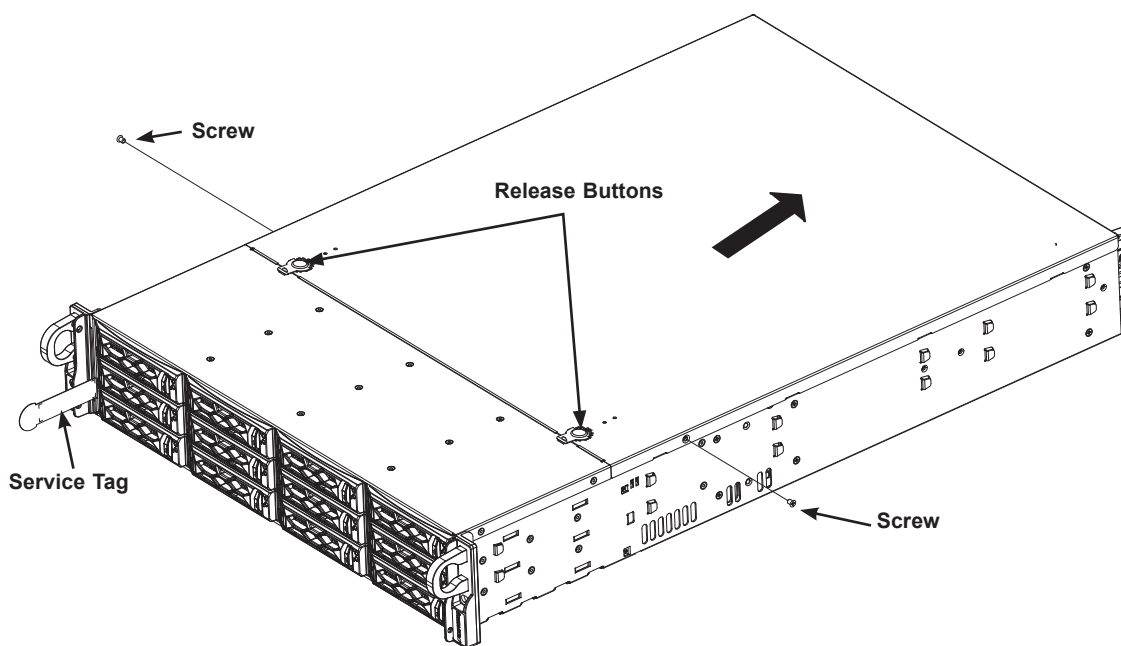


Figure 3-1. Removing the Top Cover

3.3 Motherboard Components

Processor and Heatsink Installation

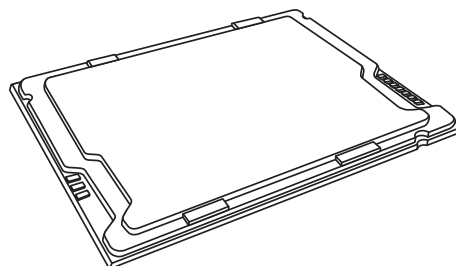
The processor (CPU) and processor carrier should be assembled together first to form the processor carrier assembly. This will be attached to the heatsink to form the processor heatsink module (PHM) before being installed onto the CPU socket.

Notes:

- Use ESD protection.
- Shut down the system and then unplug the AC power cord from all power supplies.
- Check that the plastic protective cover is on the CPU socket and none of the socket pins are bent. If they are, contact your retailer.
- When handling the processor, avoid touching or placing direct pressure on the LGA lands (gold contacts). Improper installation or socket misalignment can cause serious damage to the processor or socket, which may require manufacturer repairs.
- Thermal grease is pre-applied on a new heatsink. No additional thermal grease is needed.
- Refer to the Supermicro website for updates on processor support.
- All graphics in this manual are for illustration purposes only. Your components may look different.
- Please order the CPU carrier to pair with the CPU.

CPU carrier for 4th and 5th Generation Intel Xeon Scalable Processors (XCC)	SKT-1333L-0000-FXC
CPU carrier for 4th and 5th Generation Intel Xeon Scalable Processors (MCC)	SKT-1424L-001B-FXC
CPU carrier for 4th Generation Intel Xeon Scalable Processors (HBM)	SKT-1425H-101C-FXC

The 4th and 5th Generation Intel Xeon Scalable Processor

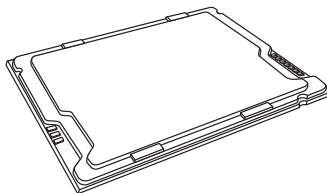


Intel Xeon Processor

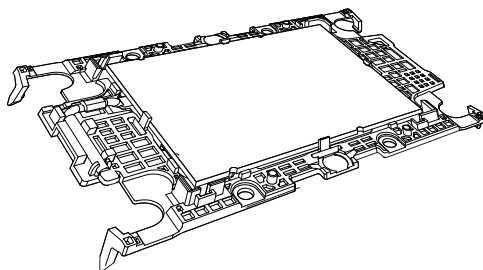
Overview of the Processor Carrier Assembly

The processor carrier assembly contains the Intel Xeon processor and a processor carrier.

1. Intel Xeon Processor



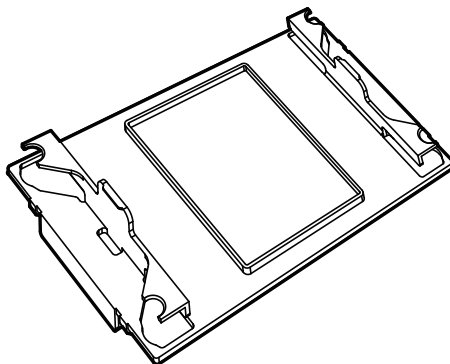
2. Processor Carrier



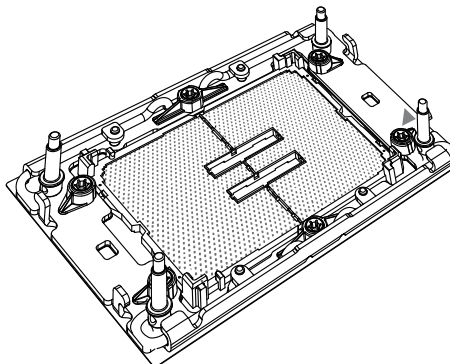
Overview of the CPU Socket

The CPU socket is protected by a plastic protective cover.

1. Plastic Protective Cover



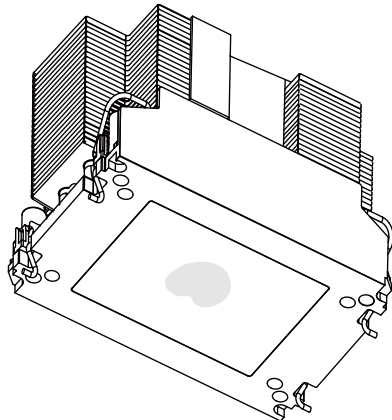
2. CPU Socket



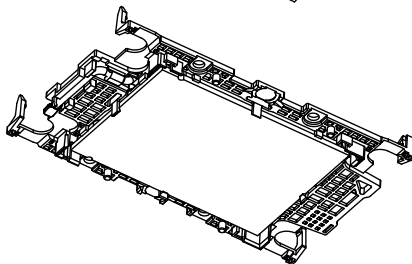
Overview of the Processor Heatsink Module

The Processor Heatsink Module (PHM) contains a heatsink, a processor carrier, and the Intel Xeon processor.

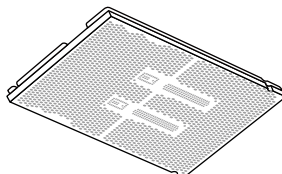
1. Heatsink with Thermal Grease



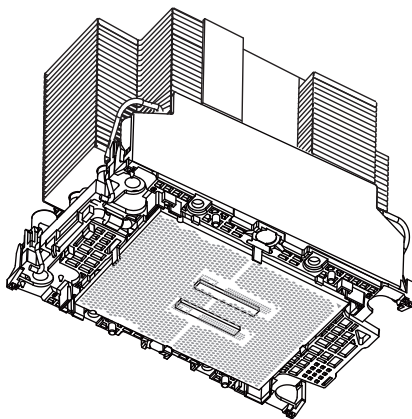
2. Processor Carrier



3. Intel Xeon Processor



Processor Heatsink Module (PHM)

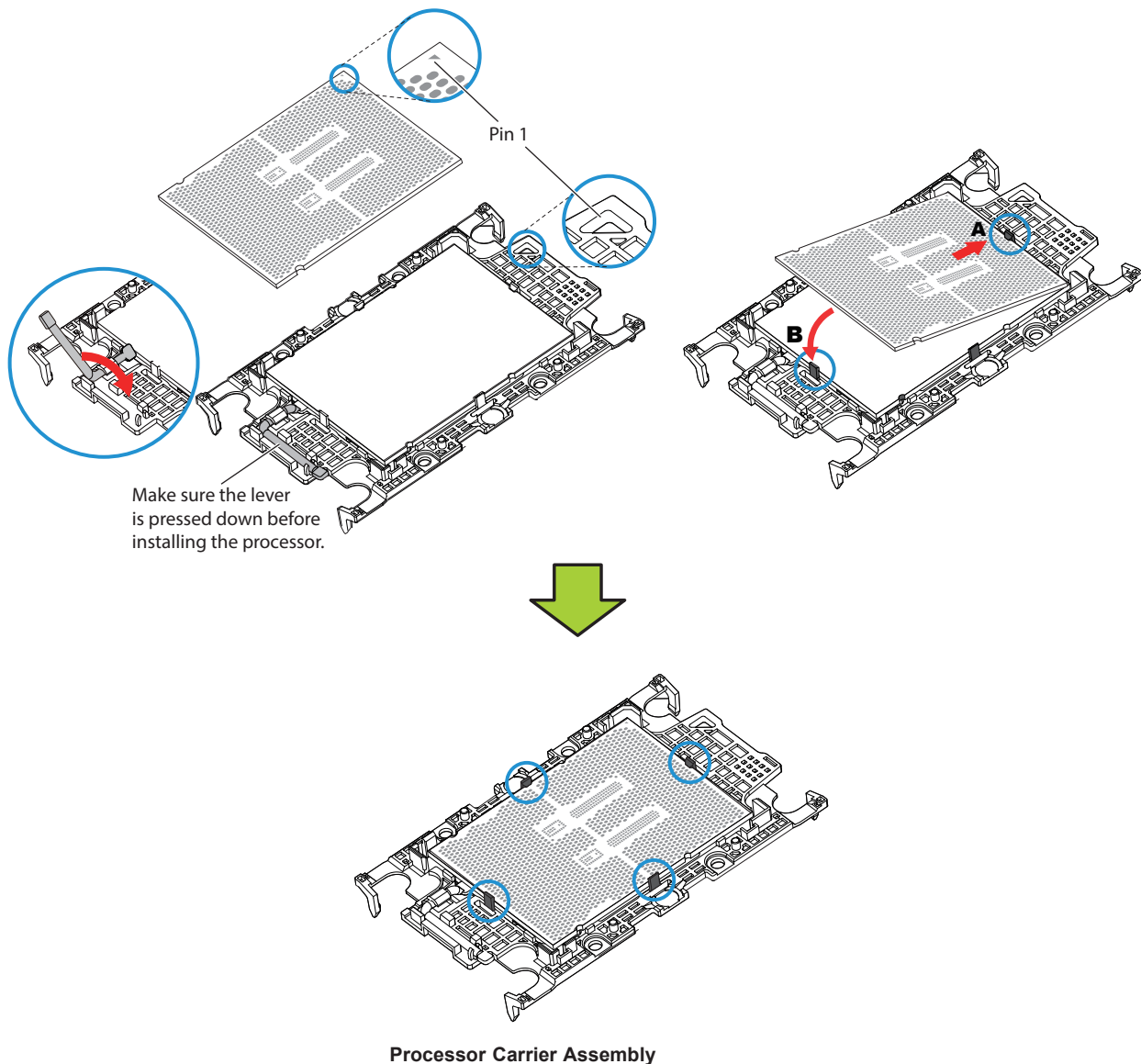


Bottom View

Creating the Processor Carrier Assembly

To install a processor into the processor carrier, follow the steps below:

1. Before installation, make sure the lever on the processor carrier is pressed down as shown below.
2. Hold the processor with the LGA lands (gold contacts) facing up. Locate the small, gold triangle in the corner of the processor and the corresponding hollowed triangle on the processor carrier. These triangles indicate pin 1. See the images below.
3. Use the triangles as a guide to carefully align and place one end of the processor into the latch marked A, and place the other end of processor into the latch marked B as shown below.
4. Examine all corners to ensure that the processor is firmly attached to the carrier.

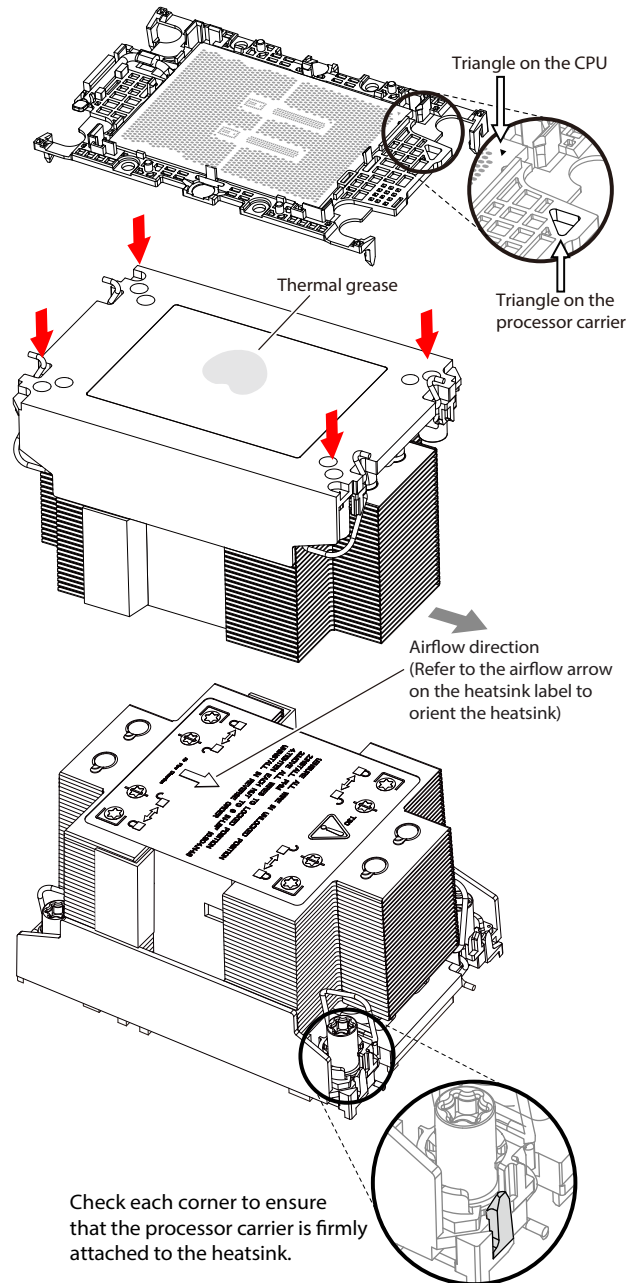


Assembling the Processor Heatsink Module

After creating the processor carrier assembly for the processor, mount it onto the heatsink to create the processor heatsink module (PHM):

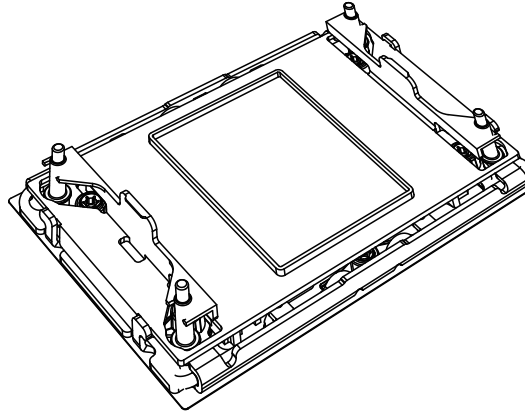
1. Note the label on top of the heatsink, which marks the airflow direction. Turn the heatsink over and orient the heatsink so the airflow arrow is pointing towards the triangle on the processor.
2. If this is a new heatsink, the thermal grease has been pre-applied. Otherwise, apply the proper amount of thermal grease.
3. Hold the processor carrier assembly so the processor's gold contacts are facing up, then align the holes of the processor carrier assembly with the holes on the heatsink. Press the processor carrier assembly down until it snaps into place. The plastic clips of the processor carrier assembly will lock at the four corners.
4. Examine all corners to ensure that the plastic clips on the processor carrier assembly are firmly attached to the heatsink.

Processor Carrier Assembly
(Upside Down)

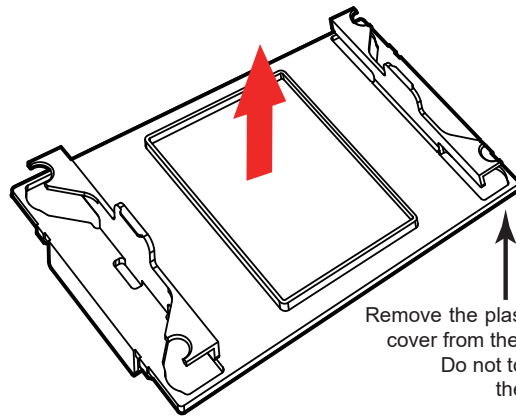


Preparing the CPU Socket for Installation

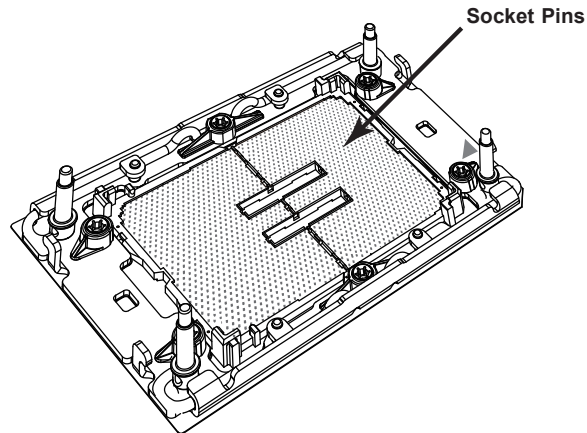
This motherboard comes with a plastic protective cover installed on the CPU socket. Remove it from the socket to install the Processor Heatsink Module (PHM). Gently pull up one corner of the plastic protective cover to remove it.



CPU Socket with Plastic Protective Cover



Remove the plastic protective cover from the CPU socket. Do not touch or bend the socket pins.



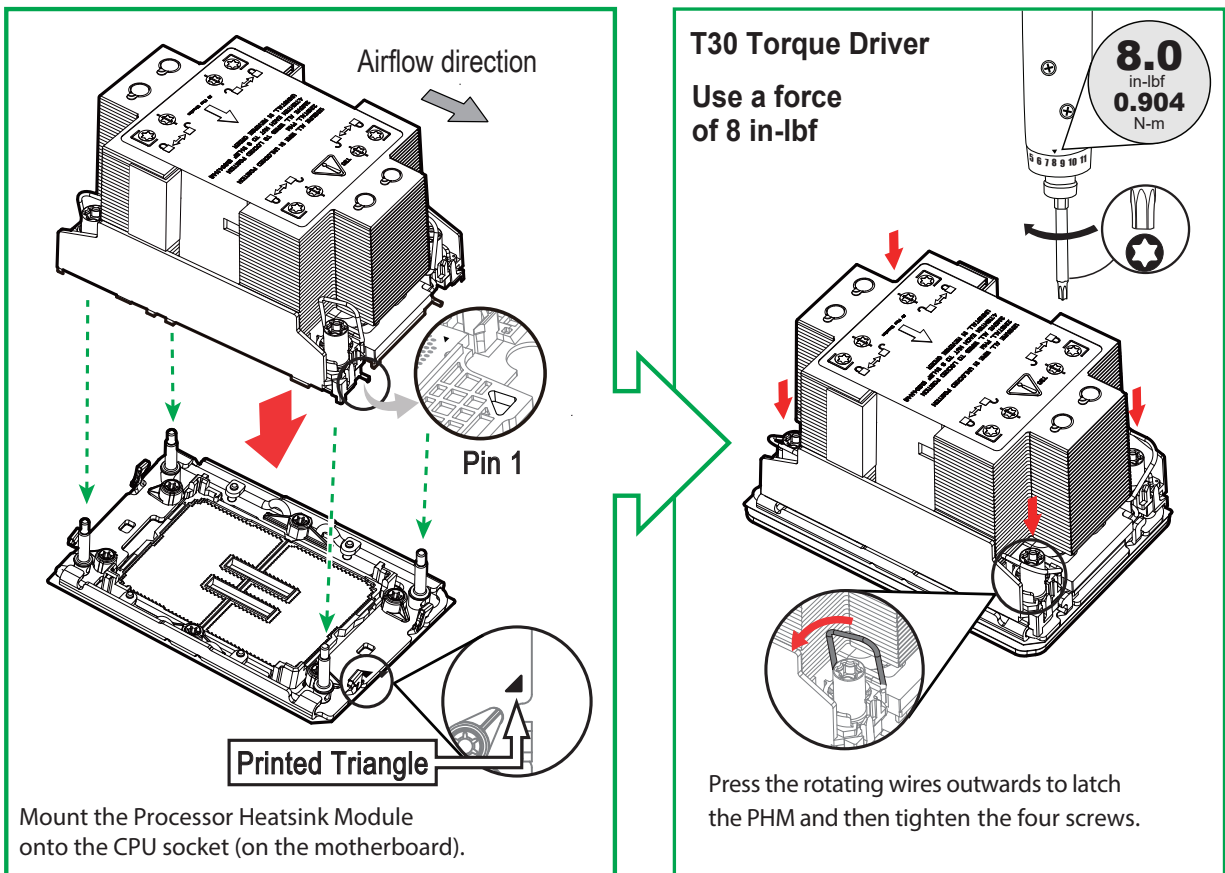
Installing the Processor Heatsink Module

After assembling the Processor Heatsink Module (PHM), install it onto the CPU socket:

1. Align pin 1 of the PHM with the printed triangle on the CPU socket. See the left image below.
2. Make sure all four holes of the heatsink are aligned with the socket, then gently place the heatsink on top of the CPU socket.
3. Press all four rotating wires outwards and make sure that the heatsink is securely latched into the CPU socket.
4. With a T30 bit torque driver set to a force of 8.0 in-lbf (0.904 N-m), gradually tighten the four screws to ensure even pressure. You can start with any screw, but make sure to tighten the screws in a diagonal pattern.

Important: Do not use a force greater than 8.0 in-lbf (0.904 N-m). Exceeding this force may over-torque the screw, causing damage to the processor, heatsink, and screw.

5. Examine all corners to ensure that the PHM is firmly attached to the socket.

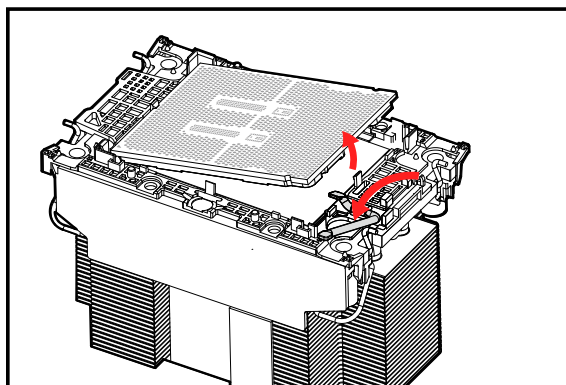
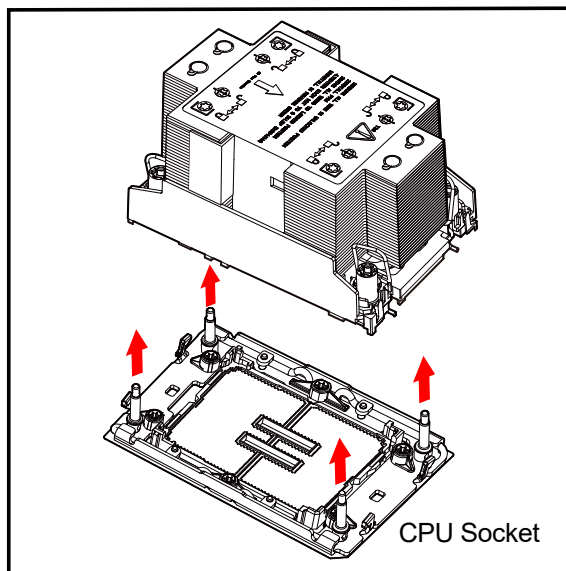
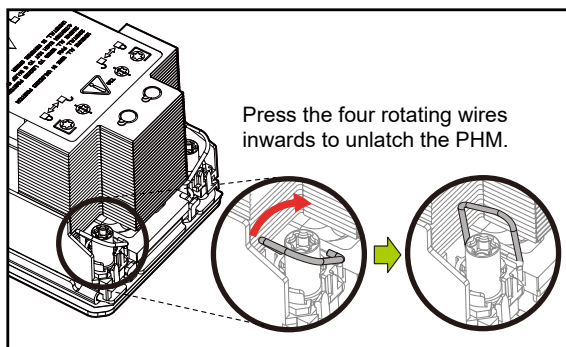
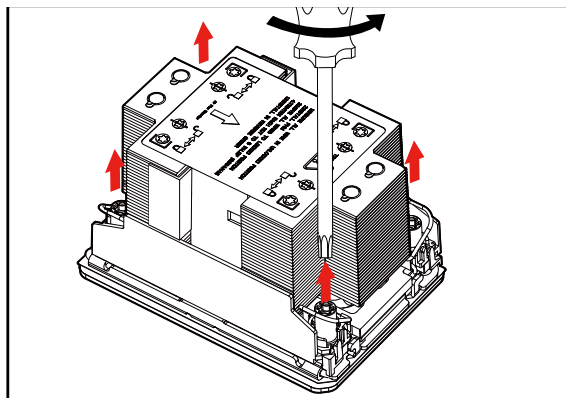


Removing the Processor Heatsink Module

Before removing the processor heatsink module (PHM) from the motherboard, shut down the system and then unplug the AC power cord from all power supplies.

Then follow the steps below:

1. Use a T30 Torx-bit screwdriver to loosen the four screws. You can start with any screw, but make sure to loosen the screws in a diagonal pattern.
2. Press the four rotating wires inwards to unlatch the PHM from the socket.
3. Gently lift the PHM upwards to remove it from the socket.
4. To remove the CPU, move the lever to its unlocked position and gently remove the CPU.



Memory Support

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 X13SEDW-F supports up to 4 TB of ECC RDIMM/RDIMM 3DS DDR5 memory in eight memory slots. The 4th Generation Intel Xeon Scalable Processor memory has speeds of up to 4800 MT/s (4400 MT/s when fully populated), while the 5th Generation Intel Xeon Scalable Processor memory has speeds of up to 5600 MT/s (4400 MT/s when fully populated). Refer to the table below for the recommended DIMM population order.

Note: Use one DIMM per channel when populating the channels.

1 CPU, 16 DIMM Slots	
Number of DIMMs	Memory Population Sequence
2	DIMMA1 / DIMMG1
4	DIMMA1 / DIMMG1 / DIMMC1 / DIMME1
8	DIMMA1 / DIMMG1 / DIMMB1 / DIMMH1 / DIMMD1 / DIMMF1 / DIMMC1 / DIMME1
16	DIMMA1 / DIMMA2 / DIMMB1 / DIMMB2 / DIMMC1 / DIMMC2 / DIMMD1 / DIMMD2 / DIMME1 / DIMME2 / DIMMF1 / DIMMF2 / DIMMG1 / DIMMG2 / DIMMH1 / DIMMH2

1 HBM CPU, 16 DIMM Slots	
Number of DIMMs	Memory Population Sequence
0	
1	DIMMA1
2	DIMMA1 / DIMMG1
4	DIMMA1 / DIMMG1 / DIMMC1 / DIMME1
8	DIMMA1 / DIMMG1 / DIMMC1 / DIMME1 / DIMMD1 / DIMMF1 / DIMMB1 / DIMMH1
16	DIMMA1 / DIMMA2 / DIMMB1 / DIMMB2 / DIMMC1 / DIMMC2 / DIMMD1 / DIMMD2 / DIMME1 / DIMME2 / DIMMF1 / DIMMF2 / DIMMG1 / DIMMG2 / DIMMH1 / DIMMH2

Compatible and Incompatible DIMM Types in a Channel and a System			
DIMM Type	RDIMM	RDIMM 3DS	9x4 RDIMM
RDIMM	Compatible	Incompatible	Incompatible
RDIMM 3DS	Incompatible	Compatible	Incompatible
9x4 RDIMM	Incompatible	Incompatible	Compatible

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

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

- 1DPC applies to 1SPC or 2SPC implementations (SPC – sockets per channel).
- 24 Gb XCC only with limited configs: 1DPC all DIMM types, 2DPC 96 GB only. Only 8 and 16 DIMM configs, no fallbacks.
- Memory speed will be 4800 MT/s 1DPC and 4400 MT/s 2DPC.
- Mixing DRAM Density (16 Gb/24 Gb) and/or Frequency is not allowed.

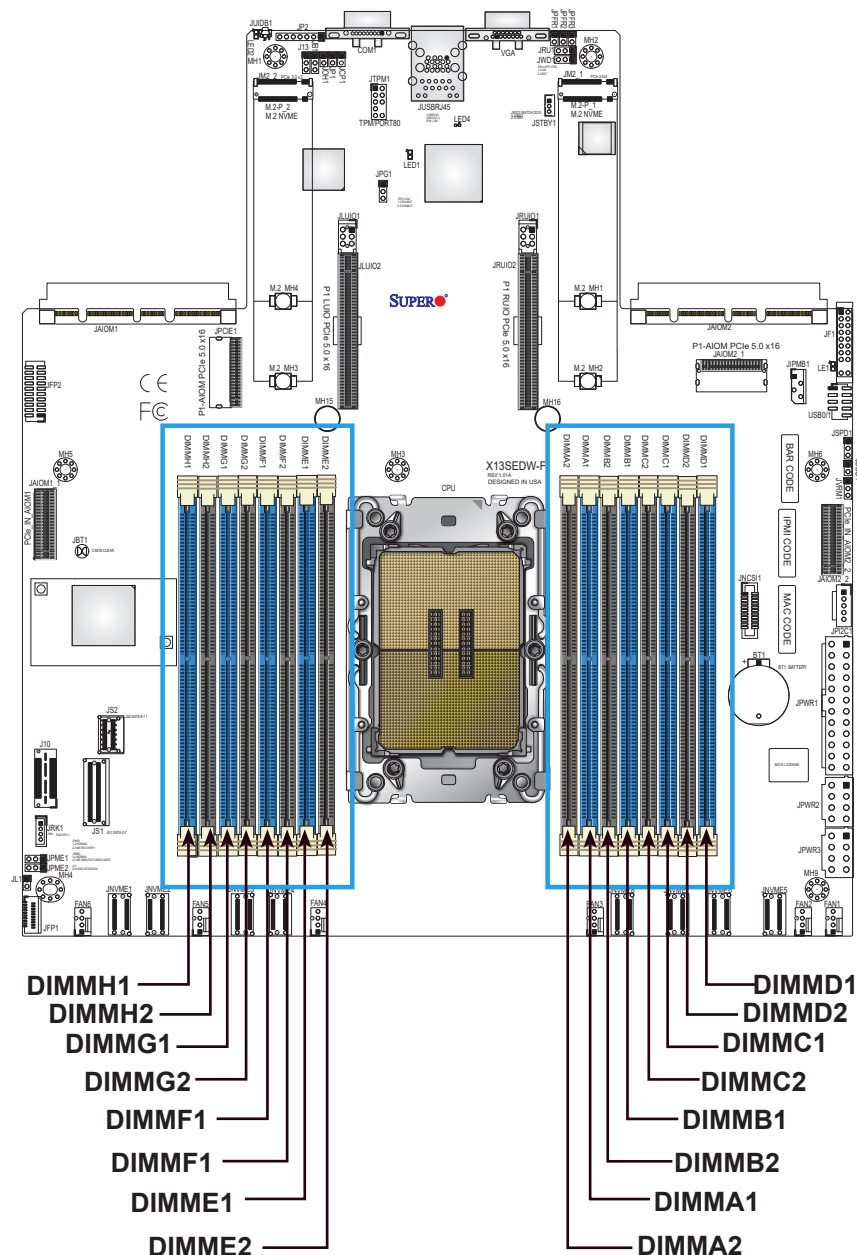
DDR5 Memory Support for the 5th Generation Intel® Xeon® Scalable Processors-SP					
Type	Ranks Per DIMM and Data Width (Stack)	DIMM Capacity (GB)		Speed (MT/s)	
		Memory Density 16 Gb	Memory Density 24 Gb	One DIMM per Channel ¹	Two DIMMs per Channel
RDIMM	SRx8 (RC D)	16 GB	24 GB ²	5600*	4400*
	SRx4 (RC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

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

- 1DPC applies to 1SPC or 2SPC implementations (SPC – sockets per channel).
- 24 Gb, 24 GB, and 48 GB DRAM density is not supported in 2DPC.
- Memory speed will be 5600 MT/s 1DPC and 4400 MT/s 2DPC.
- For 1DPC 5600 speed, DDR5-5600 DIMMs are required.
- Mixing DRAM Density (16 Gb/24 Gb) and/or Frequency is not allowed.

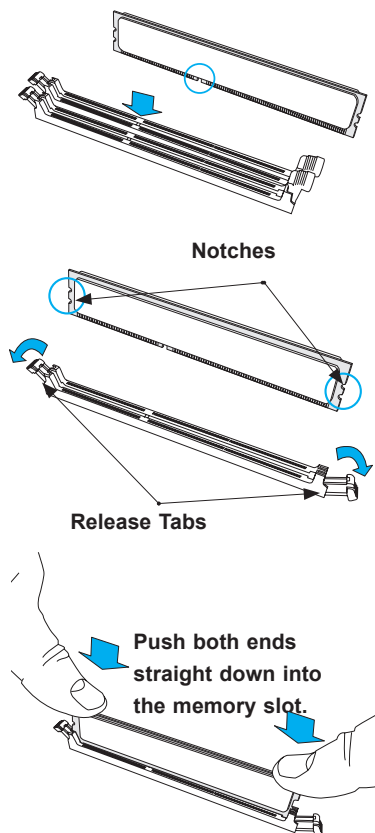
General Guidelines for Optimizing Memory Performance

- It is recommended to use DDR5 memory of the same type, size, and speed.
- Mixed DIMM speeds can be installed. However, all DIMMs will run at the speed of the slowest DIMM.
- To achieve the best memory performance, a balanced memory population is recommended.
- The motherboard will not support an odd number of modules except for a single DIMM module necessary for board operation. To achieve the best memory performance, a balanced (even number) memory population is recommended.



DIMM Installation

1. Insert the desired number of DIMMs into the memory slots based on the Recommended Memory Population Guide tables.
2. Push the release tabs outwards on both ends of the DIMM slot to unlock it.
3. Align the key of the DIMM module with the receptive point on the memory slot.
4. Align the notches on both ends of the module against the receptive points on the ends of the slot.
5. Push both ends of the module straight down into the slot until the module snaps into place.
6. Press the release tabs to the lock positions to secure the DIMM module into the slot.



DIMM Removal

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

PCI Expansion Cards

The system can accommodate six to eight PCIe 5.0 expansion cards (depending upon configuration) and one PCIe 5.0 AIOM networking cards.

Limitations for Slots 1, 2, 4, and 5

Due to PCIe 5.0 requirements, riser card slots 1 and 2 are connected by cable to the JNVMe 1/2/3/4 port and slots 4 and 5 are connected by cable to the JNVMe 5/6/7/8 port on the motherboard.

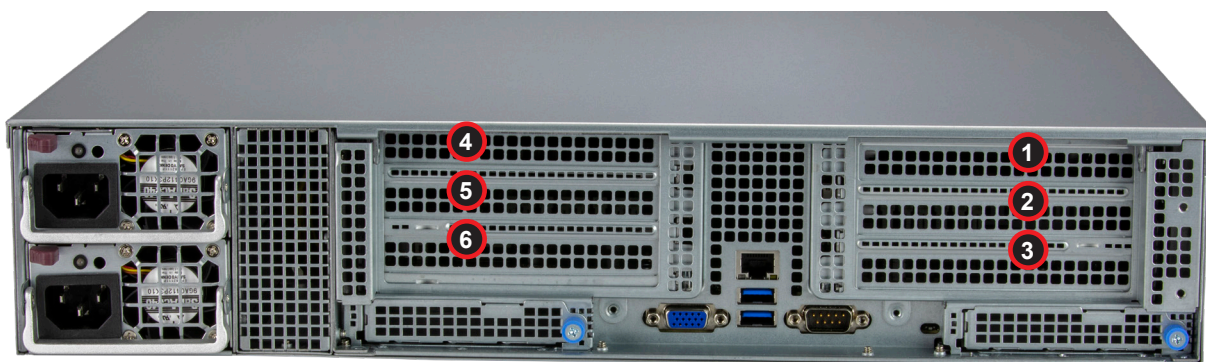


Figure 3-3. Expansion Card Slots

Expansion Slot Descriptions	
Item	Description
1	PCIe 5.0 x8 (FH, 10.5" L)
2	PCIe 5.0 x8 (FH, 10.5" L)
3	PCIe 5.0 x16 (FHHL)
4	PCIe 5.0 x8 (FH, 10.5" L)
5	PCIe 5.0 x8 (FH, 10.5" L)
6	PCIe 5.0 x16 (FHHL)

Installing Expansion Cards

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

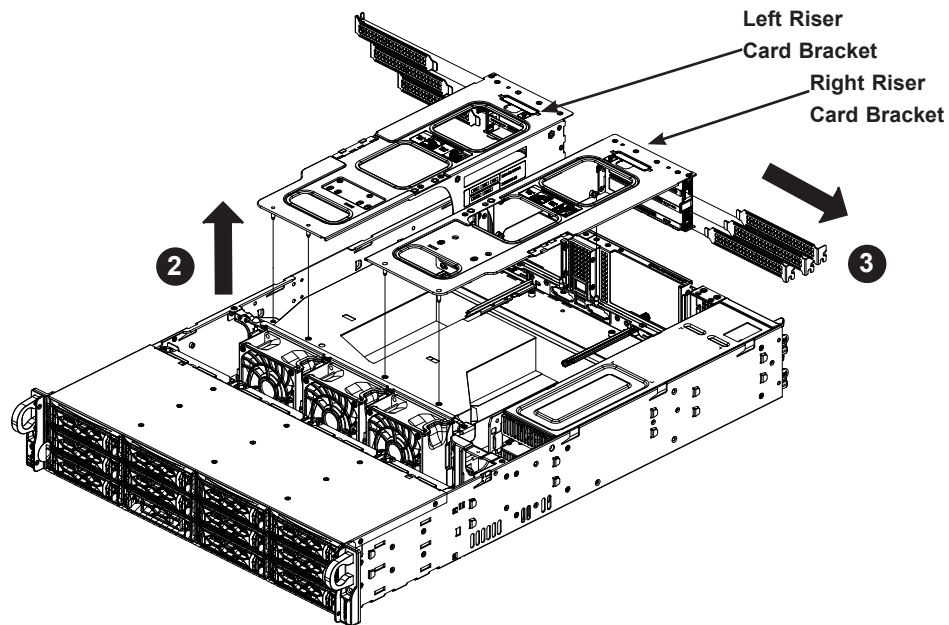


Figure 3-4. Removing Riser Card Brackets and Shields

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

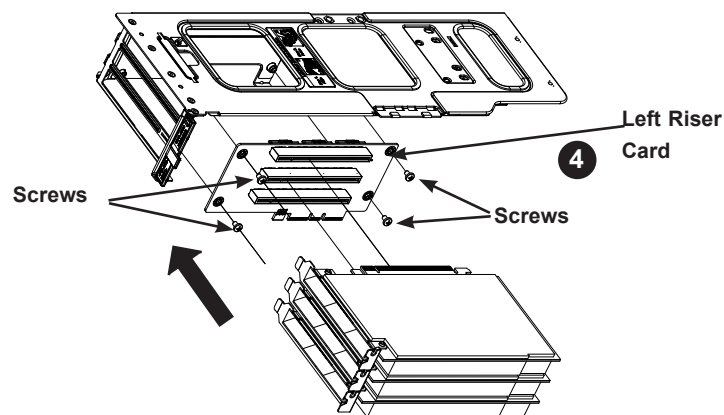


Figure 3-5. Installing Left Expansion Cards

AIOM Network Cards

The system provides network connection by means of one advanced I/O module (AIOM).



Figure 3-6. AIOM Slot

Installing an AIOM Card

1. Remove the blank cover plate from A1 by unscrewing the thumbscrew.
2. Slide the AIOM card into the opening until it seats in the motherboard slot.
3. Secure with the thumbscrew.

Note: System power must be turned off before removing or installing AIOM cards.

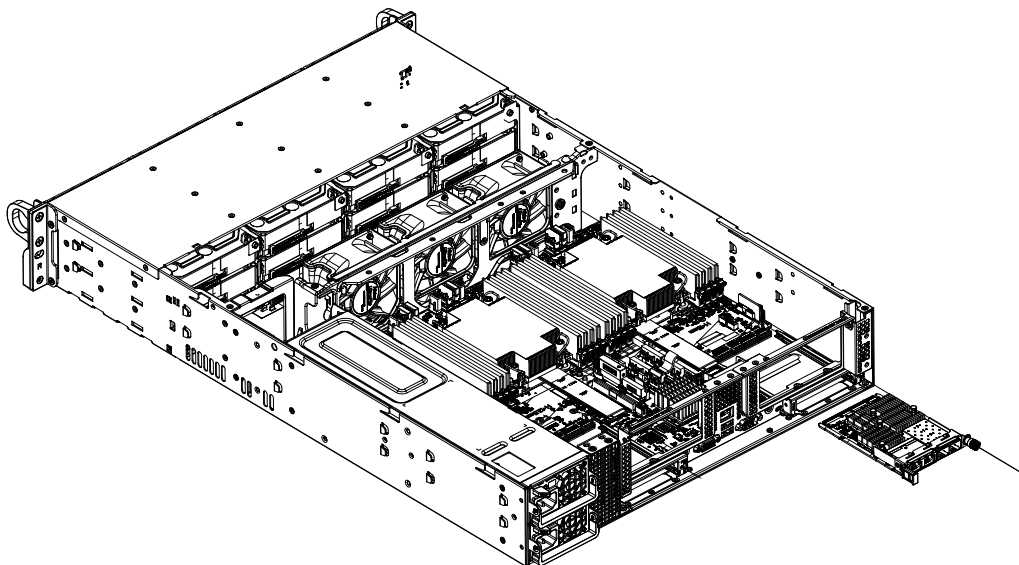


Figure 3-7. Installing AIOMs

Motherboard Battery

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

Replacing the Battery

Begin by removing power from the system as described in [Section 3.1](#).

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

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

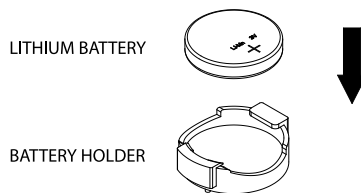


Figure 3-8. Installing the Onboard Battery

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

3.4 Chassis Components

This section provides instructions on installing and replacing system components. To assure compatibility, only use components that match the specifications or part numbers given.

Storage Drives

The system supports up to twelve 3.5"/2.5"SAS/SATA or two NVMe drives in front drive bays. An optional controller card kit is required to support SAS and an optional cable is required to support four NVMe drives.

The drives are mounted in tool-less drive carriers that simplify their removal from the chassis. These carriers also help promote proper airflow. Each carrier has a small space on the front to place an orange or purple label to help distinguish between NVMe or SAS/SATA drives. Drive carrier status indicators are described in [Section 1.3](#).

Note: Enterprise level hard disk drives are recommended for use in Supermicro servers. For compatible storage drives, see <https://www.supermicro.com/en/products/system/UP/2U/SYS-521C-NR>.

Installing Drives

The system supports twelve hot-swap SATA/SAS3/NVMe hybrid drive bays.



Figure 3-9. Logical Drive Numbers

Removing a Hot-Swap Drive Carrier from the System

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

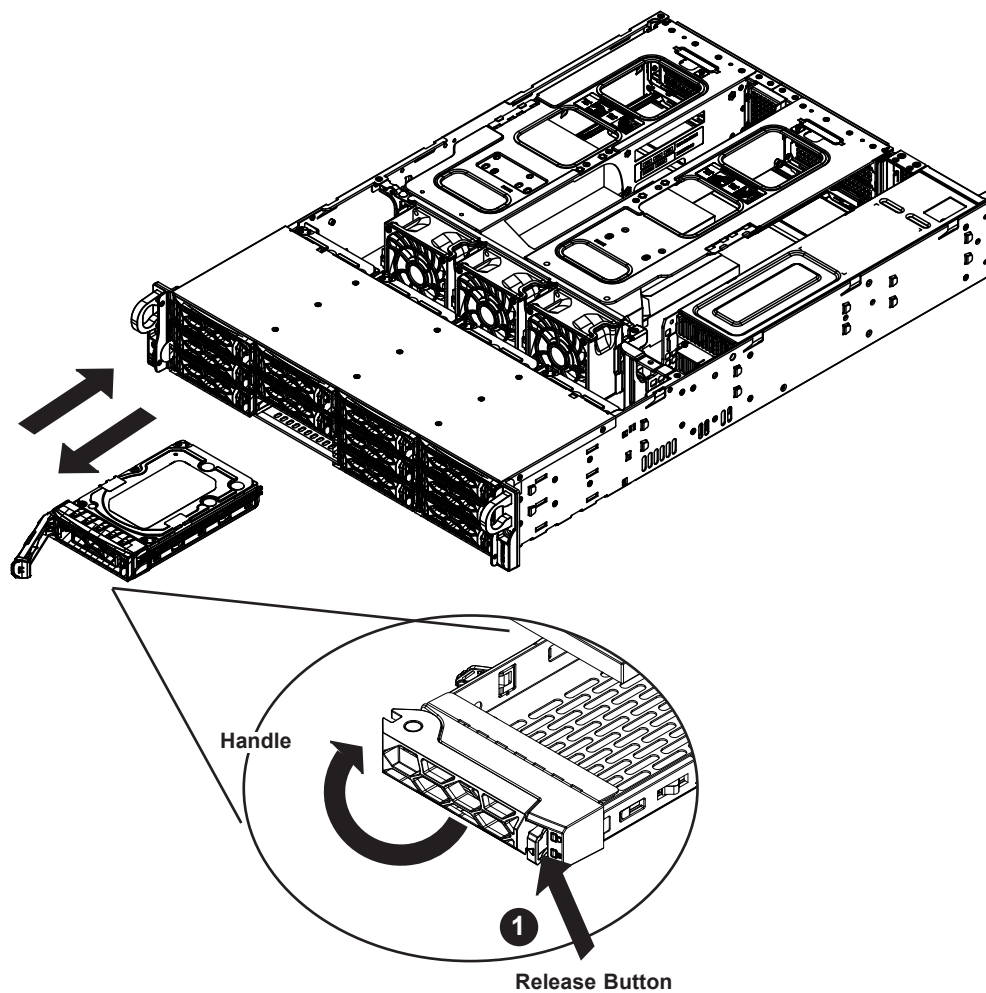


Figure 3-10. Removing a Drive Carrier

Installing a 3.5" Drive

1. Position the drive above the carrier with the PCB side facing down and the connector end toward the rear of the carrier.
2. Tilt the drive to insert it onto the two posts on the left inside of the carrier.

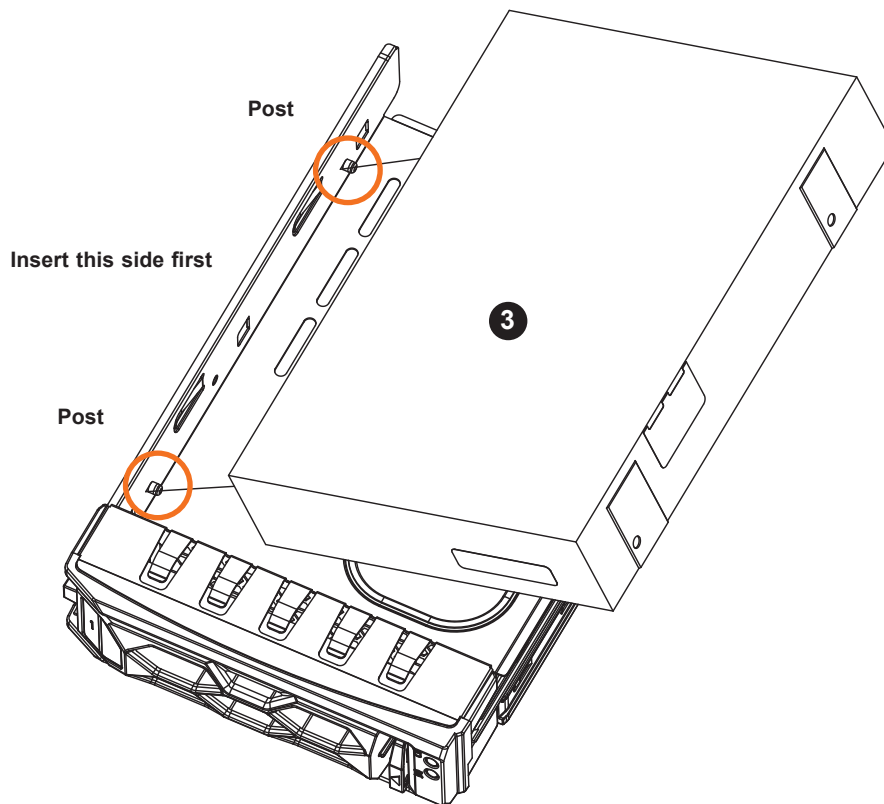


Figure 3-11. Installing a 3.5" Drive into a Carrier

3. Push the right side of the drive fully into the carrier and allow the two spring locking clasps to secure the drive.
4. Insert the drive carrier into its bay, keeping the release button on the right. When the carrier reaches the rear of the bay, the release handle will retract.
5. Push the handle in until it clicks into its locked position

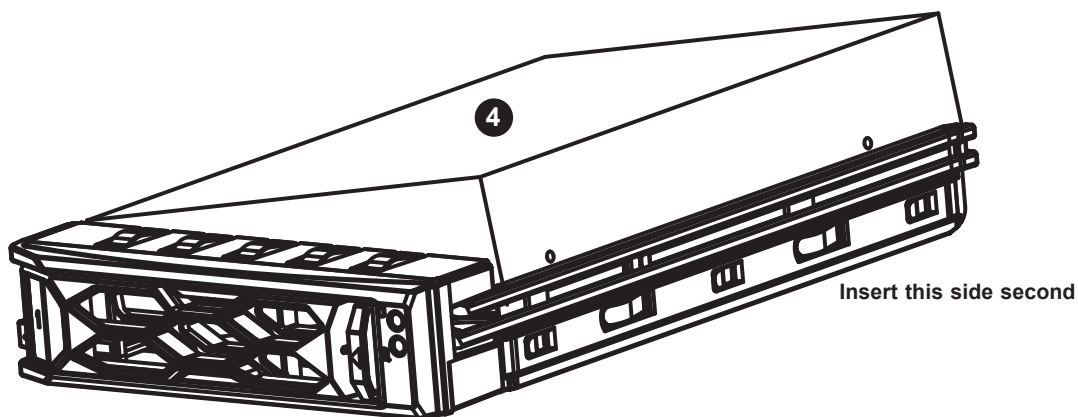


Figure 3-12. Installing a 3.5" Drive into a Carrier

Installing a 2.5" Drive

1. Install the drive directly into the tray with four screws underneath.
2. Insert the drive carrier into its bay, keeping the release button on the right. When the carrier reaches the rear of the bay, the release handle will retract.
3. Push the handle in until it clicks into its locked position

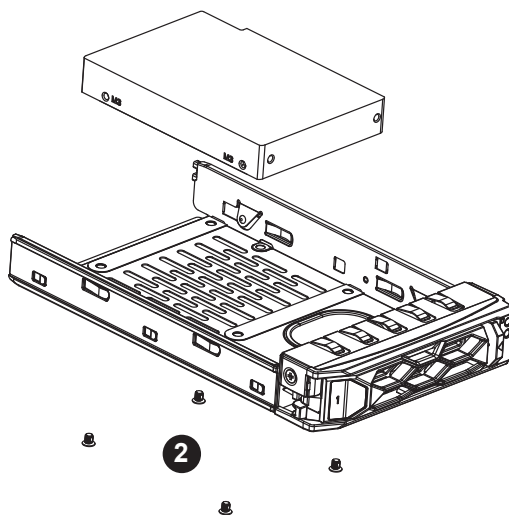


Figure 3-13. Installing a 2.5" Drive into a Carrier

Hot-Swap for NVMe Drives

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

Ejecting a Drive

1. IPMI > Storage > Physical View

2. Select Device and click Eject. After ejecting, the drive Status LED indicator turns green.
3. Remove the drive.

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

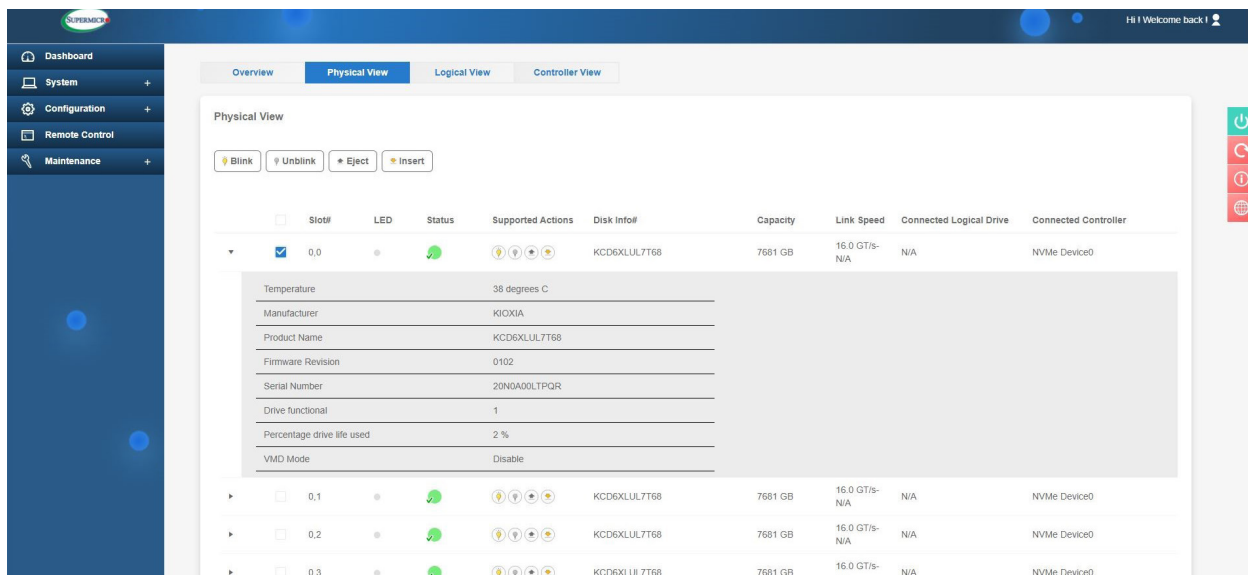


Figure 3-14. IPMI Screenshot

Replacing the Drive

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

System Cooling

Three 8-cm fans provide the cooling for the system. Make sure the chassis top cover makes a good seal so the cooling air circulates properly through the chassis

Changing a System Fan

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

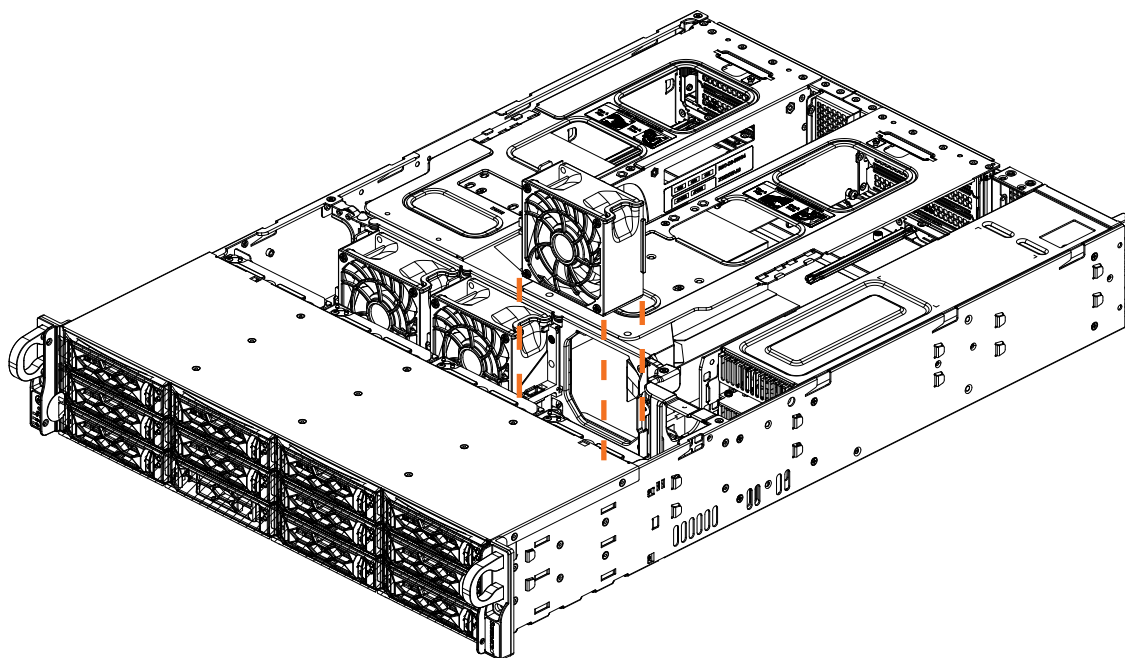


Figure 3-15. Replacing a Fan

Checking the Server Air Flow

- Make sure there are no objects to obstruct airflow in and out of the server.
- Do not operate the server without drives or drive trays in the drive bays.
- Use only recommended server parts.
- Make sure no wires or foreign objects obstruct air flow through the chassis. Pull all excess cabling out of the airflow path or use shorter cables.

The control panel LEDs display system heat status. See “Control Panel” in Chapter 1 for details.

Overheating

There are several possible responses if the system overheats.

Overheat Temperature Setting

Some backplanes allow the overheat temperature to be set at 45, 50, or 55 degrees by changing a jumper setting. For more information, consult the backplane user manual at www.supermicro.com. (Click Support, then the Manuals link.)

Responses

If the server overheats:

1. Use the LEDs to determine the nature of the overheating condition.
2. Confirm that the chassis covers are installed properly.
3. Make sure all fans are present and operating normally.
4. Check the routing of the cables.
5. Verify that the heatsinks are installed properly.

Power Supply

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

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

Power Supply LEDs

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

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

Replacing the Power Supply

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

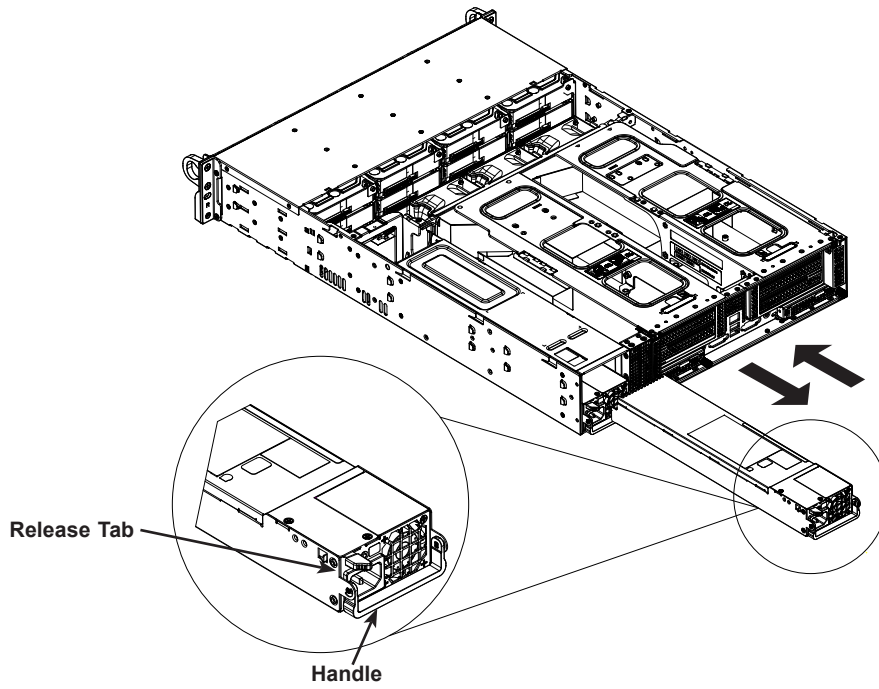


Figure 3-16. Installing/Removing a Power Supply Module

Chapter 4

Motherboard Connections

This section describes the connections on the motherboard and provides pinout definitions. Note that depending on how the system is configured, not all connections are required. The LEDs on the motherboard are also described here. A motherboard layout indicating component locations may be found in [Chapter 1](#).

Please review the Safety Precautions in Appendix A before installing or removing components.

4.1 Power Connections

Power Connections

Power Connectors

JPWR1 is the 24-pin power connector for ATX power source. JPWR2 and JPWR3 are the 8-pin 12V DC power connectors that provide power to the CPU in conjunction with JPWR1 or they can be used as the sole 12V DC only power inputs when JPWR1 is not in use.

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

8-pin CPU Power Pin Definitions	
Pin#	Definition
1-4	GND
5-8	12V

4.2 Headers and Connectors

Chassis Intrusion

A Chassis Intrusion header is located at JL1 on the motherboard. Attach the appropriate cable from the chassis to inform you of a chassis intrusion when the chassis is opened. Refer to the table below for pin definitions.

Chassis Intrusion Pin Definitions	
Pin#	Definition
1	Intrusion Input
2	Ground

4-Pin External BMC I²C Header

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

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

Fan Headers

There are six 4-pin fan headers (FAN1 - FAN6) on the motherboard. All these 4-pin fan headers are backwards compatible with the traditional 3-pin fans. However, fan speed control is available for 4-pin fans only by Thermal Management via the IPMI 2.0 interface. Refer to the table below for pin definitions.

Fan Header Pin Definitions	
Pin#	Definition
1	Ground (Black)
2	2.5A/+12V (Red)
3	Tachometer
4	PWM_Control

Intel RAID Key Header

The JRK1 header allows you to enable RAID functions for NVMe connections. Refer to the table below for pin definitions.

Intel RAID Key Header Pin Definitions	
Pin#	Definition
1	GND
2	PU 3.3V Stdbby
3	GND
4	PCH RAID KEY

M.2 Slots

This motherboard has two M.2 slots (JM2_1, JM2_2). M.2 was formerly known as Next Generation Form Factor (NGFF) and serves to replace mini PCIe. M.2 allows for a variety of card sizes, increased functionality, and spatial efficiency. The M.2 connectors on the motherboard supports PCIe 3.0 from PCH in the 2280 and 22110 form factors.

NC-SI Header for IPMI Support

A Network-Controller Sideband Interface (NC-SI) header is located at JNCSI1 on the motherboard. For remote management, connect the appropriate cable from this header to an add-on card to provide the out-of-band (sideband) connection between the onboard Baseboard Management Controller (BMC) and a Network Interface Controller (NIC). For the network sideband interface to work properly, you will need to use a NIC add-on card that supports NC-SI and also need to have a special cable. Please contact Supermicro at www.supermicro.com to purchase the cable for this header.

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

Overheat/Fan Fail LED Header

The JOH1 header is used to connect an LED indicator to provide warnings of chassis overheating and fan failure. This LED will blink when a fan failure occurs. Refer to the tables below for pin definitions.

Overheat LED Header Status	
State	Definition
Solid	Overheat
Blinking	Fan Fail

Overheat LED Pin Definitions	
Pin#	Signal
1	Pull high to +3.3V power through 330-ohm resistor
2	OH Active

Power SMB (I²C) Header

Power System Management Bus (I²C) header at JPI²C1 monitors the power supply, fan and system temperatures. Refer to the table below for pin definitions.

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

Standby Power

The Standby Power header is located at JSTBY1 on the motherboard. You must have a card with a Standby Power connector and a cable to use this feature. Refer to the table below for pin definitions.

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

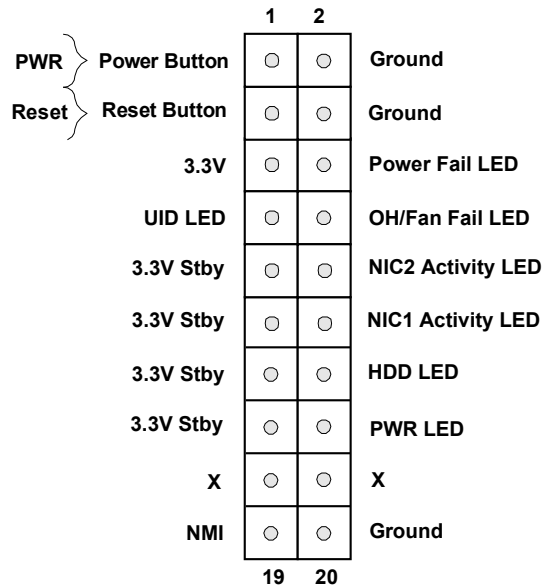
TPM/Port 80 Header

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. Visit 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	+3.3V	2	SPI_CS#
3	RESET#	4	SPI_MISO
5	SPI_CLK	6	GND
7	SPI_MOSI	8	NC
9	+3.3V Stdby	10	SPI_IRQ#

4.3 Front Control Panel

JF1 contains header pins for various buttons and indicators that are normally located on a control panel at the front of the chassis. These connectors are designed specifically for use with a Supermicro chassis. See the figure below for the descriptions of the front control panel buttons and LED indicators.



Power Button

The Power Button connection is located on pins 1 and 2 of JF1. Momentarily contacting both pins will power on/off the system. This button can also be configured to function as a suspend button (with a setting in the BIOS - see Chapter 4). To turn off the power when the system is in suspend mode, press the button for 4 seconds or longer. Refer to the table below for pin definitions.

Power Button Pin Definitions (JF1)	
Pin#	Definition
1	Signal
2	Ground

Reset Button

The Reset Button connection is located on pins 3 and 4 of JF1. Attach it to a hardware reset switch on the computer case to reset the system. Refer to the table below for pin definitions.

Reset Button Pin Definitions (JF1)	
Pin#	Definition
3	Reset
4	Ground

Power Fail

The Power Fail LED connection is located at pins 5 and 6. Refer to the table below for pin definitions.

Power Fail LED Pin Definitions (JF1)	
Pin#	Definition
5	3.3V
6	Power Fail LED

Information LED (OH/Fan Fail/PWR Fail/UID LED)

The Information LED (OH/Fan Fail/PWR Fail/UID LED) connection is located on pins 7 and 8 of JF1. The LED on pin 7 is active when the UID switch on the rear I/O panel is pressed. The LED on pin 8 provides warnings of overheat, power failure, or fan failure. Refer to the table below for more information.

Information LED-UID/OH/PWR Fail/Fan Fail LED Pin Definitions (JF1)	
Status	Description
Solid Red	An overheat condition has occurred. This may be caused by cable congestion.
Blinking Red (1Hz)	Fan failure: check for an inoperative fan.
Blinking Red (0.25Hz)	Power failure: check for a non-operational power supply.
Solid Blue	Local UID is activated. Use this function to locate a unit in a rack mount environment that might be need of service.
Blinking Blue (300msec)	Remote UID is on. Use this function to identify a unit from a remote location that might be in need of service.

NIC1/NIC2 (LAN1/LAN2)

The Network Interface Controller (NIC) LED connection for LAN port 1 is located on pins 11 and 12 of JF1, and LAN port 2 is on pins 9 and 10. Attach the NIC LED cables here to display network activity. Refer to the table below for pin definitions.

NIC1/NIC2 LED Pin Definitions (JF1)	
Pin#	Definition
9	NIC 2 Activity LED
11	NIC 1 Activity LED

HDD LED

The HDD LED connection is located on pins 13 and 14 of JF1. Attach a cable to pin 14 to show hard drive activity status. Refer to the table below for pin definitions.

HDD LED Pin Definitions (JF1)	
Pins	Definition
13	3.3V Stdby
14	HDD Active

Power LED

The Power LED connection is located on pins 15 and 16 of JF1. Refer to the table below for pin definitions.

Power LED Pin Definitions (JF1)	
Pins	Definition
15	+3.3V Stby
16	PWR LED

NMI Button

The non-maskable interrupt button header is located on pins 19 and 20 of JF1. Refer to the table below for pin definitions.

NMI Button Pin Definitions (JF1)	
Pins	Definition
19	Control
20	Ground

4.4 Ports

Rear I/O Ports

See the figure below for the locations and descriptions of the various I/O ports on the rear of the motherboard.

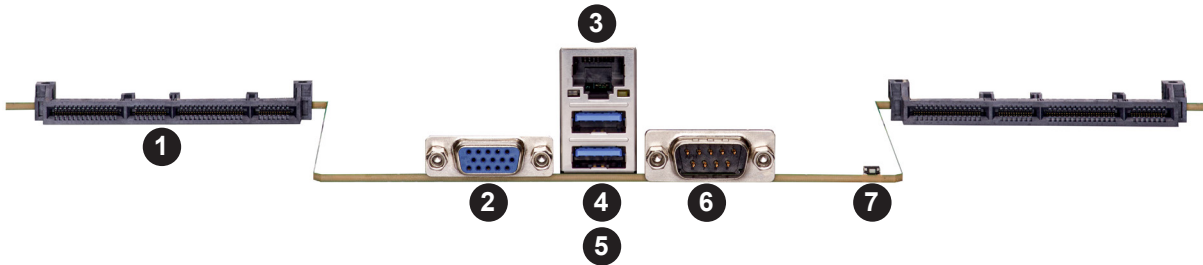


Figure 4-1. Rear I/O Ports

Rear I/O Ports			
#	Description	#	Description
1	AIOM2	5	USB3
2	VGA	6	COM1
3	BMC LAN	7	UID Switch
4	USB2	8	AIOM1

AIOM1 – AIOM2

Supermicro introduces the Advanced I/O Module (AIOM), the latest expansion card feature offering PCIe 5.0 lanes in each slot which can be utilized to offer additional LAN ports, VPU, storage devices, etc. on the motherboard. Visit the Supermicro website for all available module options. Keep in mind that it is mandatory that power be unplugged prior to removing or installing an AIOM module card to either one of these two expansion slots.

COM Port

The motherboard has one COM port. COM1 is located next to JUSBRJ45.

COM Port Pin Definitions			
Pin#	Definition	Pin#	Definition
1	SP_DCDA	6	SP_DSRA
2	SP_RXDA	7	SP_RTSA
3	SP_TXDA	8	CTS
4	SP_DTRA	9	SP_RIA
5	GND	10	NC

LAN Port

The motherboard has one dedicated BMC LAN port. It is located next to the VGA port and above USB2/3 ports on the back panel. It can accept RJ45 cables. Refer to the LED indicator section for LAN LED information.

Universal Serial Bus (USB) Ports

The motherboard has two USB 2.0 headers on the motherboard (USB0/1), and two USB 3.2 Gen 1 ports on the I/O back panel (USB2/3). The onboard headers can be used to provide front side USB access with a cable (not included).

Front Panel USB0/1 (2.0) Headers Pin Definitions			
Pin#	Definition	Pin#	Definition
1	+5V	2	+5V
3	USB_N	4	USB_N
5	USB_P	6	USB_P
7	Ground	8	Ground
9	Key	10	NC

Back Panel USB2/3 (USB 3.2 Gen 1) Pin Definitions			
Pin#	Definition	Pin#	Definition
A1	VBUS	B1	VBUS
A2	USB_N	B2	USB_N
A3	USB_P	B3	USB_P
A4	GND	B4	GND
A5	Stda_SSRX-	B5	Stda_SSRX-
A6	Stda_SSRX+	B6	Stda_SSRX+
A7	GND	B7	GND
A8	Stda_SSTX-	B8	Stda_SSTX-
A9	Stda_SSTX+	B9	Stda_SSTX+

VGA Port

A video (VGA) port is located on the I/O back panel.

Unit Identifier Switch (UID-SW): One button with two functions

A Unit Identifier (UID) switch and two LED Indicators are located on the motherboard. The UID switch is located next to the VGA port on the back panel.

Function	User Input	Behavior	LED Activity
UID LED Indicator	Push Once	Turns on the UID LED	UID LED turns solid blue
	Push Again	Turns off the UID LED	UID LED turns off
BMC Reset	Push and hold for 6 seconds	BMC will do a cold boot	BMC Hearbeat LED turns solid green
	Push and hold for 12 seconds	BMC will reset to factory default	BMC Hearbeat LED turns solid green

Note: After pushing and holding the UID-SW for 12 seconds, all BMC settings including username and password will revert back to the factory default. Only the network settings and FRU are retained.

UID Switch Pin Definitions	
Pin#	Definition
1	Button In
2	Ground
G1	Ground
G2	Ground

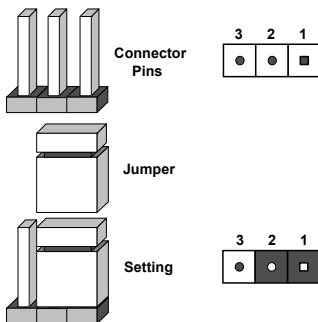
UID LED Pin Definitions	
Color	Status
Blue: On	Unit Identified

4.5 Jumpers

Explanation of Jumpers

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

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



CMOS Clear

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

To Clear CMOS

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

Notes: Clearing CMOS will also clear all passwords.

Do not use the PW_ON connector to clear CMOS.



Front Control Board Signal Reset

Jumper JRU1 is used to configure the signal settings for the Front Control Board (JFP1). Close pins 1 and 2 to reset the Front Control Board signals for UID use. Close pins 2 and 3 to configure JFP1 signals for reset use. The default setting is on pins 1-2 to reset JFP1 for power button use. Refer to the table below for jumper settings.

Front Control Board Signal Reset Jumper (JRU1) Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Configure JFP1 Signals for UID (Default)
Pins 2-3	Configure JFP1 Signals for Reset

VGA Enable/Disable

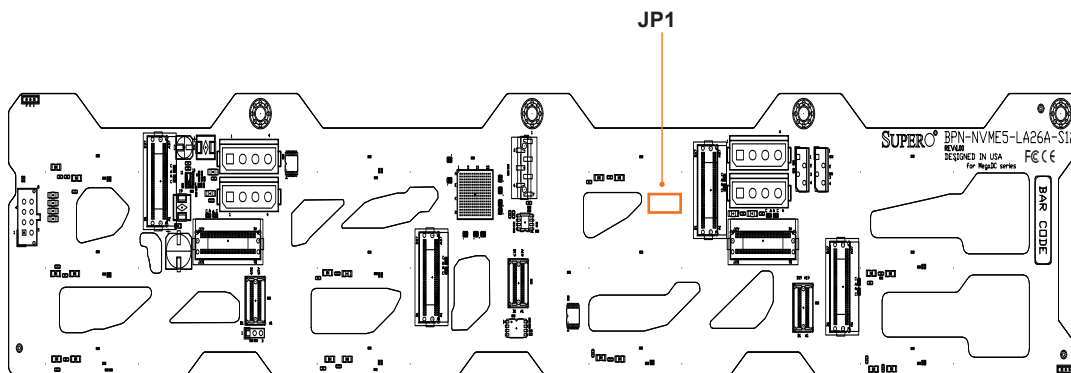
JPG1 allows you to enable or disable the VGA port using the onboard graphics controller.

VGA Enable/Disable Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enabled
Pins 2-3	Disabled

Backplane SGPIO Jumper Settings

The JP1 jumper on the backplane controls the SGPIO signal model. Refer to the table below for jumper settings.

Backplane SGPIO Jumper Settings	
Jumper Setting	Definition
Pins 1-2	x4 + x4 SAS AOC/RAID
Pins 2-3	x8 Onboard SATA (Default)



4.6 LED Indicators

BMC Heartbeat LED

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

BMC Heartbeat LED Indicator	
LED Color	Definition
Green: Blinking	BMC Normal

Onboard Power LED

LE1 is the onboard Power LED. When this LED is on, the system is on. Turn off the system and unplug the power cord before removing or installing components. Refer to the table below for more information.

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

Chapter 5

Software

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

5.1 Microsoft Windows OS Installation

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

Installing the OS

1. Create a method to access the Microsoft Windows installation ISO file. That can be a USB flash or media drive, or the BMC KVM console.
2. Go to the Supermicro web page for your motherboard and click on "Download the Latest Drivers and Utilities", select the proper driver, and copy it to a USB flash drive.
3. Boot from a bootable device with Windows OS installation. You can see a bootable device list by pressing **[F11]** during the system startup.

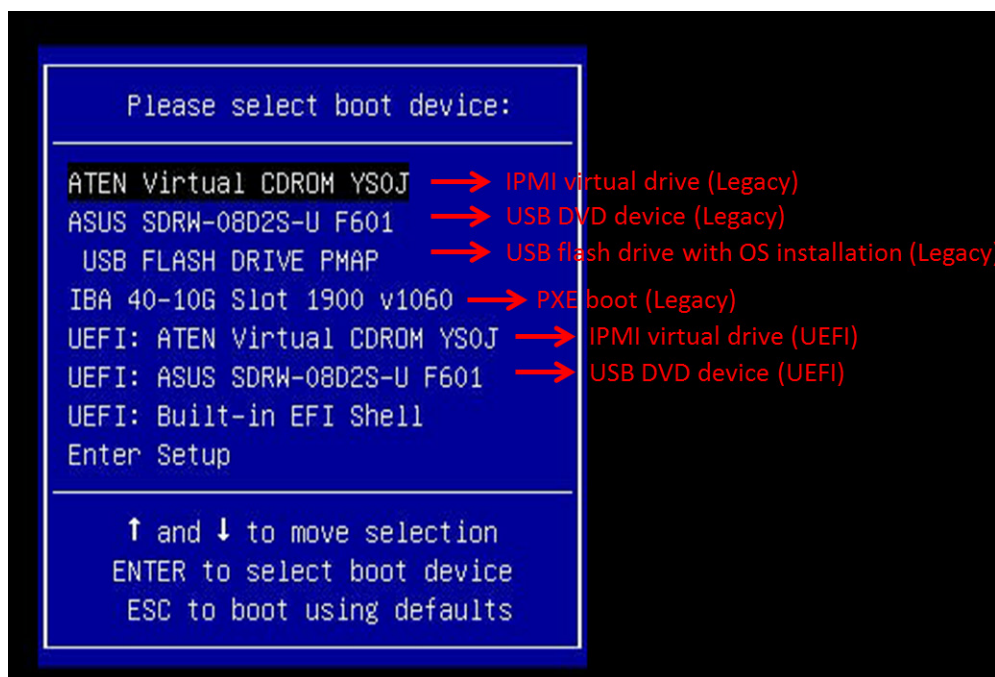


Figure 5-1. Select Boot Device

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

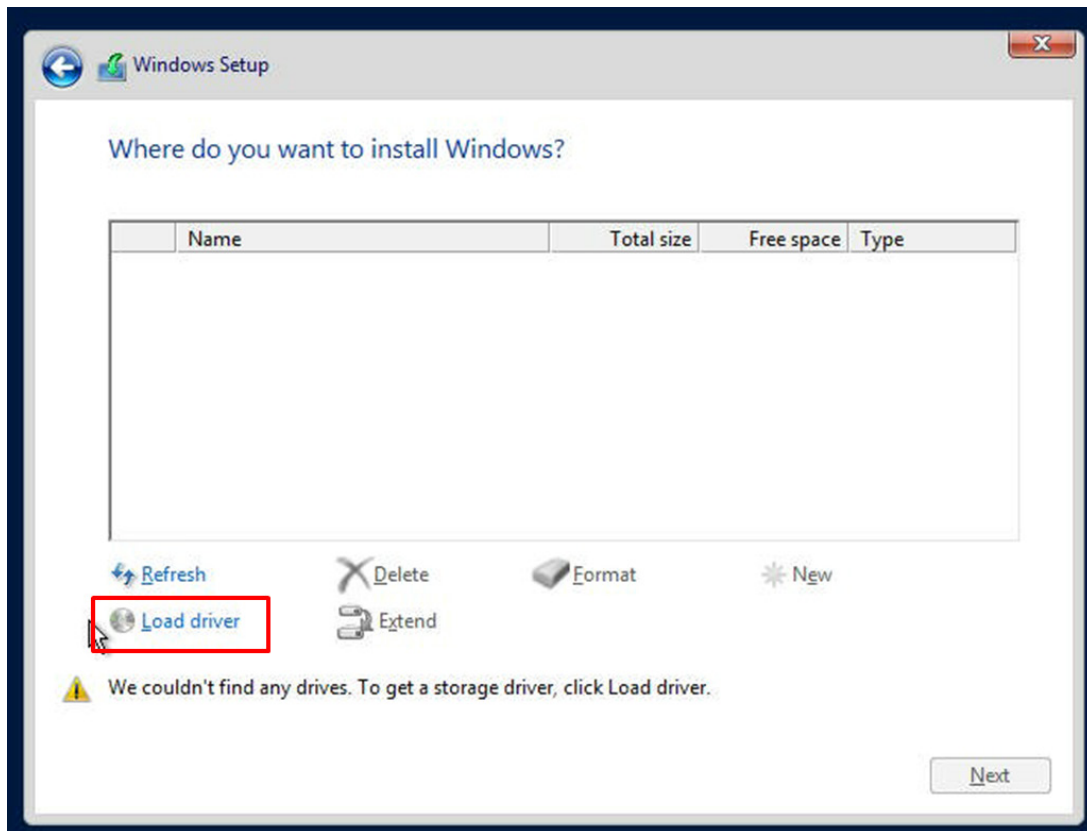


Figure 5-2. Load Driver Link

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

- For RAID, choose the SATA/sSATA RAID driver indicated then choose the storage drive on which you want to install it.
 - For non-RAID, choose the SATA/sSATA AHCI driver indicated then choose the storage drive on which you want to install it.
5. Once all devices are specified, continue with the installation.
 6. After the Windows OS installation has completed, the system will automatically reboot multiple times.

5.2 Driver Installation

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

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

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

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

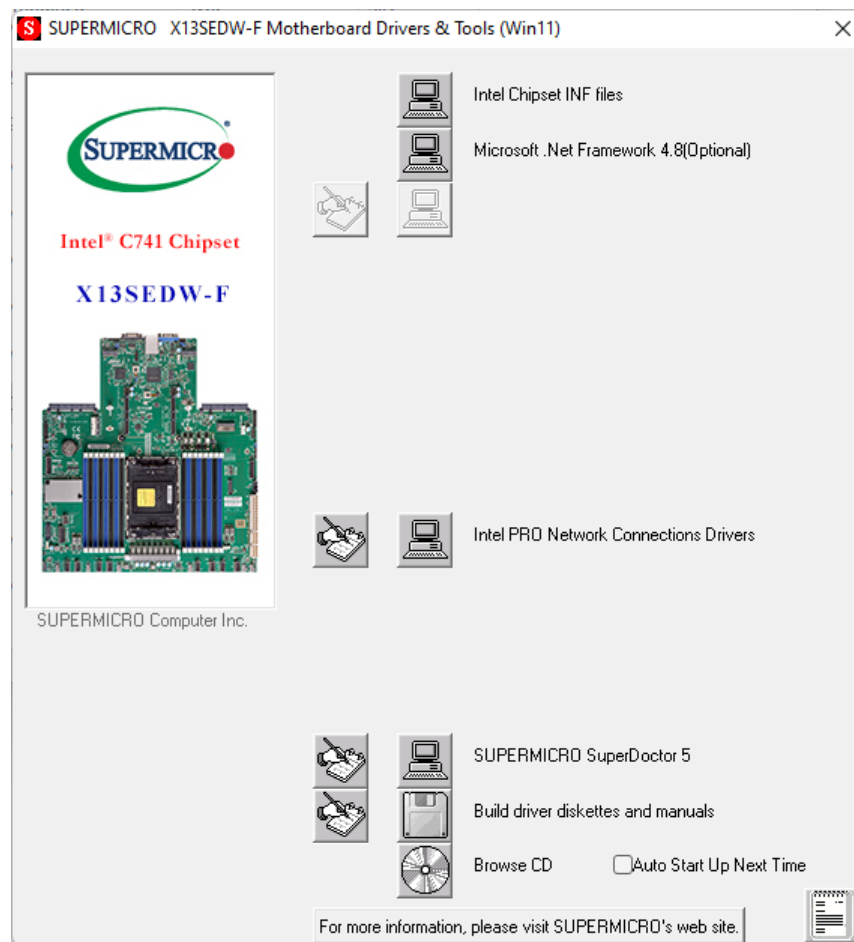


Figure 5-3. Driver & Tool Installation Screen

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

5.3 SuperDoctor® 5

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

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

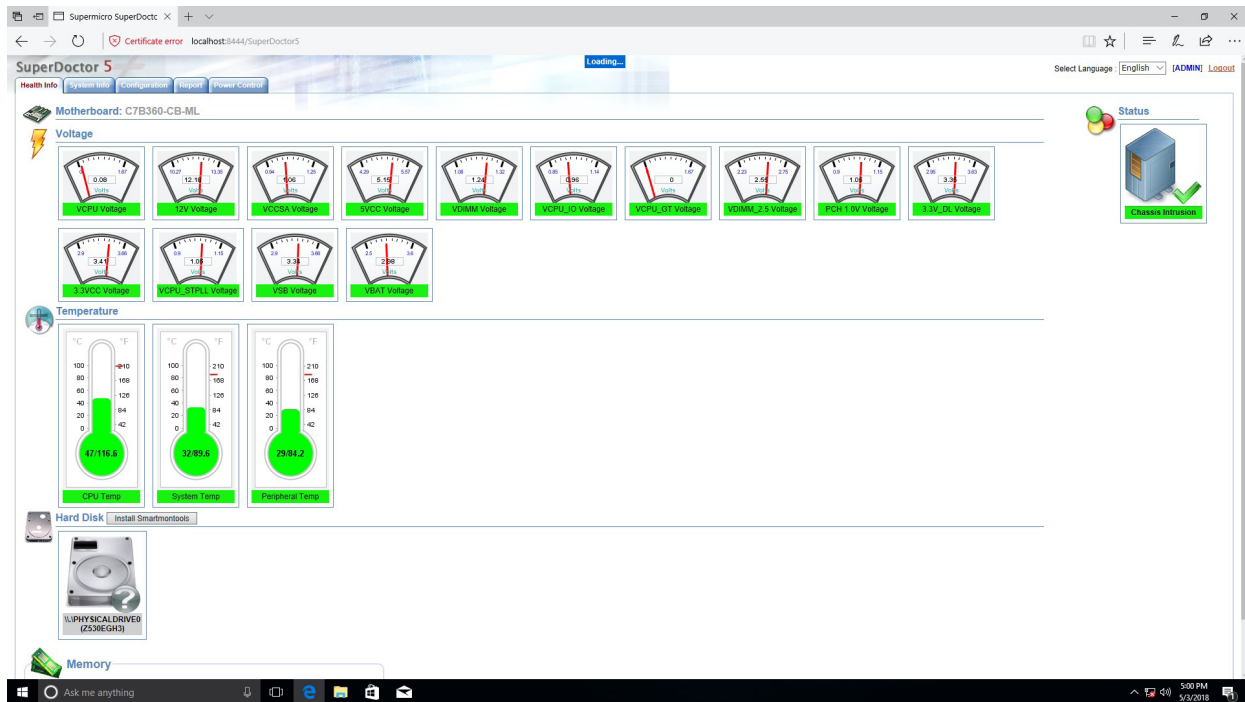


Figure 5-4. SuperDoctor 5 Interface Display Screen (Health Information)

5.4 BMC

The 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 Password Label

Chapter 6

Optional Components

This chapter describes optional system components and installation procedures.

6.1 Optional Parts List

Optional Parts List
Description
Intel VROC RAID Key
TPM security module

6.2 TPM Security Module

SPI capable TPM 2.0 (AOM-TPM-9670V) with Infineon 9670 controller, vertical 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:

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

6.3 Intel Virtual RAID on CPU (VROC)

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

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

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

Requirements and Restrictions

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

Supported SSDs and Operating Systems

To see the latest support information: <https://www.intel.com/content/www/us/en/support/articles/000030310/memory-and-storage/ssd-software.html>

Additional Information

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

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

Hardware Key

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

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

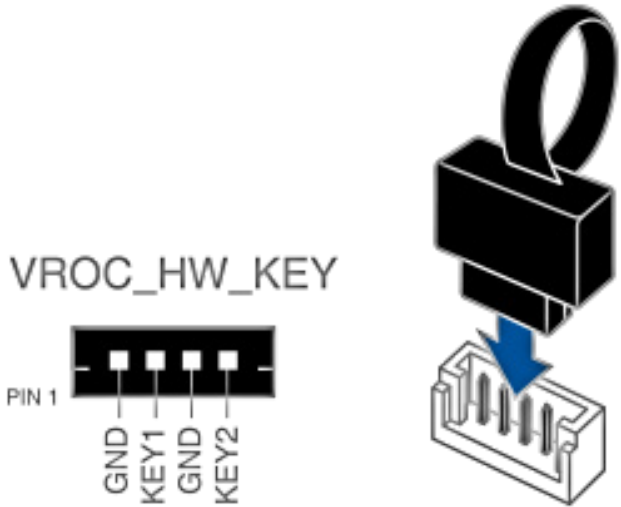


Figure 6-1. Intel® VROC RAID Key and Motherboard Connector JRK1

Configuring NVMe RAID Manually

RAID for NVMe SSDs is enabled by default when the Intel VROC Raid Key is populated. It may be managed manually through the UEFI BIOS.

1. Install the patch as described in the Restrictions and Requirements section on a previous page.
2. Reboot the server.
3. Press [DEL] key to enter BIOS.
4. Switch to **Advanced > Chipset Configuration > North Bridge > IIO Configuration > Intel® VMD Technology**. Here, you can select a mode. The default is Auto. The VMD switch enables VMD mode for all VROC keys. The Manual switch allows the user to choose devices on which to enable VMD.

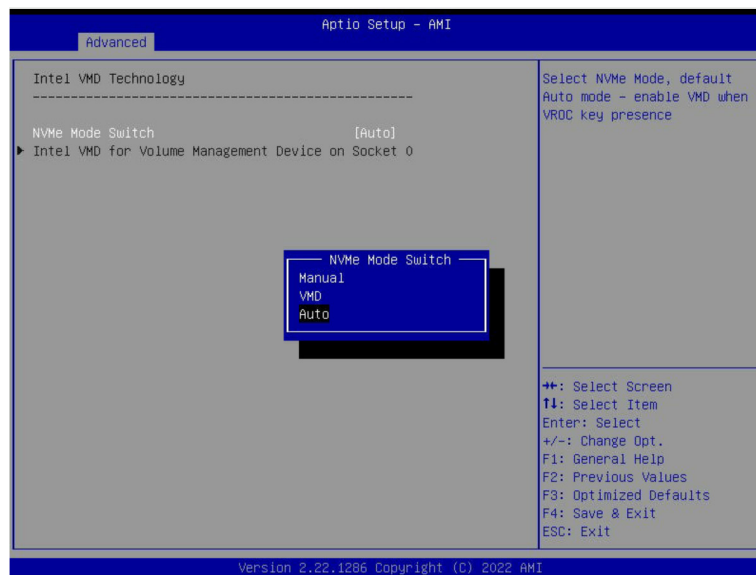


Figure 6-2. Selecting the Mode

5. Select the desired PCIe slot to Enable or Disable Intel VMD functionality according to the current hardware configuration being used. Hot Plug Capability can also be Enabled or Disabled.

The onboard M.2 NVMe from PCH is located in the PCH ports section. The screenshot below show example choices in Manual mode.

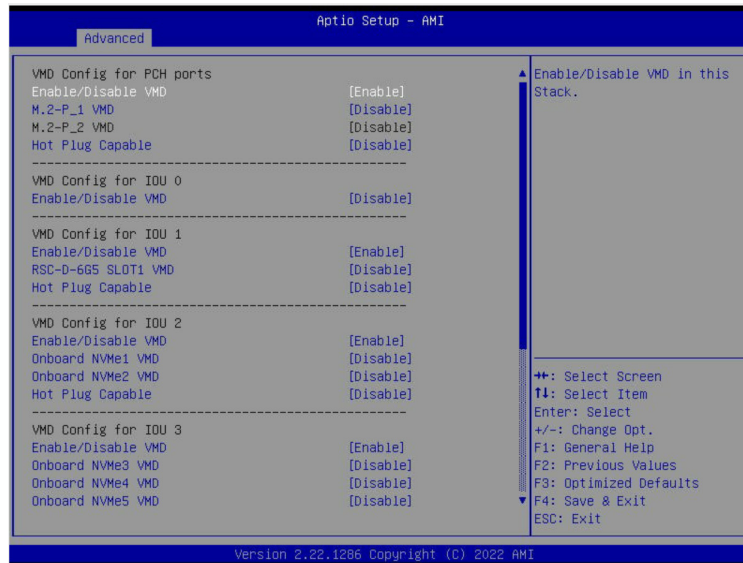
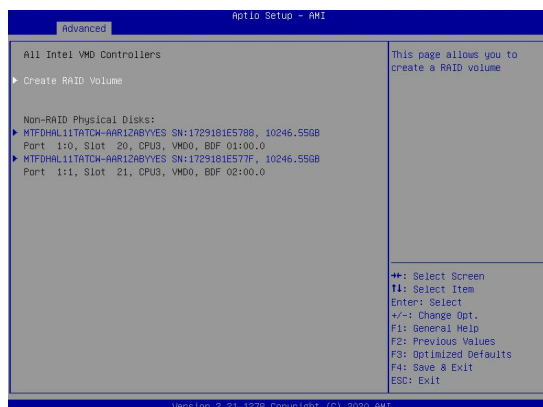


Figure 6-3. Manual Mode Choices

6. Press [F4] to save the configuration and reboot the system.
7. Press [DEL] to enter BIOS.
8. Switch to **Advanced > Intel(R) Virtual RAID on CPU > All Intel VMD Controllers > Create RAID Volume**.
9. Set **Name**.
10. Set **RAID Level**.
11. Select **Strip Size** (Default 64KB).
12. Select **Create Volume**.



13. If another RAID is needed, start again at step 6.
14. Press [F4] to save and reboot.
15. If cross-controller RAID is required, select **Enable RAID spanned over VMD Controller**.
16. Select specific disks for RAID with an [X].
 - RAID0: Select at least two [2 - 24] disks
 - RAID1: Select only two disks
 - RAID5: Select at least three [3 - 24] disks
 - RAID10: Select only four disks

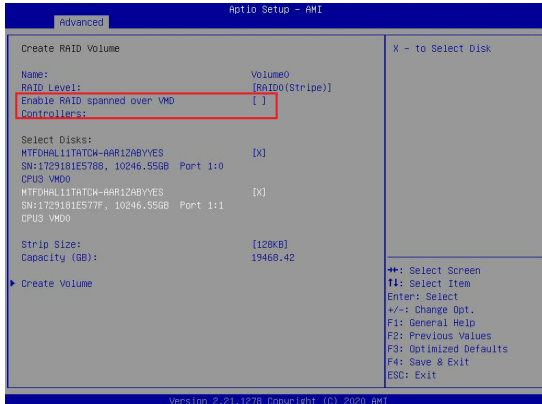


Figure 6-4. Created Volume *without* enabling RAID spanned over VMD Controller

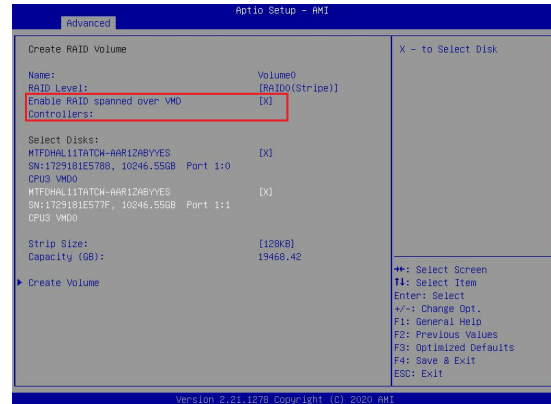


Figure 6-5. Created Volume *with* enabling RAID spanned over VMD Controller

Status Indications

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

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

IBPI SFF 8489 Defined Status LED States

Hot Swap Drives

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

Hot-unplug

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

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

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

Hot-plug

- Physically install the device.

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

Related Information Links

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

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

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

Chapter 7

Troubleshooting and Support

7.1 Information Resources

Website

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

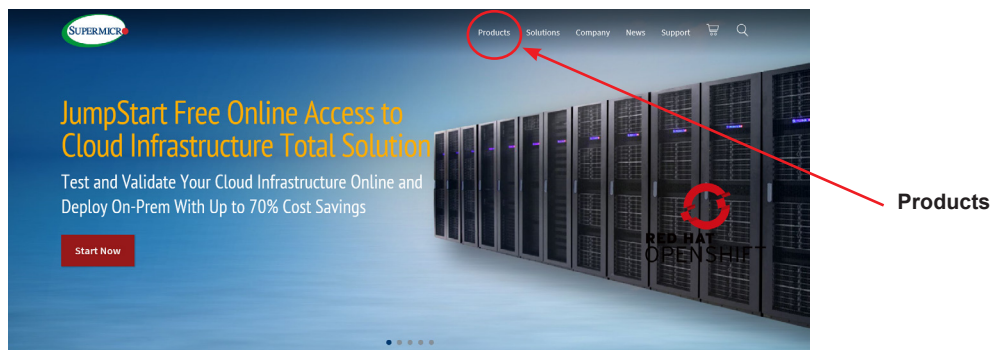


Figure 7-1. Supermicro Website

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

Direct Links for the SYS-521C-NR System

Web specifications pages for [SYS-521C-NR](#)

[X13SEDW-F motherboard page](#) for links to the Quick Reference Guide, User Manual, validated storage drives, etc.

Direct Links for General Support and Information

[Frequently Asked Questions](#)

[Add-on card descriptions](#)

[TPM User Guide](#)

General Memory Configuration Guide: [X13](#)

[BMC User Guide](#)

[SuperDoctor5 Large Deployment Guide](#)

Direct Links (continued)

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

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

[Security Center](#) for recent security notices

[Supernano Phone and Addresses](#)

7.2 BMC Interface

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

For general documentation and information on the BMC, please visit our website at: www.supernano.com/manuals/other/BMC_Users_Guide_X12_H12.pdf.

The screenshot shows the BMC interface with the following components:

- Navigation Sidebar:** Dashboard, System, Component Info, Health Event Log, Configuration, Remote Control, Maintenance.
- Advanced Settings:** Filter options: X Sensor-specific, X Threshold, X Generic, X OEM, X Unspecified.
- Health Event Log:**
 - Buttons: Clear Health Event Log, Export to Excel.
 - Table with columns: Severity, Date/Time, Sensor Type Categories, Description, Event Type.

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

Figure 7-2. BMC Sample

7.3 Troubleshooting Procedures

Use the following procedures to troubleshoot your system. If you have followed all of the procedures below and still need assistance, refer to the [Technical Support Procedures](#) or [Returning Merchandise for Service](#) section(s) in this chapter. **Power down** the system before changing any non hot-swap hardware components.

General Technique

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

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

No Power

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

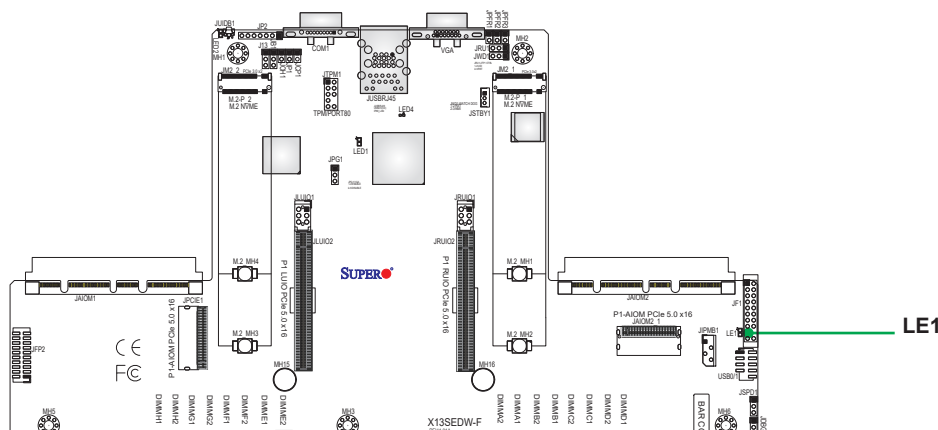


Figure 7-3. Location of the MB Power LED

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

No Video

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

System Boot Failure

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

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

Memory Errors

- Make sure that the DIMM modules are properly and fully installed.
- Confirm that you are using the correct memory. Also, it is recommended that you use the same memory type and speed for all DIMMs in the system. See [Memory Support](#) in Chapter 3 for memory details.
- Check for bad DIMM modules or slots by swapping modules between slots and noting the results.

Losing the System Setup Configuration

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

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

When the System Becomes Unstable

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

- CPU/BIOS support: Make sure that your CPU is supported and that you have the latest BIOS installed in your system.
- Memory: Make sure that the memory modules are supported. Refer to the product page on our website at www.supermicro.com. Test the modules using **memtest86** or a similar utility.
- Storage drives: Make sure that all drives work properly. Replace if necessary.

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

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

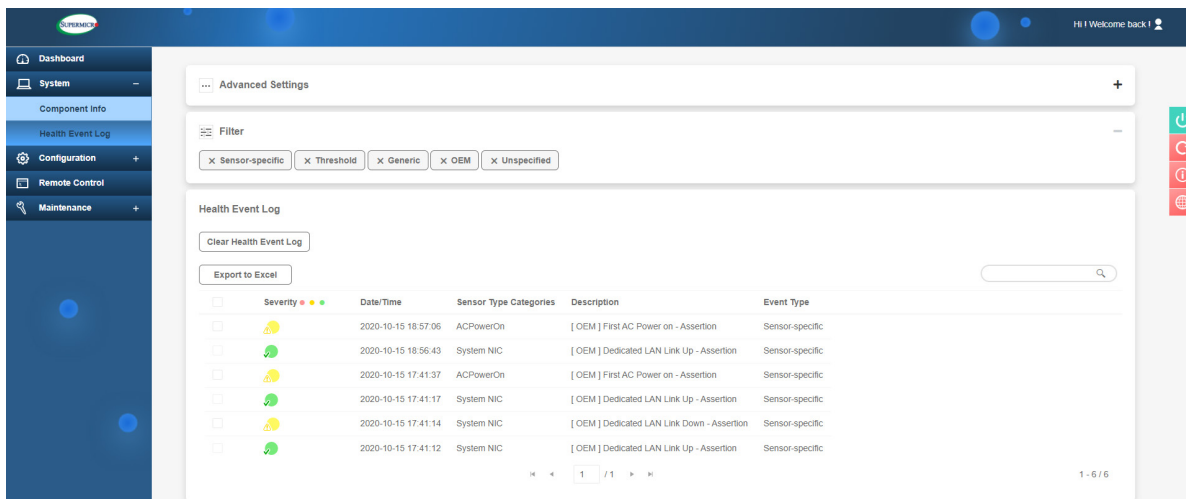
- Source of installation: Make sure that the devices used for installation are working properly, including boot devices.
- Cable connection: Check to make sure that all cables are connected and working properly.
- Use the minimum configuration for troubleshooting: Remove all unnecessary components (starting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

7.4 Crash Dump Using the BMC Dashboard

In the event of a processor internal error (IERR) that crashes your system, you may want to provide information to support staff. You can download a crash dump of status information using the BMC Dashboard. The BMC manual is available at www.supernmicro.com/manuals/other/BMC_Users_Guide_X12_H12.pdf.

Check Error Log

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



The screenshot shows the BMC Dashboard interface. On the left is a dark blue sidebar with navigation icons and labels: Dashboard, System, Component Info, Health Event Log, Configuration, Remote Control, and Maintenance. The main content area has a top navigation bar with 'Advanced Settings' and a search bar. Below that is a 'Filter' section with buttons for 'Sensor-specific', 'Threshold', 'Generic', 'OEM', and 'Unspecified'. The 'Health Event Log' section contains a 'Clear Health Event Log' button, an 'Export to Excel' button, and a search input. The event log table has the following data:

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

Figure 7-3. BMC Event Log

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

7.5 CMOS Clear

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

To Clear CMOS

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



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

Notes: Clearing CMOS will also clear all passwords.

Do not use the PW_ON connector to clear CMOS.

7.6 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.

7.7 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.

7.8 Feedback

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

7.9 Contacting Supermicro

Headquarters

Address: Super Micro Computer, Inc.
980 Rock Ave.
San Jose, CA 95131 U.S.A.

Tel: +1 (408) 503-8000

Fax: +1 (408) 503-8008

Email: marketing@supermicro.com (General Information)
Sales-USA@supermicro.com (Sales Inquiries)
Government_Sales-USA@supermicro.com (Gov. Sales Inquiries)
support@supermicro.com (Technical Support)
RMA@supermicro.com (RMA Support)
Webmaster@supermicro.com (Webmaster)

Website: www.supermicro.com

Europe

Address: Super Micro Computer B.V.
Het Sterrenbeeld 28, 5215 ML
's-Hertogenbosch, The Netherlands

Tel: +31 (0) 73-6400390

Fax: +31 (0) 73-6416525

Email: Sales_Europe@supermicro.com (Sales Inquiries)
Support_Europe@supermicro.com (Technical Support)
RMA_Europe@supermicro.com (RMA Support)

Website: www.supermicro.nl

Asia-Pacific

Address: Super Micro Computer, Inc.
3F, No. 150, Jian 1st Rd.
Zhonghe Dist., New Taipei City 235
Taiwan (R.O.C)

Tel: +886-(2) 8226-3990

Fax: +886-(2) 8226-3992

Email: Sales-Asia@supermicro.com.tw (Sales Inquiries)
Support@supermicro.com.tw (Technical Support)
RMA@supermicro.com.tw (RMA Support)

Website: www.supermicro.com.tw

Appendix A

Standardized Warning Statements for AC Systems

About Standardized Warning Statements

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

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

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

Warning Definition



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

警告の定義

この警告サインは危険を意味します。

人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、電気回路に含まれる危険性に注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危險。

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

此警告符號代表危險。

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

Warnung

WICHTIGE SICHERHEITSHINWEISE

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

BEWAHREN SIE DIESE HINWEISE GUT AUF.

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

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

GUARDE ESTAS INSTRUCCIONES.

IMPORTANTES INFORMATIONS DE SÉCURITÉ

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

CONSERVEZ CES INFORMATIONS.

תקנון הזהרות אזהרה

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

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

안전을 위한 주의사항

경고!

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

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

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

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

BEWAAR DEZE INSTRUCTIES

Installation Instructions



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

設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

警告

将此系统连接电源前,请先阅读安装说明。

警告

將系統與電源連接前，請先閱讀安裝說明。

Warnung

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

¡Advertencia!

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

Attention

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

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

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

Circuit Breaker

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

サーキット・ブレーカー

この製品は、短絡(過電流)保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

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

هذا المنتج يعتمد على معدات الحماية مه الدوائر القصيرة التي تم تثبيتها في المبنى
تأكد من أن تقييم الجهاز الوقائي ليس أكثر من : 20A, 250V

경고!

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

Waarschuwing

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

Power Disconnection Warning



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



電源切断の警告

システムコンポーネントの取り付けまたは取り外しのために、シャーシ内部にアクセスするには、システムの電源はすべてのソースから切断され、電源コードは電源モジュールから取り外す必要があります。

警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה מפני ניתוק חשמלי

אזהרה!

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

يجب فصل انظاؤ من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد انطاقت قېم

انصل إلى امناطق انداخييت نههيكم نشييج أو إزانت مكناث الجهاز

경고!

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

Waarschuwing

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

Equipment Installation



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

機器の設置

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

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה!

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

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

경고!

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

Waarschuwing

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

Restricted Area

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

アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

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

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

אזור עם גישה מוגבלת

אזהרה!

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

تخصيص هذه انحدة نترك بُها ف مناطق محظورة تم .

،ممكن اننصل إن منطقت محظورة فقط من خلال استخذاو أداة خاصت أو أ وس هُت أخري نلالأمما ققم ومفتاح

경고!

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

Waarschuwing

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

Battery Handling



Warning! There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions

電池の取り扱い

電池交換が正しく行われなかった場合、破裂の危険性があります。交換する電池はメーカーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従って処分して下さい。

警告

電池更換不當會有爆炸危險。請只使用同類電池或制造商推荐的功能相当的電池更換原有電池。請按制造商的說明處理廢舊電池。

警告

電池更換不當會有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有電池。請按照製造商的說明指示處理廢棄舊電池。

Warnung

Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

Attention

Danger d'explosion si la pile n'est pas remplacée correctement. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

¡Advertencia!

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

אזהרה!

קיימת סכנת פיצוץ של הסוללה במידה והוחלפה בדרך לא תקינה. יש להחליף את הסוללה בסוג התואם מחברת יצרן מומלצת. סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر من انفجار في حالة اسحبذال البطارية بطريقة غير صحيحة فعليل
اسحبذال البطارية
فقط بنفس النوع أو ما يعادلها مما أوصت به الشركة المصنعة
جخلص من البطاريات المسحعملة وفقا لعمليات الشركة الصانعة

경고!

배터리가 올바르게 교체되지 않으면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

Waarschuwing

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

Redundant Power Supplies



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

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告

此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告

此装置连接的电源可能不只一个，必须切断所有电源才能停止对该装置的供电。

Warnung

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

¡Advertencia!

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

Attention

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

אם קיים יותר מספק אחד

אזהרה!

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

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة .

يجب إزالة كافة الاتصالات لعسل الوحدة عن الكهرباء

경고!

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

Waarschuwing

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

Backplane Voltage



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

バックプレーンの電圧

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

修理する際には注意ください。

警告

当系统正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告

當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

Warnung

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

¡Advertencia!

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

Attention

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

מתח בפנל האחורי

אזהרה!

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

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

경고!

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

Waarschuwing

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

Comply with Local and National Electrical Codes



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

地方および国の電気規格に準拠

機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告

设备安装必须符合本地与本国电气法规。

警告

設備安裝必須符合本地與本國電氣法規。

Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

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

Attention

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

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

تركيب المعدات الكهربائية يجب أن يمتثل للقوايه المحلية والبطية المتعلقة
بالكهرباء

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

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

Product Disposal



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

製品の廃棄

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

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

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

¡Advertencia!

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

Attention

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

סילוק המוצר

אזהרה!

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

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

경고!

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

Waarschuwing

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

Fan Warning



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

ファンの警告

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

警告!

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה!

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

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

경고!

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

Waarschuwing

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

Power Cable and AC Adapter



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

電源コードとACアダプター

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

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

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

AC ימאתמו מיילמשח מילבכ

!הרהזא

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

תאלבאלא אארשב מץ וא אדדחמלא וא ארפוטמלא תאליטוטלא מאדחטסאב מץ, אגתנמלא בייקרת דנע לכלז יפ אמב אילחמלא אלאסלא תאבלטתמו נינאווקב מאזתלאלא אמ דדרתמלא ראיטלא תאלוחמו אילברמלא קיירח וא לטע יפ בבסטטי דץ ירשא תאלוחמו תאלבאלא יא מאדחטסא. מילסלא סבאלאו לטומוא מץ ח. CSA וא UL לביק נמ אדמתמלא תאלבאלא מאדחטסא תאדעמלא אילברמלא אזהאלל אלאסלא נונאק רזחי Supermicro לביק נמ אדדחמלא אילברמלא תאגתנמלא רייג ירשא תאדעמ יא אמ (UL/CSA) אלאסלא למחתיטלאו

전원 케이블 및 AC 어댑터

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

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

Stroomkabel en AC-Adapter

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

Appendix B

System Specifications

Processor Support

Single 4th and 5th Generation Intel Xeon Scalable processor, P+ (LGA4189) sockets; up to 350 W TDP

Notes: Please refer to the motherboard specifications pages on our website for updates to supported processors.

Chipset

Intel PCH C741

BIOS

AMI BIOS; ACPI 3.0 or later, PCI firmware 4.0 support, BIOS rescue hot-key, SPI dual/quad speed support, RTC (Real Time Clock) wakeup, and SMBIOS 3.0 or later

Memory Support

16 DIMM slots to support up to 4 TB DDR5 RDIMM to 4800 MT/s

Storage Drives

Twelve hot-swap 3.5" SATA (default) drive bays

Optional NVMe drive bays by additional cables or SAS3 via optional AOC)

Two M.2 PCIe 3.0 x2 M-Key NVMe

PCI Expansion Slots

Two PCIe 5.0 x16 slots (FHHL)

Four PCIe 5.0 x8 slots (FHFL) (default configuration)

One PCIe 5.0 x16 AIOM slot (default)

Input/Output

One RJ45 dedicated IPMI LAN port

Two USB 3.2 Gen1 ports (rear)

Two USB 2.0 ports (header)

One VGA port

One serial (COM) port (rear)

Motherboard

X13SEDW-F: 13.4" x 12.29" (34.04 x 31.22cm)

Chassis

CSE-LA26TS-R1K23AWP1; 2U Rackmount, (WxHxD) 17.2 x 3.5 x 25.5 in. (43.7 x 8.6 x 64.8 cm)

System Cooling

Three 8-cm PWM fans

Power Supply

PWS-1K23A-1R, 1200W redundant modules, 80Plus Titanium level

Input:

1000 W at 100-127 Vac

1200 W at 200-240 Vac

1200 W at 240 Vdc (CCC only)

50-60 Hz

Output

+12 V 100 A (1200W)

+12 V 83 A (1000W)

+ 5 Vsb 4 A

Operating Environment

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

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

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

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

Regulatory Compliance

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

Applied Directives, Standards

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

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:

2011/65/EU (RoHS Directive)

EC 1907/2006 (REACH)

2012/19/EU (WEEE Directive)

California Proposition 65

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

Appendix C

UEFI BIOS Recovery and IPMI Crash Dump

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 need to update the BIOS, do not shut down or reset the system while the BIOS is updating. Doing so may cause a boot failure.

C.1 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 for add-on card initialization to allow the UEFI OS loader, which is stored in the add-on card, to boot the system. The UEFI offers clean, hands-off control to a computer system at bootup.

C.2 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 boot block contains critical BIOS codes, including memory detection and recovery codes for the user to flash a new BIOS image if the original main BIOS image is corrupted. When the system power is on, the boot block codes execute first. Once it is completed, the main BIOS code will continue with system initialization and bootup.

C.3 Recovering the BIOS Block with a USB Device

If the BIOS file is corrupted and the system is not able to boot up, this feature will allow you to recover the BIOS image using a USB-attached device. A USB flash drive or media drive may be used for this purpose. Please note that a USB hard disk drive is NOT supported. Follow the procedures on the next page to recover the BIOS.

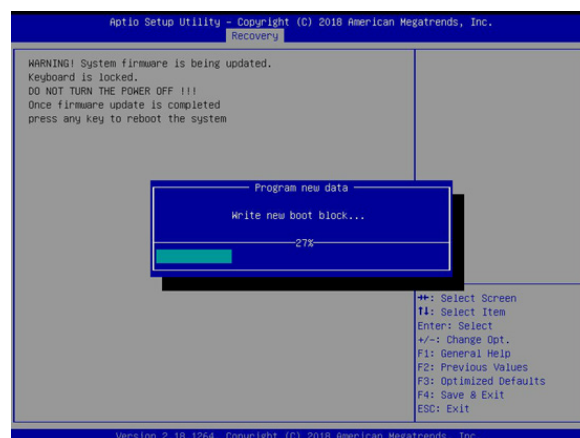
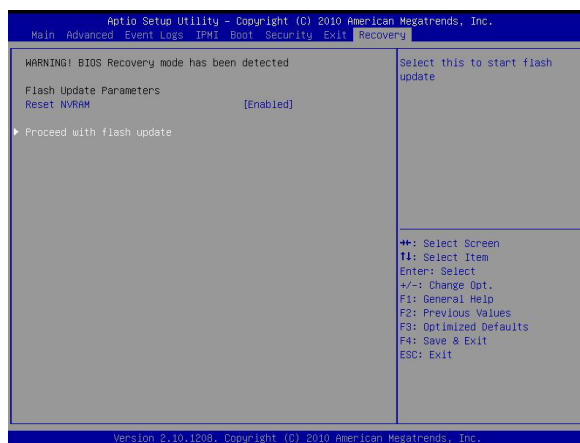
1. Using a different system, copy the standard BIOS binary image file into the root directory of a USB flash drive with FAT16 or FAT32 format and rename the file to SUPER.ROM.

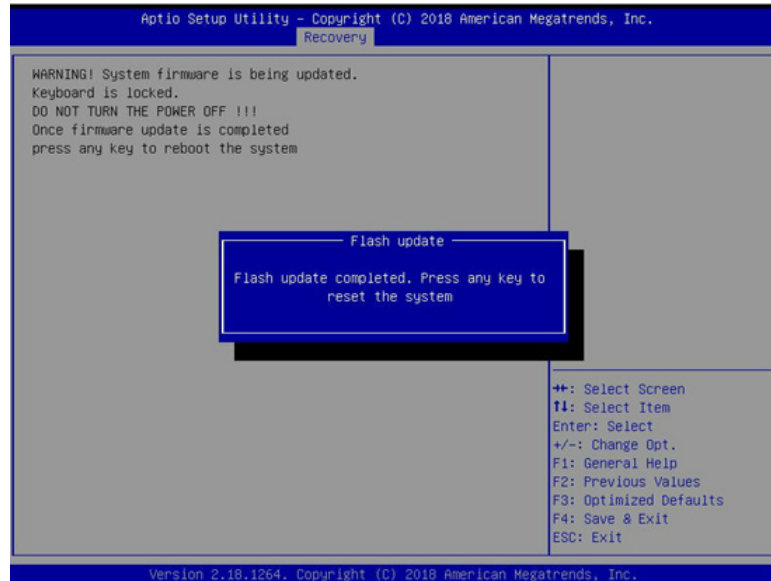
Note: If you cannot locate the "SUPER.ROM" file in your driver disk, visit our website at www.supermicro.com to download the correct BIOS image into a USB flash device and rename it "SUPER.ROM".

2. While the system is turned off, insert the USB device that contains the new BIOS binary image (SUPER.ROM).
3. Power on the system.
4. After the system is turned on, the system will enter the BIOS Recovery menu. Select "Proceed with flash update" to start the BIOS recovery process. **DO NOT INTERRUPT THIS PROCESS UNTIL IT FINISHED!**



5. After the Boot Sector Recovery Process is complete, press any key to reboot the system.



**Notes:**

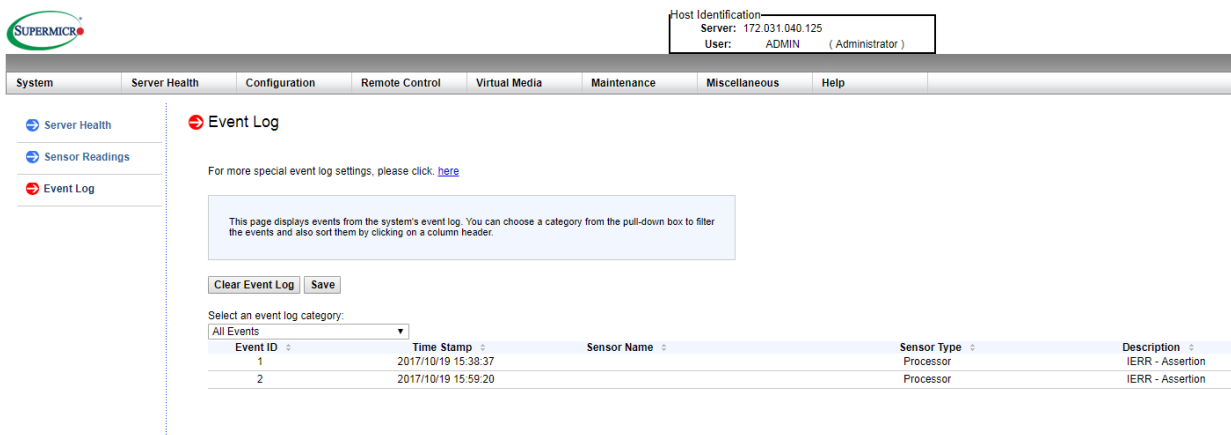
- * The BIOS recovery (SUPER.ROM) will not work if BIOS has a multi-block crash.
- * If you have purchased an OOB license, you can do a BIOS flash again through BMC WebGUI or SUM. Please refer to these SUPERMICRO software-related videos:
Activate OOB license: https://www.youtube.com/watch?v=V4spX_DOV7I
SUPERMICO BIOS Update: <https://www.youtube.com/watch?v=S8z6iOEHGwY>
- * If the BIOS flash recovery fails, contact our RMA Department to have the BIOS chip reprogrammed. This will require shipping the board to Supermicro for repair.
Submit your RMA request at <https://www.supermicro.com/support/rma>
Please make sure to follow all instructions when returning the motherboard.

C.4 Crash Dump Using IPMI

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 IPMI. The IPMI manual is available at <https://www.supernmicro.com/solutions/IPMI.cfm>.

Check IPMI Error Log

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



Host Identification:
Server: 172.031.040.125
User: ADMIN (Administrator)

System Server Health Configuration Remote Control Virtual Media Maintenance Miscellaneous Help

Server Health
Sensor Readings
Event Log

Event Log

For more special event log settings, please click [here](#).

This page displays events from the system's event log. You can choose a category from the pull-down box to filter the events and also sort them by clicking on a column header.

Clear Event Log Save

Select an event log category:
All Events

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

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