



SUPERSERVER[®]
620P-ACR16H
620P-ACR16L



USER'S MANUAL

Revision 1.0

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Preface

About this Manual

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

Please refer to the 620P-ACR16(H/L) server specifications page on our website for updates on supported memory, processors and operating systems (<http://www.supermicro.com>).

Notes

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

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

If you have any questions, please contact our support team at:
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This manual may be periodically updated without notice. Please check the Supermicro website for possible updates to the manual revision level.

Secure Data Deletion

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

Warnings

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



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



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

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Contacting Supermicro

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Chapter 1

Introduction

1.1 Overview

This chapter provides an outline of the functions and features of the SuperStorage server 620P-ACR16(H/L). The following provides an overview of the specifications and capabilities.

| System Overview | |
|------------------------|---|
| Motherboard | X12DPi-N(T)6 |
| Chassis | CSE-829HE1C4-R1K62LPB |
| Processors | 3rd Gen Intel Xeon Scalable in P+ (LGA-4189) socket |
| Memory | 16 DIMM Slots up to 4TB of DDR4 ECC RDIMM/LRDIMM/LRDIMM 3DS with speeds up to 3200MHz |
| Storage | 16 x 3.5" hot-swap SATA/SAS hybrid drive bays One M.2 NVMe |
| Expansion Slots | Four PCIe 4.0 x16 low profile Two PCIe 4.0 x8 low profile (see Section 3.10 for details) |
| I/O Ports | LAN: Two RJ45 10G BASE-T; one RJ45 dedicated BMC LAN port USB: Four USB 3.0 ports (Rear) One VGA port (Rear) One COM port (Rear) Two Super DOM (Disk on Module) ports |
| System Cooling | Four heavy duty 8cm fans with optimal Fan Speed Control One air shroud |
| Power | Two redundant 1600W power supplies, 80Plus Titanium level |
| Form Factor | 2U; (WxHxD) 17.3 x 3.5 x 27.8 in. (439 x 89 x 706 mm) |

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

The following safety models associated with the 620P-ACR16(H/L) have been certified as compliant with UL or CSA: 829-16, 829H-R16X12, and 829H-16.

Models

- 620P-ACR16H includes the Broadcom S39xx HW RAID card.
- 620P-ACR16L includes the Broadcom S38xx IT mode card.

1.2 System Features

The following views of the system display the main features.

Front View



Figure 1-1. Front View

| Logical Storage Drive Numbers | |
|-------------------------------|---|
| Item | Description |
| 0-3 | Four 3.5" hot-swap SAS3/SATA/NVMe** hybrid drive bays |
| 4-15 | 12 x3.5" hot-swap SAS3/SATA drive bays |

**NVMe support requires additional parts in optional part list.

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. For VROC configurations, refer to the VROC section in this manual.

| 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 |
| | Off | | Idle SATA drive installed |
| Status LED | Red | Solid On | Failure of drive with RSTe support |
| | Red | Blinking at 1 Hz | Rebuild drive with RSTe support |
| | Red | Blinking with two blinks and one stop at 1 Hz | Hot spare for drive with RSTe support |
| | Red | On for five seconds, then off | Power on for drive with RSTe support |
| | Red | Blinking at 4 Hz | Identify drive with RSTe support |
| | Green | Solid on | Safe to remove NVMe drive |
| | Amber | Blinking at 1Hz | Do not remove NVMe drive |

Control Panel

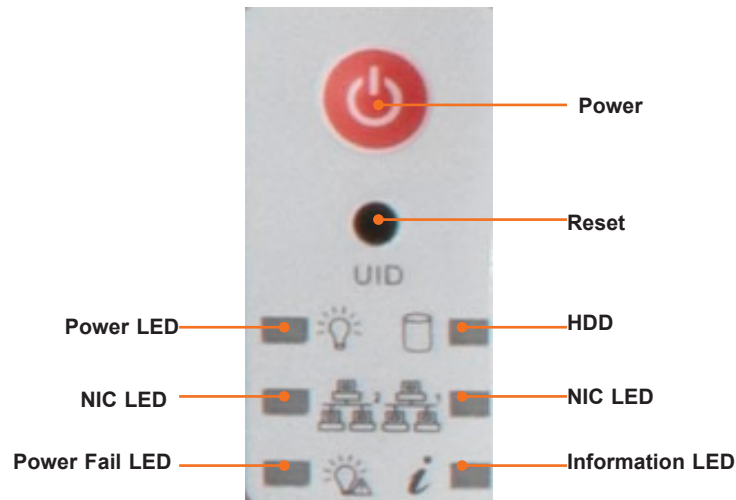


Figure 1-2. Control Panel

| Control Panel Features | |
|------------------------|--|
| Feature | Description |
| Power button | The main power switch applies or removes primary power from the power supply to the server but maintains standby power. |
| Reset Button | Reboots the system |
| Power LED | Indicates power is being supplied to the system power supply units. This LED is illuminated when the system is operating normally. |
| HDD | Indicates activity on the storage drives when flashing. |
| NIC LEDs | Indicates network activity on LANs when flashing. |
| Power Fail LED | Indicates a power supply module has failed. |
| Information LED | Alerts operator to several states, as noted in the table below. |

| Information LED | |
|-------------------------|--|
| Color, Status | Description |
| Red, continuously | 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. |
| Blue, solid | UID has been activated locally to locate the server in a rack environment. |
| Blue, blinking | UID has been activated using the BMC to locate the server in a rack environment. |

Rear View

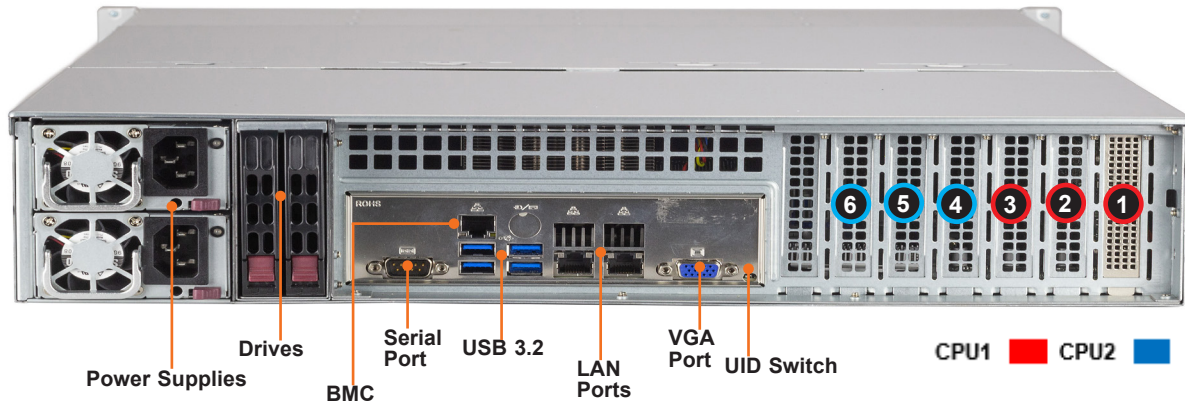


Figure 1-3. System: Rear View

| System Features: Rear | |
|-----------------------|---|
| Feature | Description |
| Power Supplies | Two redundant power supply modules, PWS1 on the bottom, PWS2 on the top |
| Drives | Two optional 2.5" hot-swap storage drives, SATA or NVMe |
| BMC | Dedicated LAN port for BMC; for indicator details, see BMC LAN LEDs |
| USB | Four USB 3.2 ports |
| LAN | Two 10G BASE-T ports |
| VGA | One video port |
| UID Switch/LED | The unit identification (UID) button turns on or off the blue light function of the Information LED and this blue LED on the rear of the chassis. This button can also be used to reset the BMC . |

| Expansion Card Chassis Slots | |
|------------------------------|--|
| Item | Description |
| 1 | PCIe 4.0x8 low-profile slot (Occupied by 3916 SAS 620P-ACR16H controller or 3816 SAS 620P-ACR16L controller) |
| 2_3 | PCIe 4.0x16 low-profile slot |
| 4_5 | PCIe 4.0x16 low-profile slot |
| 6 | PCIe 4.0x8 low-profile slot |

Power Supply Indicator

| Power Supply Indicator | |
|-------------------------------|---|
| LED Color and State | Power Supply Condition |
| Off | No AC power to modules |
| Amber, solid | AC cord unplugged and in redundant mode OR power supply critical events causing a shutdown, failure, OCP, OVP, fan fail, OTP, UVP |
| Amber, blinking | Power supply warning events where the power supply continues to operate: high temperature, over voltage, under voltage, etc |
| Green, blinking | AC present, only 12vsb on (module off) |
| Green, solid | Output on, functioning normally |

1.3 System Architecture

This section shows the locations of the system electronic components.

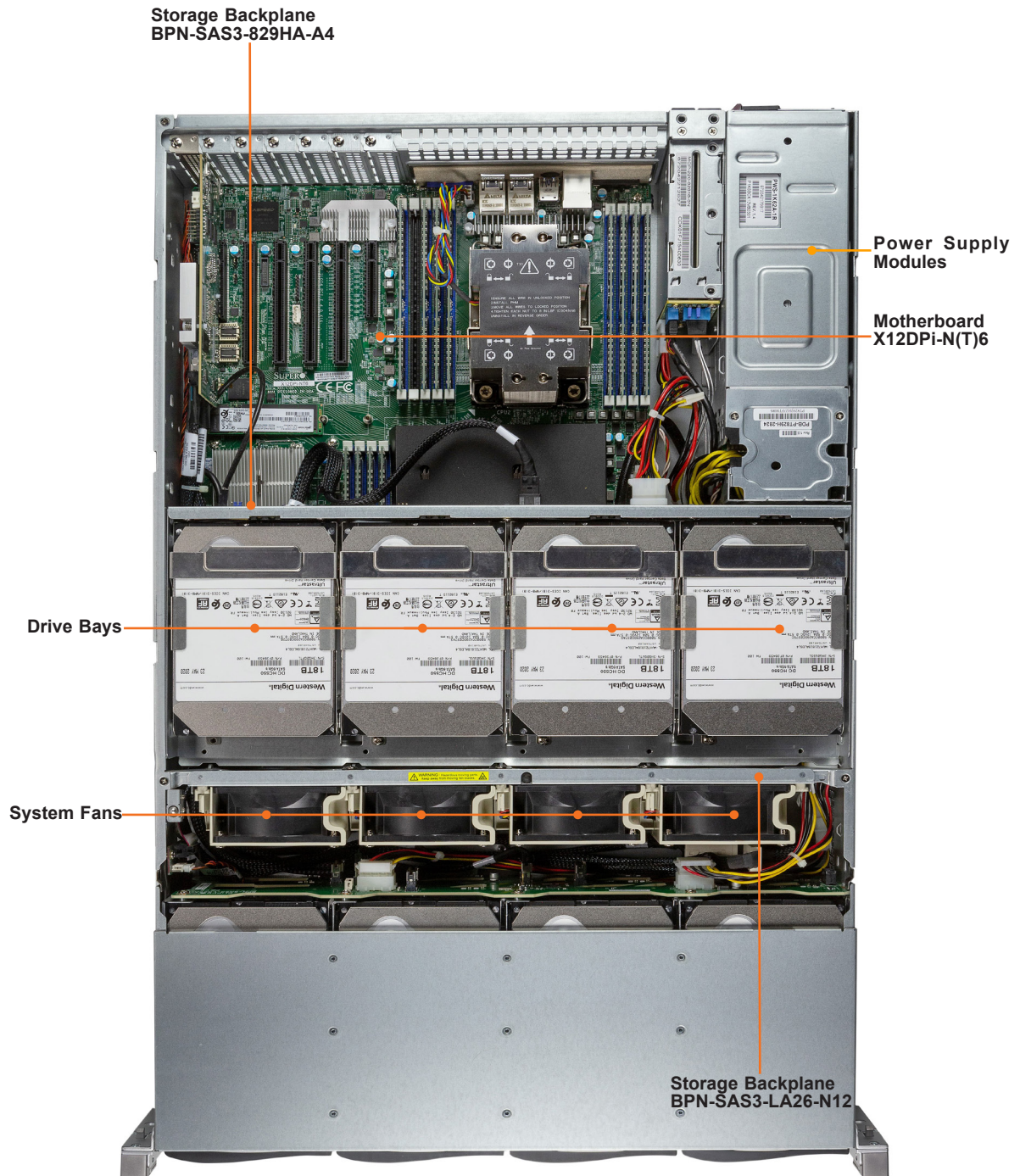


Figure 1-4. Main Component Locations

| System Features: Top | |
|----------------------|---|
| Feature | Description |
| Power Supply | Dual redundant modules |
| DIMM Slots | 16 DIMM memory slots |
| Processors | 3rd Gen Intel Xeon Scalable with heatsinks |
| Drive Bays | Four 3.5" hot-swap top loading drive bays |
| System Fans | Four 8-cm fans with Optimal Fan Speed Control, FAN-0166L4 |
| Storage Backplanes | BPN-SAS3-829HA-A4 and BPN-SAS3-LA26-N12 |
| Motherboard | X12DPi-N(T)6 |

1.4 Motherboard Layout

Below is a layout of the X12DPi-N(T)6 motherboard with jumper, connector and LED locations shown. See the table on the following page for descriptions. For detailed descriptions, pinout information and jumper settings, refer to [Chapter 4](#) or the [Motherboard Manual](#).

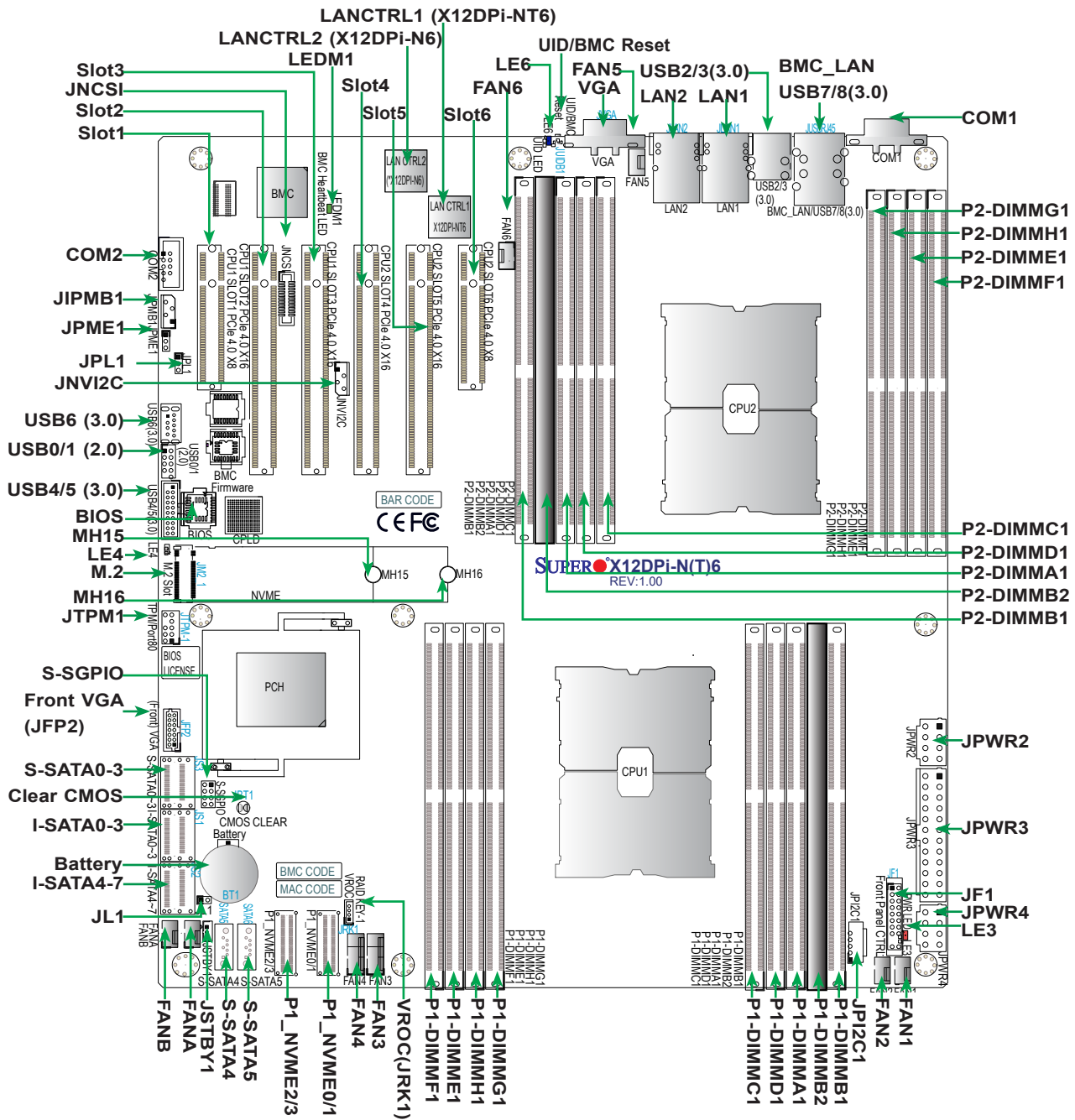


Figure 1-5. Motherboard Layout

Quick Reference Table

| Jumper | Description | Default Setting |
|--------|---------------------------|--------------------|
| JBT1 | CMOS clear | Open (Normal) |
| JPL1 | LAN Enable/Disable | Pins 1-2 (Enabled) |
| JPME1 | ME manufacturing recovery | Pins 1-2 (Normal) |

| LED | Description | Status |
|-------|---------------------------|---|
| LE3 | Power LED | LED On: Onboard Power On |
| LE4 | M.2 LED | Blinking Green: Device Working |
| LE6 | Unit Identifier (UID) LED | Solid Blue: Unit Identified |
| LEDM1 | BMC heartbeat LED | Blinking Green: BMC Normal (Active), Solid Green: (During BMC Reset or during a Cold Reboot) |

| Connector | Description |
|-------------------------|--|
| Battery (BT1) | Onboard battery |
| COM1 | Rear I/O COM port |
| COM2 | Front accessible COM port header |
| FAN1 - FAN6, FANA, FANB | CPU/System fan headers |
| BMC_LAN | Dedicated BMC LAN port |
| JF1 | Front control panel header |
| JIPMB1 | 4-pin BMC external I ² C header |
| JL1 | Chassis intrusion header |
| JNCSI | NC-SI (Network Controller Sideband Interface) connector (see Note below) |
| JNVI ² C | NVMe I ² C header |
| JPI ² C1 | Power System Management Bus (SMB) I ² C header |
| JPWR2/JPWR4 | 8-pin power connectors |
| JPWR3 | 24-pin ATX power connector |
| JSTBY1 | Standby power header |
| JTPM1 | Trusted Platform Module/Port 80 connector |
| LAN1, LAN2 | Ethernet LAN (RJ45) Port 1/ Port 2 (1G LAN support on X12DPi-N6 and 10G LAN support on X12DPi-NT6) |
| M.2 | PCIe 4.0 x4 M.2 slot (with support of M-Key 2280, and 22110) |
| MH15, MH16 | Mounting holes for M.2 keys (MH15: for M.2 Key 2280, MH16: for M.2 Key 22110) |
| P1_DIMMB2, P2_DIMMB2 | Dedicated PMem slots |
| P1_NVME0/1, P1_NVME2/3 | PCIe 4.0 x8 slimSAS ports with support of four NVMe connections (0/1, 2/3) |
| I-SATA 0-3, I-SATA 4-7 | Intel® PCH SATA 3.0 ports (with RAID 0, 1, 5, 10) |
| S-SATA 0-3 | Intel® PCH S-SATA 3.0 ports (with RAID 0, 1, 5, 10) |
| S-SATA4/S-SATA5 | Intel PCH powered S-SATA 3.0 ports with support for SuperDOM (Disk on Module) devices |
| SLOT1 | PCIe 4.0 x8 slot supported by CPU1 |
| SLOT2/SLOT3 | PCIe 4.0 x16 slots supported by CPU1 |
| SLOT4, SLOT5 | PCIe 4.0 x16 slots supported by CPU2 |

| | |
|----------------------------|--|
| SLOT6 | PCIe 4.0 x8 slot supported by CPU2 |
| S-SGPIO | Serial link general purpose I/O connection header (for S-SATA4/5 SuperDOM support) |
| USB0/1 (2.0) | Front-accessible USB header with support for two USB 2.0 ports |
| USB2/3, USB7/8 (3.0) | Rear I/O USB 3.0 ports |
| USB4/5 (3.0) | Front-accessible USB header with support for two USB 3.0 ports |
| USB6 | Internal Type A USB 3.0 port |
| UID LED/BMC Reset (JUIDB1) | Unit Identifier (UID) LED and BMC reset switch |
| VGA (JFP2) | Front VGA header |
| VGA (JVGA) | Rear VGA port on the I/O back panel |
| VROC (JRK1) | Intel VROC key header for NVMe RAID support (see Note below.) |

Note: For details on how to configure Network Interface Card (NIC) settings, please refer to the Network Interface Card Configuration User's Guide posted on our website under the link: <http://www.supermicro.com/support/manuals/>.

Note: For detailed instructions on how to configure VROC RAID settings, please refer to the VROC RAID Configuration User's Guide posted on the web page under the link: <http://www.supermicro.com/support/manuals/>.

Motherboard Block Diagram

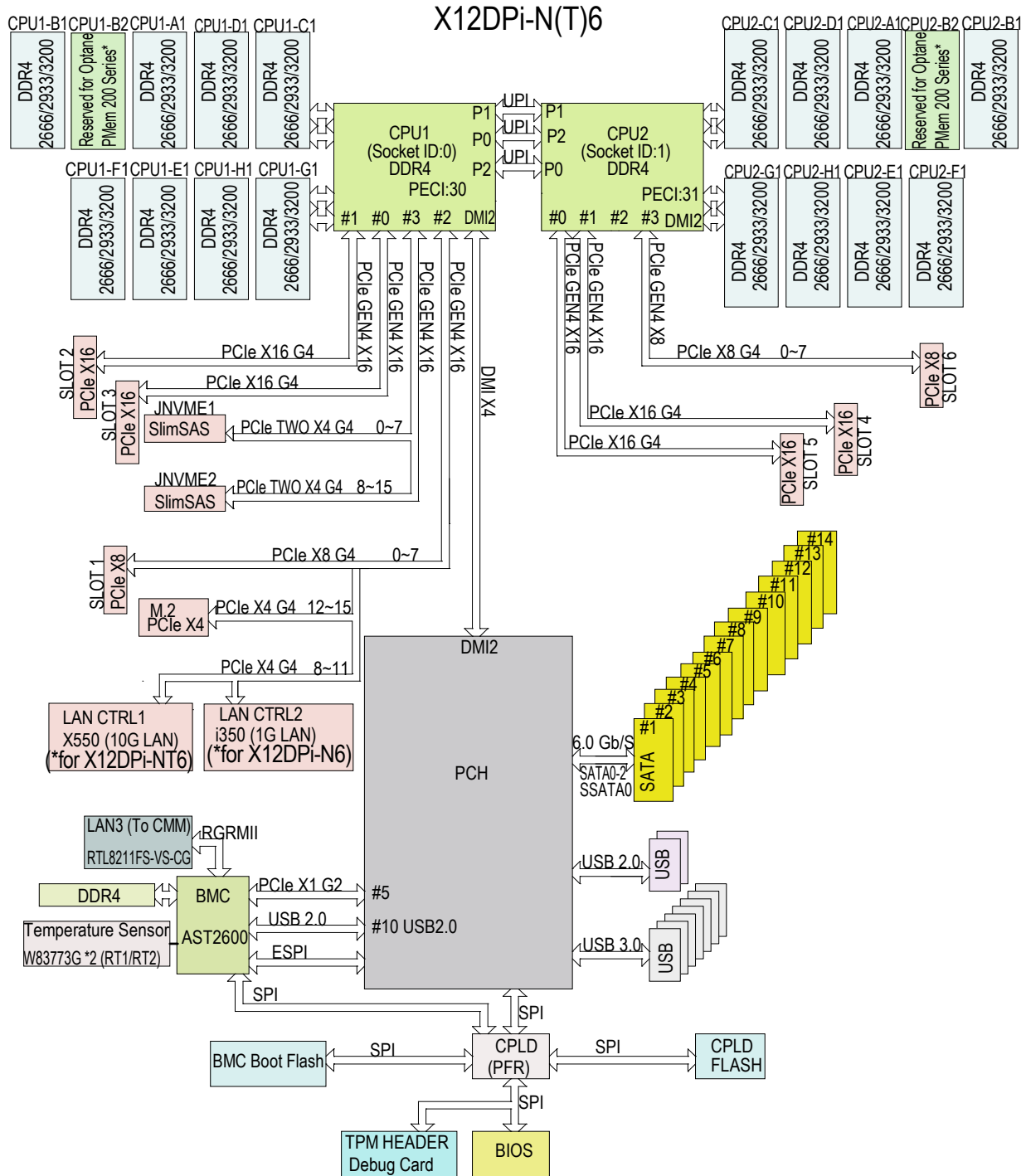


Figure 1-6. Motherboard Block Diagram

Chapter 2

Server Installation

2.1 Overview

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

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

2.2 Unpacking the System

Inspect the box in which the system was shipped, and note if it was damaged. If any equipment appears damaged, file a claim with the carrier.

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

2.3 Preparing for Setup

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

Choosing a Setup Location

- The system should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.
- Leave enough clearance in front of the rack so that you can open the front door completely (~25 inches) and approximately 30 inches of clearance in the back of the rack to allow sufficient space for airflow and access when servicing.
- This product should be installed only in a Restricted Access Location (dedicated equipment rooms, service closets, etc.).

- This product is not suitable for use with visual display workplace devices according to §2 of the German Ordinance for Work with Visual Display Units.

Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are extended to the floor so that the full weight of the rack rests on them.
- In single rack installations, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a server or other component from the rack.
- You should extend only one server or component at a time - extending two or more simultaneously may cause the rack to become unstable.
- Do not use a two-post "telco" type rack for 2U or larger servers.

Server Precautions

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

Rack Mounting Considerations

Ambient Operating Temperature

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

Airflow

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

Mechanical Loading

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

Circuit Overloading

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

Reliable Ground

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



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

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

2.4 Installing the Rails

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

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

Identifying the Rails

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

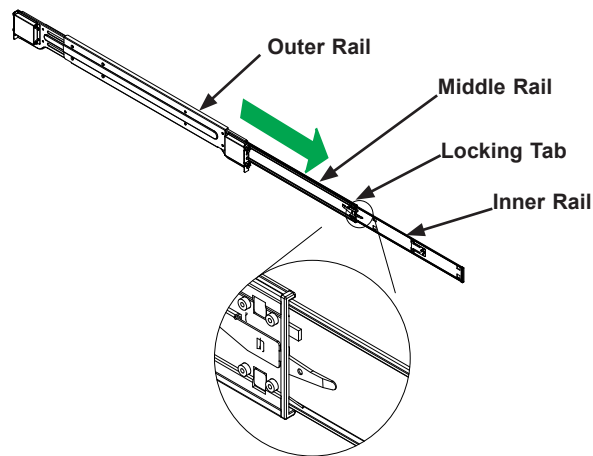


Figure 2-1. Identifying the Outer Rail, Middle Rail and Inner Rail
(Left Rail Assembly Shown)

Releasing the Inner Rail

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

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

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

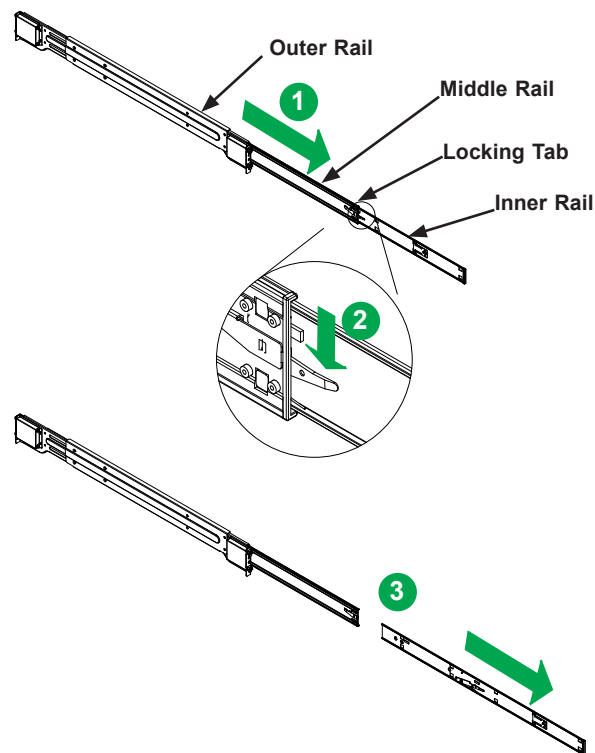


Figure 2-2. Extending and Releasing the Inner Rail

Installing the Inner Rails on the Chassis

Installing the Inner Rails

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

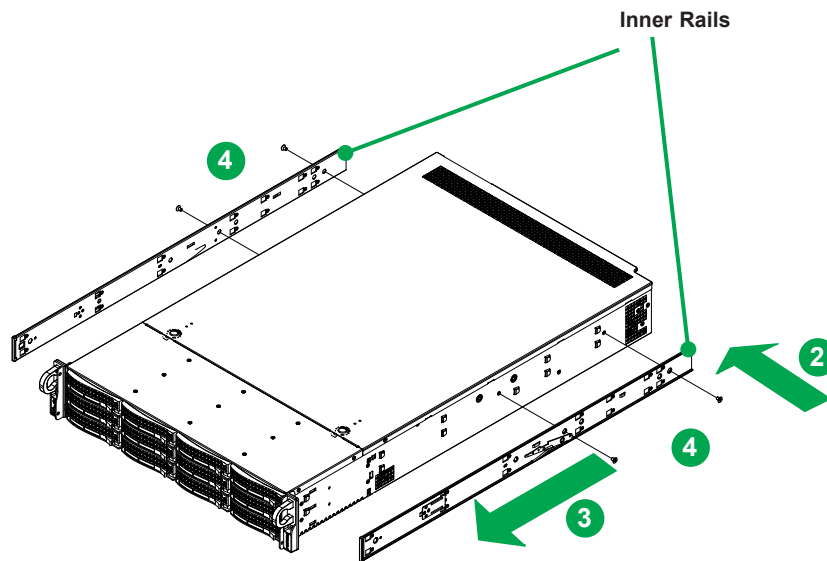


Figure 2-3. Installing the Inner Rails

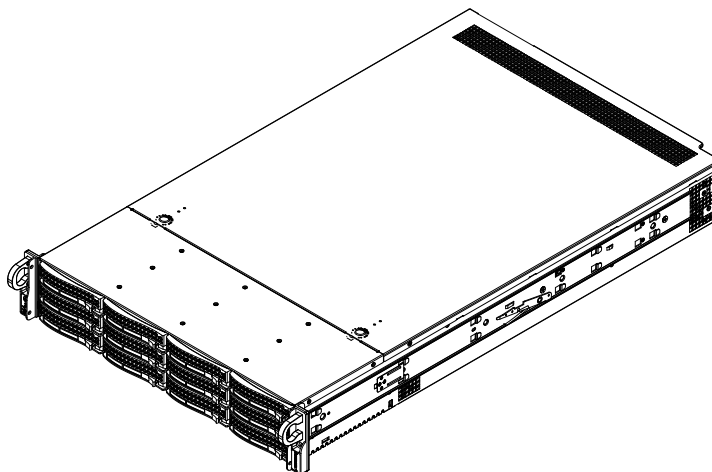


Figure 2-4. Inner Rails Installed on the Chassis

Installing the Outer Rails onto the Rack

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

Installing the Outer Rail

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

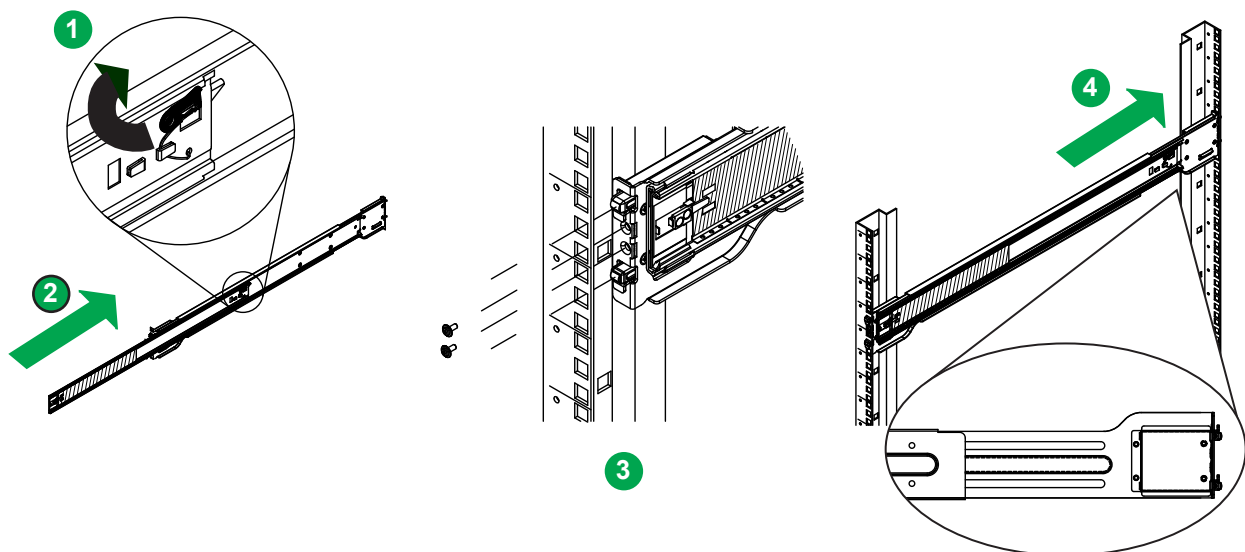


Figure 2-5. Extending and Mounting the Outer Rails

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



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



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

2.5 Installing the Chassis into a Rack

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

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

Installing the Chassis into a Rack

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

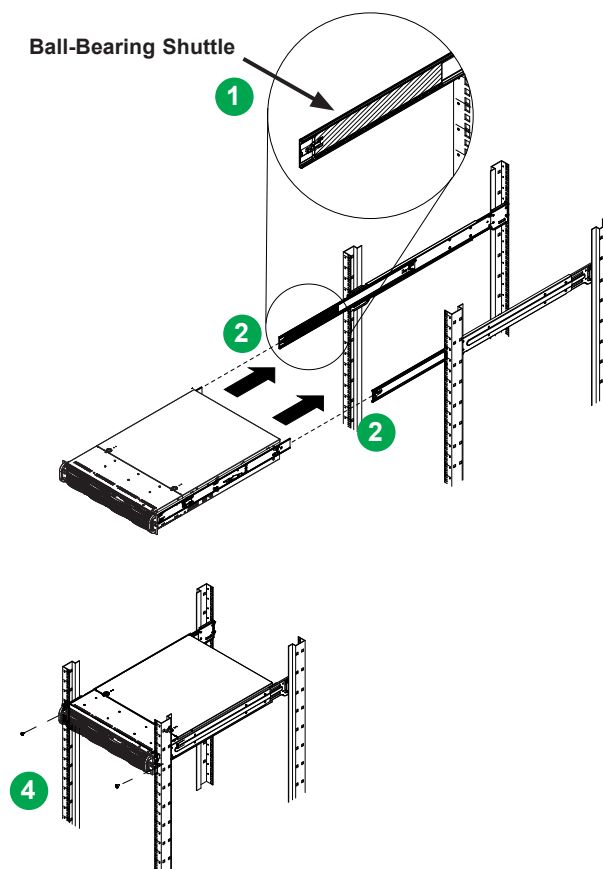


Figure 2-6. Installing the Server into the Rack

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

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

Removing the Chassis from the Rack

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

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

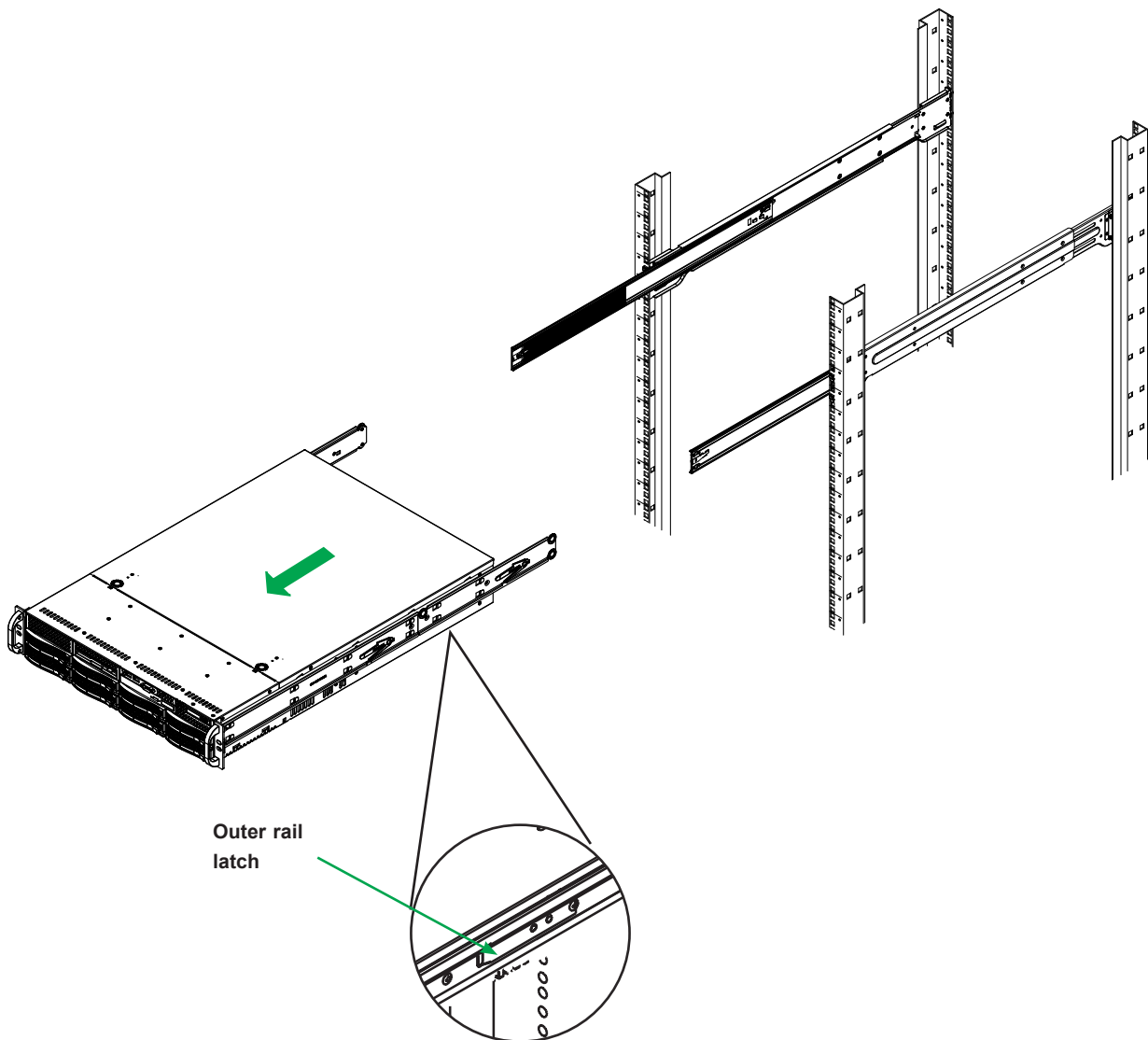


Figure 2-7. Removing the Chassis From the Rack

Chapter 3

Maintenance and Component Installation

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

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

3.1 Removing Power

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

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

Note: This caution statement applies when changing any component or subsystem that is not hot-swap/hot-plug.

3.2 Accessing the System

Some maintenance will require accessing the inside of the server.

Removing the System Fan and Top Loading Drive Bay Cover

1. Power down the server as described in section 4-1 and remove the two screws from the sides of the chassis cover.
2. Lift the cover off the chassis.
3. The four system fans and four 3.5" drive bays can be hot-swapped while system is running. To prevent over temperature, limit access time to two minutes or less.

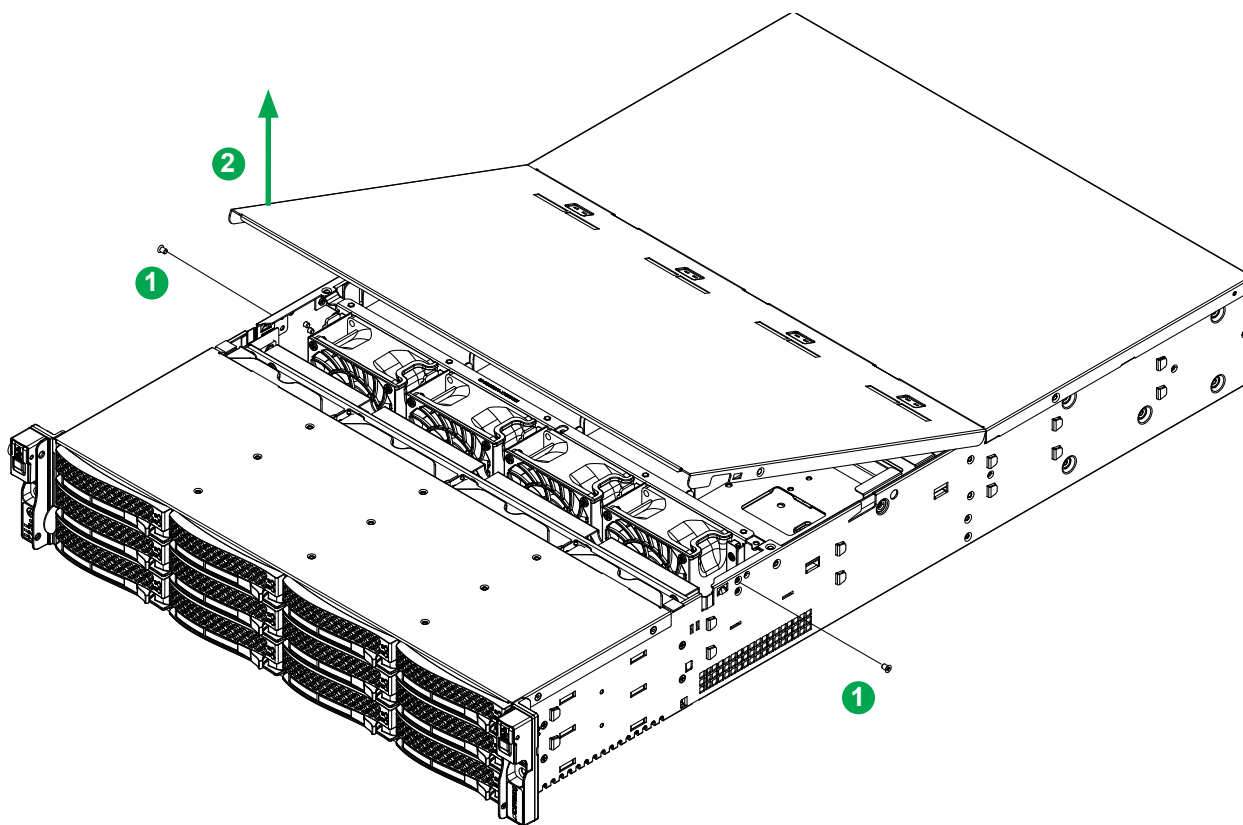


Figure 3-1. Removing the System Fan and Top Loading Drive Bay Cover

Removing the Rear Top Chassis Cover

1. Remove the system fan and top loading drive bay cover as described in the above section.
2. Remove the two screws from the sides of the chassis cover.
3. Slide the rear top cover toward the rear of the chassis.
4. Lift the rear top cover off the chassis.

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

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

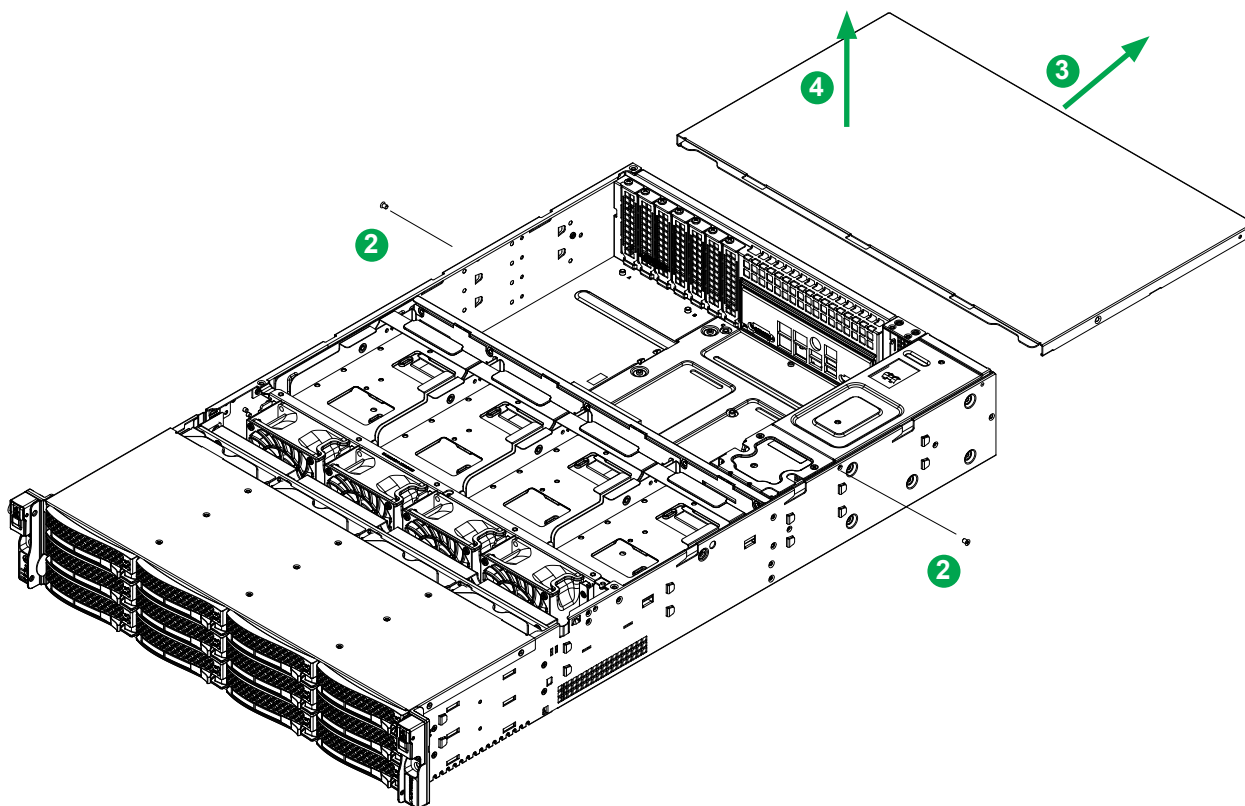


Figure 3-2. Removing the Chassis Cover

3.3 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.

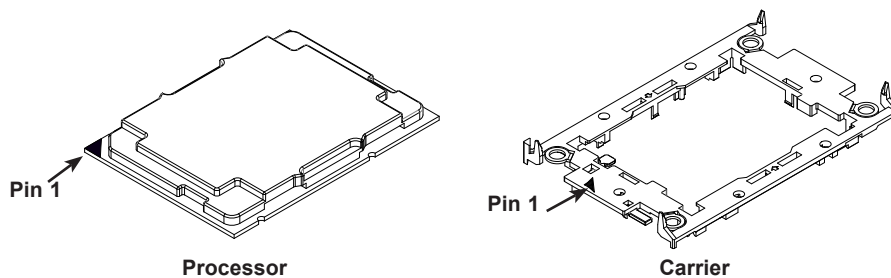
Notes:

- Use ESD protection.
- Unplug the AC power cord from all power supplies.
- Check that the plastic protective cover is on the CPU socket and that 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 land grid array (gold contacts).
- Improper installation or socket misalignment can cause serious damage to the processor or the socket and may require manufacturer repairs.
- Thermal grease is pre-applied on new heatsinks. No additional thermal grease is needed.
- Refer to the Supermicro website for updates on processor support.
- Graphics in this manual are for illustration only. Your components may look different.

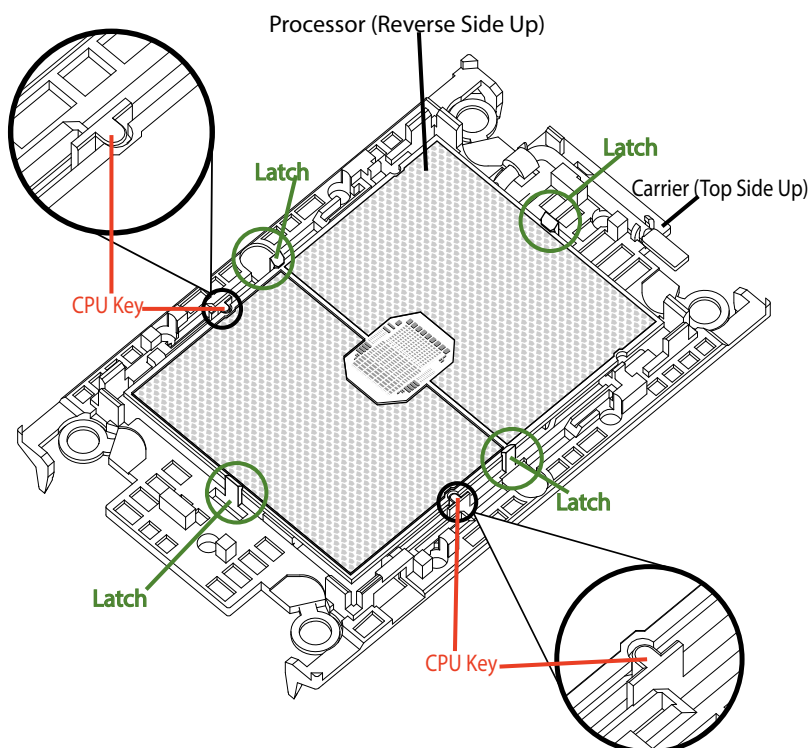
The Processor Carrier Assembly

The processor carrier assembly is comprised of the processor and the processor carrier.

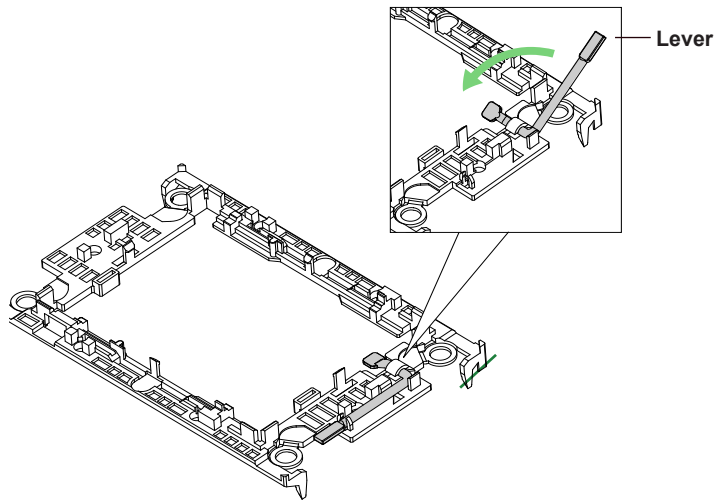
1. Hold the processor with the land grid array (LGA, gold contacts) facing down. Locate the gold triangle at the corner of the processor and the corresponding hollowed triangle on the processor carrier as shown below. These triangles indicate the location of pin 1.



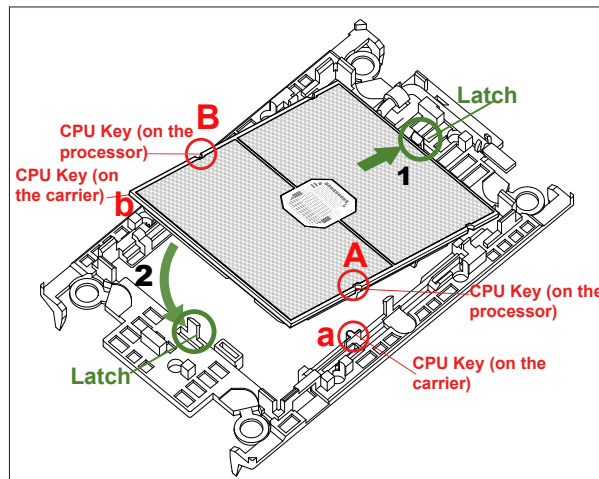
2. Turn the processor over (with the gold LGA up). Locate the CPU keys on the processor and the four latches on the carrier as shown below.



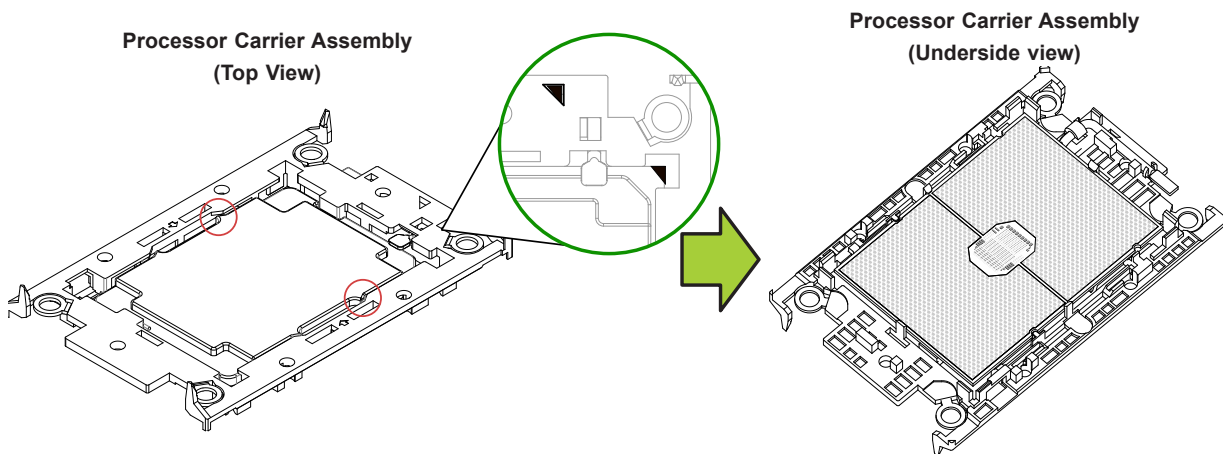
3. Locate the lever on the carrier and, if necessary, press it down as shown below.



4. Align the CPU keys on the processor (A & B) with those on the carrier (a & b) as shown below.



5. Carefully place one end of the processor under latch 1 on the carrier, and then press the other end down until it snaps into latch 2 and is properly seated on the carrier.

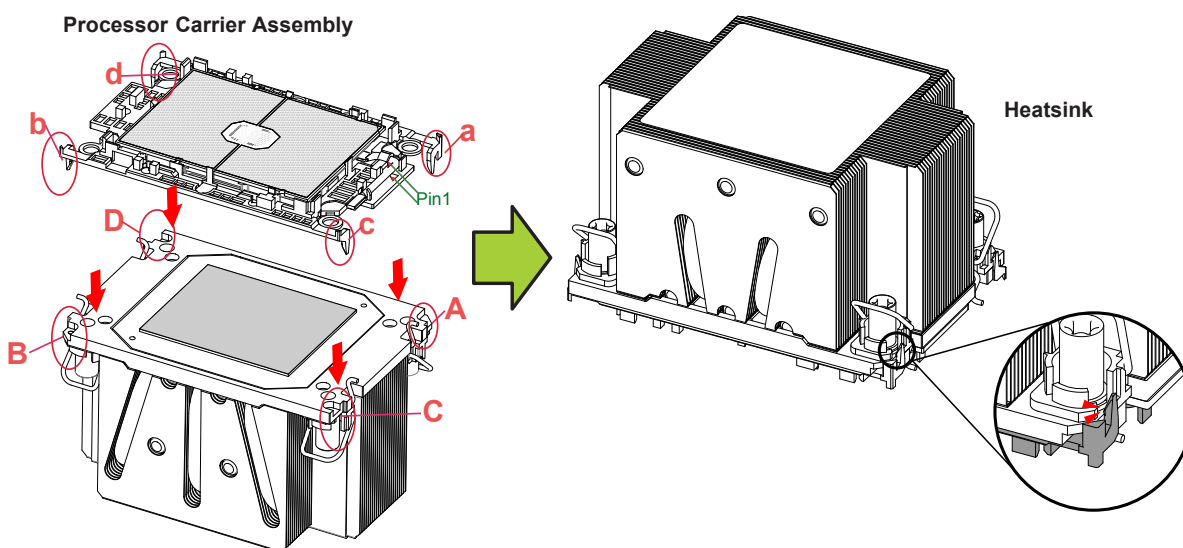


The Processor Heatsink Module (PHM)

After creating the processor carrier assembly, mount the heatsink onto the carrier assembly to form the processor heatsink module (PHM).

Note: If this is a new heatsink, the thermal grease has been pre-applied. Otherwise, apply the proper amount of thermal grease to the underside of the heatsink.

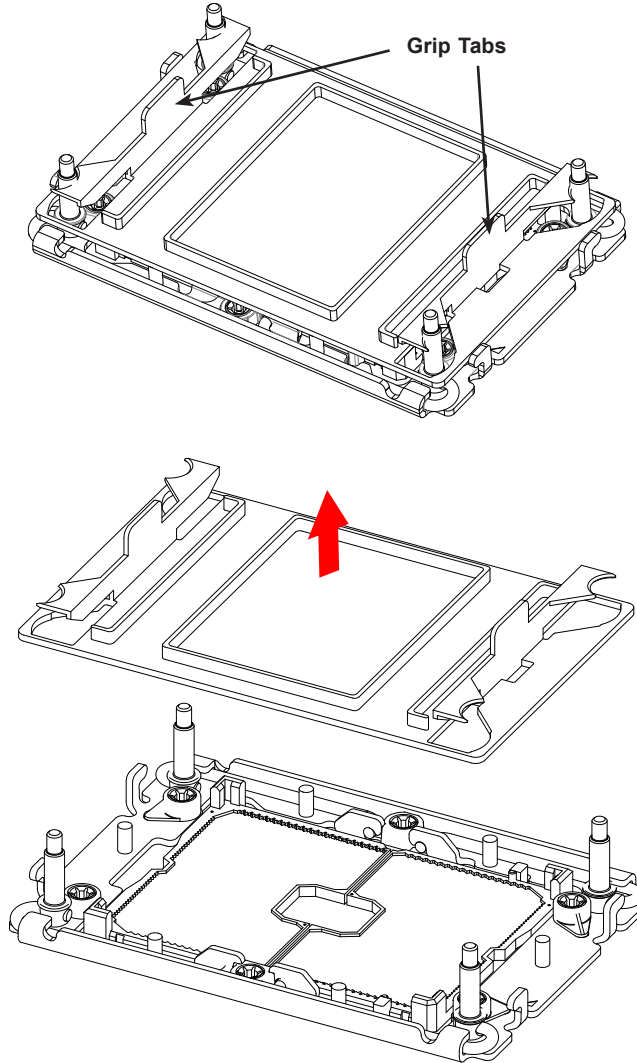
1. Turn the heatsink over with the thermal grease facing up. Note the two triangle cutouts (A, B) located at the diagonal corners of the heatsink as shown in the drawing below.
2. On the processor carrier assembly, find pin 1, as noted by the triangles. Hold the processor carrier assembly over so that the gold LGA is facing up.
3. Align clip "a" (pin 1) on the carrier assembly with the triangular cutout A on the heatsink and b, c, d on the carrier assembly with B, C, D on the heatsink.
4. Push the carrier assembly onto the heatsink, making sure that all four clips on each corner are properly secured.



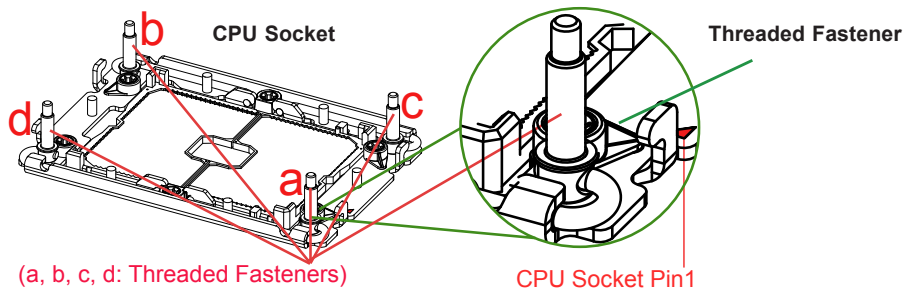
Installing the PHM into the CPU Socket

1. Remove the plastic protective cover from the CPU socket. Gently squeeze the grip tabs then pull the cover off.

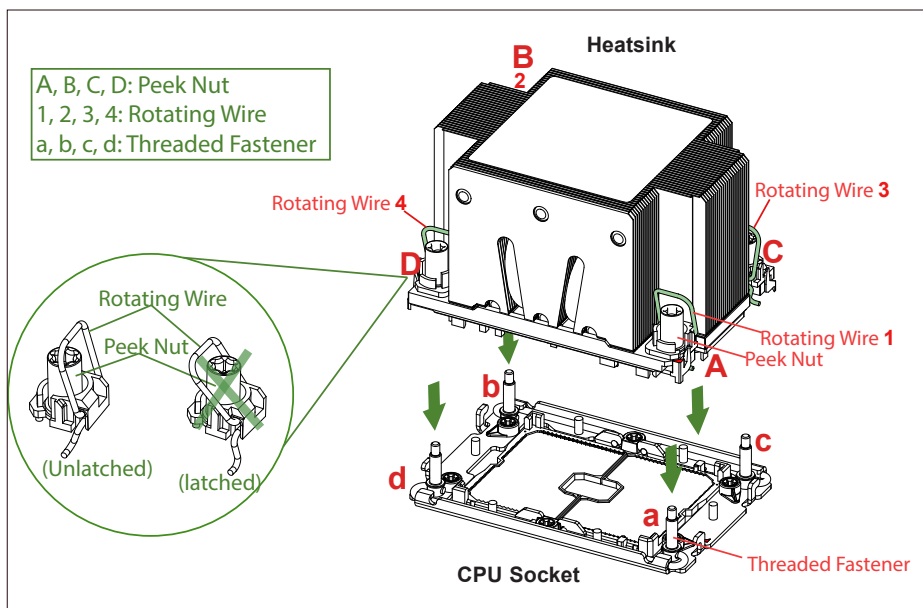
CPU Socket with Plastic Protective Cover



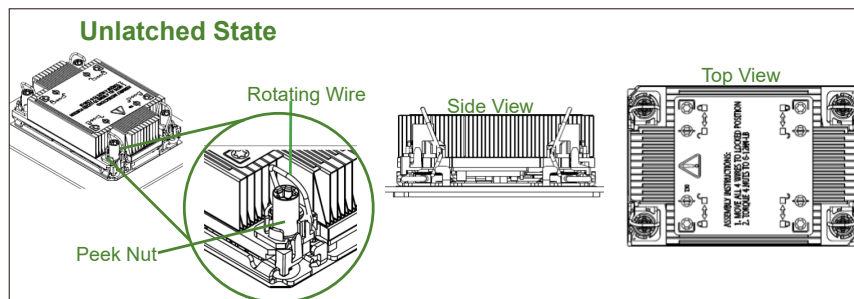
2. Locate four threaded fasteners (a, b, c, d) on the CPU socket.



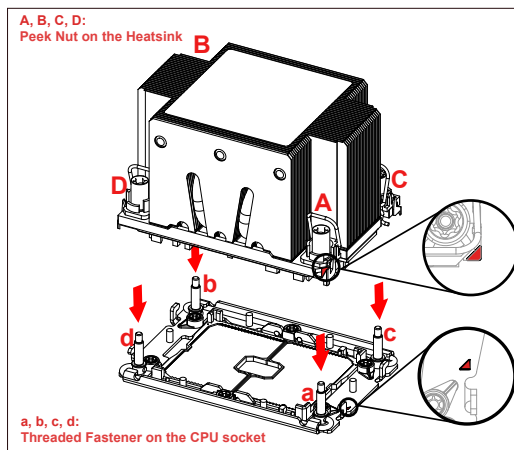
3. Locate four PEEK nuts (A, B, C, D) and four rotating wires (1, 2, 3, 4) on the heatsink as shown below.



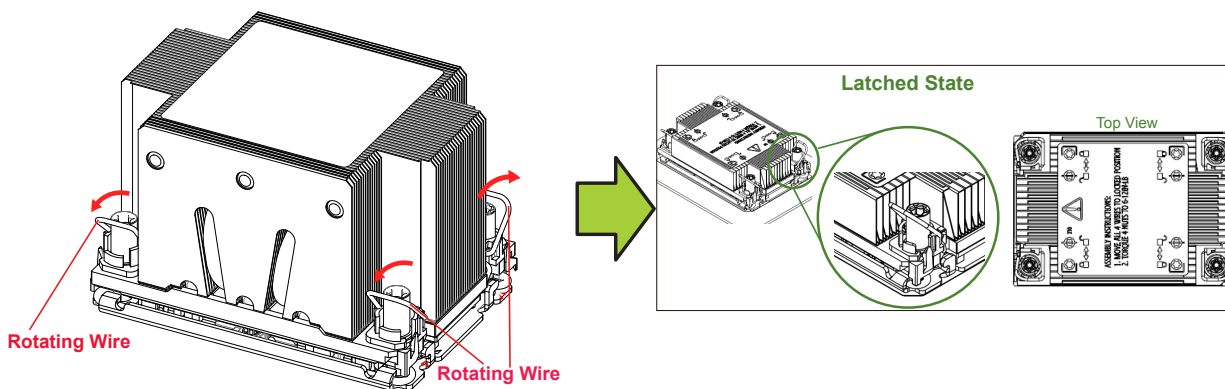
4. Check that the rotating wires (1, 2, 3, 4) are in the unlatched position as shown.



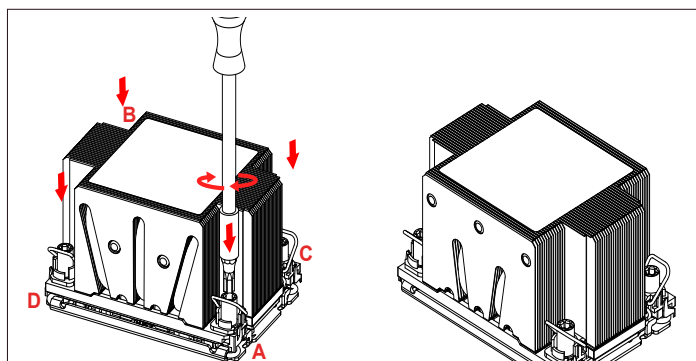
- Align nut A (next to the triangles and pin 1) on the heatsink with threaded fastener "a" on the CPU socket. Also align nuts B, C, D on the heatsink with threaded fasteners b, c, d on the CPU socket.
- Gently place the heatsink on the CPU socket, making sure that each nut is properly aligned with its corresponding threaded fastener.



- Press all four rotating wires outward to latch the PHM onto the CPU socket.



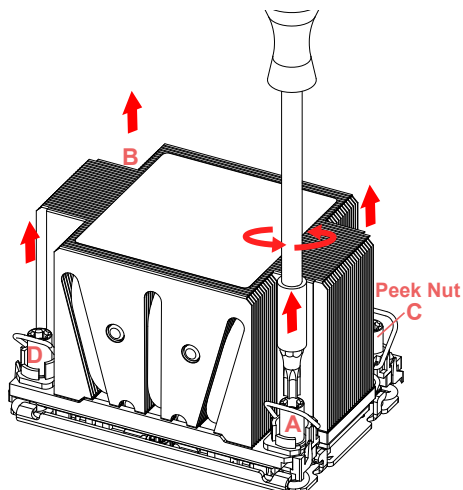
- With a t30-bit screwdriver, tighten all PEEK nuts in the sequence of A, B, C, and D with even pressure not greater than 12 lbf-in.



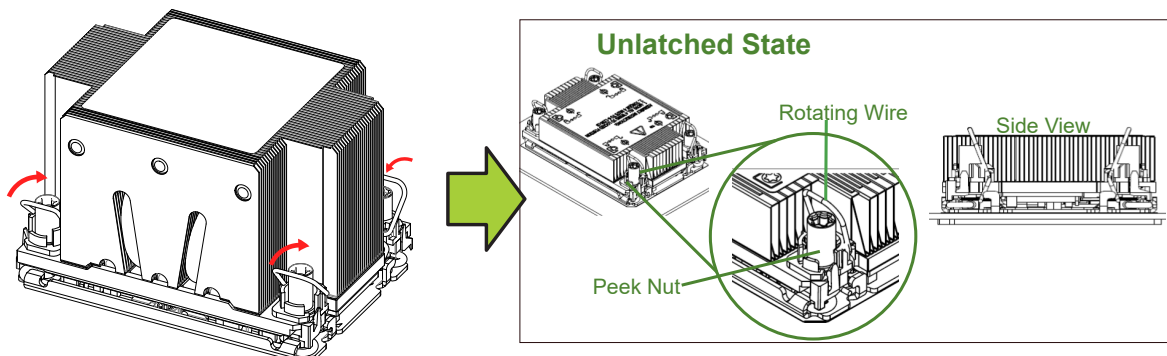
Removing the PHM from the CPU Socket

Be sure the system is shut down and all AC power cords are unplugged.

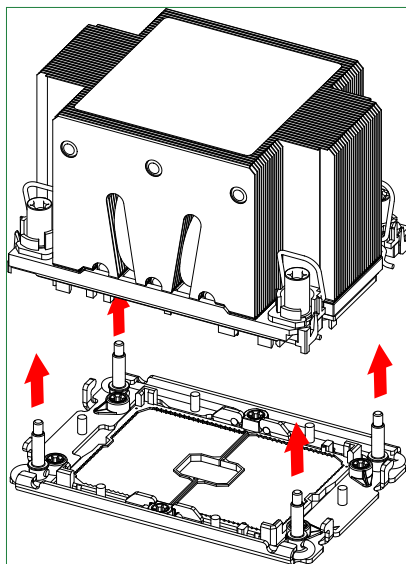
1. Use a t30-bit screwdriver to loosen the four PEEK nuts on the heatsink in the sequence of A, B, C, and D.



2. Press the four rotating wires inward to unlatch the PHM as shown below.

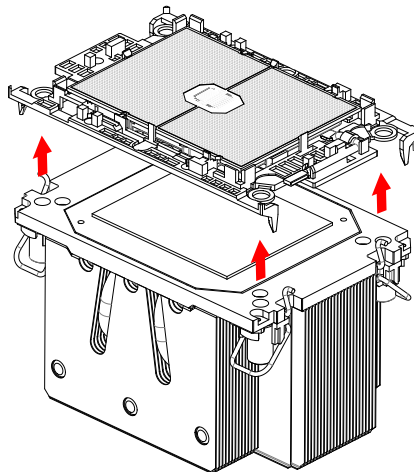
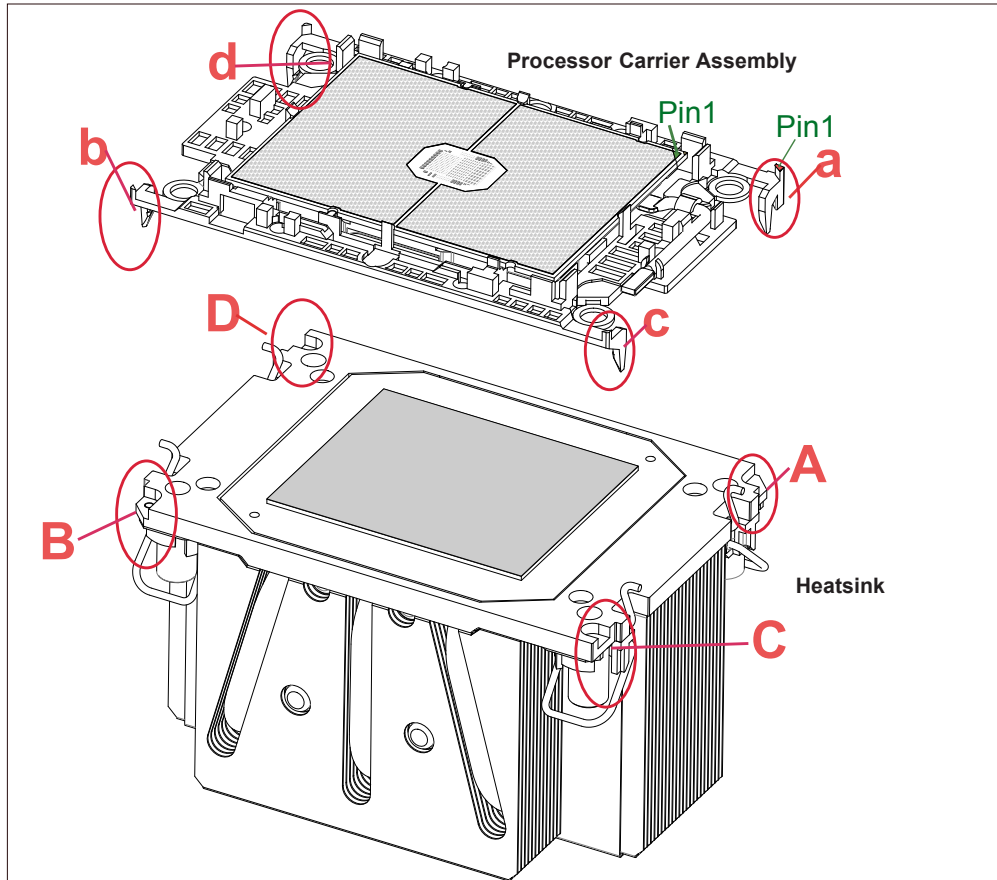


3. Gently lift the PHM upward to remove it from the CPU socket.



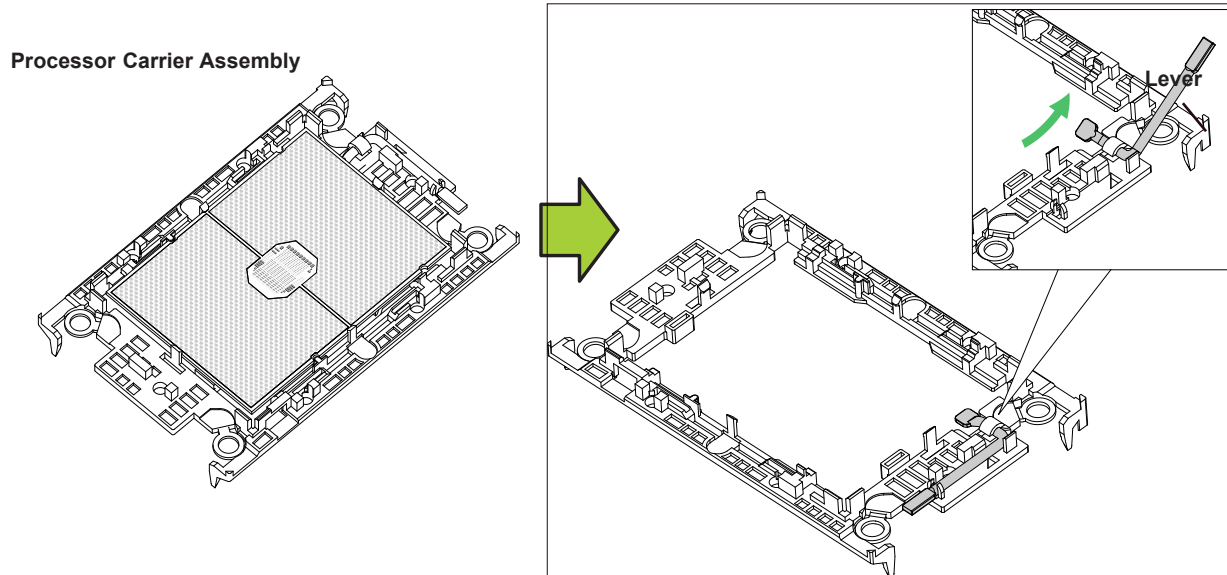
Removing the Processor Carrier Assembly from the PHM

Detach the four plastic clips (a, b, c, d) on the processor carrier assembly from the four corners of the heatsink (A, B, C, D) as shown below, and lift off the processor carrier assembly.

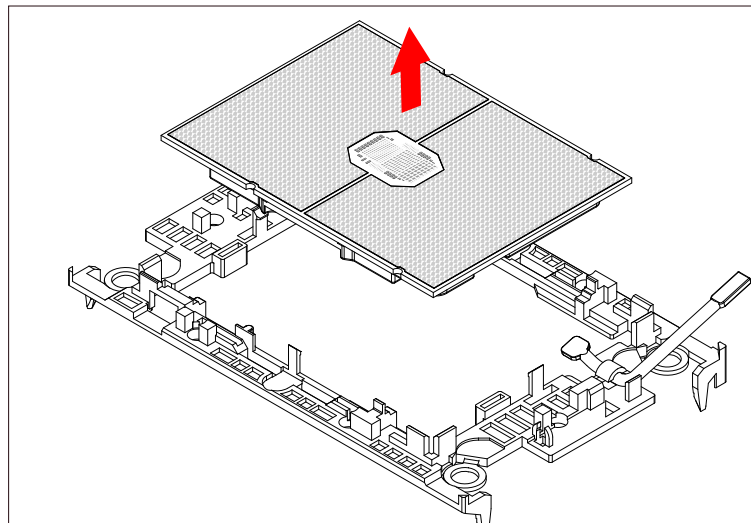


Removing the Processor from the Carrier Assembly

Unlock the lever from its locked position and push it upwards to disengage the processor from the carrier as shown below right. Carefully remove the processor from the carrier.



Note: Handle the processor with care to avoid damage.



3.4 Memory

Memory Support

The X12DPi-N(T)6 has 16 DIMM slots for up to 4TB of 3DS LRDIMM/LRDIMM/3DS RDIMM/RDIMM DDR4 ECC memory, plus 2 slots reserved for Intel Optane PMem 200 Series with speeds of 3200MHz. Intel Optane PMem is supported by the 3rd Gen Intel Xeon Scalable Platinum, Gold and selected Silver processors only. For validated memory, use our [Product Resources page](#).

| DDR4 Memory Support for 3rd Gen Intel Xeon Scalable Processors | | | | | |
|--|-------------------------------|----------------------|----------------------|----------------------|-----------------------|
| Type | Ranks Per DIMM and Data Width | DIMM Capacity (GB) | | Speed (MT/s) | |
| | | DRAM Density | | One DIMM per Channel | Two DIMMs per Channel |
| | | 8 Gb | 16 Gb | 1.2 Volts | 1.2 Volts |
| RDIMM | SRx8 | 8GB | 16GB | 3200 | 3200 |
| | SRx4 | 16GB | 32GB | | |
| | DRx8 | 16GB | 32GB | | |
| | DRx4 | 32GB | 64GB | | |
| RDIMM 3DS | (4R/8R) x4 | 2H- 64GB 4H-128GB | 2H-128GB 4H-256GB | | |
| LRDIMM | QRx4 | 64GB | 128GB | | |
| LRDIMM 3DS | (4R/8R) x4 | 4H-128GB | 2H-128GB 4H-256GB | | |

Use the DIMM slots listed on the next page for memory modules. This memory population table is based on guidelines provided by Intel to support Supermicro motherboards.

Note: Memory slots P1-DIMMB2 and P2-DIMMB2 are reserved for PMem 200 Series only.

| Memory Population for the X12 DP Motherboard, 18 DIMM Slots | |
|---|--|
| CPU/DimMs | Memory Population Sequence |
| 1 CPU & 1 DIMM | A1 |
| 1 CPU & 2 DIMMs | A1, E1 |
| 1 CPU & 4 DIMMs | A1, C1, E1, G1 |
| 1 CPU & 6 DIMM | A1, B1, C1, E1, F1, G1 |
| 1 CPU & 8 DIMMs | A1, B1, C1, D1, E1, F1, G1, H1 |
| 1 CPU & 9 DIMMs | A1, B1, C1, D1, E1, F1, G1, H1 and PMem in B2 |
| <hr/> | |
| 2 CPUs & 2 DIMMs | CPU1: A1 CPU2: A1 |
| 2 CPUs & 4 DIMMs | CPU1: A1, E1 CPU2: A1, E1 |
| 2 CPUs & 6 DIMMs* | CPU1: A1, C1, E1, G1 CPU2: A1, E1 |
| 2 CPUs & 8 DIMMs | CPU1: A1, C1, E1, G1 CPU2: A1, C1, E1, G1 |
| 2 CPUs & 10 DIMMs* | CPU1: A1, B1, C1, E1, F1, G1 CPU2: A1, C1, E1, G1 |
| 2 CPUs & 12 DIMMs | CPU1: A1, B1, C1, E1, F1, G1 CPU2: A1, B1, C1, E1, F1, G1 |
| 2 CPUs & 14 DIMMs* | CPU1: A1, B1, C1, D1, E1, F1, G1, H1 CPU2: A1, B1, C1, E1, F1, G1 |
| 2 CPUs & 16 DIMMs | CPU1: A1, B1, C1, D1, E1, F1, G1, H1 CPU2: A1, B1, C1, D1, E1, F1, G1, H1 |
| 2 CPUs & 18 DIMMs | CPU1: A1, B1, C1, D1, E1, F1, G1, H1 and Pmem in B2 CPU2: A1, B1, C1, D1, E1, F1, G1, H1 and Pmem in B2 |

*Unbalanced, not recommended.

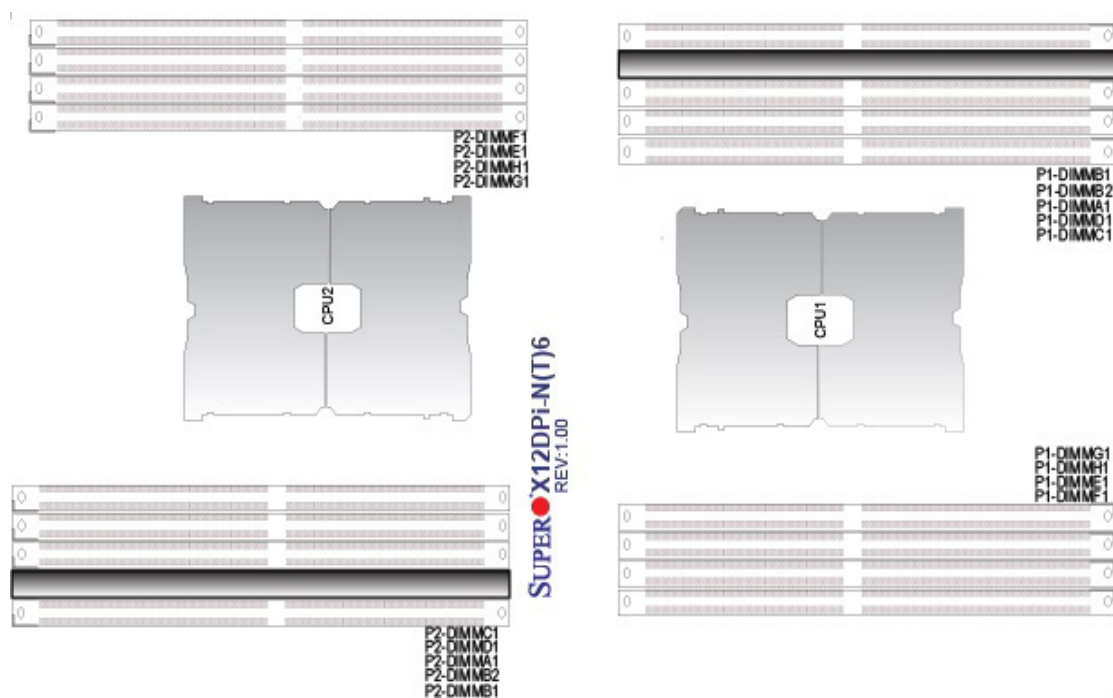


Figure 3-3. Memory Slots

Optane PMem Population

Intel Optane PMem 200 Series, up to 18TB of PMem and 4TB DDR4.

| Symmetric Population for Each CPU with PMem | | | | | | | | | | | |
|---|----------|---------------|------|------|------|------|------|------|------|------|------|
| DIMMs & PMem | Modes | AD Interleave | DIMM | | | | | | | | |
| | | | F1 | E1 | H1 | G1 | C1 | D1 | A1 | B2 | B1 |
| 4 DIMM 4 PMem | AD MM | One - x4 | PMem | DDR4 | PMem | DDR4 | DDR4 | PMem | DDR4 | - | PMem |
| | | | DDR4 | PMem | DDR4 | PMem | PMem | DDR4 | PMem | - | DDR4 |
| 6 DIMM 1 PMem | AD | One - x1 | DDR4 | DDR4 | | DDR4 | DDR4 | PMem | DDR4 | - | DDR4 |
| | | | | DDR4 | DDR4 | DDR4 | DDR4 | DDR4 | DDR4 | - | PMem |
| | | | DDR4 | DDR4 | PMem | DDR4 | DDR4 | | DDR4 | - | DDR4 |
| | | | PMem | DDR4 | DDR4 | DDR4 | DDR4 | DDR4 | DDR4 | - | |
| | | | DDR4 | DDR4 | DDR4 | | PMem | DDR4 | DDR4 | - | DDR4 |
| | | | DDR4 | DDR4 | DDR4 | DDR4 | DDR4 | DDR4 | PMem | - | DDR4 |
| | | | DDR4 | DDR4 | DDR4 | PMem | DDR4 | DDR4 | DDR4 | - | DDR4 |
| 8 DIMM 1 PMem | AD | One - x1 | DDR4 | DDR4 | DDR4 | DDR4 | DDR4 | DDR4 | DDR4 | PMem | DDR4 |

AD: App Direct, MM: Memory Mode

| Validation Matrix (DDR4 DIMMs Validated with PMem 200 Series) | | | |
|---|---|--------------------|-------|
| DIMM Type (up to 3200) | Ranks Per DIMM & Data Width (Stack) | DIMM Capacity (GB) | |
| | | DRAM Density | |
| | | 8Gb | 16Gb |
| RDIMM | 1Rx8 | N/A | N/A |
| | 1Rx4 | 16GB | 32GB |
| | 2Rx8 | 16GB | 32GB |
| | 2Rx4 | 32GB | 64GB |
| RDIMM 3DS | 4Rx4 (2H) | N/A | 128GB |
| | 8Rx4 (4H) | NA | 256GB |
| LRDIMM | 4Rx4 | 64GB | 128GB |
| LRDIMM 3DS | 4Rx4 (2H) | N/A | N/A |
| | 8Rx4 (4H) | 126GB | 256GB |

PMem Notes

- Memory slots P1-DIMMB2 and P2-DIMMB2 are reserved for PMem 200 Series only.
- Matrix targets configs for optimized PMem to DRAM cache ratio in MM and MM + AD modes.
- For each individual population, different PMem rearrangements among channels are permitted so long as the configuration does not break X12 DP Memory population rules.
- Ensure the same DDR4 DIMM type and capacity are used for each DDR4 + PMem population.
- If the system detects an unvalidated config, then the system issues a BIOS warning. The CLI functionality is limited in non-POR configurations, and select commands will not be supported.

Memory Population Guidelines

- All DIMMs must be DDR4.
- Balance memory. Using unbalanced memory topology, such as populating two DIMMs in one channel while populating one DIMM in another channel, reduces performance. It is not recommended for Supermicro systems.
- In dual-CPU configurations, memory must be installed in the slots associated with the installed CPUs.
- For MM, NM/FM ratio is between 1:4 and 1:16. The capacity not used for FM can be used for AD. (NM = Near Memory; FM = Far Memory).

Guidelines Regarding Mixing DIMMs

- Populating slots with a pair of DIMM modules of the same type and size results in interleaved memory, which improves memory performance.
- Use memory modules of the same type and speed, as mixing is not allowed.
- x4 and x8 DIMMs can be mixed in the same channel.
- Mixing of LRDIMMs and RDIMMs is not allowed in the same channel, across different channels, and across different sockets. No mixing of PMem and NVDIMMs within the platform
- Mixing of non-3DS and 3DS LRDIMM is not allowed in the same channel, across different channels, and across different sockets.

DIMM Construction

- RDIMM (*non-3DS*) Raw Cards: A/B (2Rx4), C (1Rx4), D (1Rx8), E (2Rx8)
- 3DS RDIMM Raw Cards: A/B (4Rx4)
- LRDIMM (*non-3DS*) Raw Cards: D/E (4Rx4)
- 3DS LRDIMM Raw Cards: A/B (8Rx4)

Installing Memory

ESD Precautions

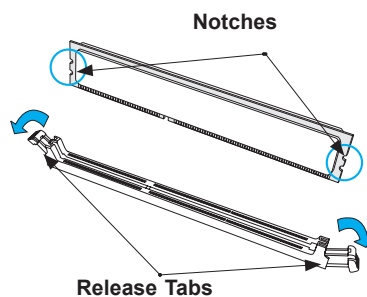
Electrostatic Discharge (ESD) can damage electronic components including memory modules. To avoid damaging DIMM modules, it is important to handle them carefully. The following measures are generally sufficient.

- Use a grounded wrist strap designed to prevent static discharge.
- Handle the memory module by its edges only.
- Put the memory modules into the antistatic bags when not in use.

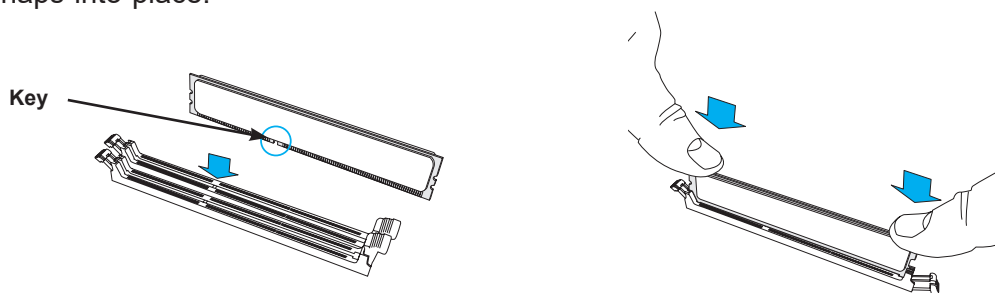
Installing Memory

Begin by removing power from the system as described in Section 3.1. Follow the memory population sequence in the table above.

1. Push the release tabs outwards on both ends of the DIMM slot to unlock it.



2. Align the key of the DIMM with the receptive point on the memory slot and with your thumbs on both ends of the module, press it straight down into the slot until the module snaps into place.



3. Press the release tabs to the locked position to secure the DIMM module into the slot.

Caution: Exercise extreme caution when installing or removing memory modules to prevent damage to the DIMMs or slots.

Removing Memory

To remove a DIMM, unlock the release tabs then pull the DIMM from the memory slot.

3.5 Motherboard Battery

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

Replacing the Battery

Begin by [removing power](#) from the system.

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

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

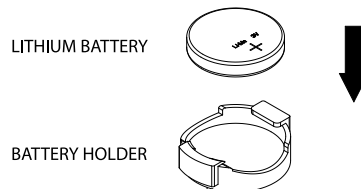


Figure 3-4. Installing the Onboard Battery

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).

3.6 Storage Drives

The system supports twelve hot-swap 3.5" NVMe/SAS/SATA storage drives in hybrid bays. For compatible storage drives, use the [X12DPi-N\(T\)6 motherboard page](#).

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

Note: Enterprise level hard disk drives are recommended for use in Supermicro chassis and servers. For information on recommended HDDs, visit the Supermicro website product pages at www.supermicro.com/products.

Installing Drives



Figure 3-5. Logical Drive Numbers

Removing a Hot-Swap Drive Carrier

1. Push the release button located beside the drive's LEDs.
2. Swing the handle fully out.
3. Grasp the handle and use it to pull the drive carrier out of its bay.

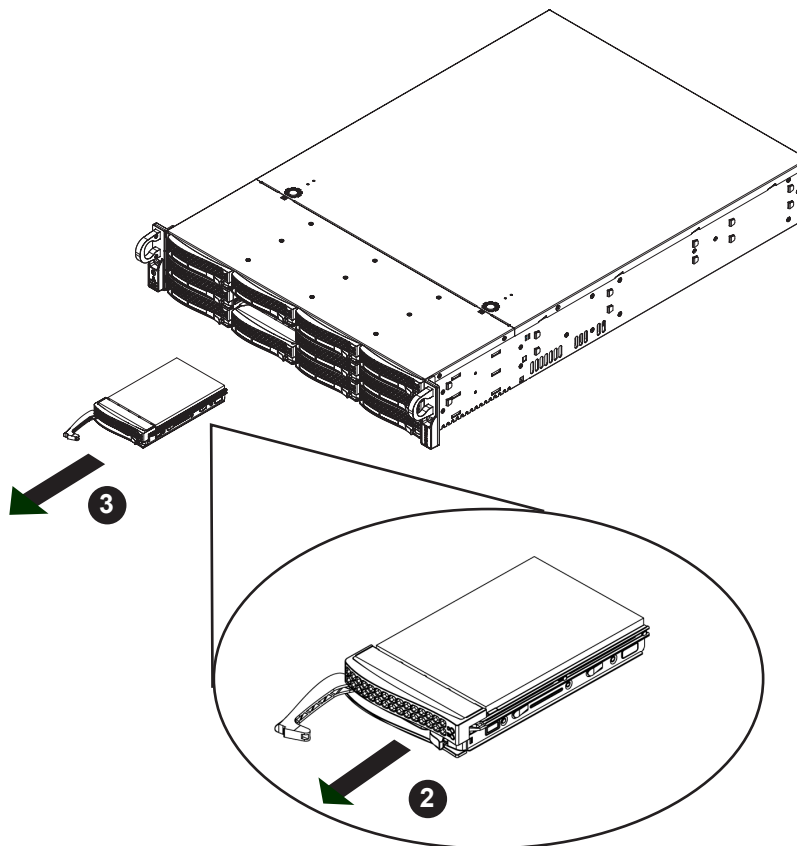


Figure 3-6. Removing a Drive Carrier from the System

Mounting a Drive in a Drive Carrier

1. To add a new drive, install it into the carrier with the printed circuit board side facing down so that the mounting holes align with those in the carrier.
2. Secure the drive to the carrier with the screws provided, then push the carrier completely into the drive bay. You should hear a click when the drive is fully inserted. This indicates that the carrier has been fully seated and connected to the midplane, which automatically makes the power and logic connections to the hard drive.

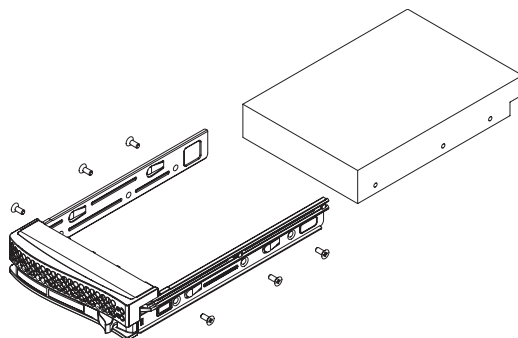


Figure 3-7. Mounting a Drive in a Carrier

Removing a Drive from a Drive Carrier

1. Remove the screws that secure the hard drive to the carrier and separate the hard drive from the carrier.
2. Replace the carrier back into the drive bay.

Hard Drive Carrier Indicators

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

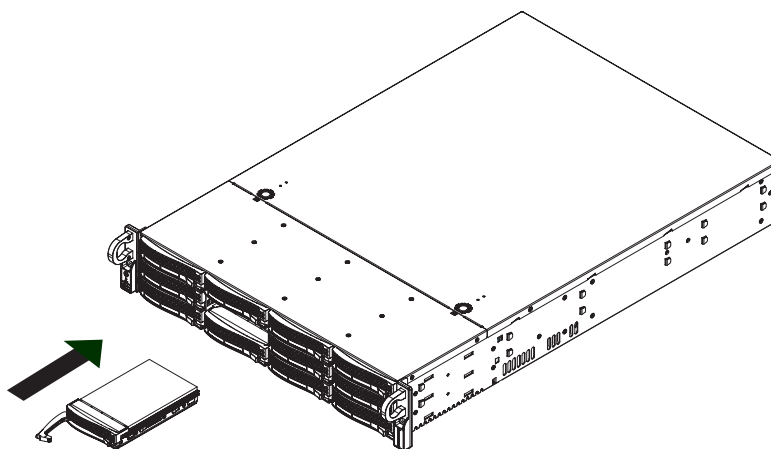


Figure 3-8. Installing a Drive Carrier into its Bay

Internal 3.5" Hard Drives

The SC829U chassis supports four internal hot-swap 3.5" hard drives which are mounted in individual hard drive trays contained in an internal chassis tray. After the chassis tray has been installed into the chassis, the power can stay on when removing or installing the hard drives from their individual trays.

Setting up the Internal Chassis Tray and Individual Trays

1. Power down the system and remove the chassis covers as described in Section 3.2.
2. Remove the two side screws securing the tray to the chassis and set them aside for later use.
3. Lift the hard chassis tray up and out of the chassis.

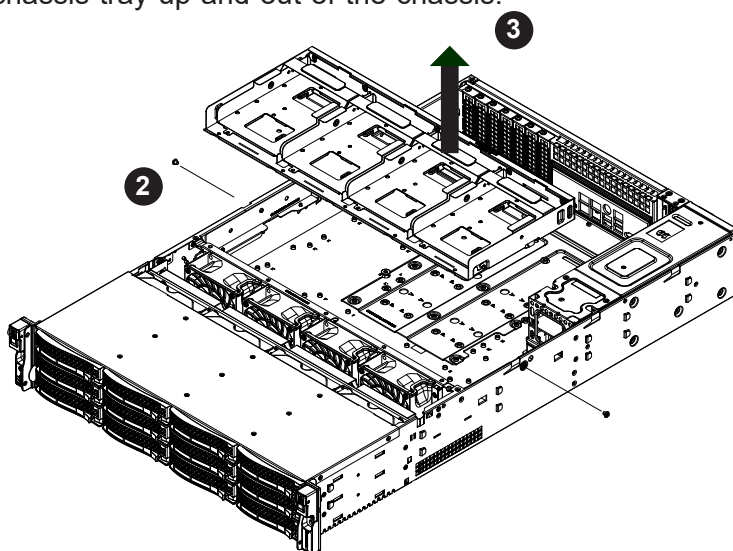


Figure 3-9. Removing the Chassis Tray

4. Remove the screws securing each hard drive tray to the chassis tray.

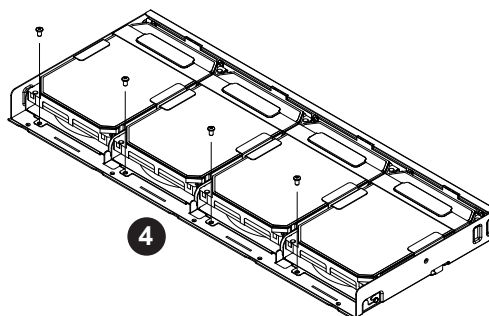


Figure 3-10. Removing Screws from the Individual Trays

5. Lift the individual trays up and out of the chassis tray.

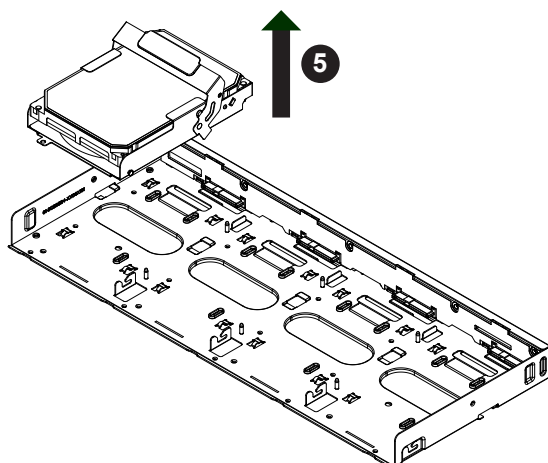


Figure 3-11. Removing a Hard Drive Carrier from the Hard Drive Tray

6. Place a hard drive into each of the individual trays and secure it with four screws.
7. Place the hard drives and individual trays into the chassis tray.

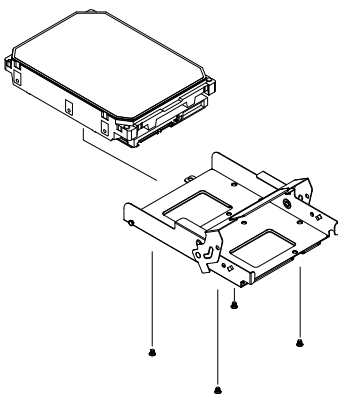


Figure 3-12. Installing a Hard Drive into its Tray

8. Secure the individual trays into the chassis tray with four screws.

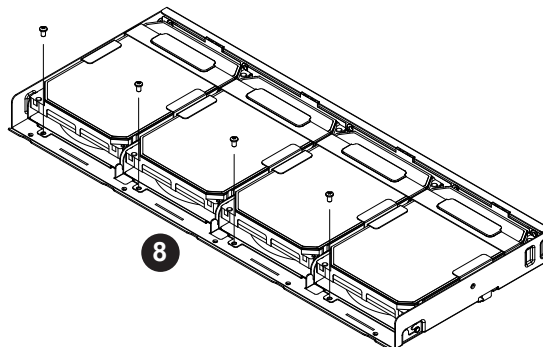


Figure 3-13. Installing Hard Drives and Carriers into the Hard Drive Tray

9. Place the loaded chassis tray into the chassis.

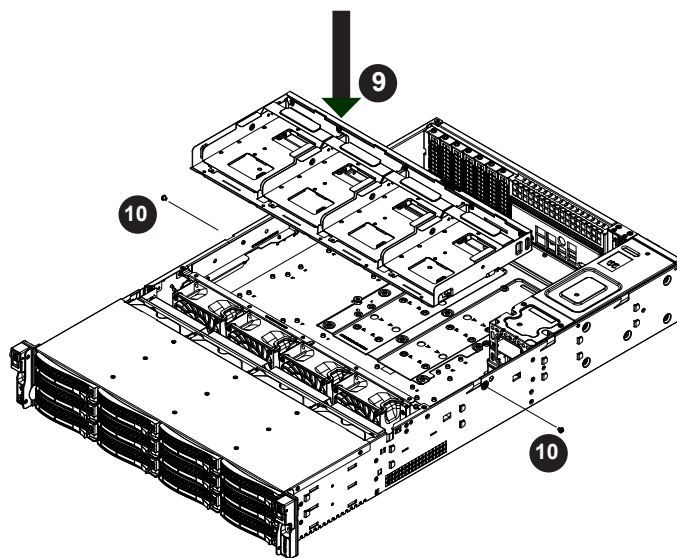


Figure 3-14. Installing the Hard Drive Tray into the Chassis

10. Secure the chassis tray with the two side screws previously set aside.
11. Plug the power cords into the rear of the power supply, replace the top cover and power up the system.

After installing the chassis tray and individual trays, the internal hot-swappable hard drives may be removed without powering down the system.

Removing Internal Hard Drives from the Chassis Tray

1. Confirm that that chassis tray and individual trays have been installed as directed in the previous section.
2. With the power running, remove the middle top cover as described in Section 3.2.
3. Lift the latch on the individual tray and slide the hard drive out toward the front of the chassis.

Installing Hard Drives Into the Individual Trays

1. After removing the middle top cover and lifting the individual tray latch, insert a hard drive into the individual tray by sliding it toward the rear of the tray.
2. Close the latch and replace the middle top cover.

3.7 System Cooling

Four 8-cm heavy duty fans provide the cooling for the system. Fan speed is controlled by system temperature using the BMC. If a fan fails, the remaining fans will ramp up to full speed and the system will continue to operate. Replace any failed fan at your earliest convenience with the same type and model.

Make sure the chassis top cover makes a good seal for proper air circulation.

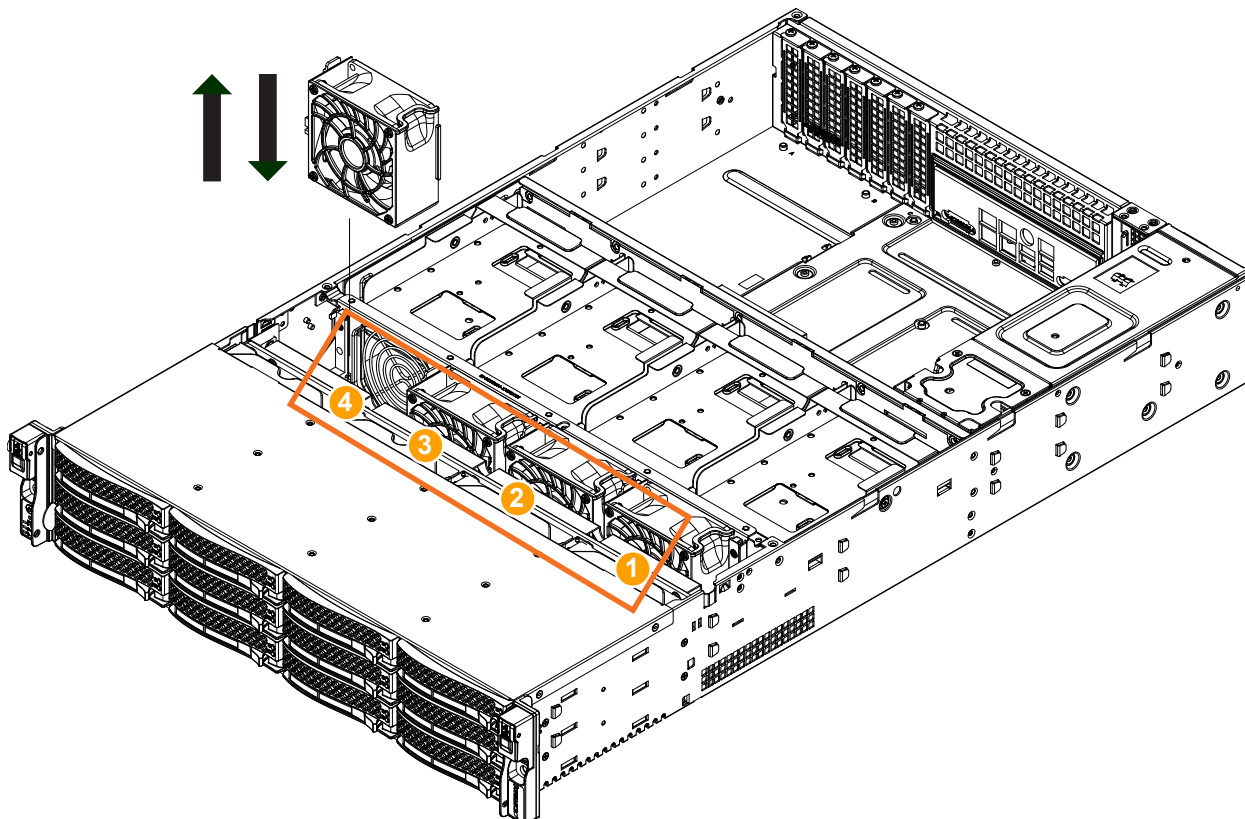


Figure 3-15. Fan Positions

Installing the Air Shroud

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

Installing the Standard Air Shroud

- Position the air shroud as illustrated in the figure below, sliding the front over the edge of the fan tray. Align the holes in the edge of the shroud with the hold in the fan tray.

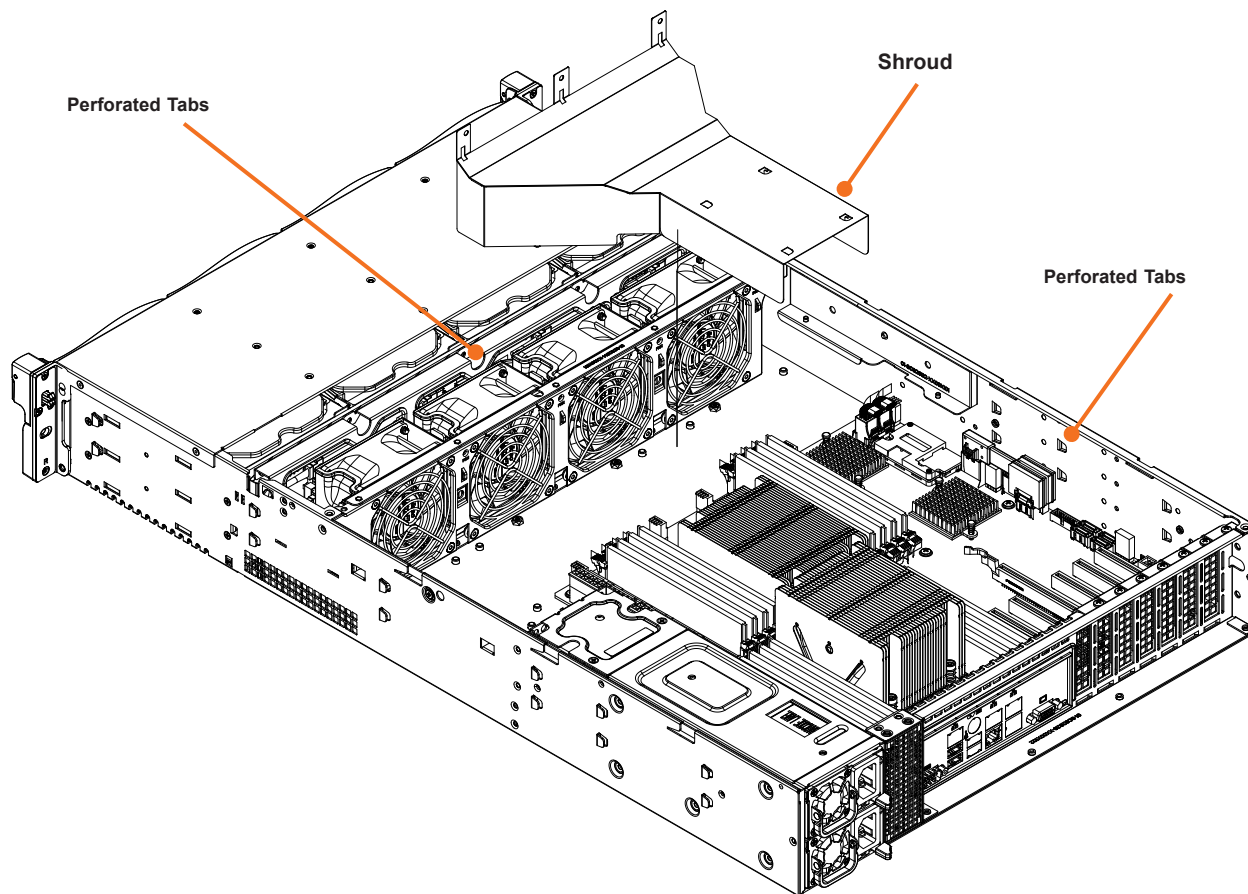


Figure 3-16. Installing the Air Shroud

3.8 Power Supply

The chassis features redundant power supplies. The system will continue to operate if one module fails. It should be replaced as soon as convenient. The power supply modules are hot-swappable, meaning they can be changed without powering down the system. New units can be ordered directly from Supermicro or authorized distributors.

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

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.

Changing the Power Supply Module:

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

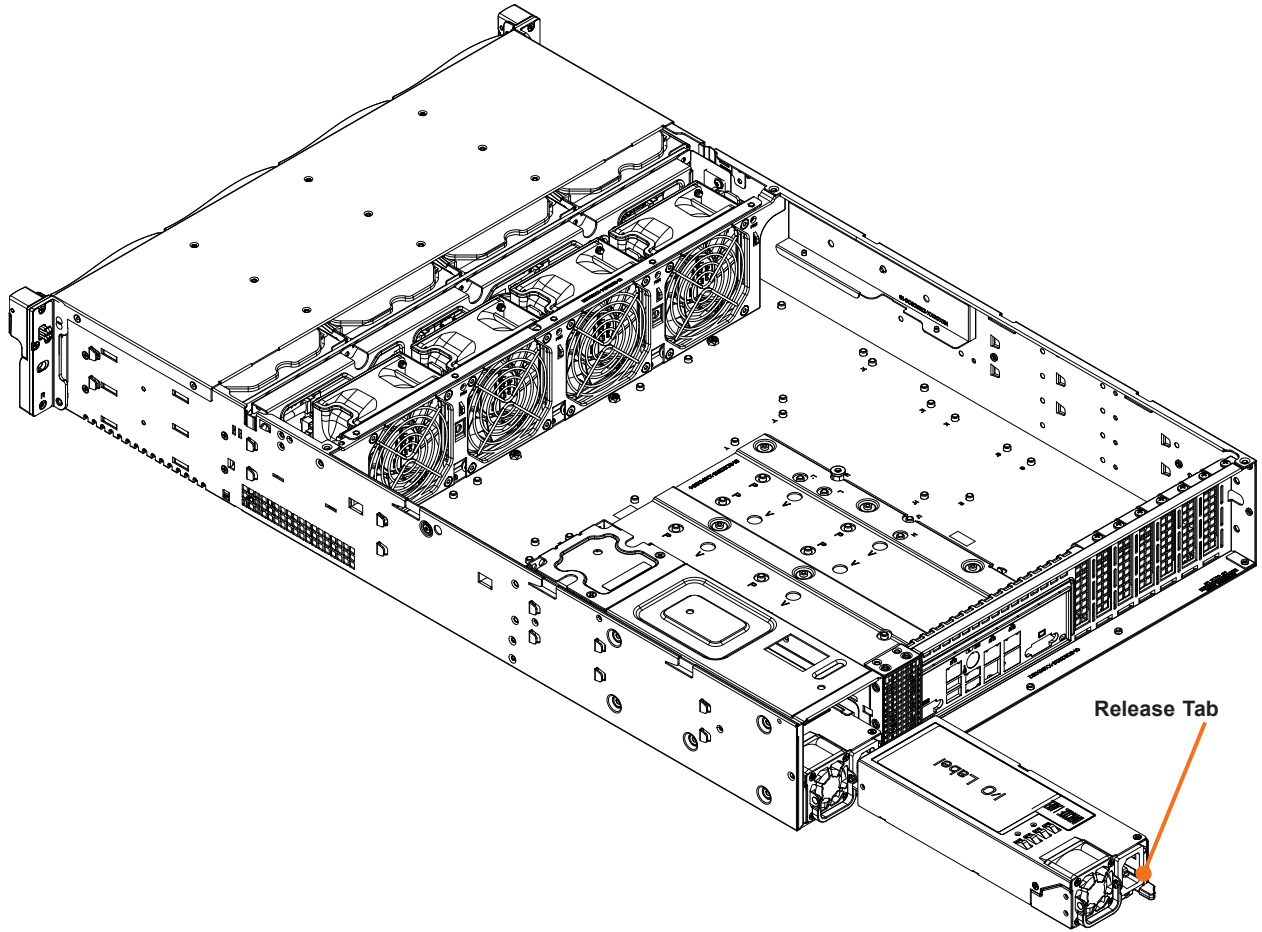


Figure 3-17. Replacing the Power Supply

3.9 PCI Expansion Cards

The system accepts up to six PCIe expansion cards.



Figure 3-18. Expansion Slots

| Expansion Card Chassis Slots | |
|------------------------------|--|
| Item | Description |
| 1 | PCIe 4.0x8 low-profile slot (Occupied by 3916 SAS 620P-ACR16H controller or 3816 SAS 620P-ACR16L controller) |
| 2_3 | PCIe 4.0x16 low-profile slot |
| 4_5 | PCIe 4.0x16 low-profile slot |
| 6 | PCIe 4.0x8 low-profile slot |

Installing an Expansion Card

1. Power down the system as described in section 3.1 and remove the cover.
2. Unscrew and remove the chassis slot cover.
3. Insert the expansion card into a slot on the motherboard while aligning the expansion card backplate with the open slot in the rear of the chassis. Secure with a screw.
4. Replace the cover and power.

3.10 Cable Routing Diagram

Refer to this section when routing or rerouting cables. Proper routing is important to maintain airflow through the system.

Cable part numbers and descriptions are available at the [Online Cable Matrix](#).

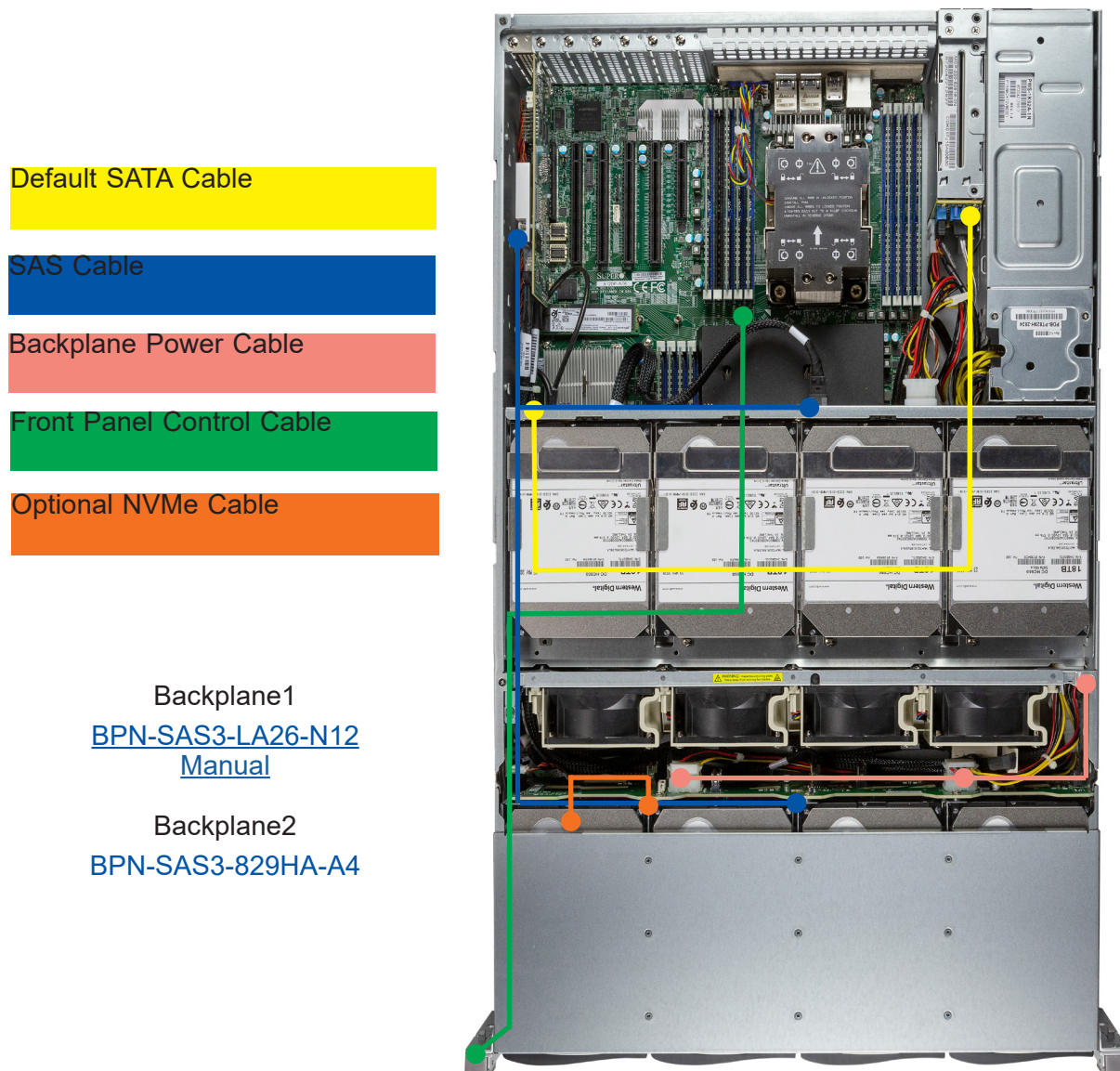


Figure 3-19. Cable Routing Diagram

Chapter 4

Motherboard Connections

This section describes the jumpers, connections and LEDs on the motherboard and provides pinout definitions. Some connections might not be used in this system. A motherboard layout indicating component locations may be found in [Chapter 1](#). More detail can be found in the [Motherboard Manual](#).

4.1 Input/Output Ports

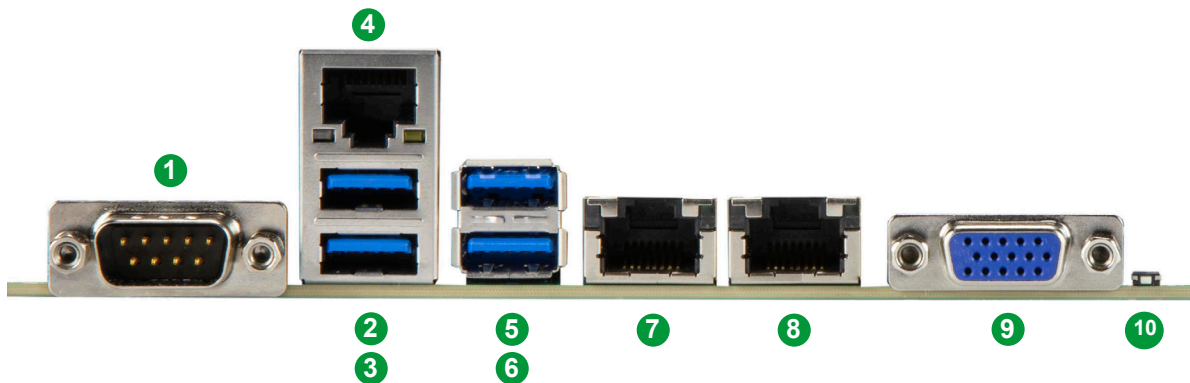


Figure 4-1. Rear I/O Ports

| Rear I/O Ports | | | |
|----------------|-------------------|----|----------------------|
| # | Description | # | Description |
| 1 | COM Port 1 | 6 | USB3 (3.0) |
| 2 | USB7 (3.0) | 7 | LAN1 |
| 3 | USB8 (3.0) | 8 | LAN2 |
| 4 | Dedicated BMC LAN | 9 | (Rear) VGA Port |
| 5 | USB2 (3.0) | 10 | UID/BMC Reset Switch |

LAN Ports

There is a dedicated BMC LAN port (4) and two 10G BASE-T ports (7 and 8).

Unit Identifier Switch/UID LED Indicator

A Unit Identifier (UID) switch (10) and a UID LED indicator are located on the rear of the system. When you press the UID switch, both front and rear UID LED indicators are toggled on or off. The UID indicators provide easy identification of a system in a rack. The UID can also be triggered using the BMC.

Note: The UID switch can also be used to reset the BMC. See details.

4.2 Power Connections

Two power connections supply the motherboard and several more supply for onboard devices.

Main Power Connector

The 24-pin power supply connector (JPWR3) meets the ATX SSI EPS 12V specification. You must also connect the 8-pin (JPWR1) and 4-pin (JPWR2) processor power connector to the power supply.

Important: To provide adequate power to the motherboard, connect both the main power connector and 8-pin/4-pin power connectors to the power supply. Failure to do so may void the manufacturer's warranty on your power supply and motherboard.

| 8-pin Power Pin Definitions | |
|--------------------------------|------------|
| Pin# | Definition |
| 1 - 4 | Ground |
| 5 - 8 | +12 Vdc |

| 4-pin Power Pin Definitions | |
|--------------------------------|------------|
| Pin# | Definition |
| 1 - 2 | Ground |
| 3 - 4 | +12Vdc |

4.3 Headers and Connectors

Fan Headers

There are seven fan headers (FAN1-FAN5, FANA, FANB) on the motherboard. These are 4-pin fan headers, although pins 1-3 are backward compatible with traditional 3-pin fans. Four-pin fans allow fan speeds to be controlled by Thermal Management in the BMC. When using the Thermal Management setting, use all 3-pin fans or all 4-pin fans.

| Fan Header Pin Definitions | |
|-------------------------------|----------------|
| Pin# | Definition |
| 1 | Ground (Black) |
| 2 | +12V (Red) |
| 3 | Tachometer |
| 4 | PWM Control |

SGPIO Header

A Serial General Purpose Input/Output header (S-SGPIO1) is used to communicate with the enclosure management chip on the backplane.

| SGPIO Header Pin Definitions | | | |
|---------------------------------|------------|------|------------|
| Pin# | Definition | Pin# | Definition |
| 1 | NC | 2 | NC |
| 3 | Ground | 4 | DATA Out |
| 5 | Load | 6 | Ground |
| 7 | Clock | 8 | NC |

NC = No Connection

Disk-On-Module Power Connector

Two power connectors for SATA DOM (Disk-On-Module) devices are located at JSD1 and JSD2. Connect appropriate cables here to provide power support for your Serial Link DOM devices.

| DOM Power Pin Definitions | |
|---------------------------|------------|
| Pin# | Definition |
| 1 | 5V |
| 2 | Ground |
| 3 | Ground |

TPM Header

The JTPM1 header is used to connect a Trusted Platform Module (TPM)/Port 80, which is available from Supermicro. A TPM/Port 80 connector is a security device that supports encryption and authentication in hard drives. It allows the motherboard to deny access if the TPM associated with the storage drive is not installed in the system. For more information on the TPM: www.supermicro.com/manuals/other/TPM.pdf.

| Trusted Platform Module/Port 80 Header Pin Definitions | | | |
|--|----------------|------|----------------|
| Pin# | Definition | Pin# | Definition |
| 1 | P3V3 | 2 | SPI_TPM_CS_N |
| 3 | PCI-E_RESET_N# | 4 | SPI_PCH_MISO |
| 5 | SPI_PCH_CLK# | 6 | Ground |
| 7 | SPI_PCH_MOSI | 8 | N/A |
| 9 | JTPM1_P3V3A | 10 | IRQ_TPM_SPIN_N |

Standby Power

The 5V Standby Power header is located at JSTBY1. You must have a card with a Standby Power connector and a cable to use this feature.

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

Power SMB (I²C) Header

The Power System Management Bus (I²C) connector (JPI²C1) monitors the power supply, fan, and system temperatures.

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

BMC External I²C Header

A System Management Bus header for IPMI 2.0 is located at JIPMB1. Connect the appropriate cable here to use the IPMB I²C connection on your system.

| External I ² C Header Pin Definitions | |
|---|------------|
| Pin# | Definition |
| 1 | Data |
| 2 | Ground |
| 3 | Clock |
| 4 | 3V3_STBY |

Chassis Intrusion

A Chassis Intrusion header is located at JL1. Attach the appropriate cable from the chassis to the header to alert when the chassis is opened.

| Chassis Intrusion Pin Definitions | |
|--------------------------------------|-----------------|
| Pins | Definition |
| 1 | Intrusion Input |
| 2 | Ground |

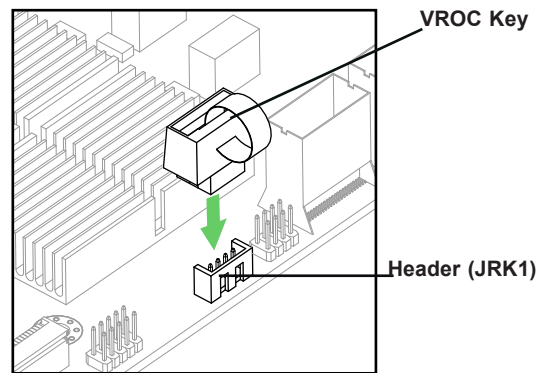
NVMe I²C Header

Connector JNVI²C1 is a management header for the Supermicro AOC NVMe PCIe peripheral cards. Please connect the I²C cable to this connector.

RAID Key Header

An Intel VROC RAID Key header is located at JRK1. It supports VMD used in creating optional advanced NVMe RAID configurations.

| RAID Key Header Pin Definitions | |
|------------------------------------|--------------|
| Pin# | Definition |
| 1 | Ground |
| 2 | RAID_KEY_PU |
| 3 | Ground |
| 4 | PCH_RAID_KEY |



Note: This drawing is for illustration only. Your motherboard may look different.

Figure 4-2. Installing the VROC RAID Key

NC-SI Header for BMC Support

A Network Controller Sideband Interface (NC-SI) header is located at JNCSI1. 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). Use a NIC add-on card that supports NC-SI and a special cable. Please contact Supermicro at www.supermicro.com to purchase the cable for this header.

M.2 Slots

The motherboard has one M.2 SSD slot, M.2-H. It supports a PCIe 3.0 x4/SATA (32 Gb/s) SSD card in the 2280 and 22110 form factors.

SMB (I²C) for LCD Connector

The connector used for System Management Bus (I²C) for LCD devices is located at JI2C_FP1. Connect a cable here to provide health monitoring and management for LCD devices.

SMB (I²C) for LCD Connector

The JI2C_EXP1 connector is used for System Management Bus (I²C) for the devices installed on the SAS3 backplanes. Connect appropriate cables to the connector for SAS3 health monitoring and system management.

SATA Ports

Eight SATA 3.0 ports are supported by the chipset. These SATA ports support RAID 0, 1, 5, and 10. In addition, there are also two S-SATA ports (S-SATA0, S-SATA1) that include SATA DOM power.

For more information on the SATA HostRAID configuration, refer to the Intel SATA HostRAID user's guide posted at <http://www.supermicro.com>.

NVM Express Header

One connector is located at NVME0/1 to support two PCIe 4.0 x4 NVMe connections. This connector provides high-speed and low-latency connections directly from the CPU to NVMe Solid State (SSD) drives.

Control Panel

JF1 contains header pins for various control panel connections. See the figure below for the pin locations and definitions of the control panel buttons and LED indicators.

All JF1 wires have been bundled into a single cable to simplify this connection. Make sure the red wire plugs into pin 1 as marked on the motherboard. The other end connects to the control panel PCB board.

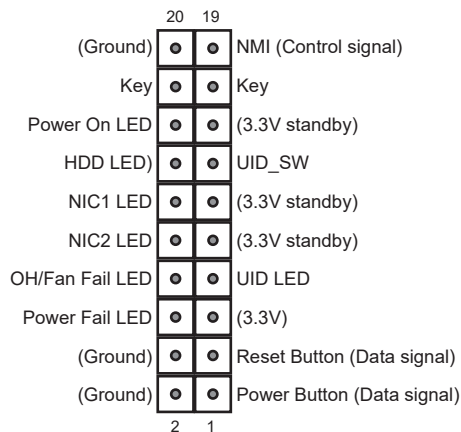


Figure 4-3. JF1 Control Panel Pins

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 6). To turn off the power when the system is in suspend mode, press the button for 4 seconds or longer.

| 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.

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

Power Fail LED

The Power Fail LED connection is located on pins 5 and 6 of JF1.

| Power Fail LED Pin Definitions (JF1) | |
|---|-----------------|
| Pin# | Definition |
| 5 | 3.3V |
| 6 | PWR Supply Fail |

Overheat (OH)/Fan Fail

Connect an LED cable to pins 7 and 8 of JF1 to use the Overheat/Fan Fail LED connections. The LED on pin 8 provides warnings of overheat or fan failure.

| OH/Fan Fail Indicator Status | |
|---------------------------------|------------|
| Status | Definition |
| Off | Normal |
| On | Overheat |
| Flashing | Fan Fail |

| OH/Fan Fail LED Pin Definitions (JF1) | |
|--|-----------------|
| Pin# | Definition |
| 7 | Blue LED |
| 8 | OH/Fan Fail LED |

NIC1/NIC2 (LAN1/LAN2)

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

| LAN1/LAN2 LED Pin Definitions (JF1) | |
|--|-------------------|
| Pin# | Definition |
| 9 | NIC2 Activity LED |
| 10 | NIC2 Link LED |
| 11 | NIC1 Activity LED |
| 12 | NIC1 Link LED |

HDD LED/UID Switch

The HDD LED/UID Switch connection is located on pins 13 and 14 of JF1. Attach a cable to Pin 14 to show hard drive activity status. Attach a cable to pin 13 to use UID switch.

| HDD LED Pin Definitions (JF1) | |
|----------------------------------|-------------------------|
| Pin# | Definition |
| 13 | 3.3V Standby/UID Switch |
| 14 | HDD Active |

Power LED

The Power LED connection is located on pins 15 and 16 of JF1.

| Power LED Pin Definitions (JF1) | |
|------------------------------------|------------|
| Pin# | Definition |
| 15 | 3.3V |
| 16 | Power LED |

NMI Button

The non-maskable interrupt button header is located on pins 19 and 20 of JF1.

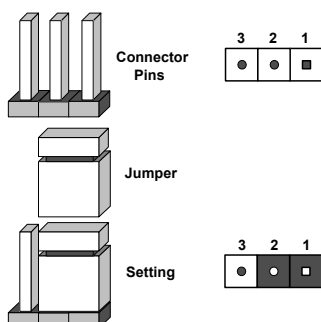
| NMI Button Pin Definitions (JF1) | |
|-------------------------------------|------------|
| Pin# | Definition |
| 19 | Control |
| 20 | Ground |

4.4 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.



ME Manufacturing

ME Recovery (JPME1) is used to enable or disable the ME Recovery feature of the motherboard. The jumper will reset Intel ME values back to their default settings.

| Manufacturing Mode Jumper Settings | |
|------------------------------------|--------------------|
| Jumper Setting | Definition |
| Pins 1-2 | Normal |
| Pins 2-3 | Manufacturing Mode |

4.5 LED Indicators

Network LAN LEDs

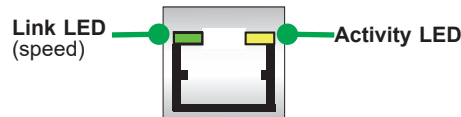
The Ethernet ports each have two LEDs. One LED indicates activity when flashing green. The other may be green, amber or off to indicate the speed of the connection.

| LAN Link LED | |
|--------------|--------------------------|
| Color | Definition |
| Off | No Connection or 100Mb/s |
| Green | 10Gb/s |
| Amber | 1Gb/s |

Dedicated BMC LAN LEDs

A dedicated BMC LAN port provides a connection to the BMC. The Link LED indicates the speed of the connection. The other LED indicates activity.

| BMC Link LED | |
|--------------|---------------|
| Color | Definition |
| Off | No Connection |
| Green | 100 Mb/s |
| Amber | 1 Gb/s |



Unit ID LED

A rear unit identifier (UID) indicator at LE6 is located near the UID switch on the I/O back panel. It provides easy identification of a unit that may need service.

M.2 Heartbeat LED

When LE4 is blinking, the M.2 slot is functioning normally.

Onboard Power LED

LDPWR3 is the onboard power indicator. When this LED is on, the system power is connected.

BMC Heartbeat LED

LEDBMC is the BMC heartbeat indicator. When the LED is blinking green, BMC is functioning normally.

Chapter 5

Software

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

5.1 Microsoft Windows OS Installation

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

Installing the OS

1. Create a method to access the MS Windows installation ISO file. That might be a DVD, perhaps using an external USB/SATA DVD drive, or a USB flash drive, or the BMC KVM console.
2. Boot from a bootable device with Windows OS installation. You can see a bootable device list by pressing **F11** during the system startup.

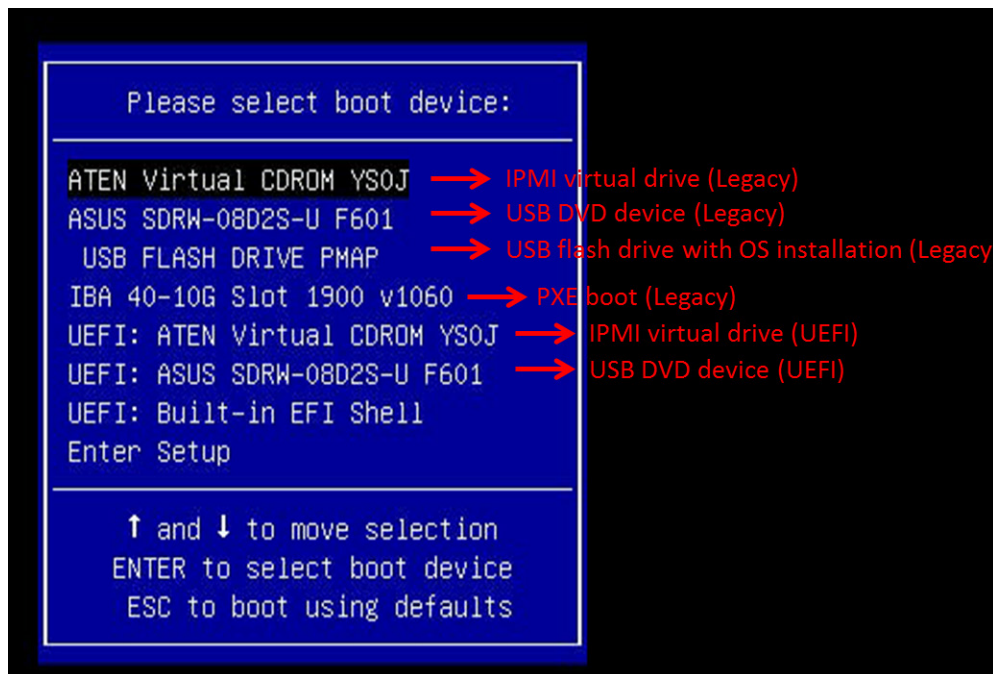


Figure 5-1. Select Boot Device

3. 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.

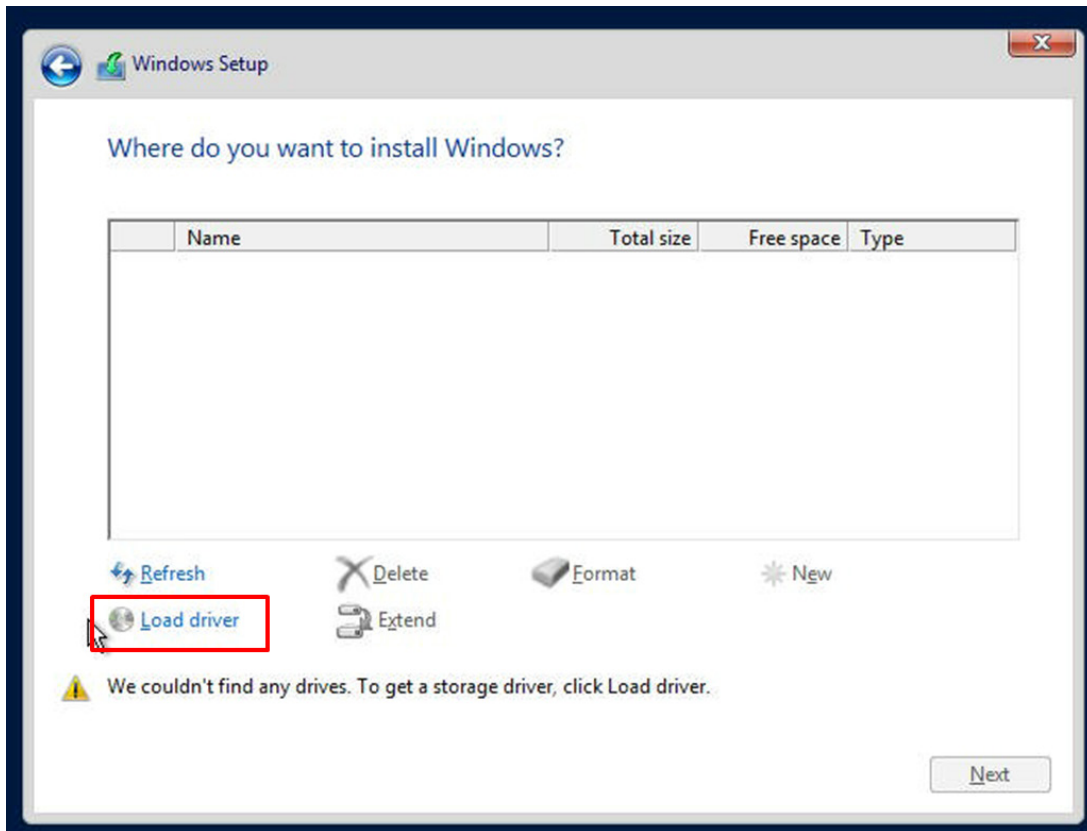


Figure 5-2. Load Driver Link

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.
4. Once all devices are specified, continue with the installation.
 5. After the Windows OS installation has completed, the system will automatically reboot multiple times.

5.2 Driver Installation

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

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

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

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

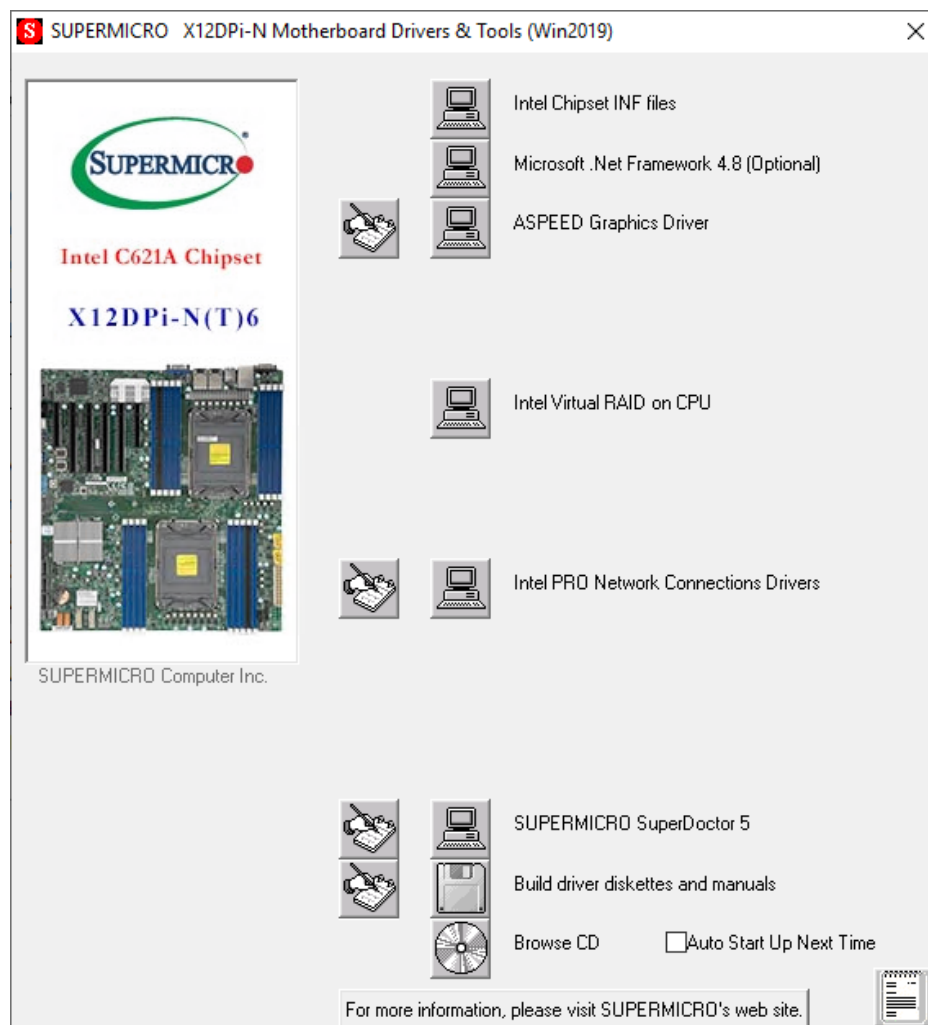


Figure 5-3. Driver and Tool Installation Screen

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

5.3 SuperDoctor® 5

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

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

[SuperDoctor® Manual and Resources](#)

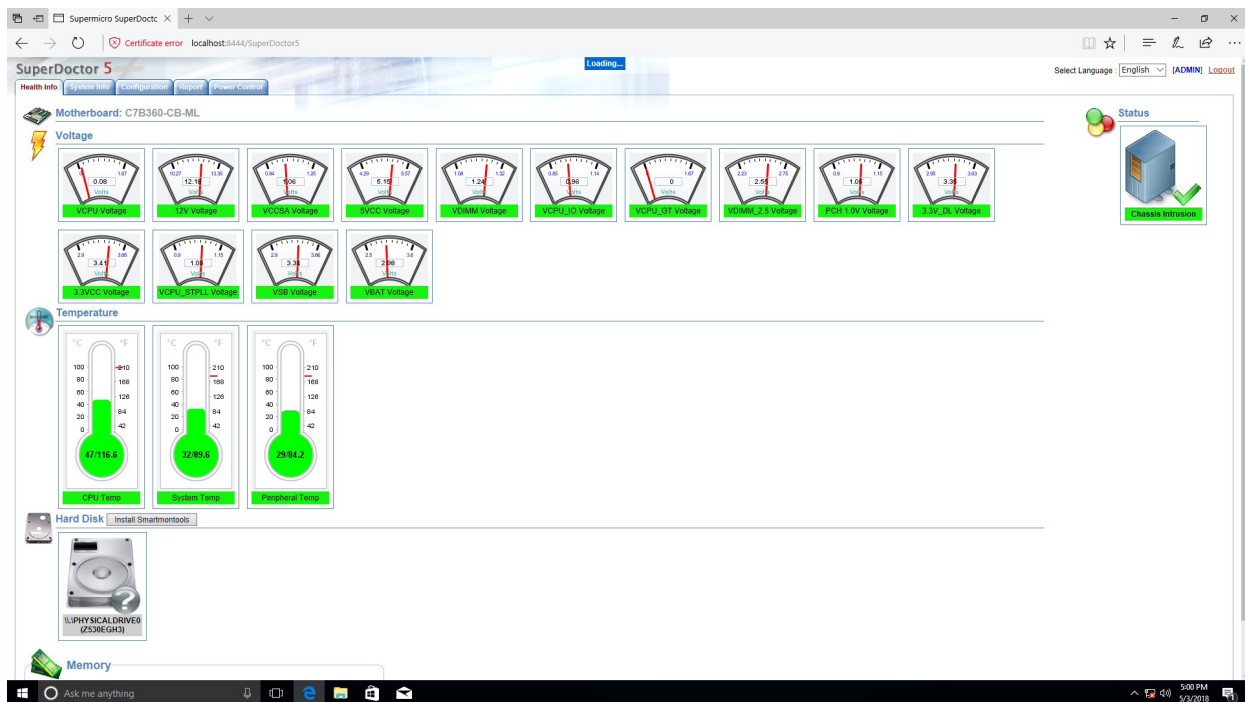


Figure 5-4. SuperDoctor 5 Interface Display Screen (Health Information)

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

See Chapter 1 for the [location](#) of the labels.

Chapter 6

Optional Components

This chapter describes optional system components and installation procedures.

| Optional Parts |
|-------------------------------------|
| Rear 2.5" Storage Drives |
| Storage Control Card and Cable(s) |
| TPM security module |
| Intel VROC RAID Key |

6.1 Additional Storage Drives

The system supports two hot-swap 2.5" SATA or NVMe drives, accessible from the chassis rear.

6.2 Storage Control Card and Cable(s)

Supermicro offers storage controller cards for various data protection and drive RAID levels. Please refer to the product page for the latest cards and add-on options.

6.3 TPM Security Module

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

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

Details and installation procedures are at:

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

- AOM-TPM-9670V
- AOM-TPM-9671V

6.4 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 PCI-E 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.

Stripe 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 |

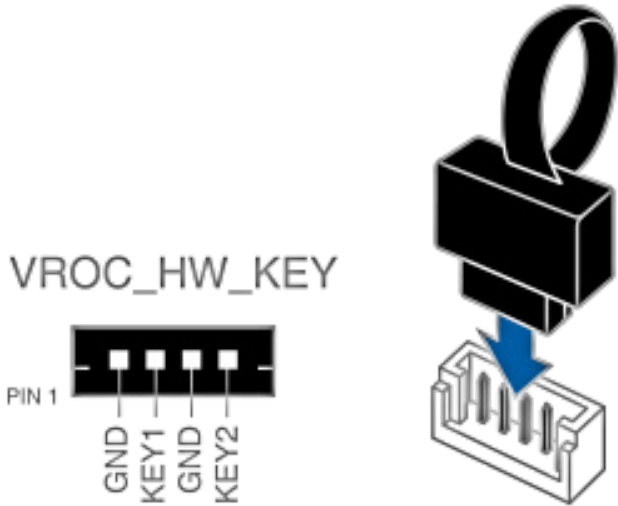


Figure 6-1. Intel VROC RAID Key and Motherboard Connector JRK1

Configuring NVMe RAID Manually

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

1. Reboot the server and press [DEL] key to access the BIOS options.
2. Switch to **Advanced > Chipset Configuration > North Bridge > IIO Configuration > Intel® VMD Technology**.

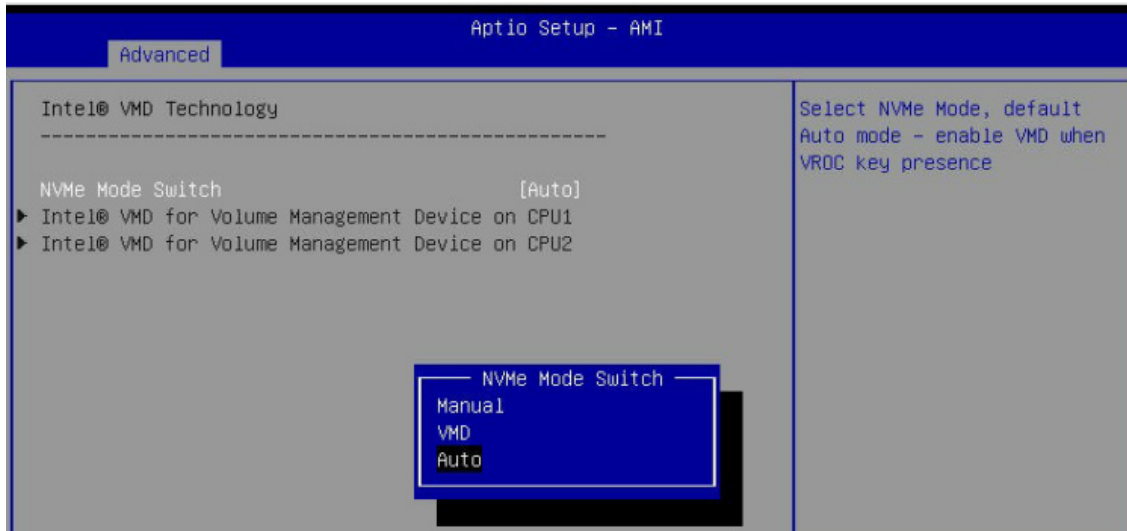


Figure 6-2. BIOS, Selecting VMD Mode

You can select a mode. The default is **Auto**. The **VMD** switch enables VMD mode for all NVMe ports despite the presence of the VROC key. The **Manual** switch allows the user to choose devices on which to enable VMD.

The onboard M.2 NVMe from PCH is located in the CPU1 section.

The screenshot below show example choices in Manual mode.

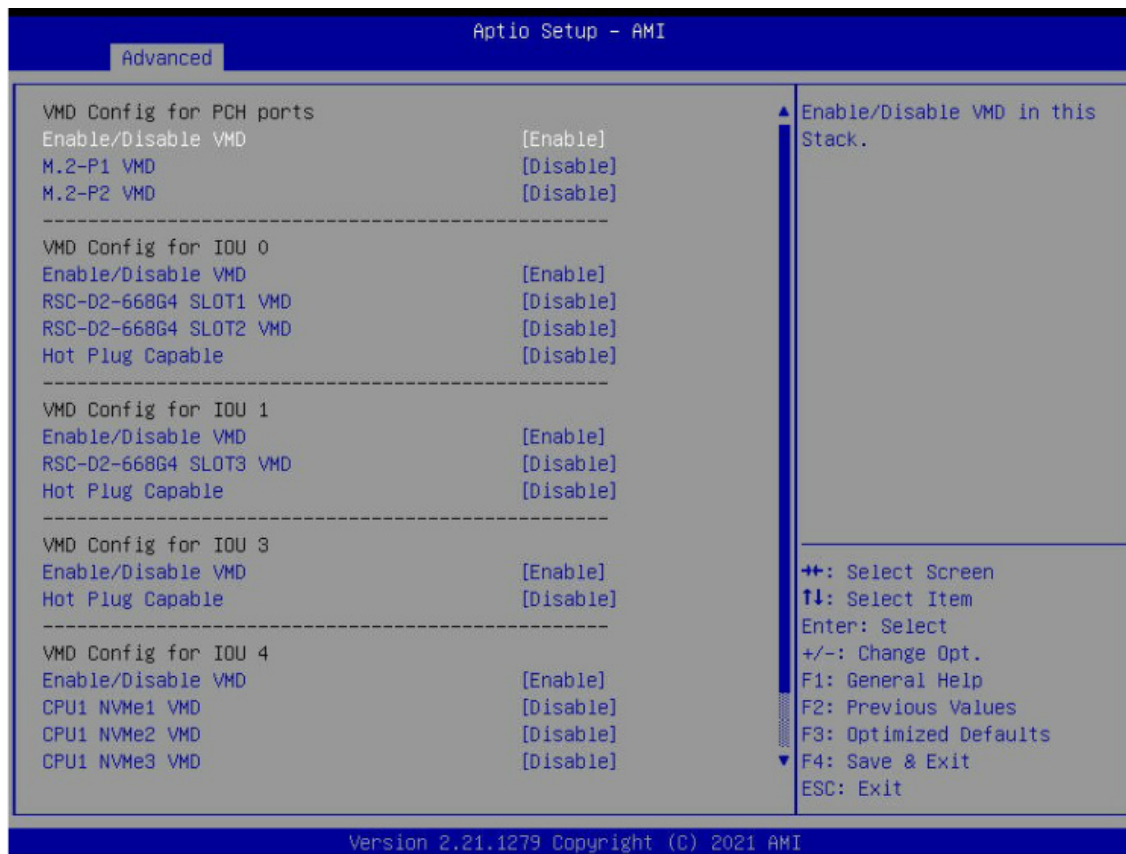


Figure 6-3. BIOS, Manual Mode (Example—your server may look different.)

3. Select the desired PStack# to Enable or Disable the corresponding Intel VMD controller

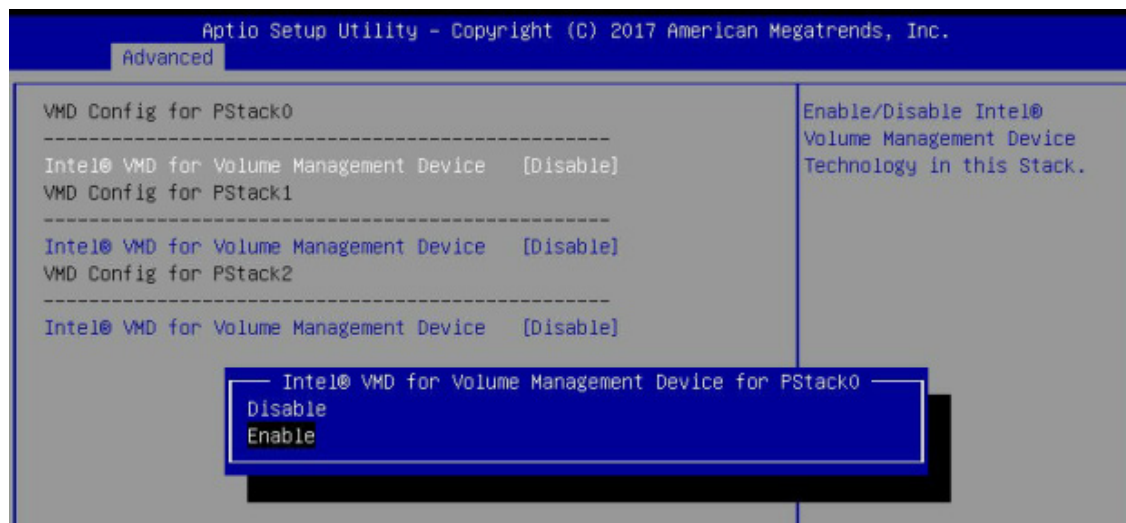


Figure 6-4. BIOS, Enabling VMD for Pstack0

- 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.

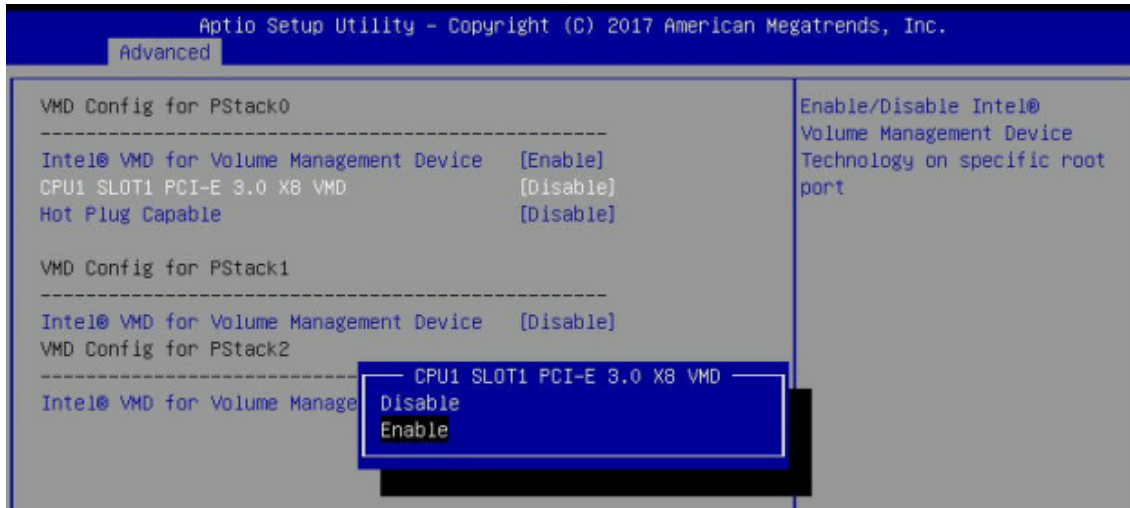


Figure 6-5. BIOS, Enabling VMD Functionality per Slot

- Repeat steps 3 and 4 for each PStack# on each CPU to be enabled or disabled. In this example, we enabled CPU1 Slot1 (Figure 6-11) and CPU2 Slot5 (Figure 6-12) (four U.2 form factor SSDs), as well as CPU1 M.2 C-1 and CPU1 M2. C-2 (two M.2 form factor SSDs)

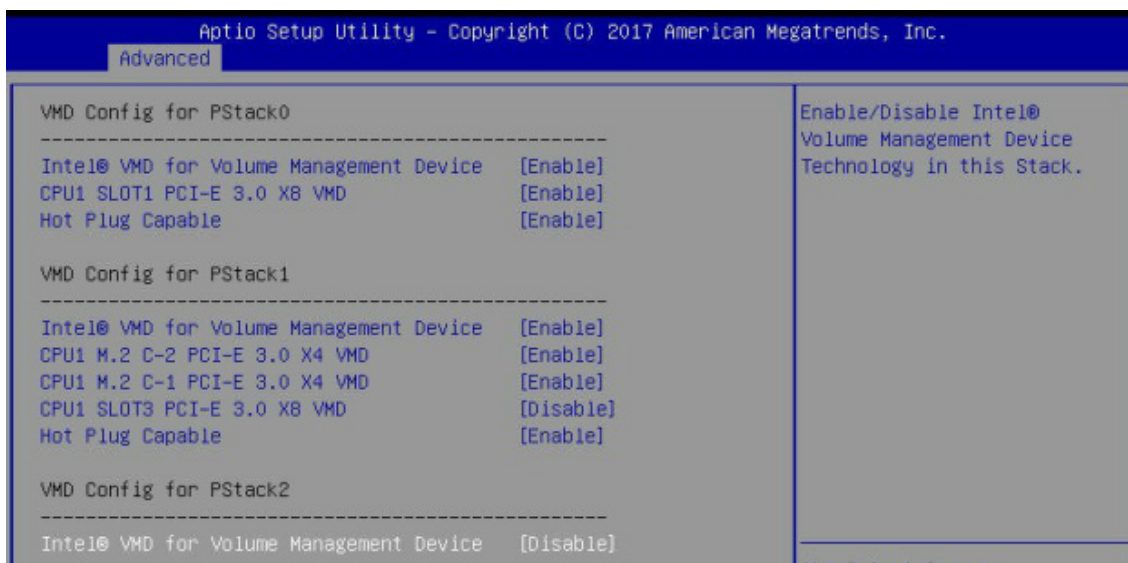


Figure 6-6. BIOS, Enabling CPU1 Example

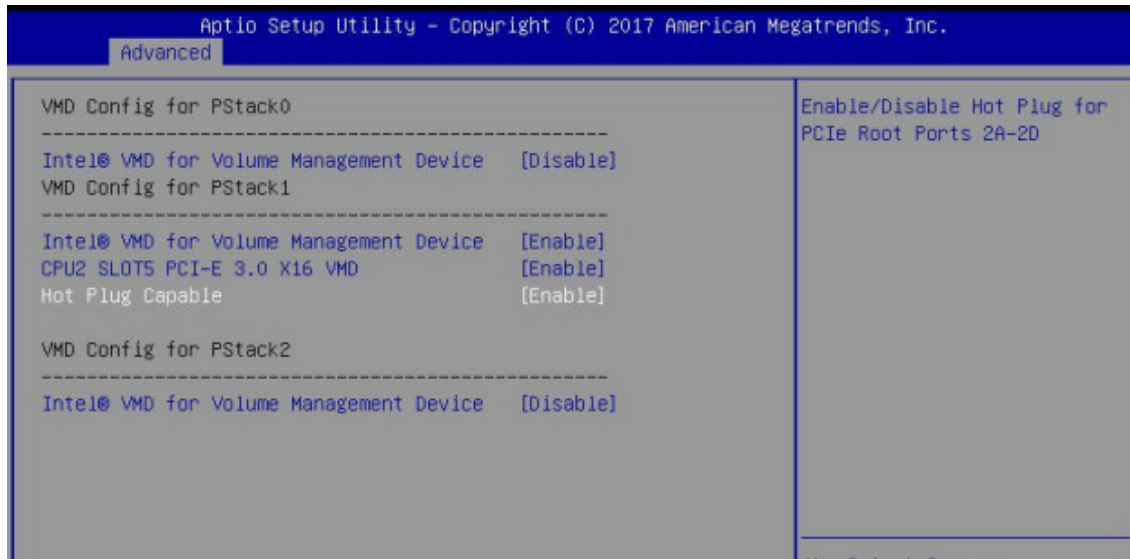


Figure 6-7. BIOS, Enabling CPU2 Example

6. Press [F4] to save the configuration and reboot the system and press [DEL] to enter BIOS.

Note: Delete the RAID volume associated with the VMD controller before disabling the controller. Failure to do so may lead to unexpected behavior.”

Note: The effects of physically changing or swapping a CPU on the VMD controller enablement has not yet been thoroughly tested or documented.

7. Switch to **Advanced > Intel(R) Virtual RAID on CPU > All Intel VMD Controllers > Create RAID Volume**.
8. Set **Name**.
9. Set **RAID Level**.

10. If cross-controller RAID is required, select **Enable RAID spanned over VMD Controller**.

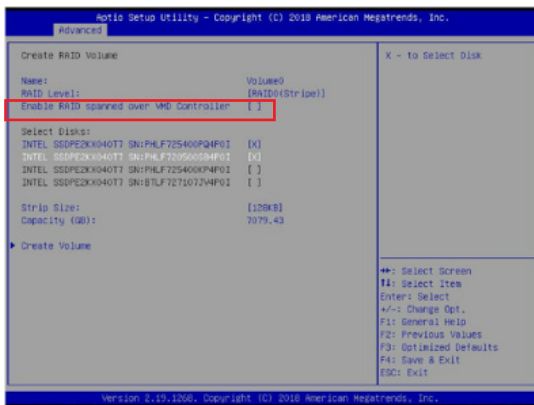


Figure 6-8. Created Volume *without* enabling RAID spanned over VMD controller

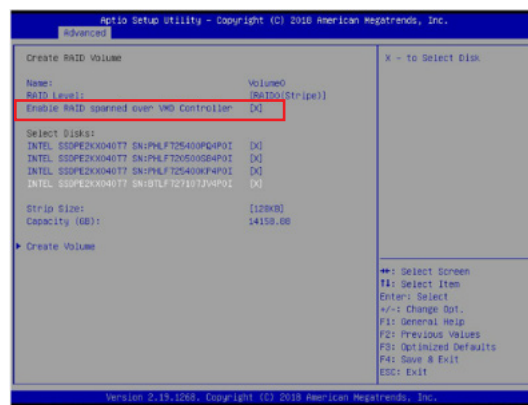


Figure 6-9. Created Volume *with* enabling RAID spanned over VMD controller

11. 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
12. Select **Stripe Size** (Default 64KB).
13. Select **Create Volume**.
14. If another RAID is needed, start again at step 9.
15. Press [F4] to save and reboot.

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.

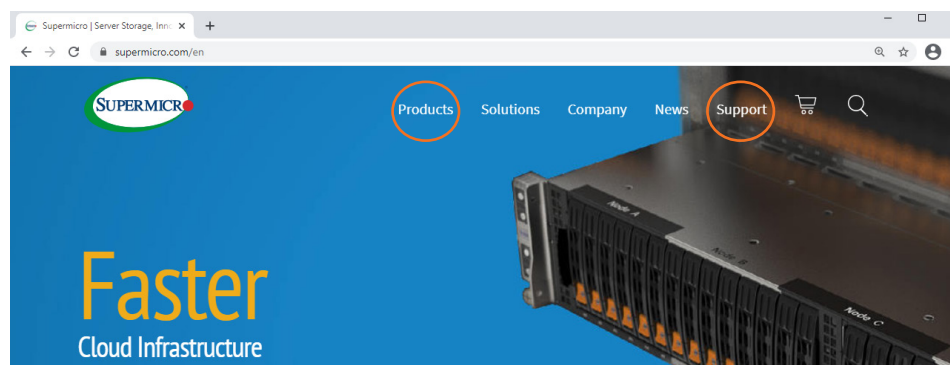


Figure 7-1. Supermicro Website

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

Direct Links for the 620P-ACR16(H/L) System

Web [620P-ACR16H](#) and [620P-ACR16L](#) specifications page

[X12DPi-N\(T\)6 motherboard page](#) for links to the Quick Reference Guide, User Manual, validated storage drives, etc.

[BPN-SAS3-LA26A-N12 Backplane Manual](#)

Direct Links for General Support and Information

[Frequently Asked Questions](#)

[Add-on card descriptions](#)

[TPM User Guide](#)

General Memory Configuration Guide: [X12](#)

[SuperDoctor5 Large Deployment Guide](#)

Direct Links (continued)

For validated memory, 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

[Supermicro Phone and Addresses](#)

7.2 Baseboard Management Controller (BMC)

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

For general documentation and information on BMC, please visit our website at: <https://www.supermicro.com/en/solutions/management-software/bmc-resources>.

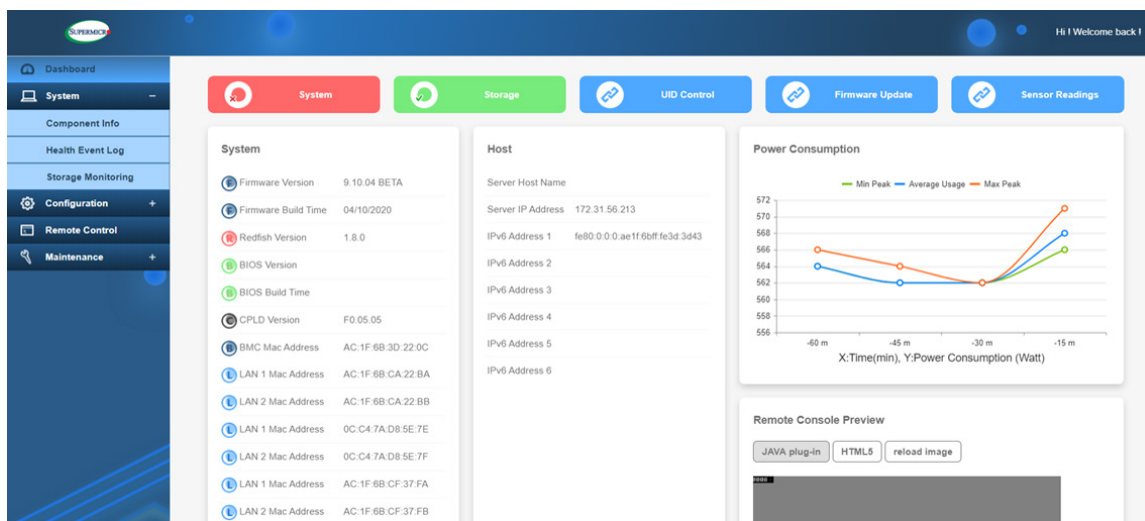


Figure 7-2. BMC Sample

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](#) sections in this chapter. [Power down](#) the system before changing any non hot-swap hardware components.

No Power

1. As you try to power up the system, note any beep codes.
2. Check that the power LED on the motherboard is on.

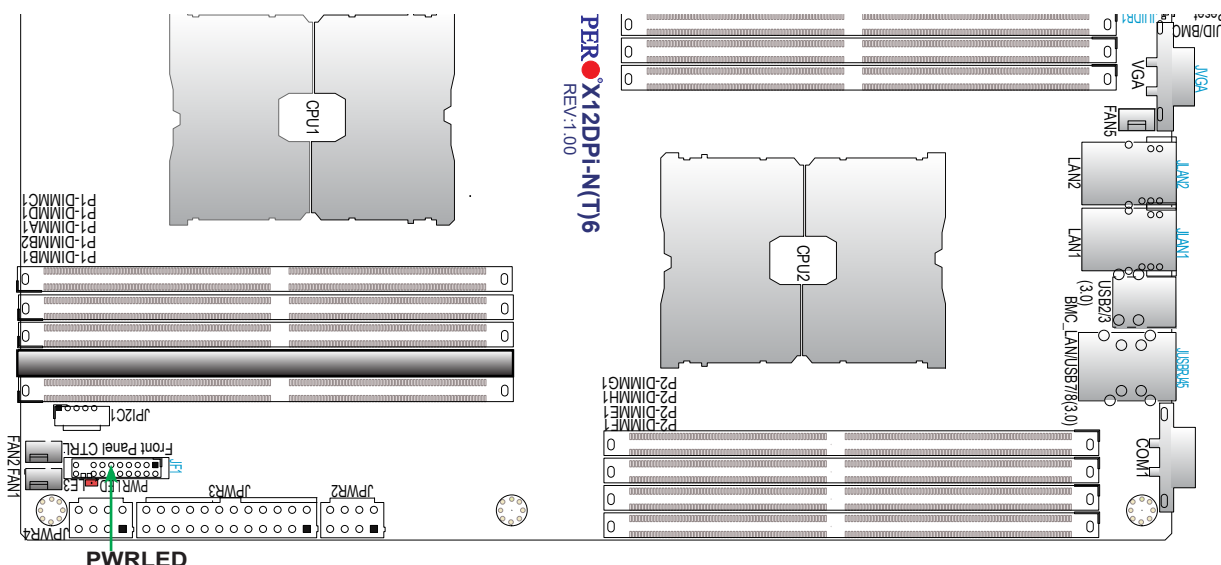


Figure 7-3. Location of the MB Power LED

3. Make sure that no short circuits exist between the motherboard and chassis.
4. Disconnect all cables from the motherboard, including those for the keyboard and mouse.
5. Remove all add-on cards.
6. Install a CPU, a heatsink, connect the internal speaker (if applicable), and the power LED to the motherboard. Make sure that the heatsink is fully seated.
7. Use the correct type of onboard CMOS battery as recommended by the manufacturer. Check to verify that it still supplies ~3VDC. If it does not, replace it with a new one.

Warning: To avoid possible explosion, do not install the battery upside down.
8. Verify that all jumpers are set to their default positions.
9. Check that the power supplies' input voltage operate at 100-120v or 180-240v.
10. Turn the power switch on and off to test the system

No Video

1. If the power is on but you have no video, remove all the add-on cards and cables.
2. As you try to power up the system, note any beep codes.

System Boot Failure

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

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

Memory Errors

1. Make sure that the DIMM modules are properly and fully installed.
2. Confirm that you are using the correct memory. Also, it is recommended that you use the same memory type and speed for all DIMMs in the system. See Section 3.3 for memory details.
3. Check for bad DIMM modules or slots by swapping modules between slots and noting the results.
4. Check the power supply voltage 115V/230V switch.

Losing the System Setup Configuration

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

When the System Becomes Unstable

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

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

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

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

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

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

7.4 Crash Dump Using BMC

In the event of a processor internal error (IERR) that crashes your system, you may want to provide information to support staff. You can download a crash dump of status information using BMC.

Check the BMC Error Log

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

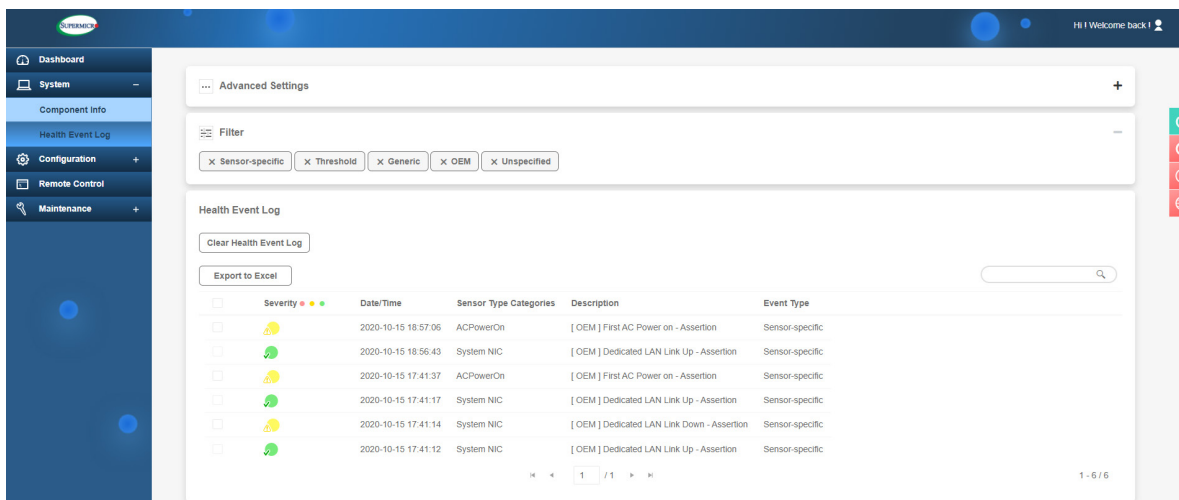


Figure 7-4. BMC Event Log

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

7.5 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 BMC Reset

The BMC can be reset using the UID button.

- Reset – Press and hold the button. After six seconds, the LED blinks at 2Hz. The BMC resets and the reset duration is ~250 ms. Then the BMC starts to boot.
- Restore factory default configuration – Hold the button for twelve seconds. The LED blinks at 4Hz while defaults are configured. **Note:** All BMC settings including username and password will be removed except the FRU and network settings.

Firmware update – When the BMC firmware is being updated, the UID LED blinks at 10Hz.

| BMC Reset Options | | |
|-------------------|----------------------|-------------------|
| Event | UID LED | BMC Heartbeat LED |
| Reset | Blue, Blinks at 2Hz | Green, solid |
| Restore Defaults | Blue, Blinks at 4Hz | Off |
| Update | Blue, Blinks at 10Hz | |

7.7 Where to Get Replacement Components

If you need replacement parts for your system, to ensure the highest level of professional service and technical support, purchase exclusively from our Supermicro Authorized Distributors/System Integrators/Resellers. A list can be found at: <http://www.supermicro.com>. Click the "Where to Buy" tab.

7.8 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.

7.9 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.

7.10 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)
support@supermicro.com (Technical Support)

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@supermicro.nl (General Information)
support@supermicro.nl (Technical Support)
rma@supermicro.nl (Customer 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: support@supermicro.com.tw

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 عْ خطر! تحذُرُ .
 قبل اَي تعول على اَي هعدات، كي على علن بالوخاطز ال اَجوة عي الذوائر
 الكهزبائِة
 وكي على دراةُ بالووارسات النقااِة لو عْ وقع اَي حادث
 استخدم رقن الب اِى الو صُص ف هاةُ كل تحذُرُ للعشر تزجوتها

안전을 위한 주의사항

경고!

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

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

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

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

BEWAAR DEZE INSTRUCTIES

Installation Instructions



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

設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

警告

将此系统连接电源前,请先阅读安装说明。

警告

將系統與電源連接前，請先閱讀安裝說明。

Warnung

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

¡Advertencia!

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

Attention

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

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقرأ إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

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

Circuit Breaker

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

サーキット・ブレーカー

この製品は、短絡(過電流)保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

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

هذا المنتج يعتمد على معدات الحماية 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.



電源切断の警告

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

警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה מפני ניתוק חשמלי

אזהרה!

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

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

انصل إني امناطق انداخهيت نههيكم نتشيج 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 trained and qualified personnel 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

Das Installieren, Ersetzen oder Bedienen dieser Ausrüstung sollte nur geschultem, qualifiziertem Personal gestattet werden.

¡Advertencia!

Solamente el personal calificado debe instalar, reemplazar o utilizar este equipo.

Attention

Il est vivement recommandé de confier l'installation, le remplacement et la maintenance de ces équipements à des personnels qualifiés et expérimentés.

אזהרה!

צוות מוסמך בלבד רשאי להתקין, להחליף את הציוד או לתת שירות עבור הציוד.

والمدربيه لتزكيب واستبدال أو خدمة هذا الجهاز يجب أن يسمح فقط للمظفيه المؤهليه

경고!

훈련을 받고 공인된 기술자만이 이 장비의 설치, 교체 또는 서비스를 수행할 수 있습니다.

Waarschuwing

Deze apparatuur mag alleen worden geïnstalleerd, vervangen of hersteld door geschoold en gekwalificeerd personeel.

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
'כלי אבטחה בלבד' (מפתח, מנעול וכד.).

تخصيص هذه انحدة نترك بُها ف مناطق محظورة تم .
ممكن اننصل إن منطقت محظورة فقط من خلال استخداو أداة خاصت
أو أ وس هُت أخري نلالأما 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製造商推薦的功能相當的電池更換原有電
池。請按製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 اسبدال البطارية بطريقة غير صحيحة فعلي
اسبدال البطارية فقط بنفس النوع أو ما يعادلها مما أوصت به الشركة المصنعة
جخلص من البطاريات المسعملة 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 ontploffingsgevaar 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

此裝置連接的電源可能不只一個，必須切斷所有電源才能停止對該裝置的供電。

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 المجددة على اللوحة عندما يكن النظام يعمل كه حذرا عند خدمة هذا الجهاز

경고!

시스템이 동작 중일 때 후면판 (Backplane)에는 위험한 전압이나 에너지가 발생합니다. 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 instalacion del equipo debe cumplir con las normas de electricidad locales y nacionales.

Attention

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

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.

Hot Swap 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・ホットスワップの警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה!

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

تحذير! 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 סיילמשח סילבכ

!הרהזא

ךרוצל ומאתוה וא ושכרנ רשא AC ימאתמו סיקפס, סילבכב שמתשהל שי, רצומה תא סניקתמ רשאכ לכב שומיש. עקתהו לבכה לש הנוכח הדימ ללוכ, תוימוקמה תוחיטבה תושירדל ומאתוה רשאו, הנקתהה למשחה ירישכמב שומישה יקוחל סאתהב. ילמשח רצק וא הלקתל סורגל לולע, רחא גוסמ סאתמ וא לבכ לש דוק סהילע עיפומ רשאכ) UL-ב או CSA-ב ימאתמו סילבכב שמתשהל רוסיא סייק, תוחיטבה יקוחו דבלב Supermicro י"ע סאתוה רשא רצומב קר אלא, רחא ילמשח רצומ לכ רובע (UL/CSA)

تالبالكلا ءارش ب مق وأ ءددرحملا وأ ءرفوتملا تالبيصوتلا مادختساب مق، جتنملا بيكرت دن ع
لكلذ يف امب ءيلحملا ءمالسلا تابلطتمو نيناوقب مازتلالا عم ددرتملا رايتلا تالوحمو ءيئابرهكلا
قيرح وأ لطلع يف ببستتي دق ىرخأ تالوحمو تالباك ي مادختسا. ميلسلا سبالاو لصولا م ج ح
CSA وأ UL لبق نم ءدمتعمل تالبالكلا مادختسا تادعمل او ءيئابرهكلا ءزهألل ءمالسلا نوناق رظحي
Supermicro لبق نم ءددرحملا او ءينعمل تاجتنملا ريغ ىرخأ تادعم ي أ عم (UL/CSA) ءمالع لمحت يتلاو

전원 케이블 및 AC 어댑터

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

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

Stroomkabel en AC-Adapter

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

Appendix B

System Specifications

Processors

3rd Gen Intel Xeon Scalable processors in a P+ (LGA-4189) socket with up to 40 cores and a thermal design power (TDP) of up to 270W

Chipset

Intel PCH C621A

BIOS

128Mb AMI BIOS SPI Flash EEPROM

Memory

Up to 4TB of DDR4 ECC RDIMM/LRDIMM/LRDIMM 3DS with speeds up to 3200MHz in 16 slots; DIMM size Up to 256GB at 1.2V

Storage Drives

16 x3.5" hot-swap SATA/SAS hybrid drive bays
 (Optional) Two rear 2.5" hot-swap SATA or NVMe bays
 One M.2 NVMe
 Two Super DOMs (disk on module) ports

PCI Expansion Slots

Four PCIe 4.0 x16 low profile
 Two PCIe 4.0 x8 low profile (see Section 3.10 for details)

Input/Output

LAN: Two RJ45 10G BASE-T; one RJ45 dedicated BMC LAN port
 USB: Four USB 3.0 ports (Rear)
 One VGA port (Rear)
 One COM port (Rear)

Motherboard

X12DPI-N(T)6; 12" (L) x 13" (W) (305mm x 330mm)

Chassis

CSE-829HE1C4-R1K62LPB; 2U; (WxHxD) 17.3 x 3.5 x 25.5 in. (439 x 89 x 648 mm)

System Cooling

Four heavy duty 8cm fans with optimal Fan Speed Control
 One set of air shroud

Power Supply

Model: PWS-1K62A-1R, 1600W redundant modules, 80Plus Platinum Levell

AC Input

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

1600W: 200-240Vac / 50-60Hz

+12V

Max: 83A / Min: 0A (100Vac-127Vac)

Max: 133A / Min: 0A (200Vac-240Vac)

+12V SB

Max: 2.1A / Min: 0A

Operating Environment

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

Non-operating Temperature: -40° to 60° C (-40° to 140° F)

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

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

Certified Safety Models

Compliant with UL or CSA: 829-16, 829H-R16X12, and 829H-16

Regulatory Compliance

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

Applied Directives, Standards

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

Electromagnetic Compatibility Regulations 2016

FCC Part 15

ICES-003

VCCI-CISPR 32

AS/NZS CISPR 32

BS/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)

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

Perchlorate Warning

California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. "Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate"