



SuperWorkstation®
740P-TR
740P-TRT



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 740P-TR/TRT server specifications page on our website for updates on supported memory, processors and operating systems (<http://www.supermicro.com>).

Notes

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

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

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

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

Secure Data Deletion

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

Warnings

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



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



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

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Appendix A Standardized Warning Statements for AC Systems

Appendix B System Specifications

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Chapter 1

Introduction

1.1 Overview

This chapter provides a brief outline of the functions and features of the SuperServer 740P-TR/TRT. It is based on the X12DPi-N(T)6 motherboard and the CSE-745BTS-R1K23BP chassis.

The following provides an overview of the specifications and capabilities.

System Overview	
Processor Support	Dual 3rd Gen Intel Xeon Scalable Processors
Memory	Supports up to 4 TB of 3DS LRDIMM/LRDIMM/3DS RDIMM/RDIMM DDR4 (288-pin) ECC memory with speeds of 3200/2933/2666 MHz in 18 memory slots and up to 4 TB of Intel Optane PMem 200 Series with speeds of up to 3200 MHz. See Chapter 3 for more details.
Drive Support	Eight hot-swappable 3.5" SATA drive bays, two optional fixed SATA or NVMe drives, one optional DVD drive
Expansion Slots	Two PCIe 4.0 x8 slots (CPU1 Slot1/CPU2 Slot6) Four PCIe 4.0 x16 slots (CPU1 Slot2/CPU1 Slot3/CPU2 Slot4/CPU2 Slot5) One PCIe 4.0 x4 M.2 slot (supports M-Key 2280 and 22110)
Networking	Two 10G Ethernet LAN ports supported by Intel X550 for X12DPi-NT6 Two 1G Ethernet LAN ports supported by Intel i350 for X12DPi-N6 One Dedicated IPMI LAN located on the rear I/O panel (via AST2600 BMC)
I/O Ports	One rear serial COM port, one onboard serial COM header Eight I-SATA 3.0 ports, four S-SATA 3.0 ports, two S-SATA 3.0 ports with SuperDOM One rear VGA port, one onboard VGA header Four rear USB 3.0 ports, one onboard USB 2.0 header with two connections, one onboard USB 3.0 header with two connections, one onboard USB 2.0 Type-A header
System Cooling	Two rear heavy-duty hot-swappable fans Three internal 8-cm hot-swappable fans One air shroud
Power	Two 1200W Redundant Titanium Level Power Supplies
Form Factor	2U (WxHxD) 16.8 x 3.5 x 25.5 in. (427 x 89 x 648 mm)

Notes: A Quick Reference guide can be found on the product page of the Supermicro website. The following safety models associated with the 740P-TR/TRT have been certified as compliant with CSA or UL models: 745BT-R12X12 and 745-12.

1.2 System Features

The CSE-745BTS-R1K23BP is a tower chassis that can also be configured as a 4U rackmount. The following views of the system display the main features.

Front View

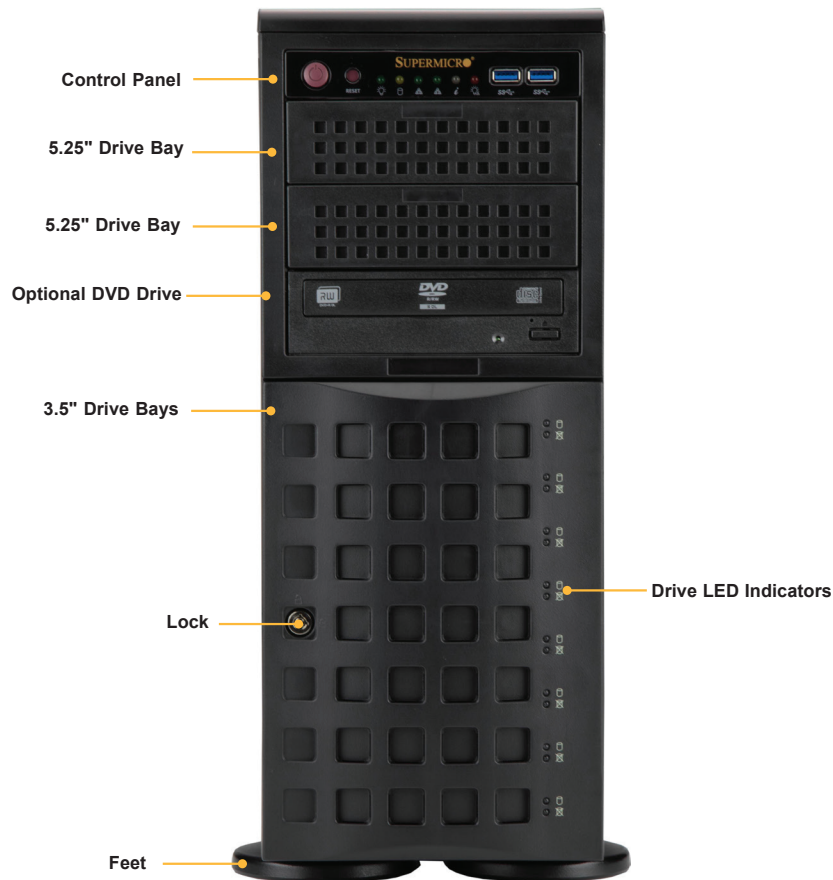


Figure 1-1. Front View

System Features: Front	
Feature	Description
Control Panel	Front control panel with LEDs and buttons. See the following page.
5.25" Drive Bays	Two 5.25" drive bays can be used to support optional fixed SATA or NVMe drives
DVD Drive	Optional DVD drive
3.5" Hard Drive Bays	Eight hot-swap drive bays behind locking bezel
Lock	Front bezel lock
Feet	Removable feet (when using system in a 4U rackmount configuration)
Drive Indicators	Eight pairs of LED status indicators for drives
Service Tag	Pull-out service tag with BMC password label

Control Panel

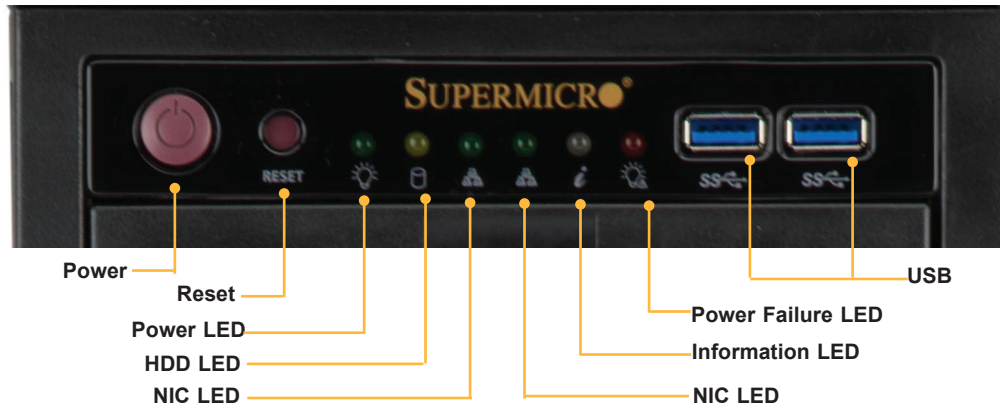


Figure 1-2. Control Panel

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	Use the reset button to reboot 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 LED	Indicates activity on the storage drives when flashing.
NIC LED	Indicates network activity on LAN1 when flashing.
NIC LED	Indicates network activity on LAN2 when flashing.
Information LED	Universal information LED (see table below for details).
Power Fail LED	Indicates one of the redundant power modules has failed when flashing.
USB	Front accessible USB 3.0 connector
USB	Front accessible USB 3.0 connector

Information LED	
Status	Description
Continuously on and red	An overheat condition has occurred.
Blinking red (1Hz)	Fan failure, check for an inoperative fan.
Solid blue	Local UID has been activated. Use this function to locate the server in a rackmount environment.
Blinking blue	Remote UID is on. Use this function to identify the server from a remote location.

Rear View

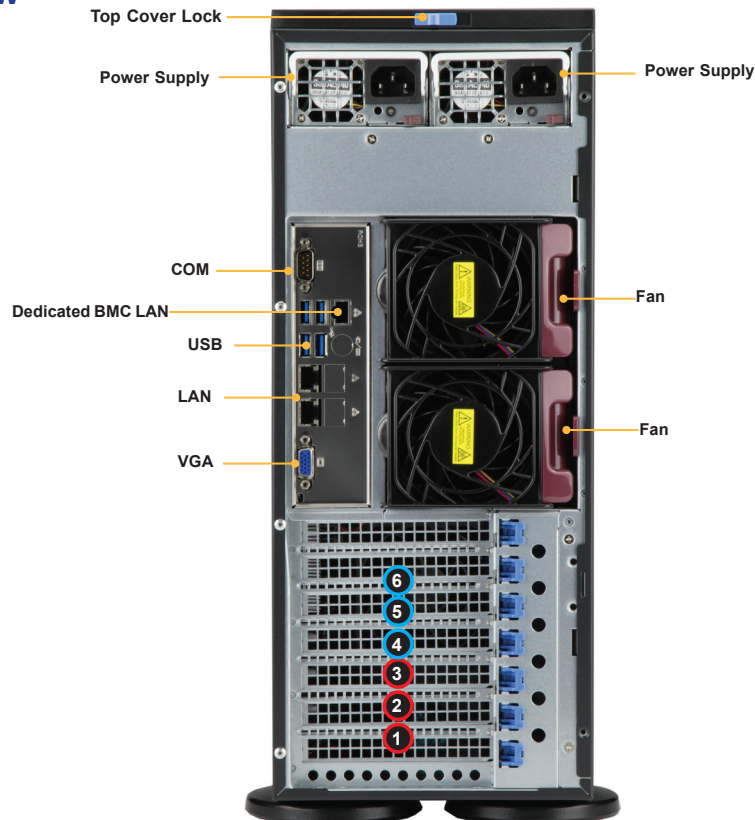


Figure 1-3. System: Rear View

System Features: Rear	
Feature	Description
Top Cover Lock	Top cover locking mechanism
Power Supplies	Two 1000W redundant power supplies
Fans	Two rear heavy-duty hot-swappable fans
Networking	Two 10G ports and one 1G dedicated BMC LAN port
USB	Four rear USB 3.0 ports
COM	One rear serial COM port
VGA	One rear VGA port

Expansion Slot Locations		
Item	Slot Name	Description
1	SLOT1	PCIe 4.0 x8 slot (CPU1)
2, 3	SLOT2, SLOT3	PCIe 4.0 x16 slot (CPU1)
4, 5	SLOT4, SLOT5	PCIe 4.0 x16 slot (CPU2)
6	SLOT6	PCIe 4.0 x8 slot (CPU2)

1.3 System Architecture

This section covers the printed circuit board (PCB) locations.

Printed Circuit Boards

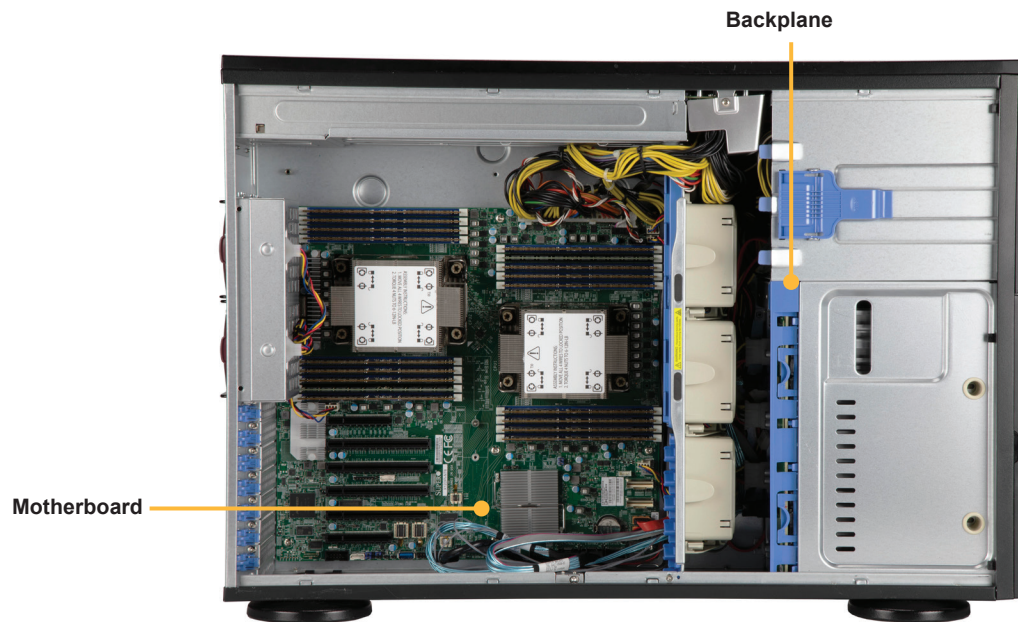


Figure 1-4. PCB Locations

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](#).

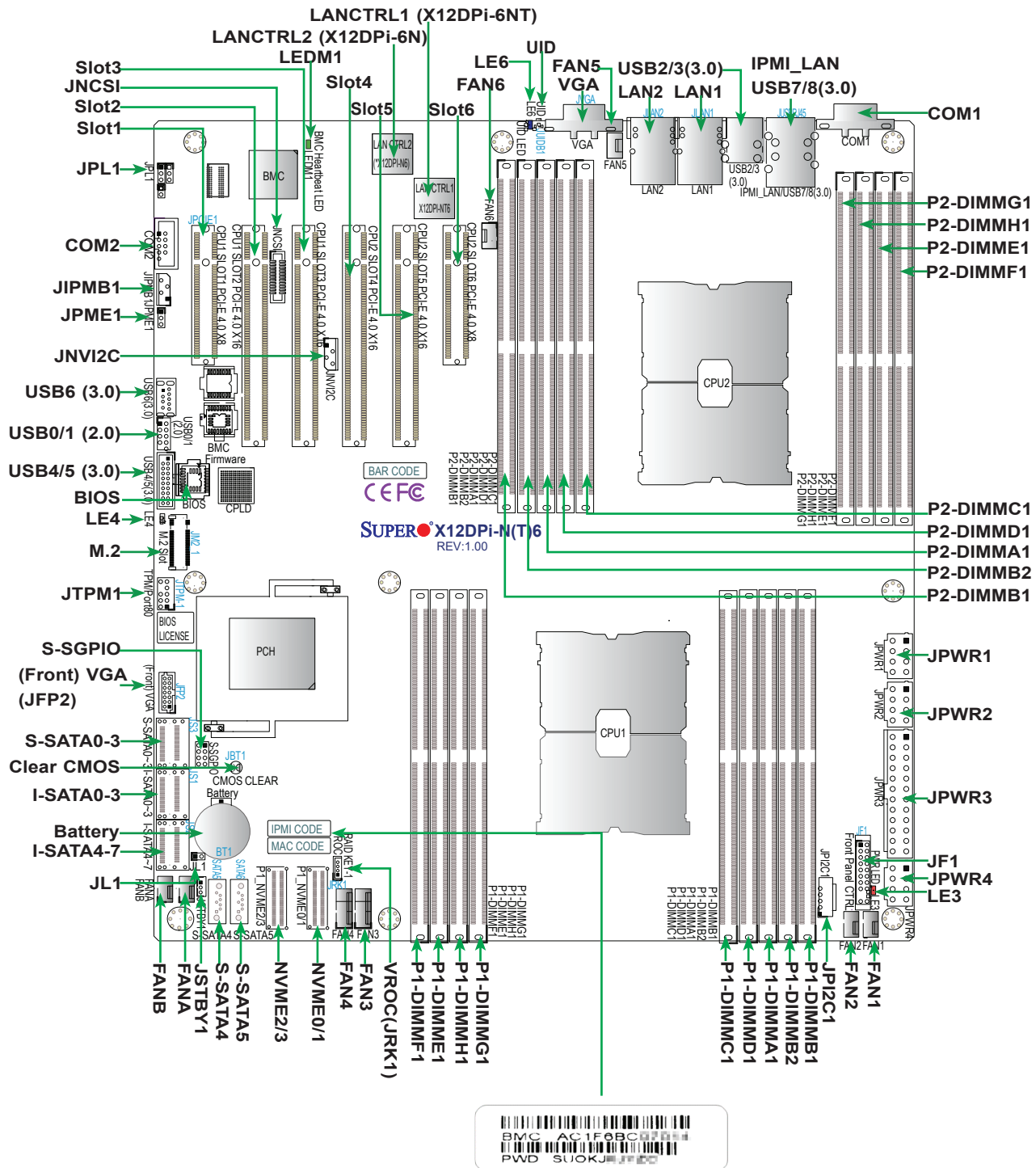


Figure 1-5. Motherboard Layout

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_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 & 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.)

Motherboard Block Diagram

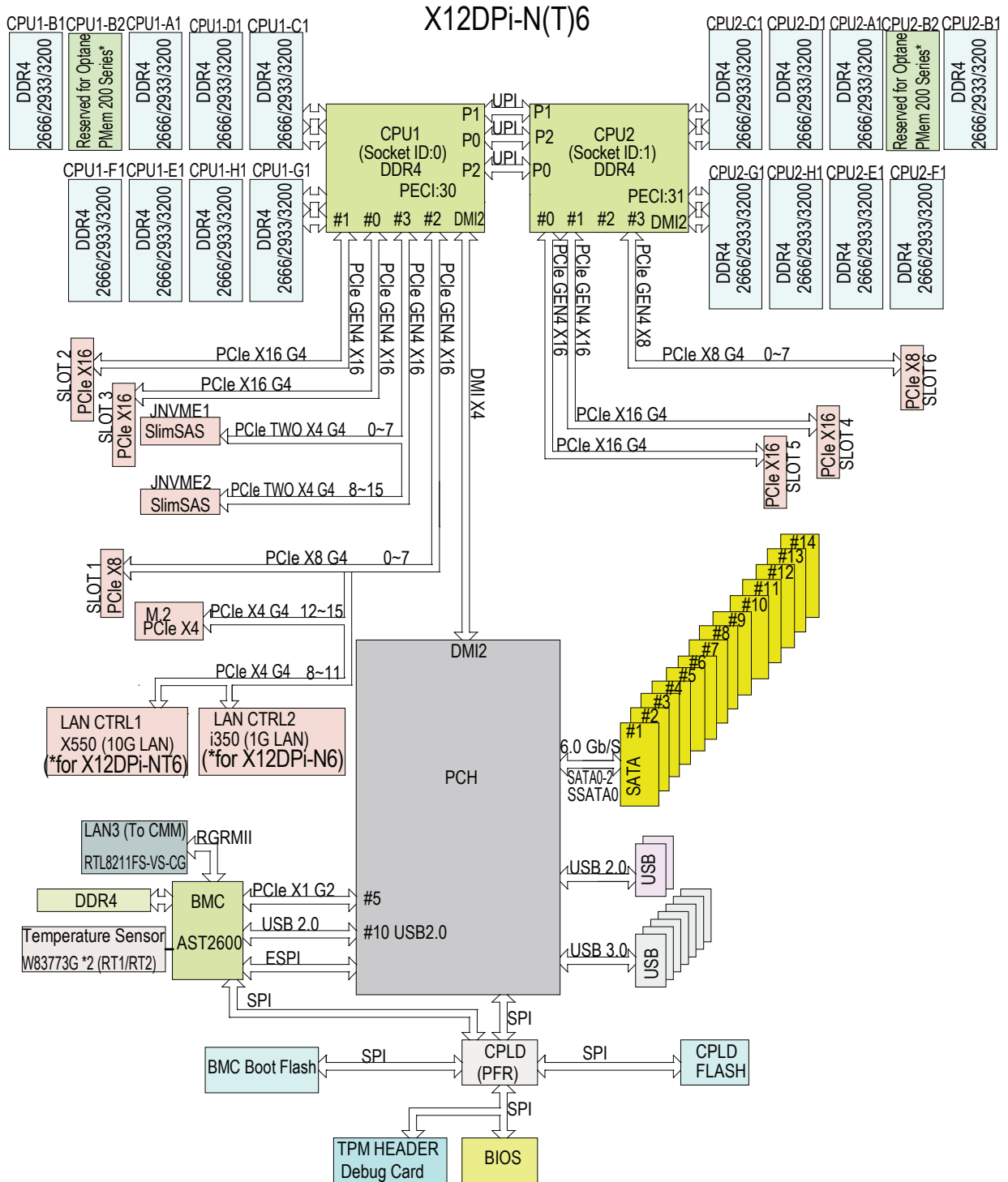


Figure 1-8. Motherboard Block Diagram

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 SuperServer 740P-TR/TRT was shipped, and note if it was damaged in any way. If any equipment appears damaged, file a damage claim with the carrier who delivered it.

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

2.3 Preparing for Setup

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

Choosing a Setup Location

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

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

Rack Precautions

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

Server Precautions

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

Workstation Precautions

- Ensure that the caster wheels on the workstation are locked.
- Review the electrical and general safety precautions in [Appendix A](#).
- Use a regulating uninterruptible power supply (UPS) to protect the workstation from power surges, voltage spikes and to keep your system operating in case of a power failure.
- Allow the power supply units and hot-swap SATA drives to cool before touching them.

- To maintain proper cooling, always keep all chassis panels closed and all SATA carriers installed when not being serviced.

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 higher than the room's ambient temperature. Therefore, make sure the rack's ambient temperature does not exceed 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.



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



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

2.4 Preparing the Chassis

Removing the Top Tower Cover

1. Locate the blue cover lock at the rear of the cover.
2. Slide the lock to the right and push the cover forward.
3. Lift the top cover off the chassis.

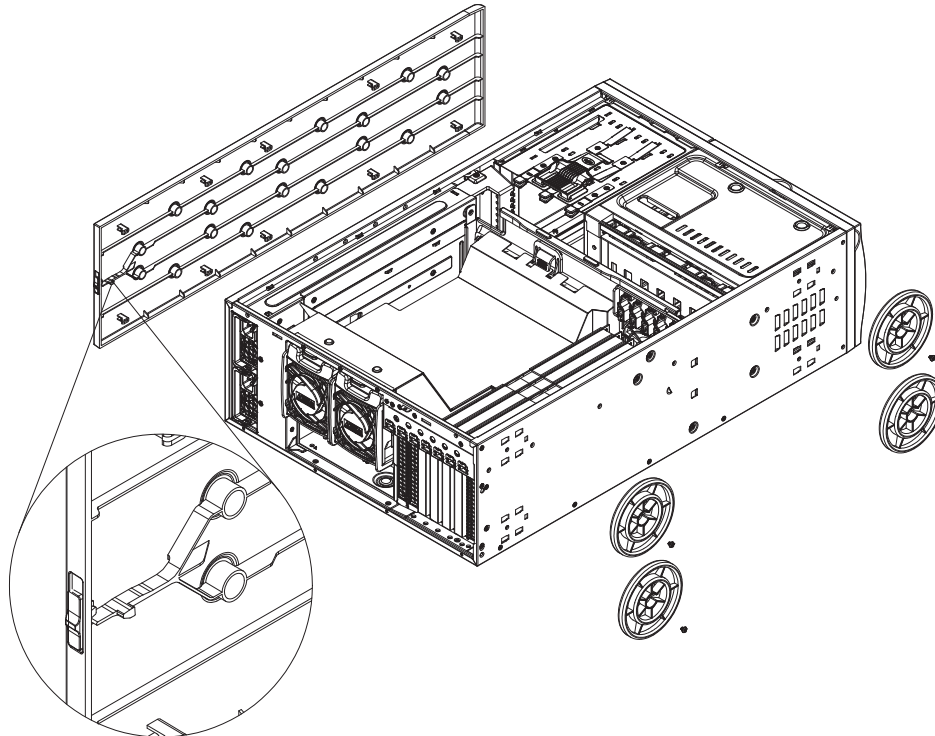


Figure 2-1. Removing the Top Tower Cover and Feet

Removing the Chassis Feet

1. Lay the chassis on its side.
2. Remove the screws holding the chassis feet in place.
3. Each foot has a foot lock tab at the center. Use a flat head screwdriver to gently lift the foot lock upward. Slide the foot toward the rear of the chassis.

2.5 Installing the Rails

This section provides a guideline for installing the rails to the chassis and to the rack with the included rackmount kit.

Identifying the Sections of the Rack Rails

The optional rackmount kit includes two rack rail assemblies. Figures 2-2 and 2-3 show the sections of one rail assembly from two different angles.

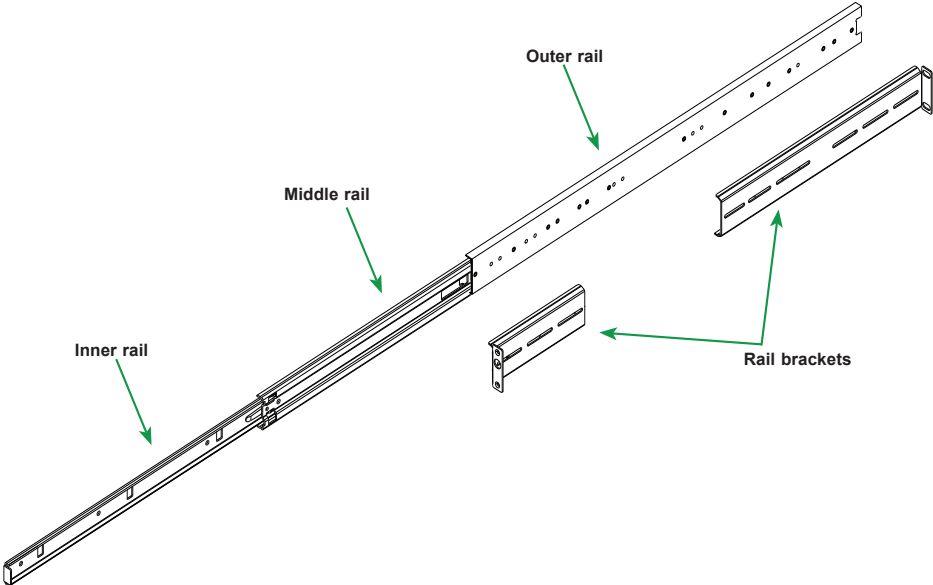


Figure 2-2. Rack Rail Sections (Outer View)

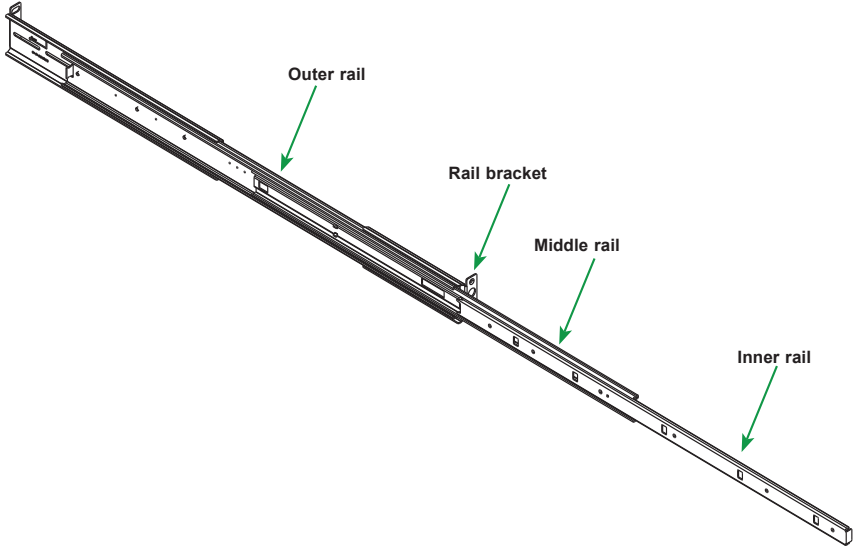


Figure 2-3. Rack Rail Sections (Inner View)

Assembling the Outer Rails and the Rack Brackets

Each outer rail requires assembly with the rack brackets before mounting onto the rack.

1. Identify the two long brackets for the rear of each rail and the two short brackets for the front of each rail. The brackets are also left and right specific.
2. Secure the short bracket onto the outer rail with screws at the side as shown below.
3. Place the long bracket onto the outer rail at the approximate position to fit your rack. Use two or three screws. Leave the screws just loose enough for the bracket to slide back and forth slightly.

Note: The short bracket is secured firmly to the rail. However, the long bracket is slightly loose.

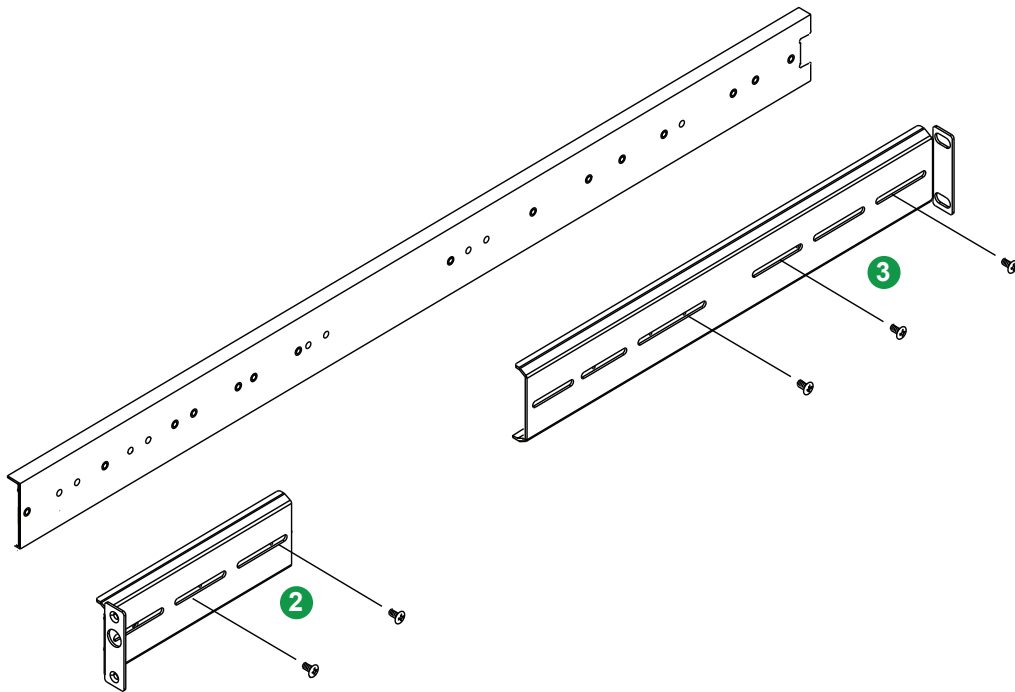
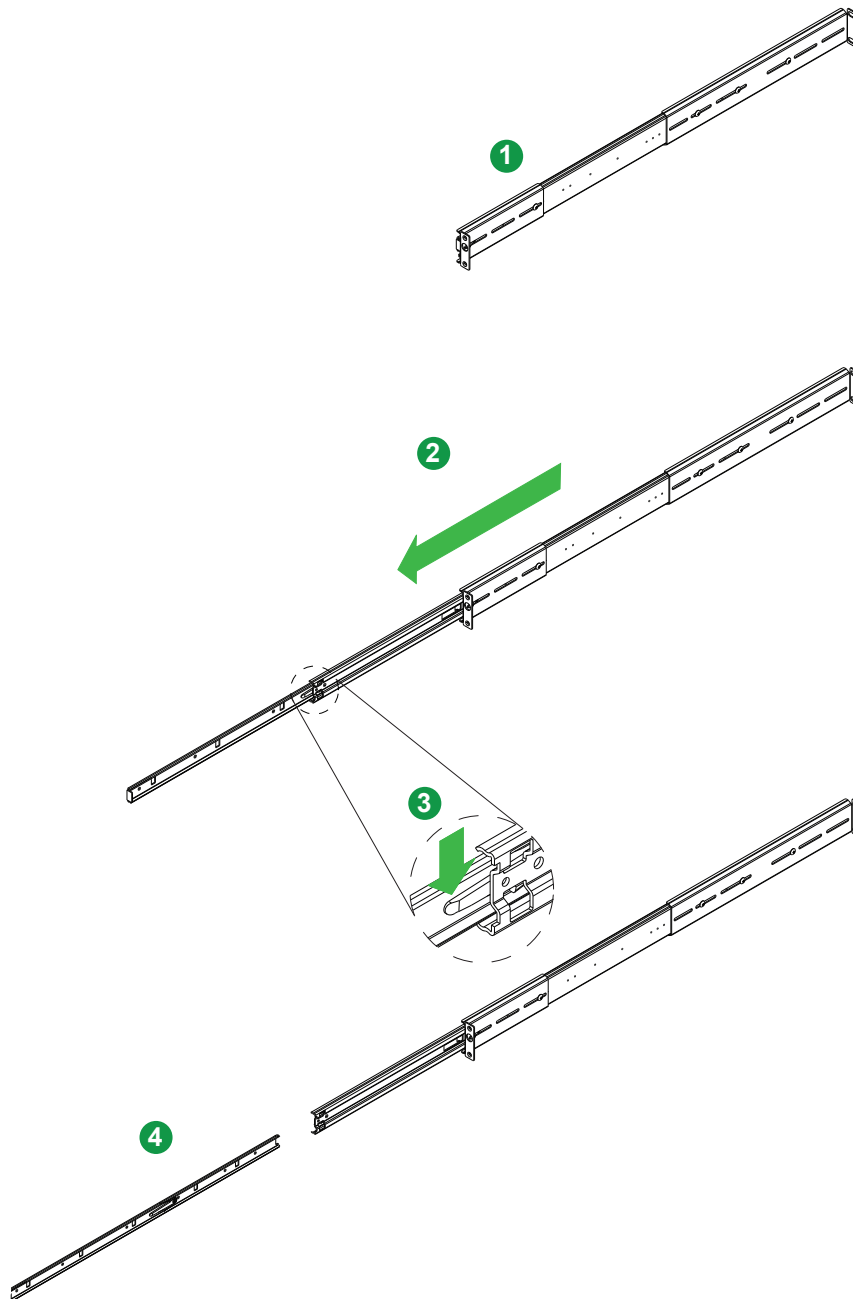


Figure 2-4. Assembling the Outer Rails

Releasing the Inner Rail from the Outer Rail

1. Locate the rail assembly.
2. Extend the rail assembly by pulling it outward.
3. Press the quick-release tab.
4. Separate the inner rail from the outer rail assembly.

**Figure 2-5. Releasing the Inner Rail (Outer View)**

Installing the Inner Rails to the Chassis

- 1. Attach the handles to the front of the chassis with three screws each.
- 2. Identify the left and right inner rails. They are labeled on the rails and in the figure below.
- 3. Align each rail with the screw holes along the side of the chassis.
- 4. Screw the rails securely to the side of the chassis.

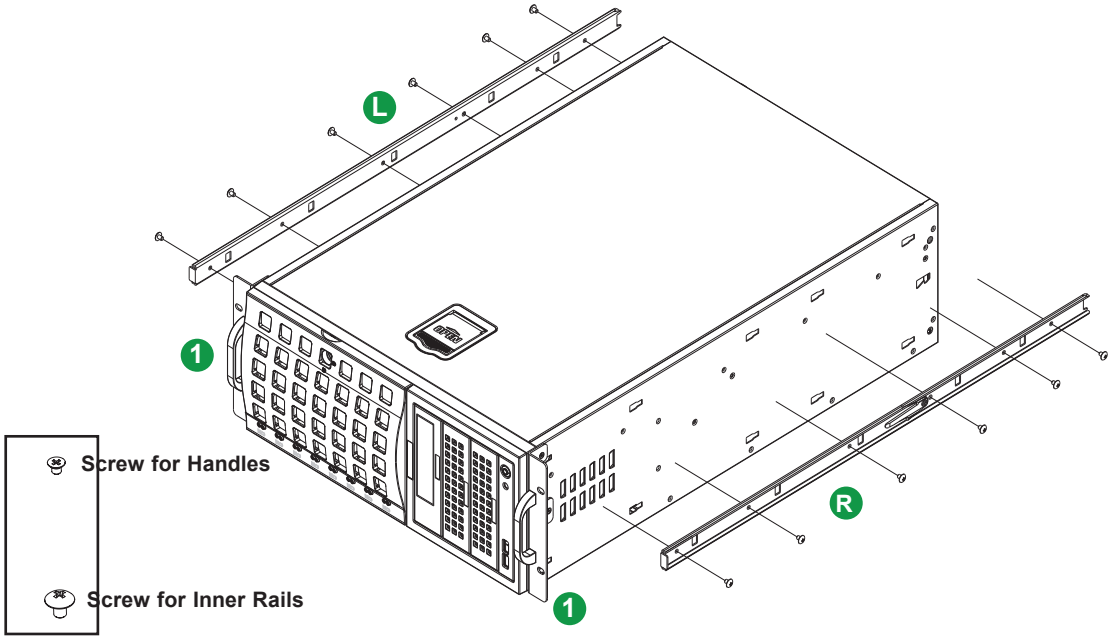


Figure 2-6. Installing the Handles and Inner Rails to the Chassis

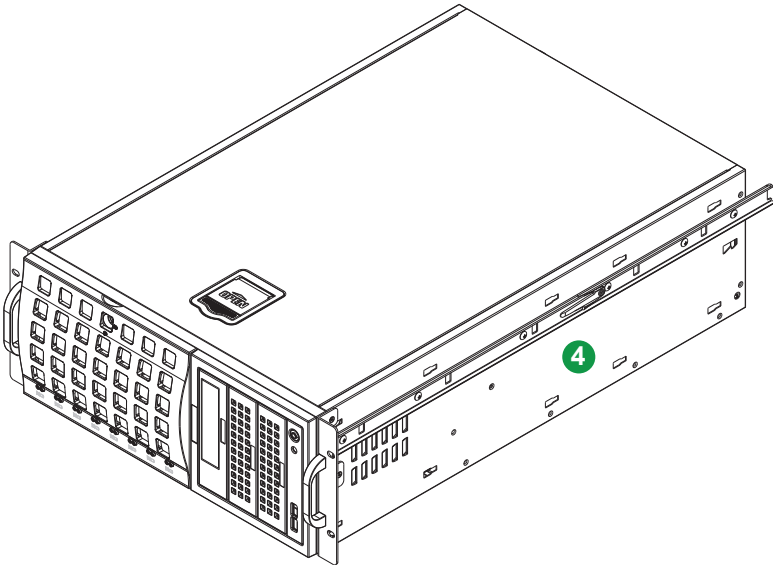


Figure 2-7. Handles and Inner Rails Installed to the Chassis

Installing the Outer Rails to the Rack

Use the previously assembled outer rails with the rear brackets loosely attached.

1. Adjust the outer rail to fit the rack depth. Align the screw holes in the bracket ears with the holes in the rack post.
2. Use screws and fasteners to secure the outer rails to the front and rear rack posts.
3. Tighten the screws holding the rear bracket.

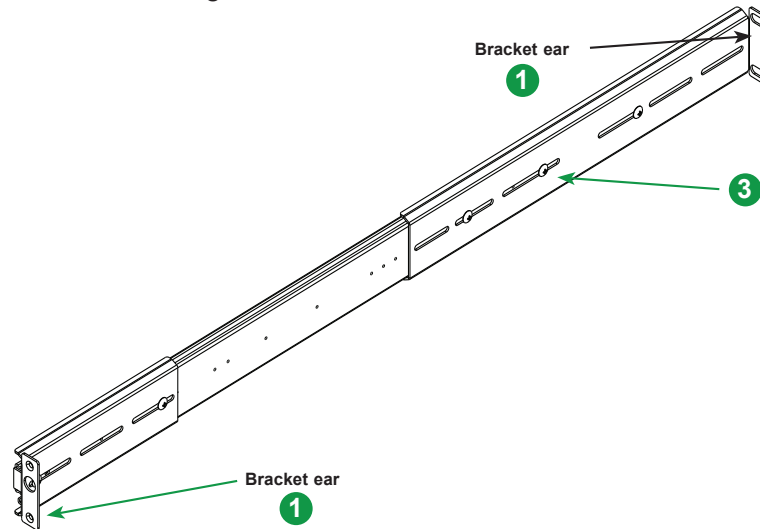


Figure 2-8. Installing the Outer Rails to the Rack

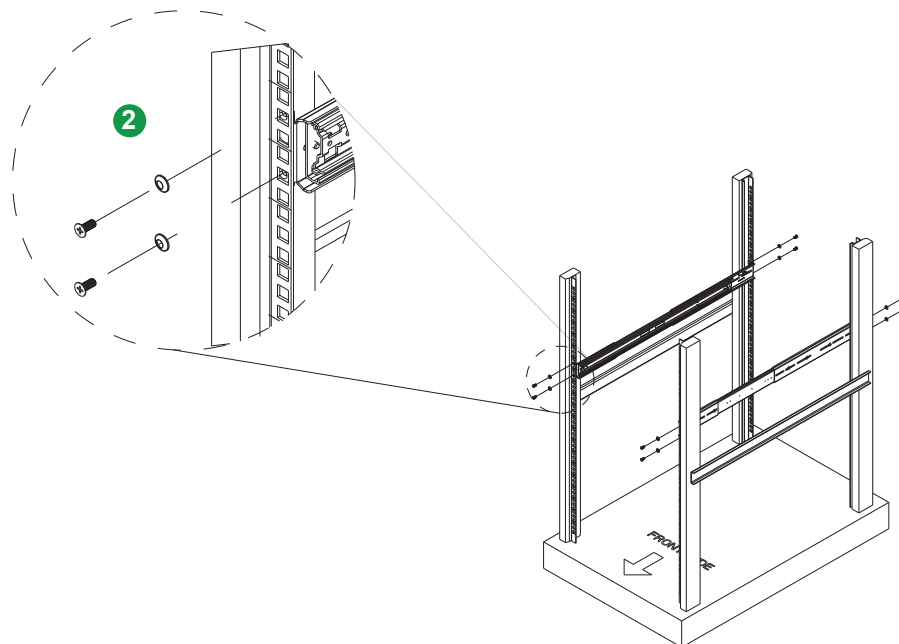


Figure 2-9. Installing the Outer Rails to the Rack

2.6 Installing the Server into the Rack

With rails attached to both the chassis and the rack, install the server into the rack.

1. Pull the middle rail out of the outer rail and make sure the ball bearing shuttle is locked at the front of the middle rail.
2. Align the chassis rails with the rack rails. Slide the chassis rails into the rack rails until the server is completely in the rack (see the next page).

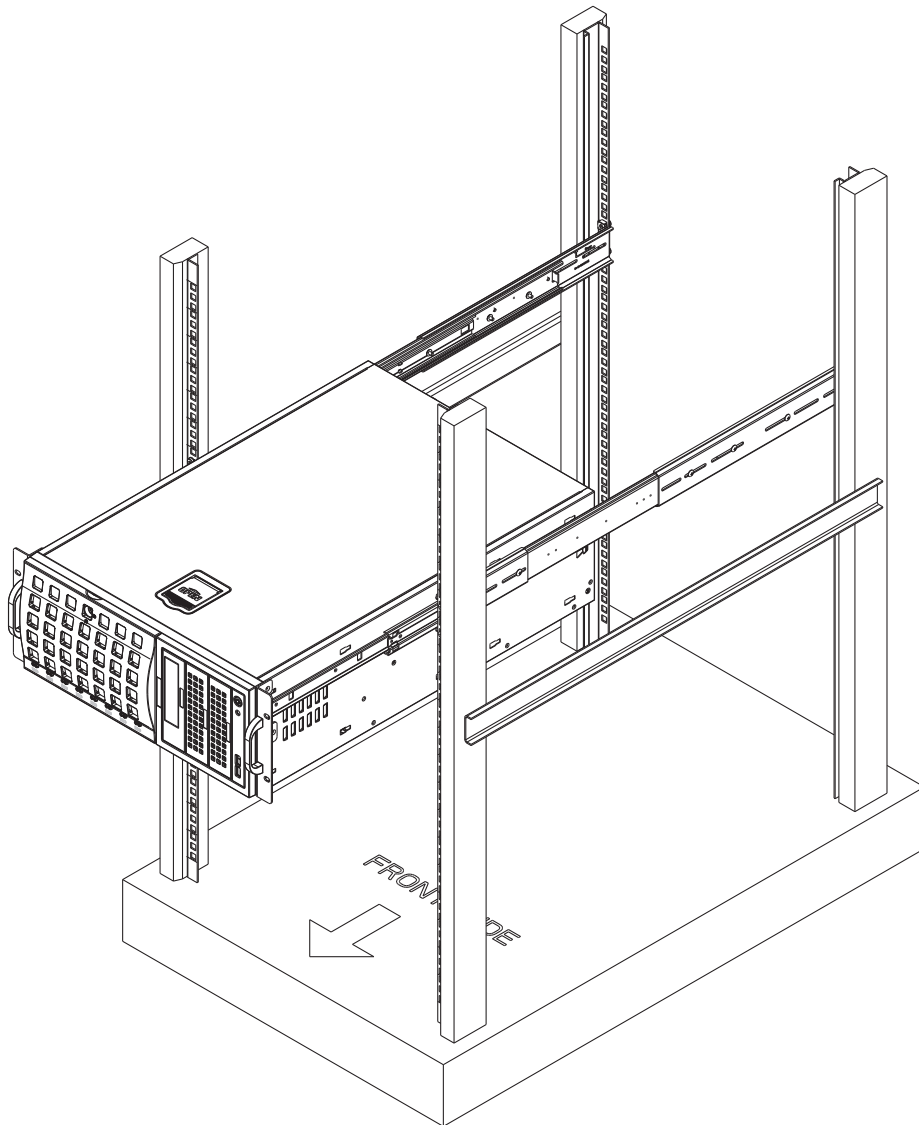


Figure 2-10. Installing the Server into the Rack

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

3. Insert and tighten the thumbscrews that hold the front of the server to the rack.

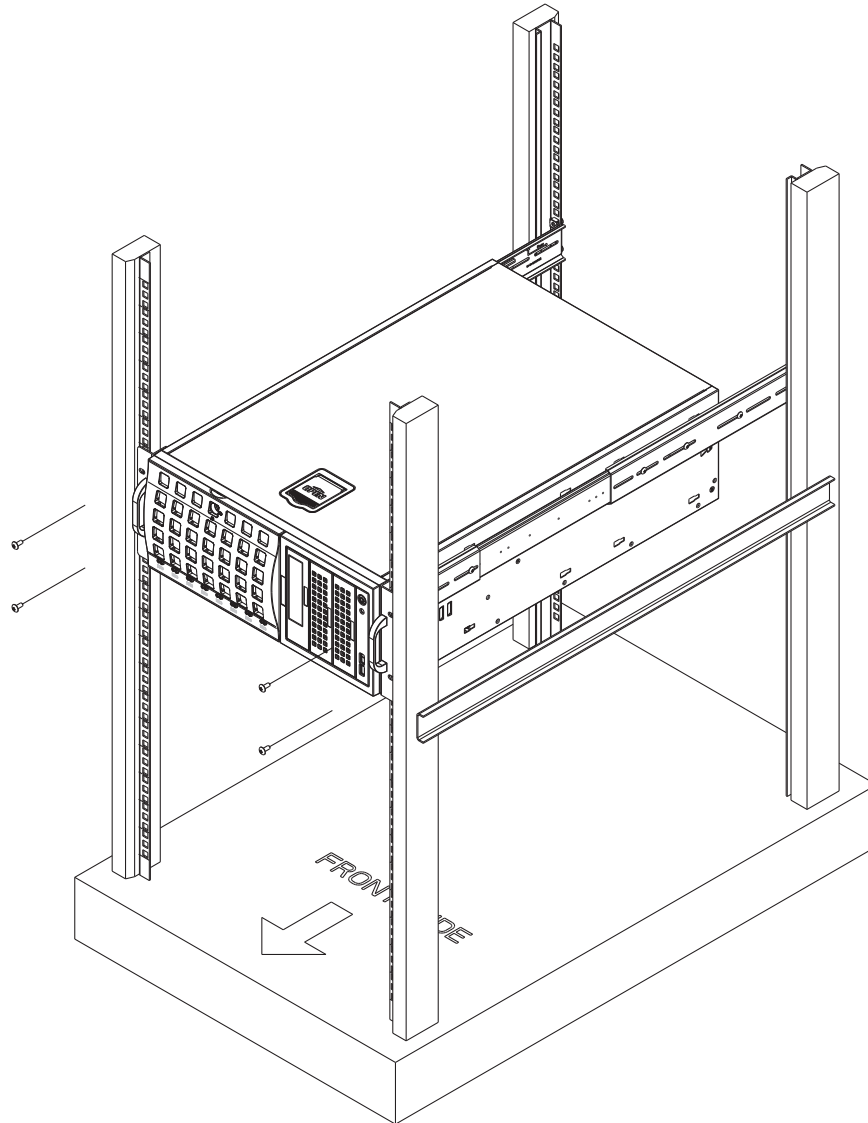


Figure 2-11. Securing the Server to the Rack

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



Warning: 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.



When initially installing the server to a rack, test that the rail locking tabs engage to prevent the server from being overextended. Have a rack lift in place as a precaution in case the test fails.

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. Remove the screws that hold the front of the server to the rack.
2. Pull the chassis forward out the front of the rack until it stops.
3. Find the quick-release tab on each side of the chassis on the inner rails. Press down on the quick-release tab and continue to pull the chassis out of the rack.



Warning: In any instance of pulling the system from the rack, always use a rack lift and follow all associated safety precautions.



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

2.7 Control Panel Orientation

The server can be configured for either tower or server rack orientation. It is shipped in tower mode and can be immediately used as desktop server. To use it in a rack, rotate the module that contains the control panel and the three drive trays (1 in Figure 2-12) 90 degrees.

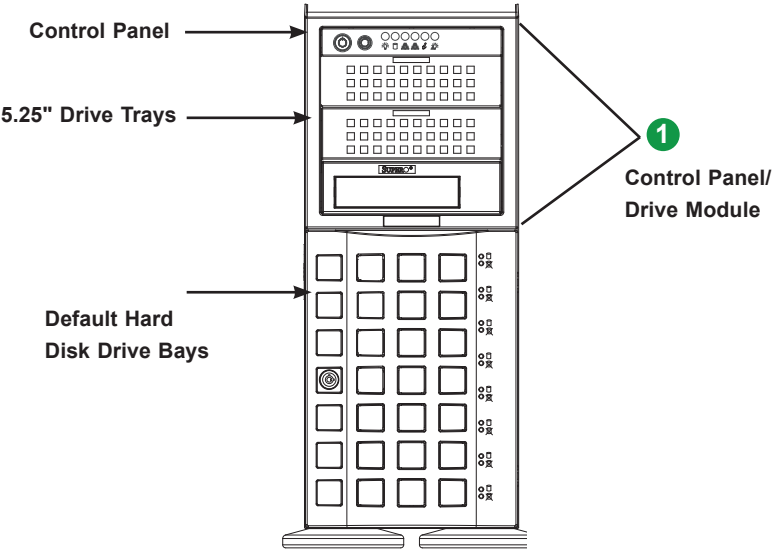


Figure 2-12. Chassis in Tower Mode (Default Configuration)

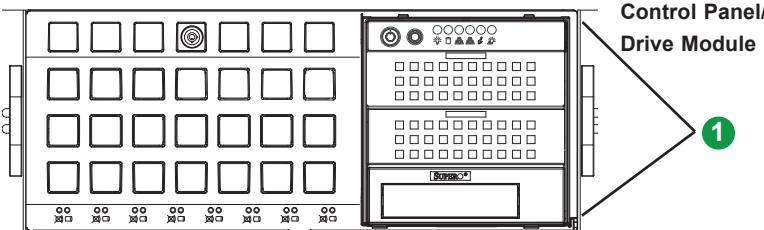


Figure 2-13. Chassis in Rackmount Mode

Rotating the Control Panel/Drive Module for Rack Mounting

1. [Power down](#) the system and [open the chassis cover](#).
2. Disconnect any cables from the back of the Control Panel/Drive Module.
3. Push the module release lever to unlock the module.

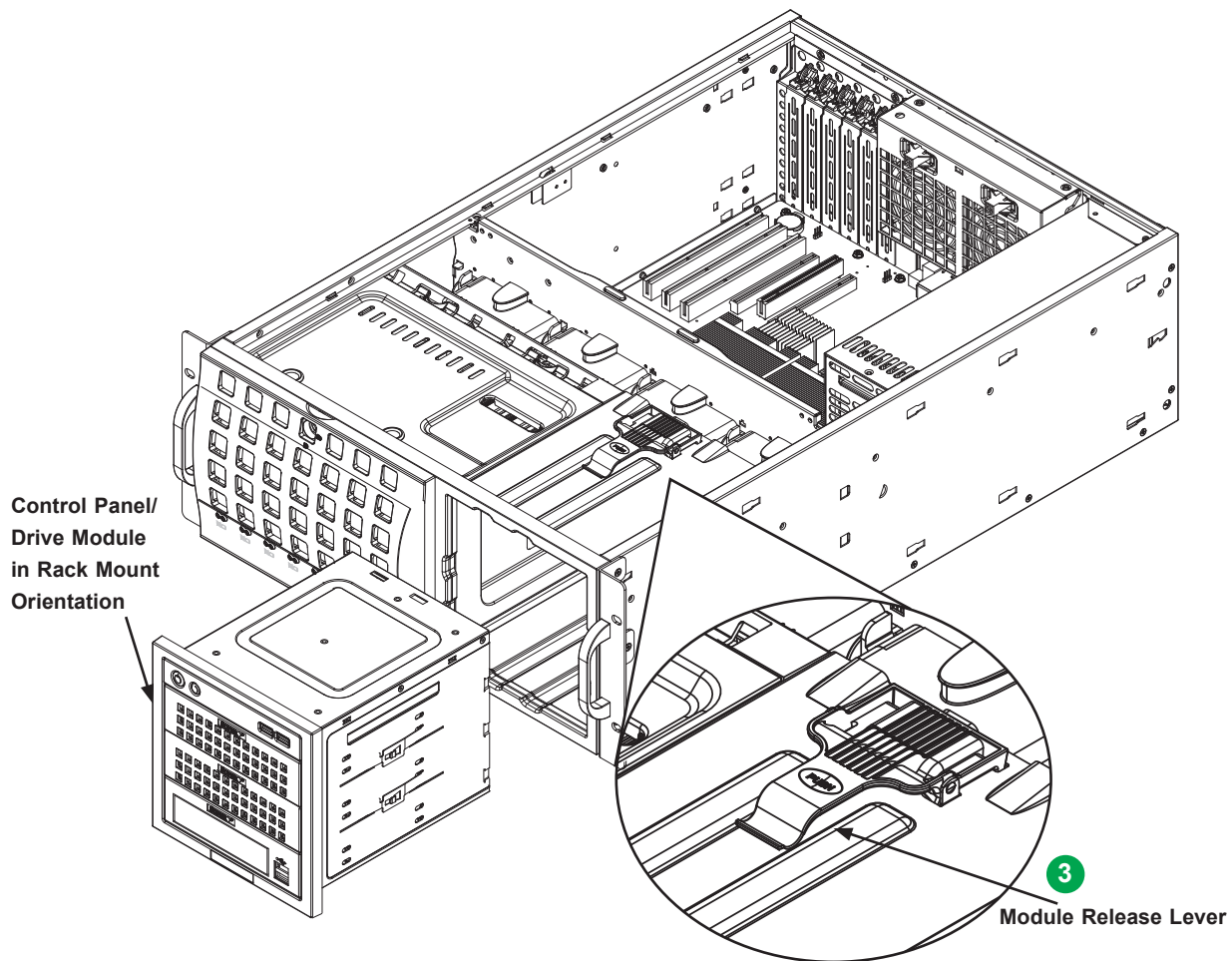


Figure 2-14. Rotating the Control Panel/Drive Module

4. Grasp the edges of the module and pull it from the chassis.
5. Rotate the module 90 degrees so that the control panel is on top.
6. Reinsert the module into the chassis and reconnect the cables.

Caution: Use caution when working around the backplane. Do not touch the module backplane with any metal objects and make sure no ribbon cables touch the backplane or obstruct the holes, which aid in proper airflow.

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.

1. Use the operating system to power down the system.
2. After the system has completely shut-down, disconnect the AC power cords from the power strip or outlet.
3. Disconnect the power cords from the power supply modules.

3.2 Accessing the System

The CSE-745BTS-R1K23BP has removable side and front covers for interior access.

Removing the Side Cover

1. Begin by [removing power](#) from the system.
2. Push the cover latch button to release the latch handle.
3. Pull the cover off the chassis using the latch handle.

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

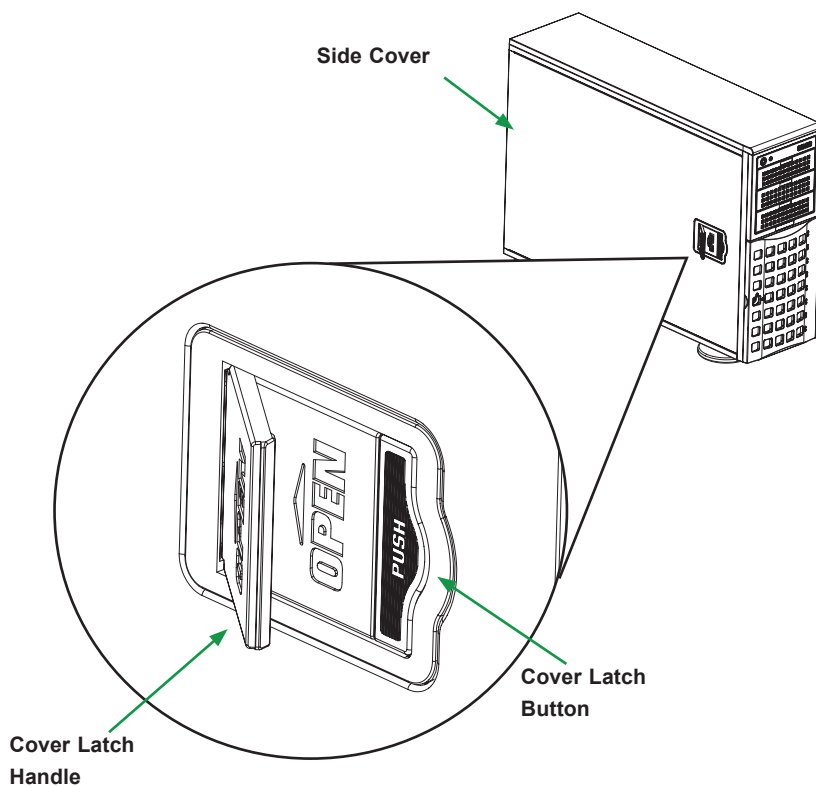


Figure 3-1. Removing the Side Cover

Removing the Front Cover

The front cover houses up to eight hot-swappable hard drives. The cover can be locked to prevent unauthorized access. The key to this lock is shipped with the system.

1. Unlock the front cover using the key shipped with the system.
2. Holding the key in the lock, swing the front cover open.

3.3 Processor and Heatsink

Prepare the system for processor and heatsink installation or removal. Follow the static-sensitive device precautions when working with the processor and heatsink.

Prepare the System

1. Remove power from the system.
2. Remove the chassis cover and any components that are obstructing the CPU socket.
3. 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.
4. Refer to the Supermicro website for updates on processor and memory support.

Note: All graphics in this manual are for illustration only. Your components may look different.

ESD Precautions

Electrostatic Discharge (ESD) can damage electronic components. Handle the motherboard carefully. The following measures are generally sufficient to protect your equipment from ESD.

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing the motherboard from the antistatic bag.
- Handle the motherboard by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- When handling the processor, avoid touching or placing direct pressure on the LGA lands (gold contacts). Improper installation or socket misalignment can cause serious damage to the processor or the socket, and may require manufacturer repairs.
- Put the motherboard and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure that your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.
- Use only the correct type of onboard CMOS battery. Do not install the onboard battery upside down to avoid possible explosion.

Installation Overview

After preparing the system and following ESD precautions, there are four steps to installing the processor and heatsink onto the motherboard.

1. Attach the processor to a plastic carrier to create the processor carrier assembly.
2. Attach the processor carrier assembly to the heatsink to create the processor heatsink module (PHM).
3. Prepare the socket for PHM installation.
4. Install the PHM.

Removal Overview

After preparing the system and following ESD precautions, there are three steps to removing the processor and heatsink from the motherboard.

1. Remove the PHM from the motherboard.
2. Remove the processor carrier assembly from the heatsink.
3. Remove the processor from the carrier.

Heatsink Overview

The 740P-TR/TRT server uses the same heatsink (SNK-P0078P) for both CPU1 and CPU2.

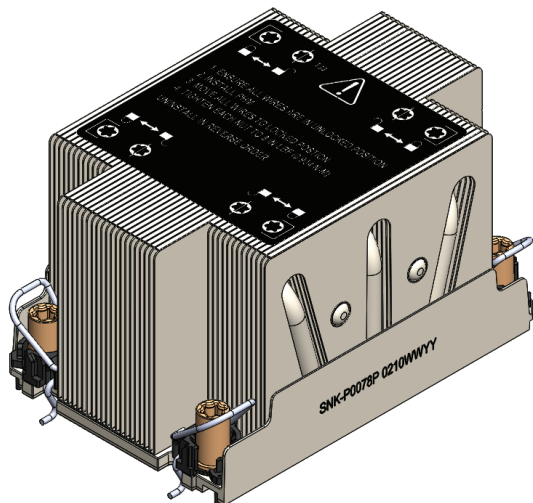


Figure 3-2. Heatsink SNK-P0078P
(for CPU1)

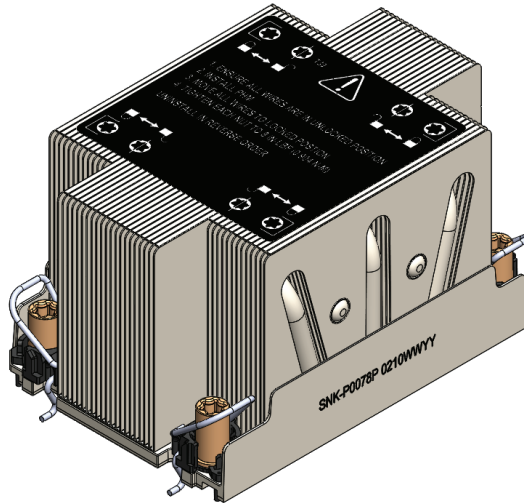


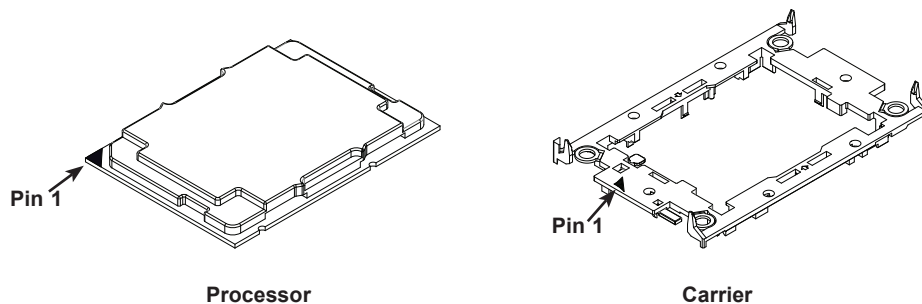
Figure 3-3. Heatsink SNK-P0078P
(for CPU2)

Note: Thermal grease is pre-applied on new heatsinks. No additional thermal grease is needed.

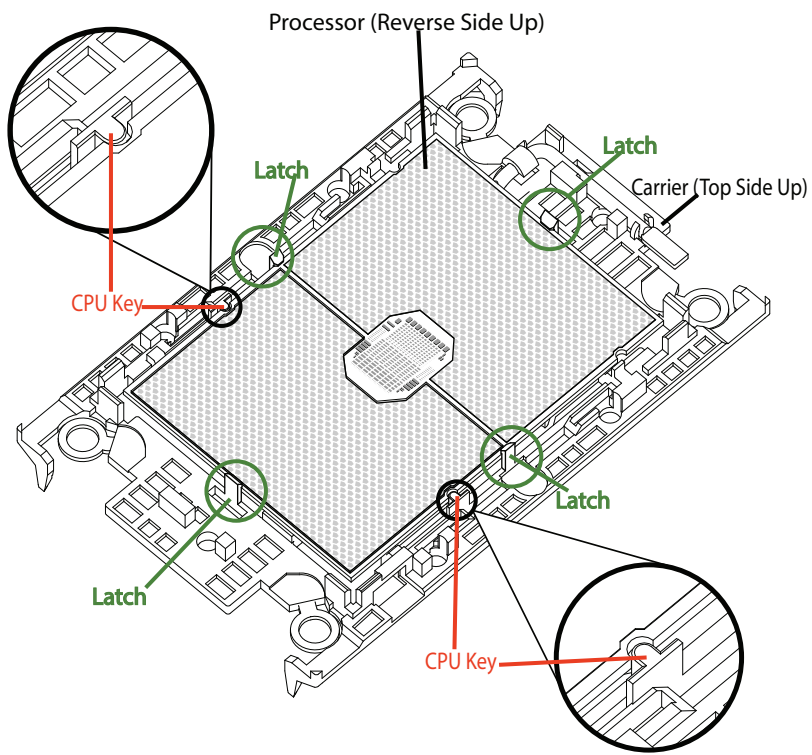
Create the Processor Carrier Assembly

Process Carrier Assembly

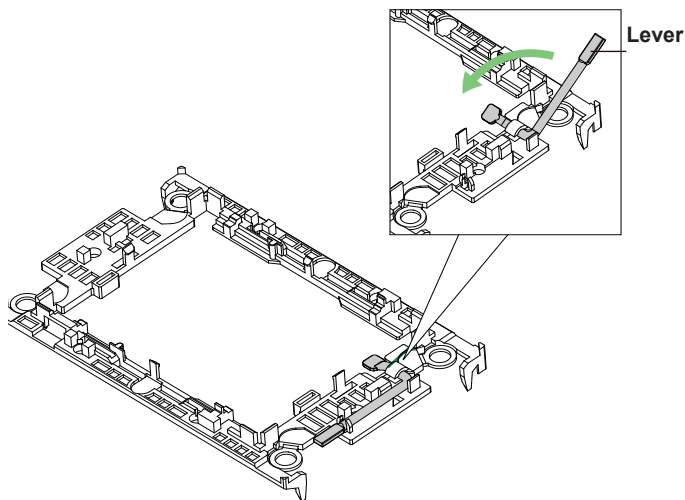
1. Hold the processor with the gold pins (LGA lands) facing down. Locate the gold triangle at the corner of the processor and the corresponding hollowed triangle on the processor carrier as shown below. These triangles indicate the location of pin 1.



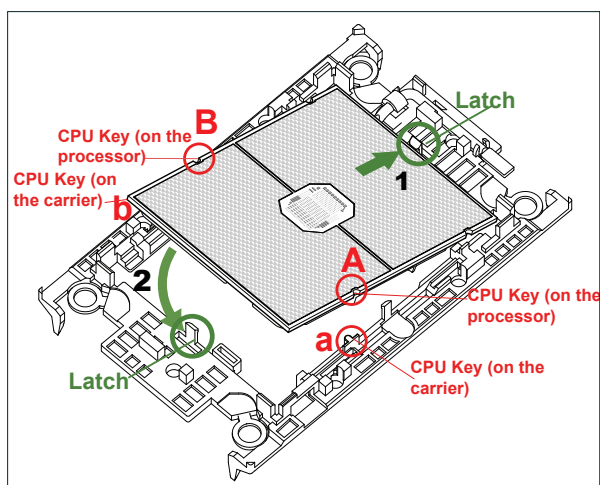
2. Turn the processor over (with the gold pins up). Locate the CPU keys on the processor and the four latches on the carrier as shown below.



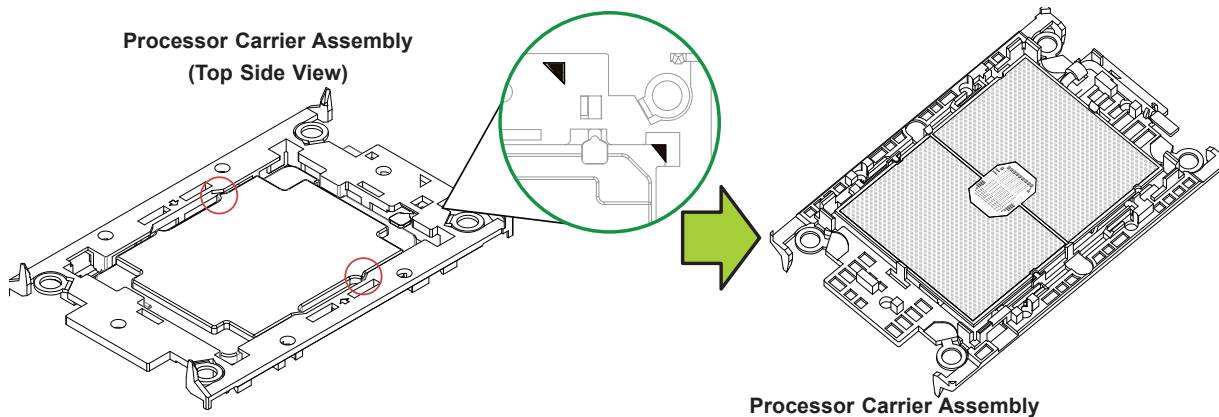
3. Locate the lever on the processor socket and press it down as shown below.



4. Using pin 1 as a guide, carefully align the CPU keys on the processor (A & B) with those on the carrier (a & b) as shown below.



5. Once aligned, 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.

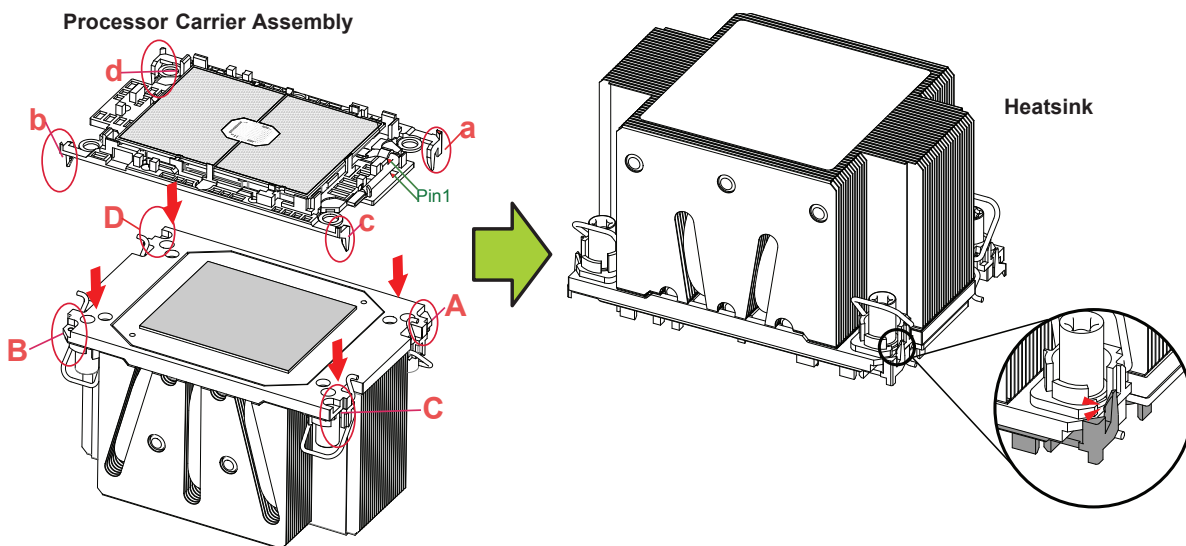


Create the Processor Heatsink Module (PHM)

If necessary, apply the proper amount of thermal grease to the underside of the heatsink.

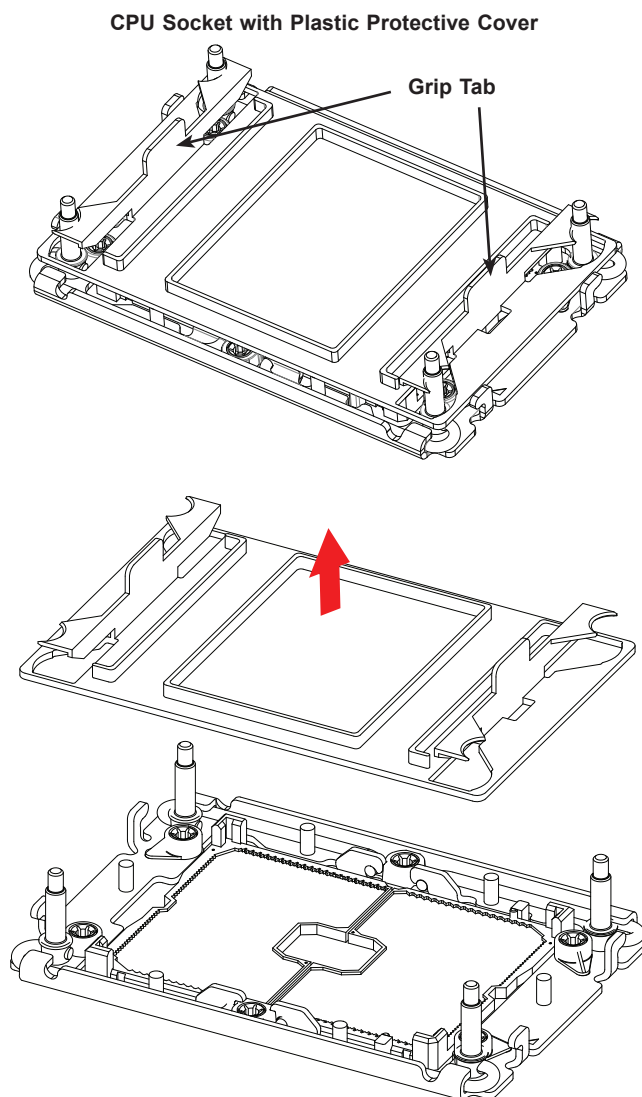
Processor Heatsink Module

1. Turn the heatsink over with the thermal grease facing up. Pay attention to the two triangle cutouts (A, B) located at the diagonal corners of the heatsink as shown in the drawing below.
2. Hold the processor carrier assembly upside-down to locate the triangles on the processor and the carrier, which indicate pin 1.
3. Turn the processor carrier assembly over so that the gold pins are facing up. Locate the two pin 1 locations ("A" on the processor and "a" on the processor carrier assembly).
4. Align "a" on the processor carrier assembly with the triangular cutout "A" on the heatsink along with "b", "c", "d" on the processor assembly with "B", "C", "D" on the heatsink.
5. Once properly aligned, place the heatsink on the processor carrier assembly with all corners matched up, making sure that the four clips are properly securing the heatsink.



Prepare the Socket

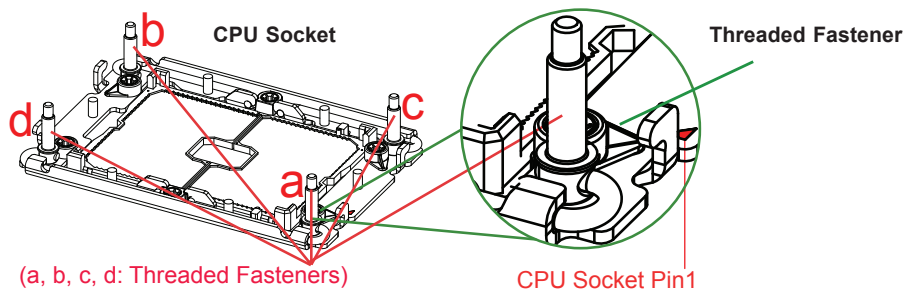
Remove the plastic protective cover on the socket by gently squeezing the grip tabs and pulling the cover off.



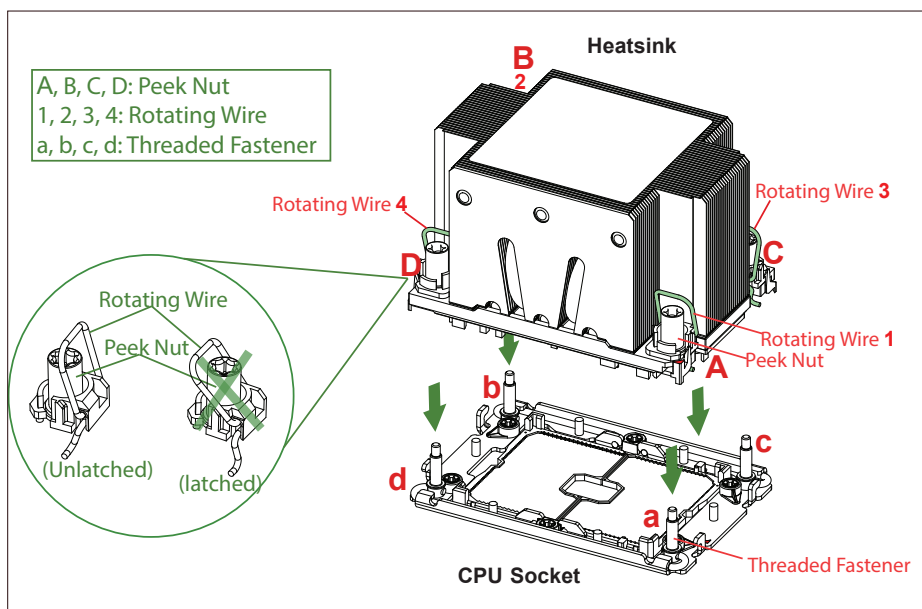
Install the PHM

After assembling the Processor Heatsink Module (PHM), you are ready to install it into the CPU socket.

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



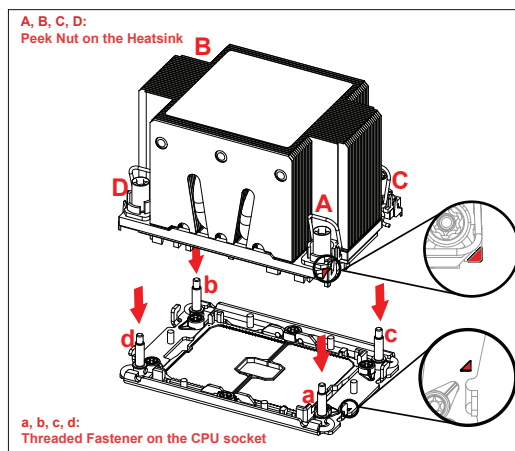
2. Locate four peek nuts (A, B, C, D) and four rotating wires (1, 2, 3, 4) on the heatsink as shown below.



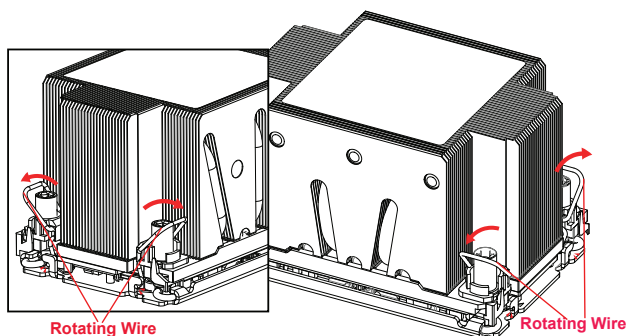
3. Check the rotating wires (1, 2, 3, 4) to make sure that they are in the unlatched position as shown.



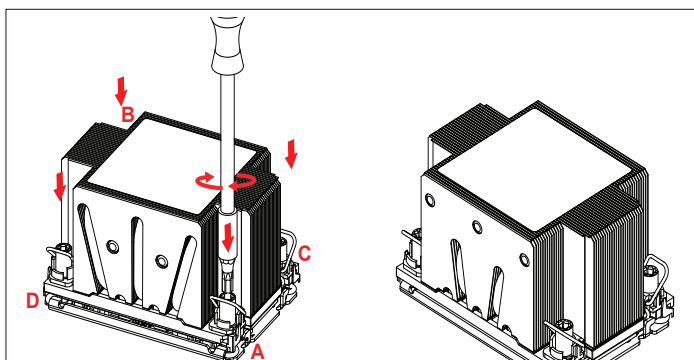
4. Align peek nut "A" (next to the triangular pin 1 on the heatsink) with threaded fastener "a" on the CPU socket. Then align peek nuts "B", "C", "D" on the heatsink with threaded fasteners "b", "c", "d" on the CPU socket, making sure that all peek nuts and threaded fasteners are properly aligned.
5. Once aligned, gently place the heatsink on the CPU socket, making sure that each peek nut is properly attached to its corresponding threaded fastener.



6. Press all four rotating wires outward and make sure that the heatsink is securely latched into the CPU socket.



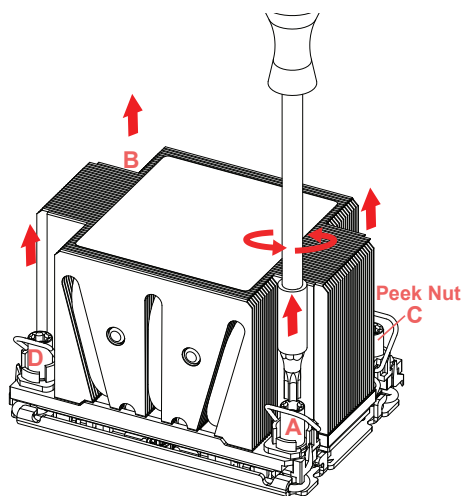
7. With a t30-bit screwdriver, tighten all peek nuts in the sequence of "A", "B", "C", and "D" with even pressure. To avoid damaging the processor or socket, do not use a force greater than 12 lbf-in when tightening the screws.
8. Examine all corners of the heatsink to ensure that the PHM is firmly attached to the CPU socket.



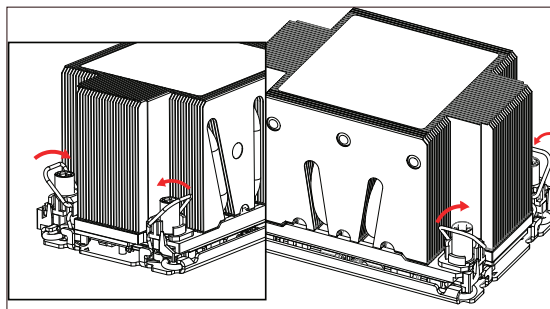
Remove the PHM from the Motherboard

Before removing the PHM from the motherboard, first shut down the system and unplug the AC power cord from all power supplies.

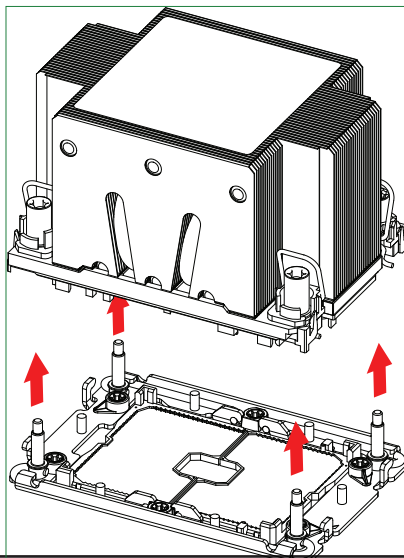
1. Use a t30-bit screwdriver to loosen the four peek nuts on the heatsink in the sequence of A, B, C, and D.



2. Once the peek nuts have been loosened from the CPU socket, press the rotating wires inward to unlatch the PHM from the socket as shown below.



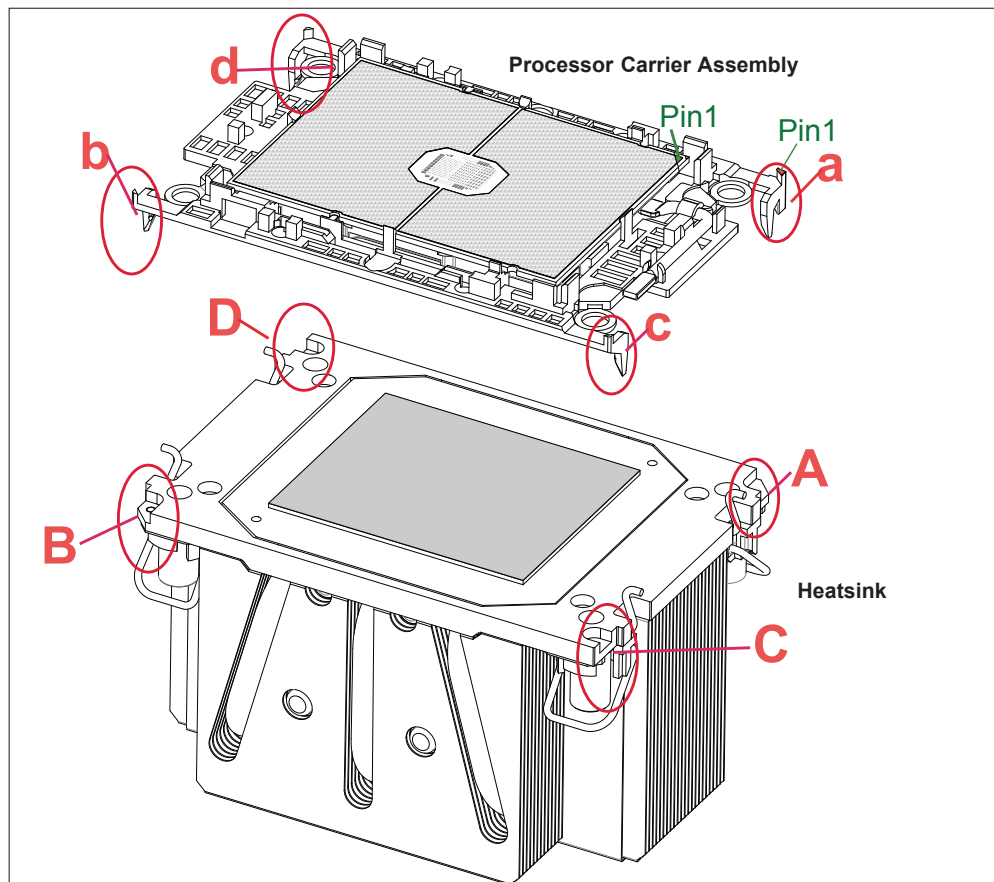
3. Gently lift the PHM upward to remove it from the CPU socket.



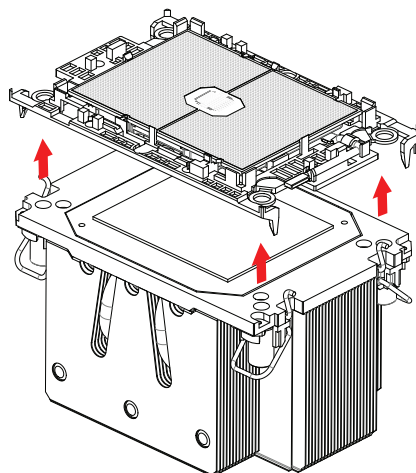
Remove the Carrier Assembly from the Heatsink

To remove the processor carrier assembly from the PHM, please follow the steps below:

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



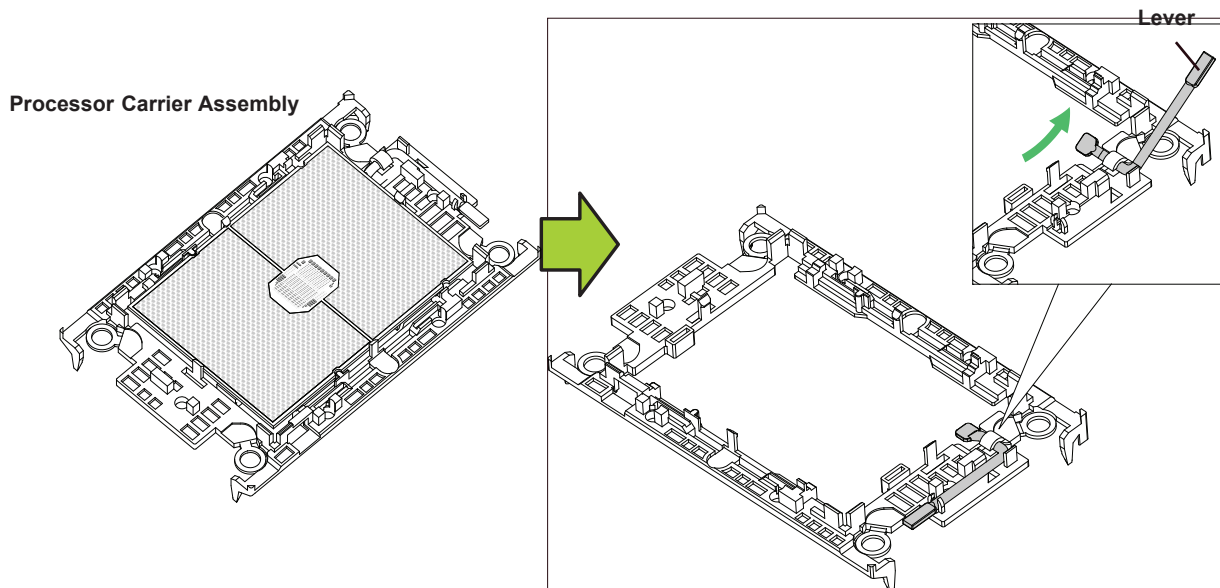
2. When all plastic clips have been detached from the heatsink, remove the processor carrier assembly from the heatsink



Remove the Processor from the Carrier Assembly

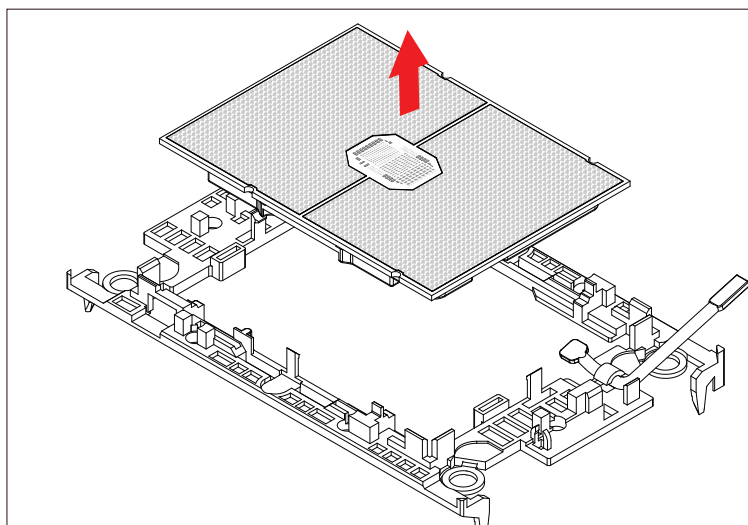
Once you have removed the processor carrier assembly from the PHM, you are ready to remove the processor from the processor carrier by following the steps below.

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



2. Once the processor has been loosened from the carrier, carefully remove the processor from the carrier.

Note: Please handle the processor with care to avoid damaging it or its pins.



3.4 Memory

The X12DPi-N(T)6 supports up to 4TB 3DS LRDIMM/LRDIMM/3DS RDIMM/RDIMM DDR4 (288-pin) ECC memory with speeds of 3200/2933/2666MHz in 16 DIMM slots and up to 4TB of Intel Optane PMem 200 Series with speeds of up to 3200MHz in two additional slots. (See the notes below.)

Notes: The Intel® Optane™ Persistent Memory (PMem) 200 Series are supported by the 3rd Gen Intel Xeon Scalable (83xx/63xx/53xx/4314 Series) Processors. P1-DIMMB2/P2-DIMMB2 memory slots are reserved for Intel Optane PMem 200 Series only. Memory speed support depends on the processors used in the system.

DDR4 Memory Support for the 3rd Gen Intel Xeon Scalable Processors

DDR4 Memory Support for the 3rd Gen Intel Xeon Scalable Processors					
Type	Ranks Per DIMM & Data Width	DIMM Capacity (GB)		Speed (MT/s); Voltage (V); Slots Per Channel (SPC) and DIMMs Per Channel (DPC)	
				1DPC (1-DIMM Per Channel)	2DPC (2-DIMM Per Channel)
		8Gb	16Gb	1.2 V	1.2 V
RDIMM	SRx8	8GB	16GB	3200	3200
	SRx4	16GB	32GB		
	DRx8	16GB	32GB		
	DRx4	32GB	64GB		
RDIMM 3Ds	(4R/8R) X4	2H- 64 GB 4H-128 GB	2H- 128 GB 4H-256 GB		
LRDIMM	QRx4	64GB	128GB	3200	3200
LRDIMM - 3Ds	(4R/8R) X4	4H-128 GB	2H- 128 GB 4H-256 GB	3200	3200

Key Parameters for DIMM Configurations	
Parameters	Possible Values
Number of Channels	8
Number of DIMMs per Channel	1DPC (1 DIMM Per Channel) or 2DPC (2 DIMMs Per Channel)
DIMM Type	RDIMM (w/ECC), 3DS RDIMM, LRDIMM, 3DS LRDIMM
DIMM Construction	non-3DS RDIMM Raw Cards: A/B (2Rx4), C (1Rx4), D (1Rx8), E (2Rx8) 3DS RDIMM Raw Cards: A/B (4Rx4) non-3DS LRDIMM Raw Cards: D/E (4Rx4) 3DS LRDIMM Raw Cards: A/B (8Rx4)

Memory Population Table for the 3rd Gen Intel Xeon Scalable

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, E1, C1, G1
1 CPU & 6 DIMM	A1, E1, C1, G1, B1, F1
1 CPU & 8 DIMMs*	A1, E1, C1, G1, B1, F1, D1, H1
1 CPU & 9 DIMMs*	A1, E1, C1, G1, B1, F1, D1, H1, B2 (B2: Reserved for PMem 200 Series only)
2 CPUs & 2 DIMMs*	CPU1: A1 CPU2: A1
2 CPUs & 4 DIMMs*	CPU1: A1, E1 CPU2: A1, E1
2 CPUs & 6 DIMMs	CPU1: A1, E1, C1, G1 CPU2: A1, E1
2 CPUs & 8 DIMMs*	CPU1: A1, E1, C1, G1 CPU2: A1, E1, C1, G1
2 CPUs & 10 DIMMs	CPU1: A1, E1, C1, G1, B1, F1 CPU2: A1, E1, C1, G1
2 CPUs & 12 DIMMs*	CPU1: A1, E1, C1, G1, B1, F1 CPU2: A1, E1, C1, G1, B1, F1
2 CPUs & 14 DIMMs	CPU1: A1, E1, C1, G1, B1, F1, D1, H1 CPU2: A1, E1, C1, G1, B1, F1
2 CPUs & 16 DIMMs*	CPU1: A1, E1, C1, G1, B1, F1, D1, H1 CPU2: A1, E1, C1, G1, B1, F1, D1, H1
2 CPUs & 18 DIMMs	CPU1: A1, E1, C1, G1, B1, F1, D1, H1, B2 (B2: Reserved for PMem 200 Series only) CPU2: A1, E1, C1, G1, B1, F1, D1, H1, B2 (B2: Reserved for PMem 200 Series only)

Note 1: P1-DIMMB2 and P2-DIMMB2 are reserved for Intel® Optane™ PMem 200 Series only.

Note 2: To maximize memory performance, please use the memory configurations marked with "*" above (also shaded in orange) as these configurations are recommended by Supermicro for optimal memory performance.

PMem 200 Series Population table for X12DP Motherboards (with 18 Slots)

Note: The Intel® Optane™ Persistent Memory (PMem) 200 Series are supported by the 3rd Gen Intel Xeon Scalable (83xx/63xx/53xx/4314 Series) Processors.

PMem 200 Series Population Table for X12DP 18-DIMM Motherboards (within 1 CPU socket)												
DDR4+PMem	Mode	AD Interleave	P1-DIMMF1	P1-DIMME1	P1-DIMMH1	P1-DIMMG1	P1-DIMMC1	P1-DIMMD1	P1-DIMMA1	P1-DIMMB2	P1-DIMMB1	
4+4	AD MM	One - x4	<i>PMem</i>	DDR4	<i>PMem</i>	DDR4	DDR4	<i>PMem</i>	DDR4	-	<i>PMem</i>	
		One - x4	DDR4	<i>PMem</i>	DDR4	<i>PMem</i>	<i>PMem</i>	DDR4	<i>PMem</i>	-	DDR4	
6+1	AD	One - x1	DDR4	DDR4	-	DDR4	DDR4	<i>PMem</i>	DDR4	-	DDR4	
			-	DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	-	<i>PMem</i>	
			DDR4	DDR4	<i>PMem</i>	DDR4	DDR4	DDR4	-	DDR4	-	DDR4
			<i>PMem</i>	DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	-	-	
			DDR4	DDR4	DDR4	-	<i>PMem</i>	DDR4	DDR4	-	DDR4	
			DDR4	-	DDR4	DDR4	DDR4	DDR4	<i>PMem</i>	-	DDR4	
			DDR4	DDR4	DDR4	<i>PMem</i>	-	DDR4	DDR4	-	DDR4	
8+1	AD	One - x1	DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	<i>PMem</i>	DDR4	

Legend (for the table above)	
DDR4 Type and Capacity	
DDR4	See Validation Matrix (DDR4 DIMMs validated with PMem)
Capacity	
PMem	Any Capacity (Uniformly for all channels for a given configuration)

- Mode definitions: AD = App Direct Mode, MM = Memory Mode.
- No mixing of PMem and NVDIMMs within the platform.
- For MM, NM/FM ratio is between 1:4 and 1:16. (NM = Near Memory (DRAM); FM = Far Memory (PMem)).
- Matrix targets configs for optimized PMem to DRAM cache ratio in MM mode.
- For each individual population, different PMem rearrangements among channels are permitted so long as the configuration doesn't break X12DP Memory population rules.
- Ensure the same DDR4 DIMM type and capacity are used for each DDR4 + PMem population.
- If the system detects an unvalidated configuration, then the system issues a BIOS warning. The CLI functionality is limited in non-POR configurations, and select commands will not be supported.

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

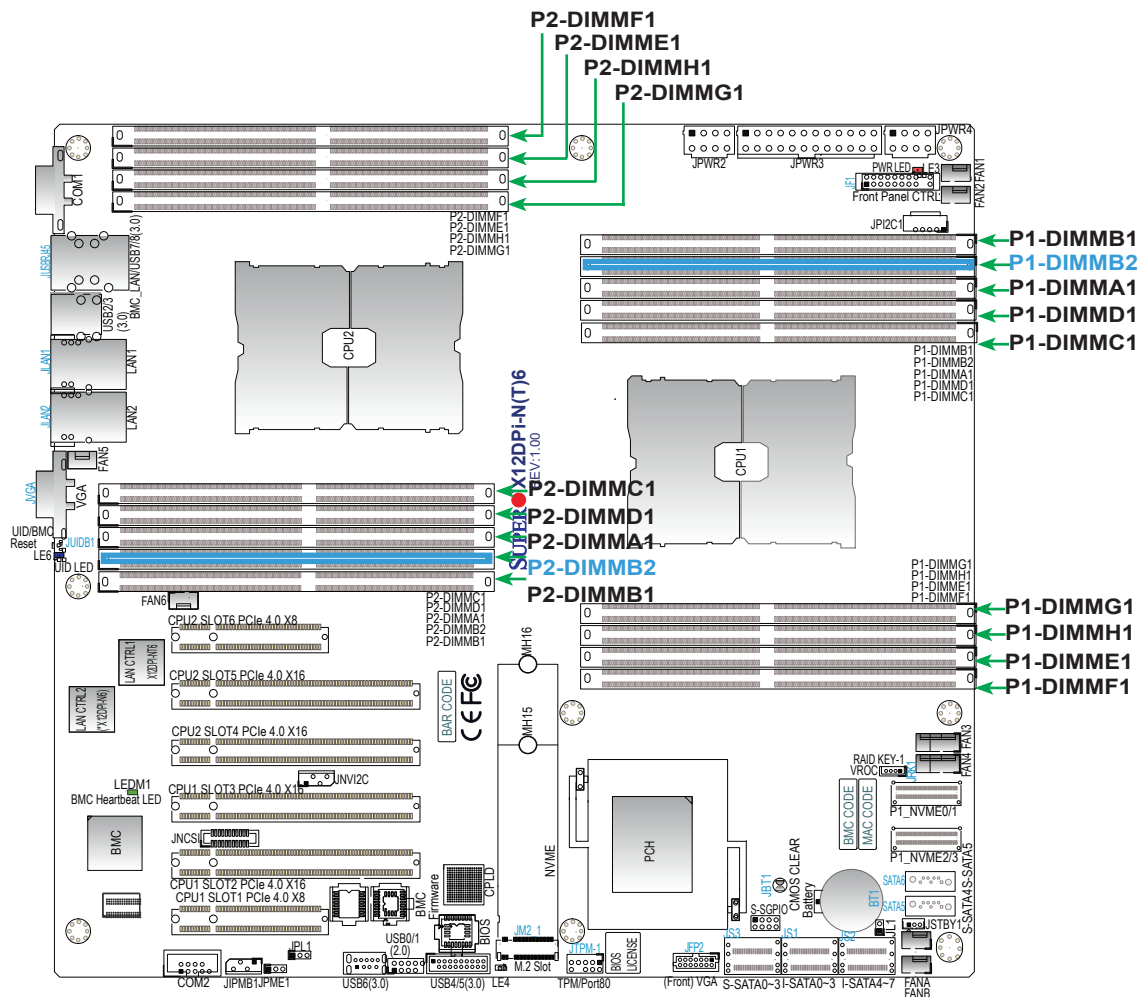
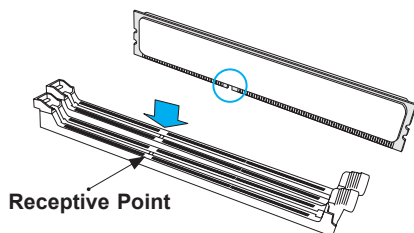


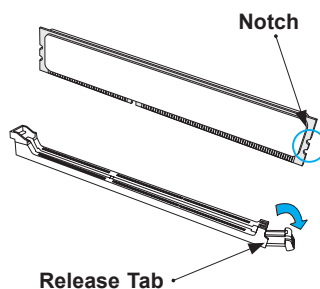
Figure 3-4. DIMM Slots

DIMM Installation

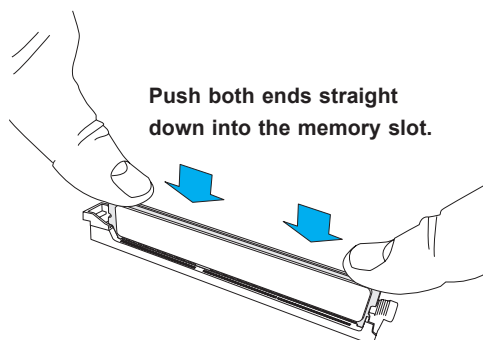
1. Insert the desired number of DIMM modules based on the recommended DIMM population table on page 48.
2. Align the DIMM module key with the receptive point on the single-latch DIMM slot.



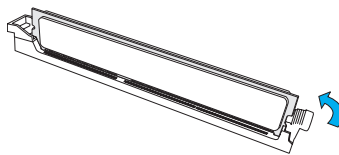
3. Push the release tab outwards to unlock the slot.



4. Press both ends of the module straight down into the slot until the module snaps into place.



5. Push the release tab to the lock position to secure the module into the slot.



DIMM Removal

Reverse the steps above to remove the DIMM modules from the motherboard.

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.

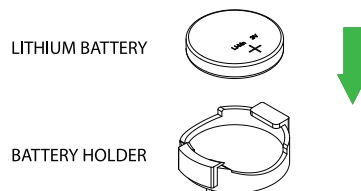


Figure 3-5. Installing the Onboard Battery

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

3.6 Storage Drives

A total of eight SATA drives may be housed in the CSE-745BTS-R1K23BP chassis. The drive IDs are preconfigured as 0 through 7 in order from bottom to top (or from left to right if rackmounted).

The drives are mounted in drive carriers to simplify their installation and removal from the chassis. (Both procedures may be done without removing power from the system.)

Removing a Hot-Swap Drive Carrier

1. Open the front bezel then push the release button located beside the drive LEDs.
2. Swing the handle fully out and then use it to pull the unit straight out.

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

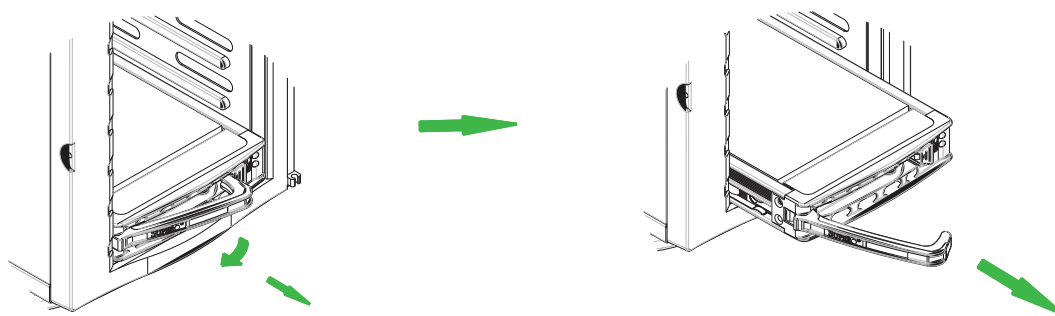


Figure 3-6. Removing a Drive Carrier

Installing 2.5" Drive into the Converter Tray

1. Fit one side of the drive against the release lever.
2. Press the other side of the drive down until it clicks into place.

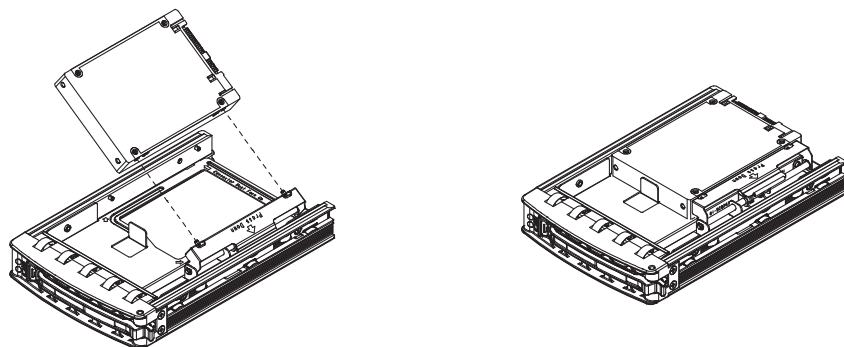


Figure 3-7. Mounting a 2.5" Drive into a Carrier

Removing 2.5" Drive from the Converter Tray

1. Press down on the release tab until the drive pops up from the tray.
2. Remove the 2.5" drive from the tray.

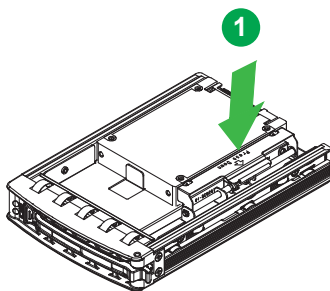
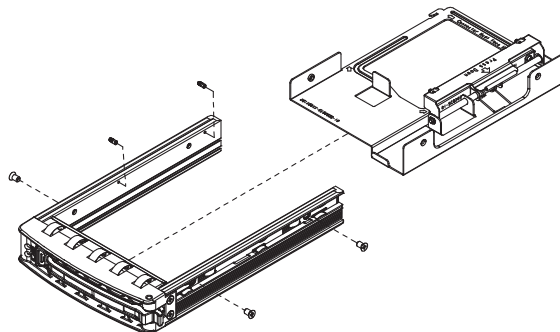


Figure 3-8. Removing a 2.5" Drive from the Carrier

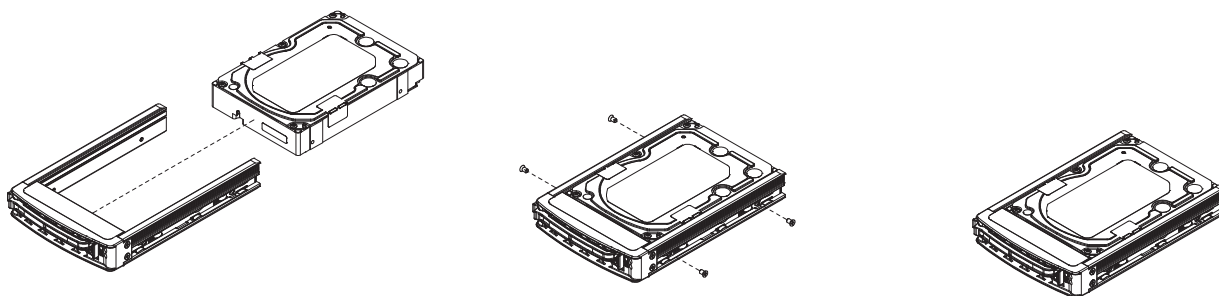
Note: Enterprise level hard disk drives are recommended for use in Supermicro chassis and servers. For information on recommended HDDs, visit the Supermicro website at <http://www.supermicro.com/products/nfo/files/storage/SBB-HDDCompList.pdf>

Removing the 3.5" to 2.5" Converter Tray

1. Remove the screws from the carrier.
2. Remove the converter tray as shown below.

**Figure 3-9. Removing the Converter Tray****Installing a 3.5" Drive**

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 3-10. Installing/Removing a 3.5" Drive from Carrier**

PCI Expansion Card Installation

The motherboard supports six expansion cards.

Installing Expansion Cards

1. Begin by [removing power](#) from the system and remove the [side cover](#).
2. Locate the release tab on the top of the PCI slot bracket.



Figure 3-11.

Expansion Slot Locations		
Item	Slot Name	Description
1	SLOT1	PCIe 4.0 x8 slot (CPU1)
2, 3	SLOT2, SLOT3	PCIe 4.0 x16 slot (CPU1)
4, 5	SLOT4, SLOT5	PCIe 4.0 x16 slot (CPU2)
6	SLOT6	PCIe 4.0 x8 slot (CPU2)

3. Gently apply pressure in the middle of the release tab to unlock the PCI slot bracket.
4. Pull the release tab upward.
5. Remove the screw holding the bracket in place and pull the bracket from the chassis.
6. Install your PCI card or other add-on card into the PCI slot bracket and motherboard. To do this, slide the PCI card (with "L" bracket) into the PCI slot and secure the card to the motherboard.
7. Push the PCI bracket release tab down until it locks into place with an audible "click".
8. Secure the PCI card with the screw previously removed from the chassis.
9. Repeat this process with each PCI card you want to install into the chassis.

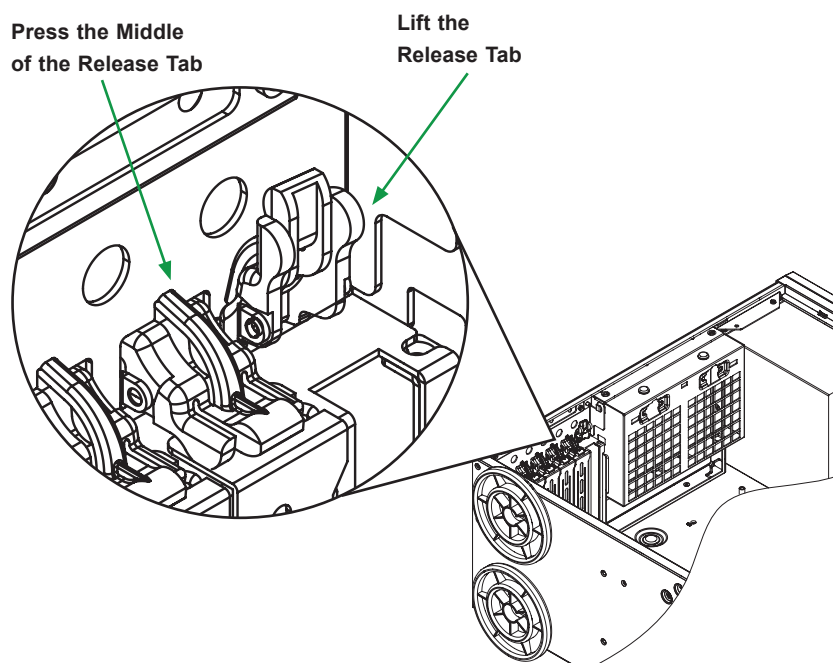


Figure 3-12. Installing Add-On Cards

3.7 System Cooling

Three 8-cm chassis cooling fans (located in the center of the chassis) provide cooling airflow while two 8-cm exhaust fans expel hot air from the chassis. The chassis is also fitted with an air shroud to balance the overall system thermal performance. The fans should all be connected to headers on the serverboard. Each power supply module also has an integrated cooling fan.

Fan Failure

Under normal operation, all three chassis fans, both exhaust fans and the power supply fans run continuously. The chassis fans and the exhaust fans are hot-swappable and can be replaced without powering down the system.

Replacing Rear Exhaust Fans

1. Push down the red tab and pull outwards to remove the exhaust fan.
2. Replace the failed fan with identical one. Install it in the same position and orientation. It should click into position when fully inserted. Check that the replaced fan is working properly.

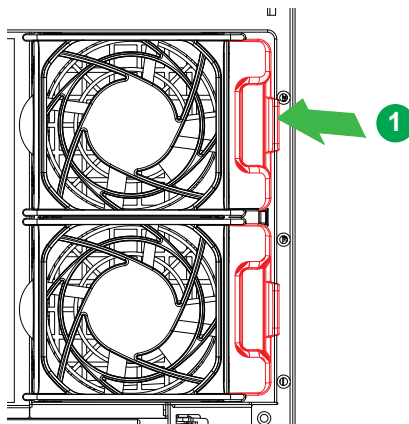


Figure 3-13. Replacing Rear Exhaust Fans

Replacing Mid-Chassis Cooling Fans

1. Begin by removing the [side cover](#).
2. Depress the locking tab on the failed fan.
3. With the tab depressed, pull the unit straight out. The wiring for these fans has been designed to detach automatically.
4. Replace the failed fan with an identical one. Install it in the same position and orientation as the one you removed; it should click into place when fully inserted. Check that the fan is working then replace the side cover.

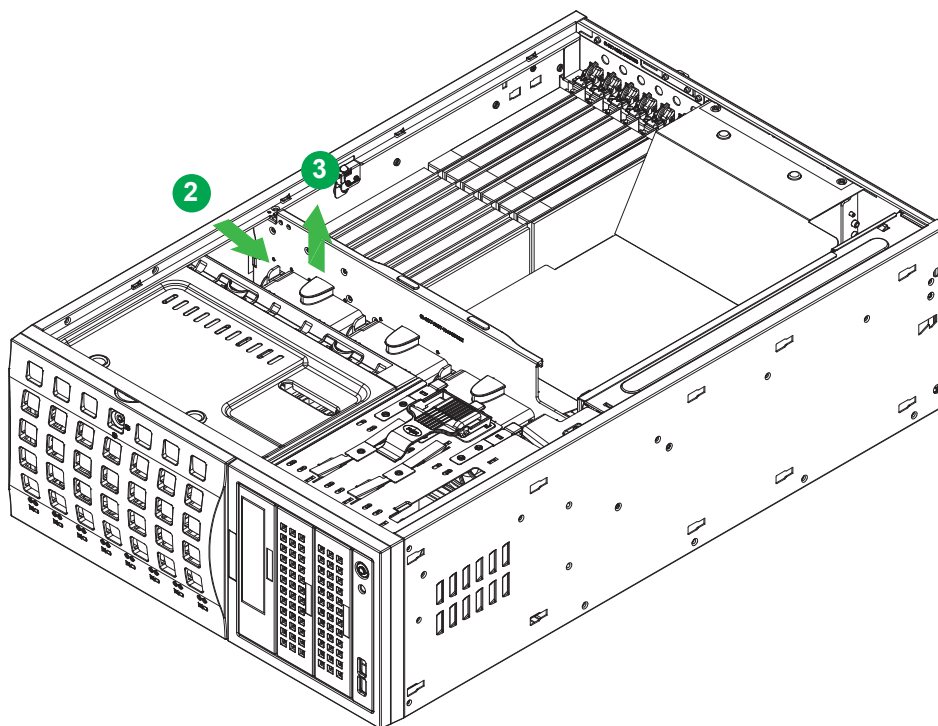


Figure 3-14. Replacing Mid-Chassis Fans

Air Shroud

The air shroud balances the system's thermal performance and should be in place during normal operation. Under most circumstances you will not need to remove the air shroud to perform any service on the system. However, if you wish to temporarily remove it, please follow the procedure below.

Removing the Air Shroud

1. Pull out the blue tab at the front of the air shroud to unlock it.
2. At the front of the air shroud, pull the locking tabs out of the slots.
3. Lift the front of the air shroud up at about a 15 degree angle and gently pull the locking tabs out of the back of the air shroud.
4. Lift the air shroud up and out of the chassis.

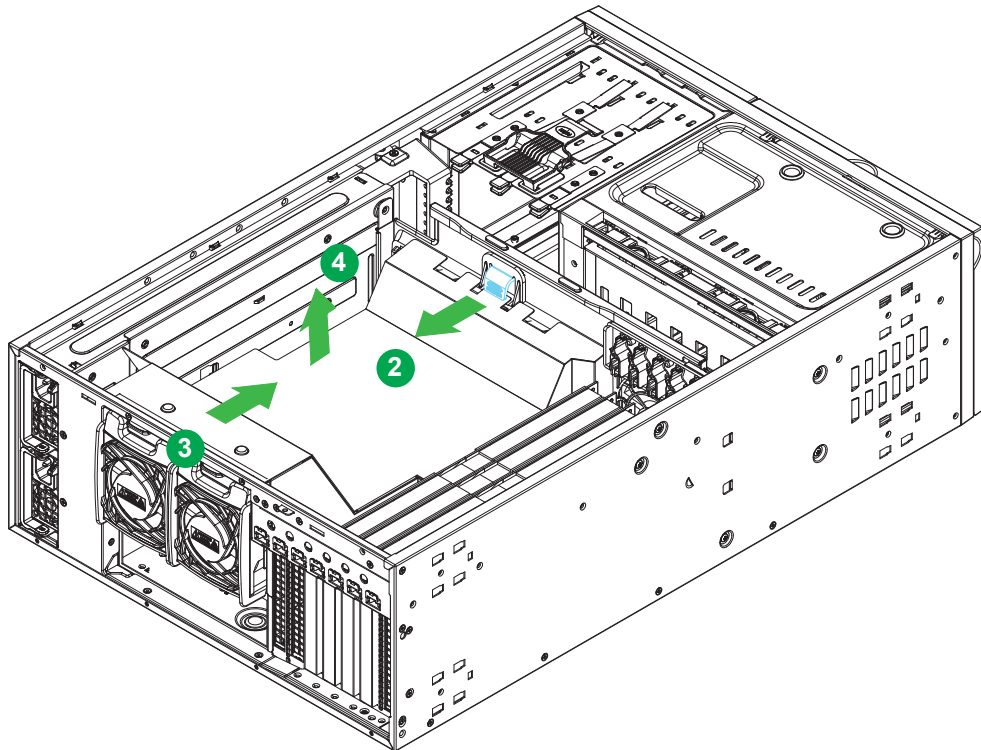


Figure 3-15. Removing the Air Shroud

Installing the Air Shroud

1. Drop the air shroud into place and line up the internal divider walls and both sides of the air shroud.
2. Insert the locking tabs at the rear of the air shroud with grooves into the gap of the chassis and gently push in until properly secured.
3. Insert the front locking tab in place to secure the air shroud.

3.8 Power Supply

The CSE-745BTS-R1K23BP chassis supports redundant 1200W Titanium Level power supplies (p/n PWS-1K23A-SQ). Each power supply has an auto-switching capability, which enables it to sense and operate at a 100V-240V input range. If one of the power supply fails, the other power supply will take on the full load. A failed power supply can be replaced while the server is running. Replacement units can be ordered directly from Supermicro.

Replacing a Power Supply

1. Remove the AC power cord from the failed power supply.
2. Press and hold the release tab while pulling the power supply out of the chassis.
3. Insert a new power supply and slide it into the power bay until it clicks into place.
4. Reconnect the AC power cord to the power supply inlet and to the power source.

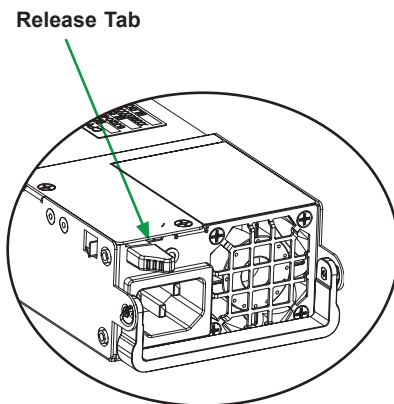


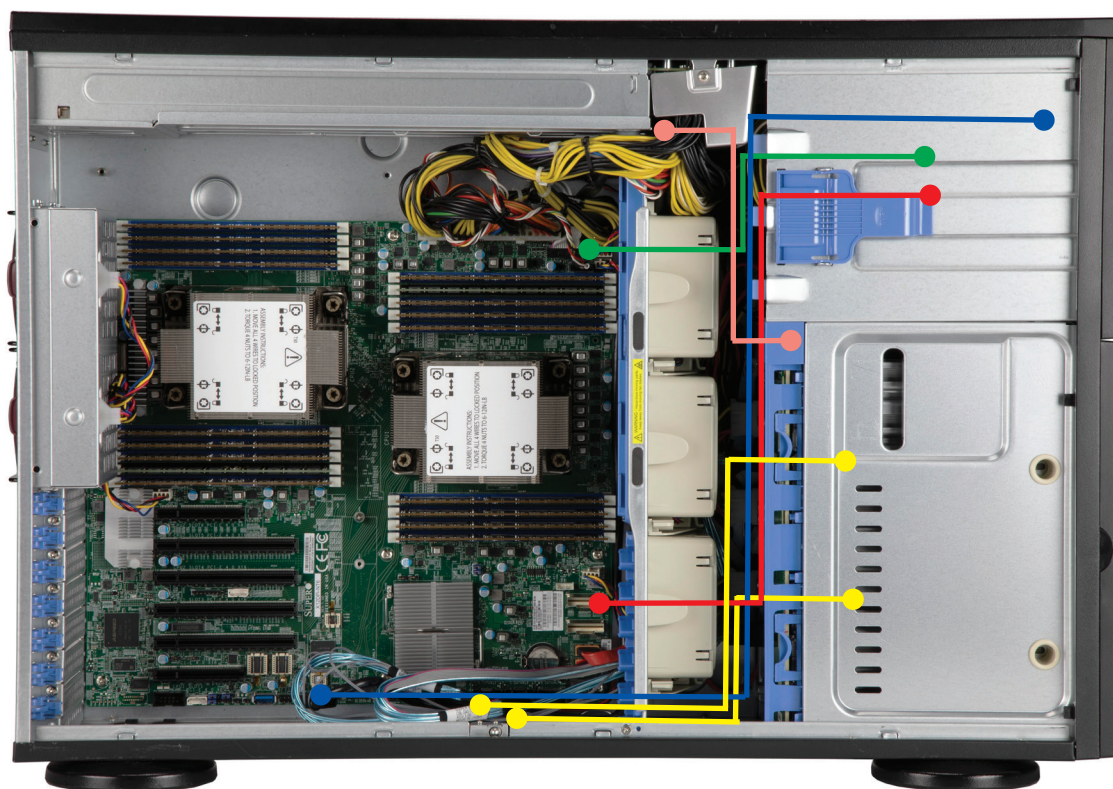
Figure 3-16. Pressing the Release Tab

Power Supply Indicators

Power Supply Indicators		
Power Supply Condition	Green LED	Amber LED
No AC Power to Power Supply	OFF	OFF
Power Supply critical events causing a shutdown/ failure/ OCP/ OVP/ Fan Fail/ OTP/ UVP	OFF	Amber LED
Power Supply Warning Events Where the power supply continues to operate; High temperature; Over voltage; under voltage, etc	OFF	1Hz Blink Amber
AC present only 12vsb on (PS off)	1Hz Blink Green	OFF
Output ON and OK	Green	OFF
AC cord unplugged and in redundant mode	OFF	Amber

3.9 Cable Routing Diagram

Refer to the diagram below for a representation of how the main cables are routed throughout the system. When disconnecting cables to add or replace components, refer to this diagram when adding or replacing components so you can reroute them in the same manner. Proper cable routing is important in maintaining airflow through the system.



SATA Cable

Backplane Power Cable

Front Panel USB Cable

Front Panel Control Cable

Optional NVMe Cable

[Online Cable Matrix](#)

Figure 3-17. Cable Routing Diagram

3.10 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 the 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	

Chapter 4

Motherboard Connections

This section describes the connections on the motherboard and provides pinout definitions. Note that depending on how the system is configured, not all connections are required. The LEDs on the motherboard are also described here. A motherboard layout indicating component locations may be found in [Chapter 1](#). More detail can be found in the [Motherboard Manual](#). Please review the Safety Precautions in [Appendix A](#) before installing or removing components.

4.1 Power Connections

ATX Power Supply Connector

The 24-pin power supply connector (JPWR2) meets the ATX SSI EPS 12V specification. You must also connect the 8-pin 12V DC power connectors (JPWR1/JPWR2/JPWR3) to the power supply to provide adequate power to your system.

Important: To provide adequate power supply to the motherboard, be sure to connect the 24-pin ATX PWR and the 8-pin PWR connectors to the power supply. Failure to do so may void the manufacturer warranty on your power supply and motherboard.

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

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

Required Connection

4.2 Headers and Connectors

Fan Headers

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

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

S-SGPIO Header

The S-SGPIO (Serial General Purpose Input/Output) header is used to communicate with the enclosure management chip on the backplane. Refer to the tables below for pin definitions.

S-SGPIO Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	NC	2	NC
3	Ground	4	Data
5	Load	6	Ground
7	Clock	8	NC

NC = No Connection

TPM/Port 80 Header

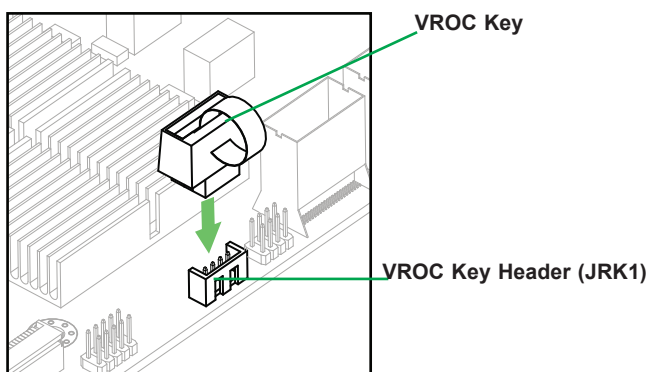
The JTPM1 header is used to connect a Trusted Platform Module (TPM)/Port 80, which is available from Supermicro (optional). A TPM/Port 80 connector is a security device that supports encryption and authentication in hard drives. It allows the motherboard to deny access if the TPM associated with the hard drive is not installed in the system. See the layout below for the location of the TPM header. Please go to the following link for more information on the TPM: <http://www.supermicro.com/manuals/other/TPM.pdf>.

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

VROC RAID Key Header

A VROC RAID Key header is located at JRK1 on the motherboard. Install a VROC RAID Key on JRK1 for NVMe RAID support as shown in the illustration below. Please refer to the layout below for the location of JRK1.

Intel VROC Key Pin Definitions	
Pin#	Definition
1	Ground
2	3.3V Standby
3	Ground
4	PCH RAID Key



Note: The graphics contained in this user's manual are for illustration only. The components installed in your system may or may not look exactly the same as the graphics shown in the manual.

Standby Power

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

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

Power SMB (I²C) Header

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

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

4-pin BMC External I²C Header

A System Management Bus header for BMC is located at JIPMB1. Connect the appropriate cable here to use the IPMB I²C connection on your system. Refer to the table below for pin definitions.

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

Chassis Intrusion

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

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

NVMe SMBus Headers

NVMe SMBus (I²C) header (JNVI²C), used for PCIe SMBus clock and data connections, provides hot-plug support via a dedicated SMBus interface. This feature is only available for a Supermicro complete system with an SMCI-proprietary NVMe add-on card and a proper cable installed. See the table below for pin definitions.

NVMe SMBus Header Pin Definitions	
Pin#	Definition
1	Data
2	Ground
3	Clock
4	VCCIO

PCIe 4.0 M.2 Slot

The X12DPi-N(T)6 motherboard has one PCIe 4.0 M.2 slot. M.2 allows for a variety of card sizes, increased functionality, and spatial efficiency. The M.2 slot on the motherboard supports PCIe 4.0 x4 M.2 NVMe SSDs in the 2280 and 22110 form factors.

SlimSAS NVMe Connectors

Two SlimSAS NVMe connectors provide four NVMe connections (P1_NVME0/1, P1_NVME2/3). Use these NVMe connections to attach high-speed PCIe storage devices.

Note: When installing an NVMe device on a motherboard, please be sure to connect the first NVMe port (P1_NVME0/1) first for your system to work properly.

NCSI Connector

The NCSI header (JNSCI) is used to connect a Network Interface Card (NIC) to the motherboard which will allow the onboard BMC (Baseboard Controller) to communicate with a network.

I-SATA 3.0 and S-SATA 3.0 Ports

The X12DPi-N(T)6 has eight I-SATA 3.0 ports (I-SATA0-3, I-SATA4-7) and six S-SATA (S-SATA0-3, S-SATA4, S-SATA5) on the motherboard. These SATA ports are supported by the Intel PCH C621A chipset. S-SATA4/S-SATA5 can be used with Supermicro SuperDOMs which are orange SATA DOM connectors with power pins built in, and do not require external power cables. S-SATA4/S-SATA-5 ports are compatible with regular SATA HDDs or SATA DOMs that need external power cables.

Control Panel

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

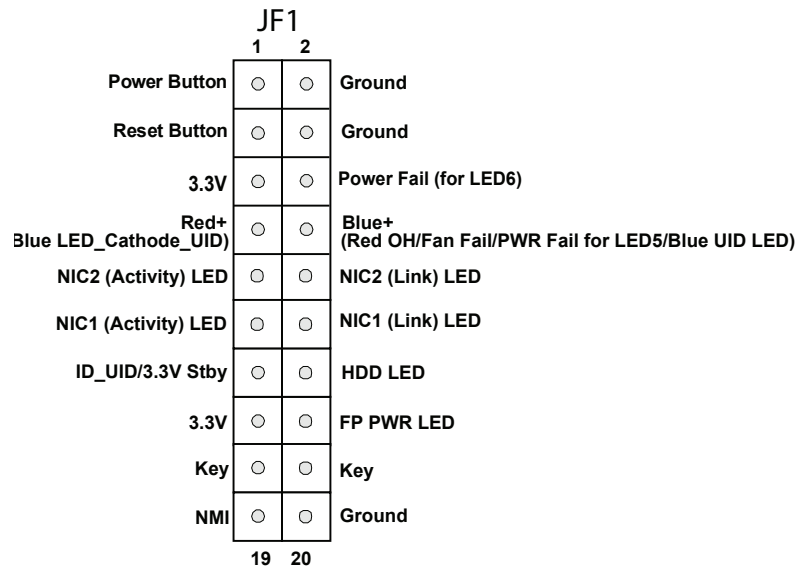


Figure 4-1. JF1 Control Panel Pins

Power On & BMC/BIOS Status LED Button

The Power On and BMC/BIOS Status LED button is located on pins 1 and 2 of JF1. Momentarily contacting both pins will power on/off the system or display BMC/BIOS status. Refer to the tables below for more information.

Power Button & BIOS/BMC Status LED Indicator Pin Definitions (JF1)	
Pin#	Definition
1	Signal
2	Ground

Power Button LED Indicator Status	
Status	Event
Green: solid on	System power on
BMC/BIOS blinking green @ 4Hz	BMC/BIOS checking
BIOS blinking green @ 4Hz	BIOS recovery/update in progress
BMC blinking red x2 (2 blinks red) @ 4Hz, 1 pause @ 2Hz (on-on-off-off)	BMC recovery/update in progress
BMC/BIOS blinking green @ 1Hz	Flash not detected or golden image checking failure

Front Control Panel LEDs

Front Control Panel (JF1) LED Indicators						
Event	Power (LED1)	HDD (LED2)	LAN (LED3/4)	UID (LED5)	Information (LED5)	Power Fail (LED6)
Power On	Solid On					
HDD Activity		Blinking				
NIC Activity			Blinking			
Overheat					Solid On	
Fan Fail					Blinking @1Hz	
Power Fail					Blinking @1/4Hz	Solid On
Local UID On				Solid On		
Remote UID On				Blinking 1Hz		
Checking	BMC/BIOS Blinking @4HZ					
Recovering/Updating	BMC Blinking @4HZ BMC 2 Blinks @4Hz, 1 Pause @2Hz (on-on-off-off)			BIOS/BMC Blinking @10Hz		
Flash Not Detected or Golden Image Check Failed	BMC/BIOS Blinking @1HZ					
CPLD Recovery Mode				Blinking @10Hz (MB UID LED)	Blinking @10Hz (FP Red LED)	

Reset Button

The Reset Button connection is located on pins 3 and 4 of JF1. Momentarily contacting both pins will reset the system. Refer to the table below for pin definitions.

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. When this LED turns solid red, it indicates a power failure. Refer to the table below for pin definitions.

Power Fail LED Pin Definitions (JF1)	
Pin#	Definition
5	3.3V
6	PWR Fail for LED6 (Solid red on: PWR failure)

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

The Information LED (OH/Fan Fail/PWR Fail/UID LED) connection is located on pins 7 and 8 of JF1. The LED on pin 7 is active when the UID button (JUIDB1) on the rear I/O panel is pressed. The LED on pin 8 provides warnings of overheat, power failure, or fan failure. Refer to the tables below for more information.

Information LED-Blue+ (OH/Fan Fail/PWR Fail LED for LED5/blue UID LED) (Pin 7 & Pin 8 of JF1) LED Indicator Status	
Status	Description
Solid red (on)	An overheat condition has occurred.
Blinking red (1Hz)	Fan failure: check for an inoperative fan.
Blinking red (0.25Hz)	Power failure: check for a non-operational power supply
Blinking red (10Hz) (FP red LED)	CPLD recovery mode error(s)
Solid blue	Local UID is activated. Use this function to locate a unit in a rack mount environment that might be in need of service.
Blinking blue (1Hz)	Remote UID is on. Use this function to identify a unit from a remote location that might be in need of service.
BIOS/BMC blinking blue (10Hz)	BIOS/BMC: recovery and/or update in progress
Red Info LED blinking (10Hz) and MB UID LED blue blinking (10Hz)	CPLD: recovery and/or update in progress

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 LAN port 2 is on pins 9 and 10. Refer to the tables below for pin definitions.

LAN1/LAN2 LED Pin Definitions (JF1)			
Pin#	Definition	Pin#	Definitin
9	NIC 2 Activity LED	10	NIC 2 Link LED
11	NIC 1 Activity LED	12	NIC 1 Link LED

LAN1/LAN2 LED LED Indicator Status	
Color	State
NIC 2: Blinking green	LAN 2: Active
NIC 1: Blinking green	LAN 1: Active

ID_UID Switch/HDD LED

The UID Switch/HDD LED connection is located on pins 13 and 14 of JF1. The UID switch is used for a chassis that supports a front UID switch. The front UID switch functions in the same way as the rear UID switch; both are for input only and cannot be used for output.

When this LED is blinking green, it indicates HDD is active. Attach a cable to pins 13 and 14 to show ID_UID status and hard drive activity. Refer to the tables below for pin definitions.

ID_UID/HDD LED Pin Definitions (JF1)	
Pins	Definition
13	ID_UID/3.3V Stdby
14	HDD Activity

ID_UID/HDD LED Pin Definitions (JF1)	
Color	State
Blinking Green	HDD Active

Front Panel Power LED

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

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

NMI Button

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

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

4.3 Input/Output Ports

Rear I/O Ports

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

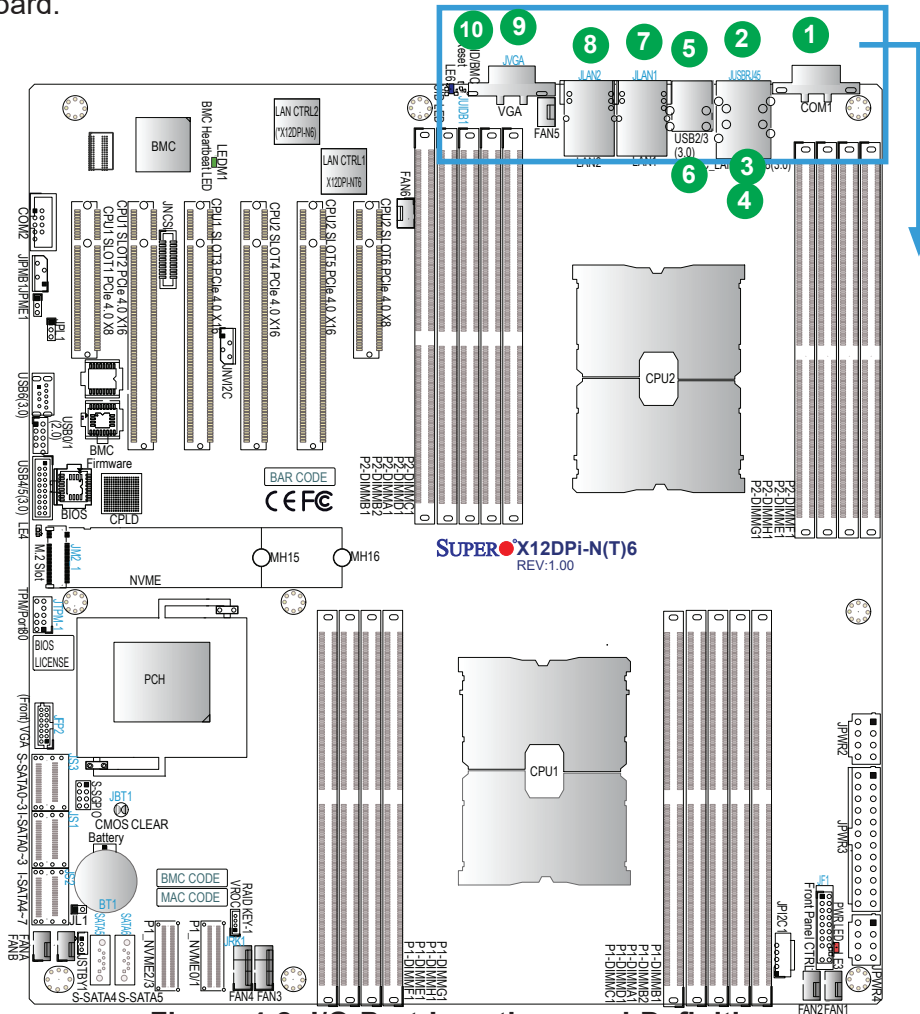
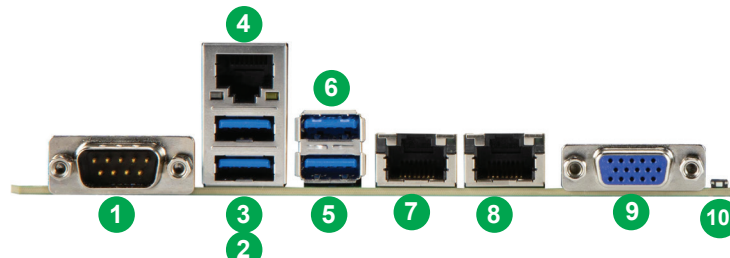


Figure 4-2. I/O Port Locations and Definitions



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

VGA Connections

There are two VGA connections in your system. The rear VGA port is located at JVGA on the rear I/O panel, and the front VGA header is located at JFP2 on the motherboard. These VGA connections provide analog interface support between the computer and the video displays. Refer to the layout below for the locations of VGA connections.

COM Ports

Two COM (communication) ports that support serial link interface are on this motherboard. COM1 is located on the rear I/O panel. COM2 is located next to PCIe Slot 1.

LAN Ports (LAN1/LAN2 & BMC LAN)

Two Ethernet LAN ports (LAN1/LAN2) and an BMC dedicated LAN (BMC LAN) are located on the rear I/O panel. LAN1/LAN2 ports support 1 GbE LAN connection (via the Intel i350 LAN controller) on the X12DPi-N6, and support 10 GbE LAN connection (via the Intel X550 LAN controller) on the X12DPi-NT6. The dedicated BMC LAN, located above the USB2/3 ports on the rear I/O panel, provides LAN support for the BMC (Baseboard Management Controller). All of these LAN ports accept RJ45 cables. Please refer to the LED Indicator section for LAN LED information.

Universal Serial Bus (USB) Ports and Headers

There are four USB 3.0 ports (USB2/3 and USB7/8) located on the rear I/O panel, and two USB headers located on the motherboard. The USB headers provide front USB access. The 10-pin black USB header supports two USB 2.0 connections (USB0/1), and the 12-pin blue USB header supports two USB 3.0 connections (USB4/5). USB6 is a Type-A USB 3.0 connector. These USB ports and headers can be used for USB support via USB cables (not included).

Front Panel USB 0/1 (2.0) Pin Definitions			
Pin#	Definition	Pin#	Definition
1	+5V	2	+5V
3	USB_N	4	USB_N
5	USB_P	6	USB_P
7	Ground	8	Ground
9	Key	10	NC

Type-A USB 6 (3.0) Pin Definitions			
Pin#	Definition	Pin#	Definition
1	VBUS	5	SSRX-
2	USB_N	6	SSRX+
3	USB_P	7	GND
4	Ground	8	SSTX-
		9	SSTX+

Front Panel USB 4/5 (3.0) Pin Definitions			
Pin#	Definition	Pin#	Definition
1	VBUS	19	Power
2	Stda_SSRX-	18	USB3_RN
3	Stda_SSRX+	17	USB3_RP
4	GND	16	GND
5	Stda_SSTX-	15	USB3_TN
6	Stda_SSTX+	14	USB3_TP
7	GND	13	GND
8	D-	12	USB_N
9	D+	11	USB_P
10		x	

Rear I/O Panel USB 2/3, 7/8 (3.0) Pin Definitions			
Pin#	Definition	Pin#	Definition
A1	VBUS	B1	Power
A2	D-	B2	USB_N
A3	D+	B3	USB_P
A4	GND	B4	GND
A5	Stda_SSRX-	B5	USB3_RN
A6	Stda_SSRX+	B6	USB3_RP
A7	GND	B7	GND
A8	Stda_SSTX-	B8	USB3_TN
A9	Stda_SSTX+	B9	USB3_TP

UID (Unit Identification)/BMC Reset Switch and UID/BMC Reset LED Indicators

A UID LED/BMC Reset switch (JUIDB1) is located on the rear side of the motherboard. This switch has dual functions. It can be used to identify a system unit that is in need of service, and it can also be used to reset the BMC settings.

When functioning as a BMC reset switch, JUIDB1 will trigger a cold reboot when the user presses and holds the switch for 6 seconds. It will also restore the BMC to the manufacturer's default when the user presses and holds the switch for 12 seconds.

When functioning as a UID LED switch, JUIDB1 will turn both rear UID LED (LE6) and front UID LED (Pin 7/Pin 8 of JF1) on and off when the user presses the switch on/off.

To achieve these dual purposes, the UID LED/BMC Reset switch works in conjunction with the BMC Heartbeat LED (LEDM1) and front/rear UID LEDs. Please note that UID can also be triggered via BMC on the motherboard. For more details on the UID LEDs and BMC LEDs, refer to the tables below. Also, refer to the BMC User's Guide posted on our website at <http://www.supermicro.com> for more information on BMC.

UID/BMC Reset Switch (JUIDB1) Features & Settings					
When Used as a UID LED Switch			When Used as a BMC Reset Switch		
Work w/Rear UID LED (LE6) & Front UID LED (JF1: Pins 7 & 8)			Work with BMC Heartbeat LED (LEDM1)		
Rear UID LED	LE6	Blue: Unit identified	BMC Heartbeat LED	LEDM1	Green Blinking: BMC Normal
Front UID LED	Pins 7 & 8 (JF1)	Blue: Unit identified	BMC Reset: Press & hold the switch (JUIDB1) 6 seconds	LEDM1: Solid green: during reboot	
Press the switch (JUIDB1) to turn on and off both rear and front UID LED indicators;			BMC Reset: Press & hold the switch (JUIDB1) 12 seconds	Triggering a cold reboot; LED: solid green on during cold reboot	
				LEDM1: Solid green: during BMC reset	
				BMC: Reset to the manufacturer's default; LED solid on during BMC Reset	

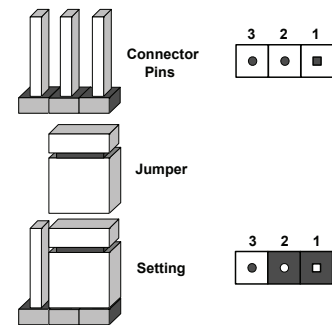
UID/BMC Reset Switch (JUIDB1) Pin Definitions	
Pin#	Definition
1	Ground
2	Ground
3	Button In
4	Button In

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.



CMOS Clear

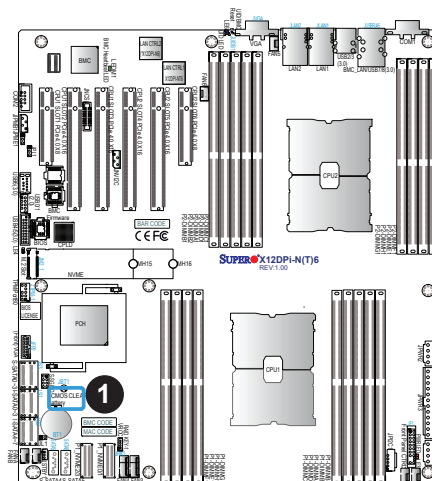
JBT1 is used to clear CMOS, which will also clear any passwords. Instead of pins, this jumper consists of contact pads to prevent accidentally clearing the contents of CMOS.



To Clear CMOS

1. First power down the system and unplug the power cord(s).
2. Remove the cover of the chassis to access the motherboard and remove the battery from the motherboard.
3. Short the CMOS pads, JBT1, with a metal object such as a small screwdriver for at least four seconds.
4. Remove the screwdriver (or shorting device).
5. Re-install the battery.
6. Replace the cover, reconnect the power cord(s), and power on the system.

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



1. JBT1

LAN Port Enable/Disable

Jumper JPL1 allows the user to enable the onboard LAN Port1/LAN Port2. The default setting is pins 1-2 to enable the connection. Refer to the table below for jumper settings.

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

ME Recovery

JPME1 is used for ME Firmware Recovery mode, which will limit system resource for essential function use only without putting restrictions on power use. In the single operation mode, online upgrade will be available via Recovery mode. See the table below for pin definitions.

ME Recovery Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Normal (Default)
Pins 2-3	ME Recovery

4.5 LED Indicators

LAN LEDs

Two LAN ports (LAN 1 and LAN 2) are located on the rear I/O panel of the motherboard. Each Ethernet LAN port has two LEDs. The green LED indicates activity, while the other Link LED may be green, amber, or off to indicate the speed of the connection. Refer to the tables below for more information.

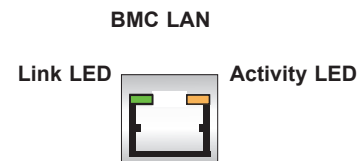
LAN1/2 Activity LED (Right) LED State		
Color	Status	Definition
Green	Flashing	Active

LAN1/2 Link LED (Left) LED State	
LED Color	Definition
Green	10Gbps (X12DPI-NT only)
Yellow/Amber	1Gbps

BMC LAN LEDs

In addition to LAN1 and LAN2, a BMC LAN is also located on the rear I/O panel. The amber LED on the right indicates activity, while the green LED on the left indicates the speed of the connection. Refer to the table below for more information.

BMC LAN LEDs		
	Color/State	Definition
Link (left)	Green: Solid Amber: Solid	100 Mbps 1Gbps
Activity (Right)	Amber: Blinking	Active



M.2 LED

An M.2 LED is located at LE4 on the motherboard. When LE4 is blinking, M.2 functions normally. Refer to the table below for more information.

M.2 LED State	
LED Color	Definition
Green: Blinking	Device Working

Onboard Power LED

The Onboard Power LED is located at LE3 on the motherboard. When this LED is on, the system power is on. Be sure to turn off the system power and unplug the power cord before removing or installing components. Refer to the table below for more information.

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

Chapter 5

Software

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

5.1 Microsoft Windows OS Installation

If you will be using RAID, you must configure RAID settings before installing the Windows OS and the RAID driver. Refer to the RAID Configuration User Guides posted on our website at www.supermicro.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 IPMI KVM console.
2. Retrieve the proper RST/RSTe driver. Go to the Supermicro web page for your motherboard and click on "Download the Latest Drivers and Utilities", select the proper driver, and copy it to a USB flash drive.
3. Boot from a bootable device with Windows OS installation. You can see a bootable device list by pressing **F11** during the system startup.

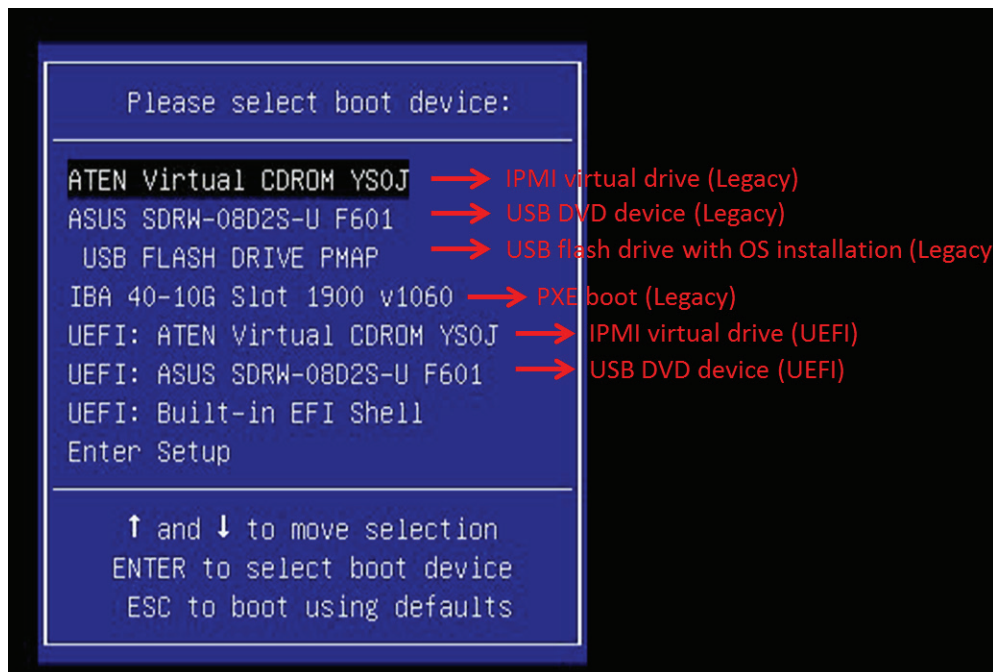


Figure 5-1. Select Boot Device

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

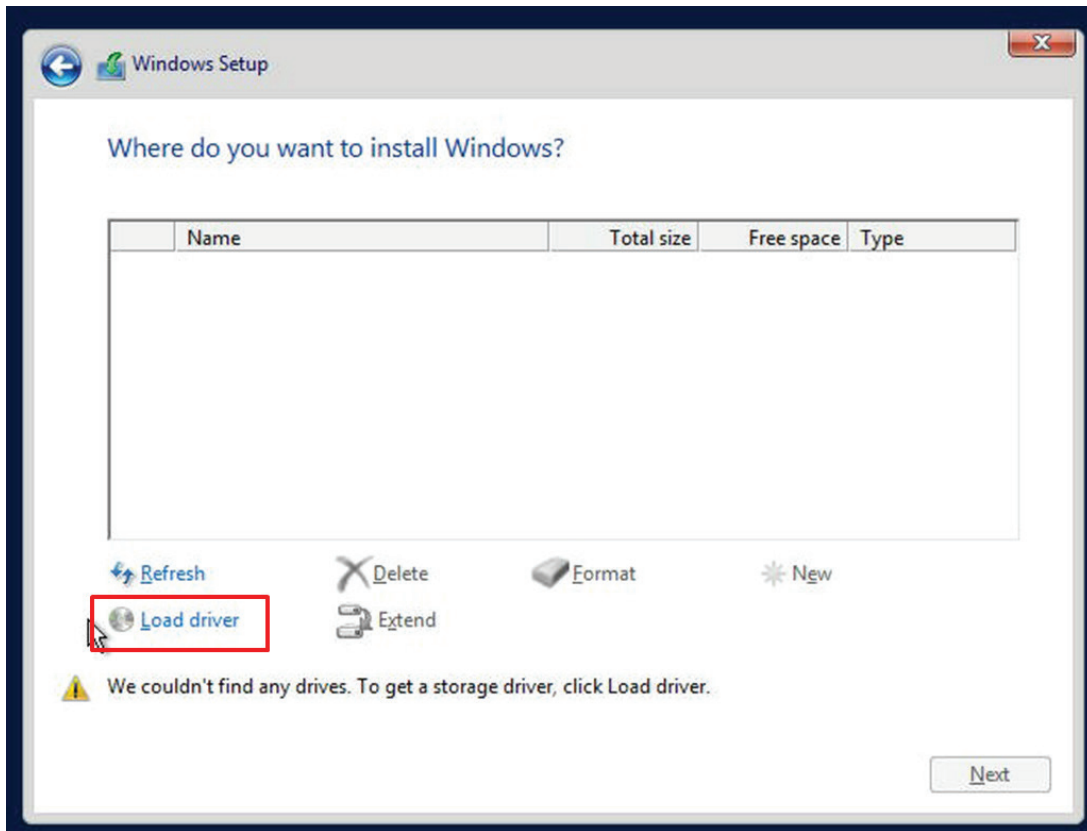


Figure 5-2. Load Driver Link

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

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

5.2 Driver Installation

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

After accessing the website, go into the CDR_Images (in the parent directory of the above link) and locate the ISO file for your motherboard. Download this file to a USB flash 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 <http://www.supermicro.com/products/>. Find the product page for your motherboard, and "Download the Latest Drivers and Utilities".

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

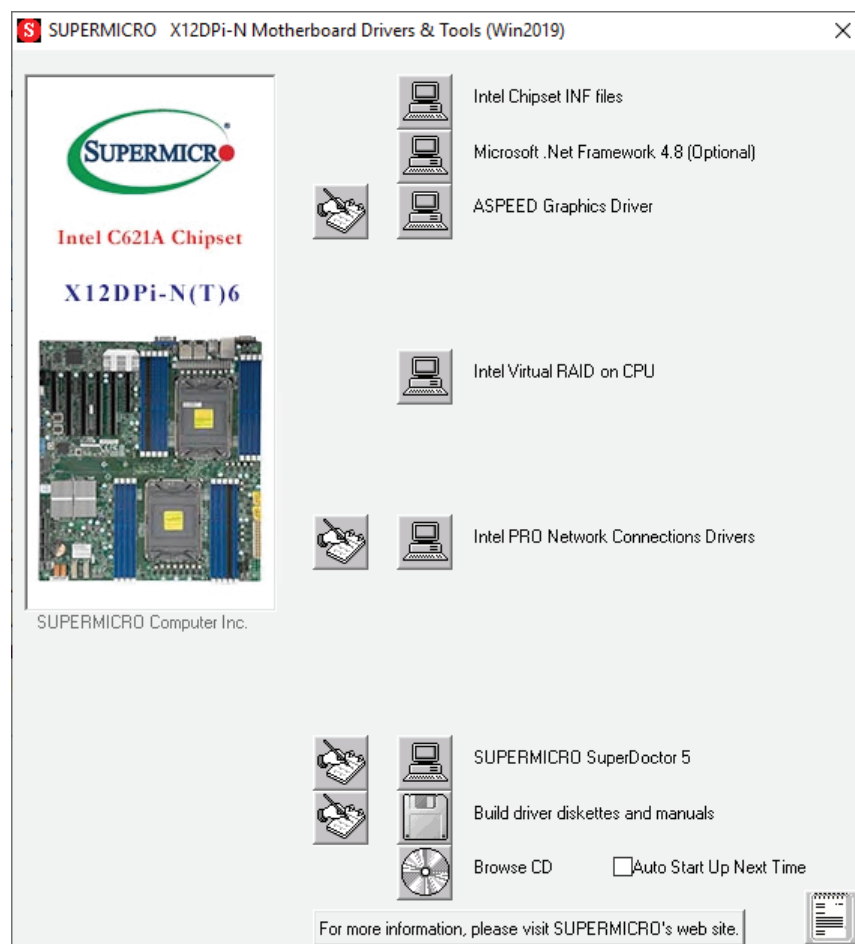


Figure 5-3. Driver & Tool Installation Screen

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

5.3 SuperDoctor® 5

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

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

SuperDoctor® Manual and Resources

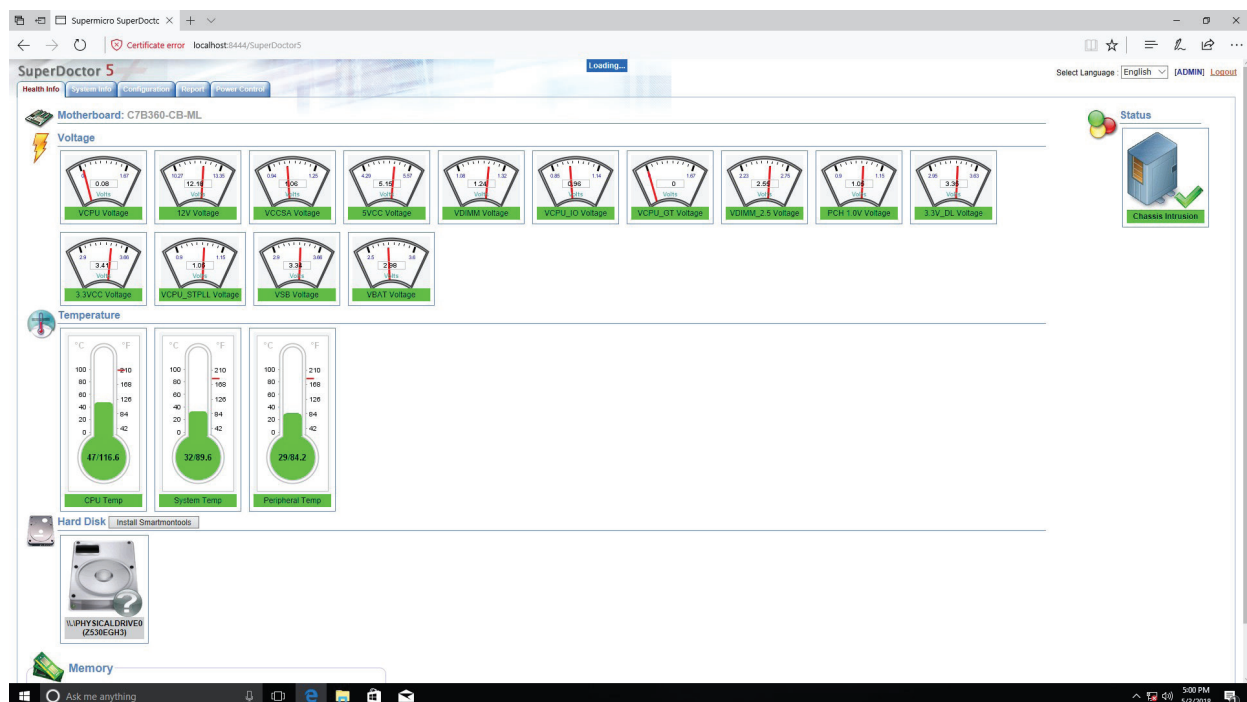


Figure 5-4. SuperDoctor 5 Interface Display Screen (Health Information)

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 the motherboard layout in Chapter 1 for the location of the label.

Chapter 6

Optional Components

This chapter describes optional system components and installation procedures.

6.1 Optional Parts List

Optional Parts List		
Description	Part Number	Quantity
Accessories for 5.25" DVD Drive including:		1
SATA Cable	CBL-0178 or CBL-0179	1
SATA Power Adapter Cable	CBL-0080L	1
Accessories for two fixed SATA or NVMe drives including:		
Dual 2.5" NVMe brackets	MCP-220-00160-0N	1
SlimSAS x8 to PCIe 2x SSF-8639 Power	CBL-SAST-0953	1
SAS Controller Card including:	AOC-S3108L-H8IR or AOC-S3108L-H8IR-16DD	1
Cable	CBL-SAST-0531-01	2

6.2 Additional Storage

Configuring the 5.25" Drive Bays

The CSE-745BTS-R1K23BP chassis supports up to three 5.25" drive bays beneath the front control panel. The three drive bays can be configured in a number of ways.

- Up to three 5.25" peripheral drives, such as a DVD drive
- One or two additional fixed SATA, SAS, or solid state drives in a single tray
- A mobile rack with eight additional 2.5" hot-swap hard drives (replaces two 5.25" bays and requires an optional expansion card and cables)
- A combination of the above

Accessing the 5.25" Drive Bays

1. Remove the chassis [side cover](#).
2. Locate the drive tray and pull the release tab up.
3. Push the drive tray out of the front of the chassis.

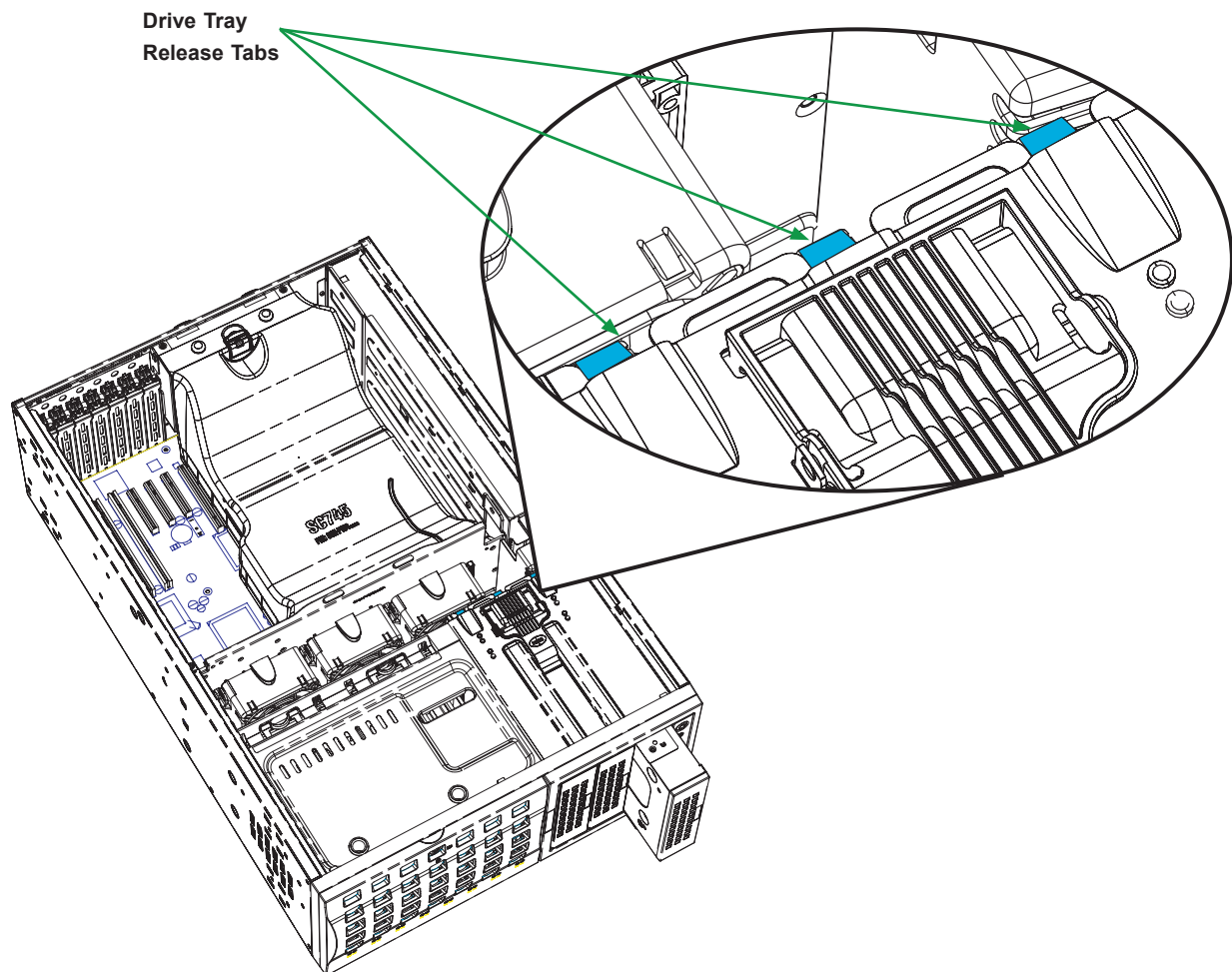


Figure 6-1. Removing a Drive Tray

Installing Storage Drive into a 5.25" Tray

One 3.5" drive or up to two 2.5" drives with an optional bracket (pn MCP-220-00044-0N) can be installed. An optional expansion card and cables are also required.

1. Remove the tray from the drive bay.
2. If installing a 3.5" drive, place the drive in the drive tray, and secure the drive to the tray with four screws from the bottom.

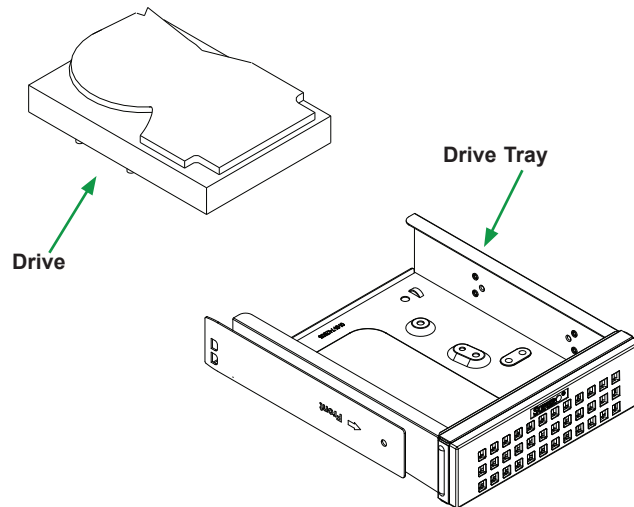


Figure 6-2. Installing a 3.5" Drive to the Drive Tray

3. If installing 2.5" drives, install one or two drives into the special purpose bracket, then secure the bracket to drive tray with screws through the bottom of the tray.

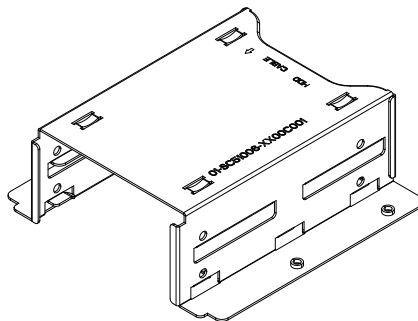


Figure 6-3. Special 2.5" Bracket

4. Slide the drive tray into the chassis until the tray clicks into place.
5. Connect the data and power cables for the new drive.
6. Replace the chassis cover and power up the system.

Installing a 5.25" Peripheral Drive

An optional peripheral device such as a DVD drive can be installed in a 5.25" bay.

1. Remove the tray from the drive bay.
2. Re-use the side rails from the tray and install them onto the peripheral device.

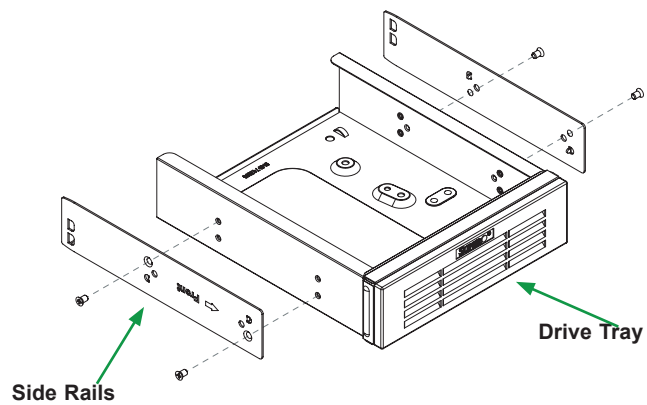


Figure 6-4. Removing Rails from the Drive Tray

3. Insert the new device in the slot until the tab locks in place.
4. Connect the data and power cable.
5. Reinstall the chassis cover and power up the system.

6.3 Intel Virtual RAID on CPU (VROC)

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

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

Requirements and Restrictions

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

Supported SSDs and Operating Systems

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

Additional Information

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

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

Hardware Key

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

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



Figure 6-5. Intel® VROC RAID Key and Motherboard Connector JRK1

Enabling NVMe RAID

RAID for NVMe SSDs must be enabled through the UEFI BIOS.

1. Install the patch as described in the Restrictions and Requirements section on a previous page.
2. Reboot the server.
3. Press [DEL] key to enter BIOS.
4. Switch to **Advanced > Chipset Configuration > North Bridge > IIO Configuration > Intel® VMD Technology > CPU1 & CPU2.**
5. **Enable** the VMD according to the following rules.
 - For U.2 NVMe, enable all the sub-items under each PStack, based on the your model server:

VMD BIOS Settings		
Model	CPU1	CPU2
740P-TR/TRT		

- For M.2 NVMe or NVMe AIC, enable the VMD according to which AOC card/slot it used.

Examples for some U.2 configurations follow.

6. Press [F4] to save the configuration and reboot the system.
7. Press [DEL] to enter BIOS.
8. Switch to **Advanced > Intel(R) Virtual RAID on CPU > All Intel VMD Controllers > Create RAID Volume.**
9. Set **Name**.
10. Set **RAID Level**.
11. If cross-controller RAID is required, select **Enable RAID spanned over VMD Controller** as shown in Figure 6-7.
12. Select specific disks for RAID with an [X].
 - RAID0: Select at least two [2 - 24] disks

Figure 6-6. BIOS VMD Settings

- RAID1: Select only two disks
 - RAID5: Select at least three [3 - 24] disks
 - RAID10: Select only four disks
13. Select **Strip Size** (Default 64KB).
 14. Select **Create Volume**.
 15. If another RAID is needed, start again at step 6.
 16. Press [F4] to save and reboot.

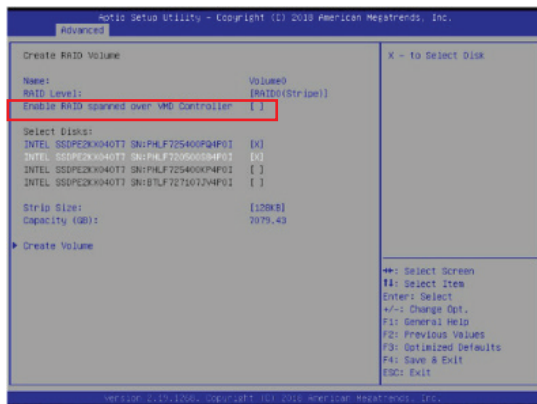


Figure 6-7. Created Volume *without* enabling RAID spanned over VMD controller

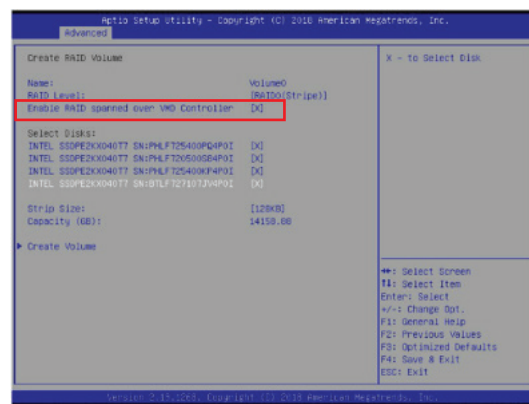


Figure 6-8. Created Volume *with* enabling RAID spanned over VMD controller

Status Indications

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

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

IBPI SFF 8489 Defined Status LED States

Hot-Swap Drives

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

Hot-unplug

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

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

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

Hot-plug

- Physically install the device.

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

Related Information Links

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

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

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

Chapter 7

Troubleshooting and Support

7.1 Information Resources

Website

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

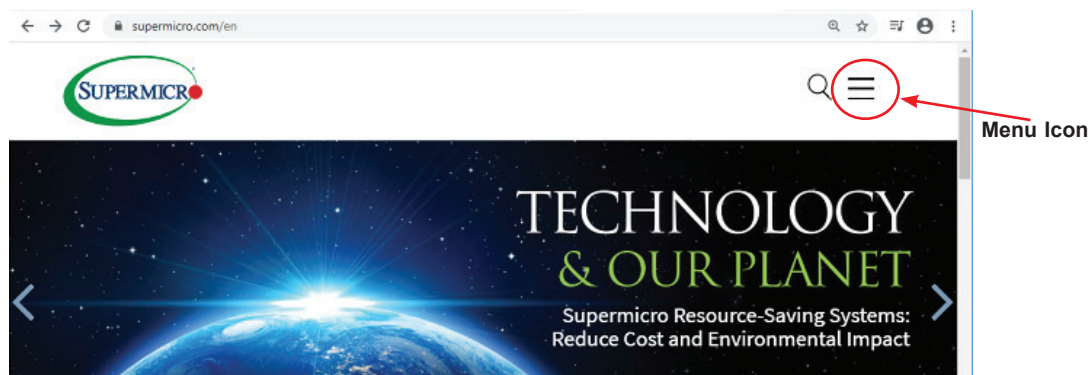


Figure 7-1. Supermicro Website

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

Direct Links for the 740P-TR/TRT System

[SYS-740P-TR/TRT](#) specifications page

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

[BPN-SAS3-743A Backplane Manual](#)

Direct Links for General Support and Information

[Frequently Asked Questions](#)

[Add-on card descriptions](#)

[TPM User Guide](#)

General Memory Configuration Guide: [X12](#)

[IPMI User Guide](#)

Direct Links (continued)

[SuperDoctor5 Large Deployment Guide](#)

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 Intelligent Platform Management Interface (IPMI)

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

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

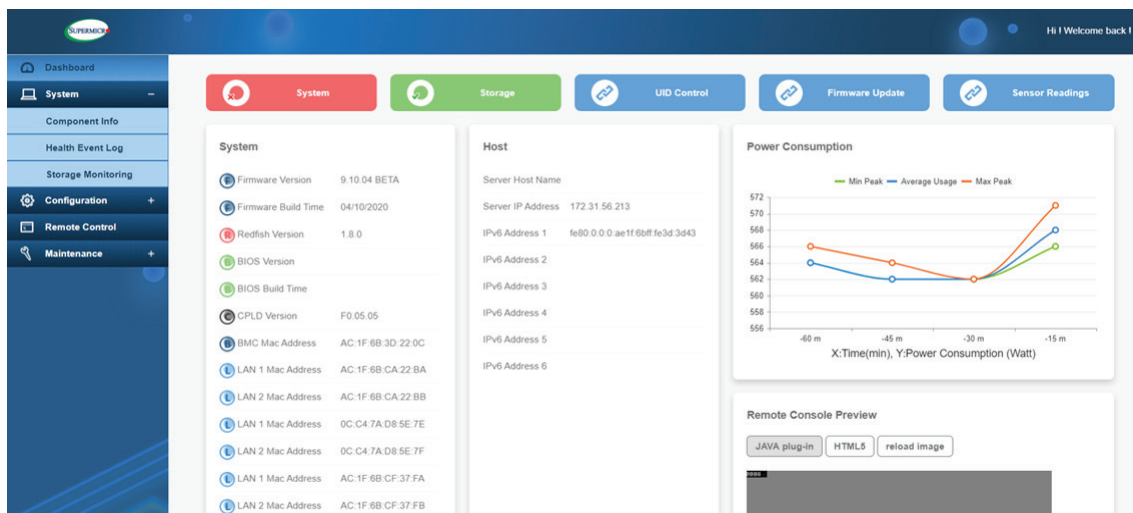


Figure 7-2. IPMI Sample

7.3 Troubleshooting Procedures

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

No Power

1. [Remove power](#) from the system.
2. Remove the server from the rack, if necessary, and place on a stable surface.

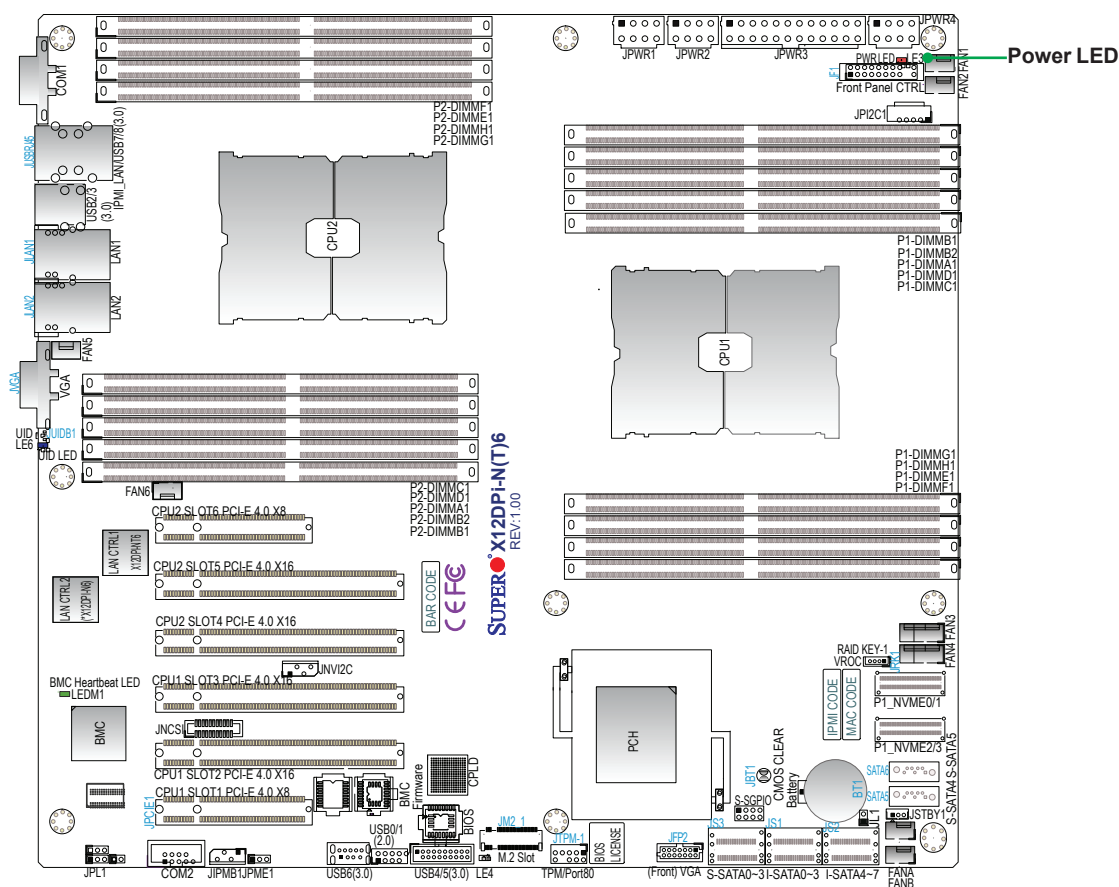


Figure 7-3. Location of the MB Power LED

3. Remove the tower [side cover](#).
4. Refer to the [cable routing diagram](#) and remove the front control panel connection on the motherboard LED to better see the power LED (LE3). See Figure 7-3.
5. Move aside any other cables obstructing the view of the power LED.

6. Reconnect the power cables to the server and power up the system.
7. As you try to power up the system, note any beep codes. Refer to the next section for details on [beep codes](#).
8. Check that the power LED on the motherboard is on.
9. Make sure that the power connector is connected to your power supply.
10. Make sure that no short circuits exist between the motherboard and chassis.
11. Disconnect all cables from the motherboard, including those for the keyboard and mouse.
12. Remove all add-on cards.
13. 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.
14. 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.
15. Verify that all jumpers are set to their default positions.
16. Check that the power supplies' input voltage operate at 100-120V or 180-240V.
17. Turn the power switch on and off to test the system

No Video

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

System Boot Failure

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

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

Memory Errors

1. Make sure that the DIMM modules are properly and fully installed.
2. Confirm that you are using the correct memory. Also, it is recommended that you use the same memory type and speed for all DIMMs in the system. See [Section 3.4](#) 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's 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 IPMI to make sure that the CPU and system temperatures are within the normal range. Also check the front panel Overheat LED and make sure that it is not on.

5. Adequate power supply: Make sure that the power supply provides adequate power to the system. Make sure that all power connectors are connected. Please refer to our website for more information on the minimum power requirements.
6. Proper software support: Make sure that the correct drivers are used.

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 7.3](#) 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 BIOS Error Beep (POST) Codes

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

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

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

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

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

Additional BIOS POST Codes

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

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

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

7.5 Crash Dump Using IPMI

In the event of a processor internal error (IERR) that crashes your system, you may want to provide information to support staff. You can download a crash dump of status information using IPMI. The IPMI manual is available at <https://www.supernmicro.com/solutions/IPMI.cfm>.

Check IPMI Error Log

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

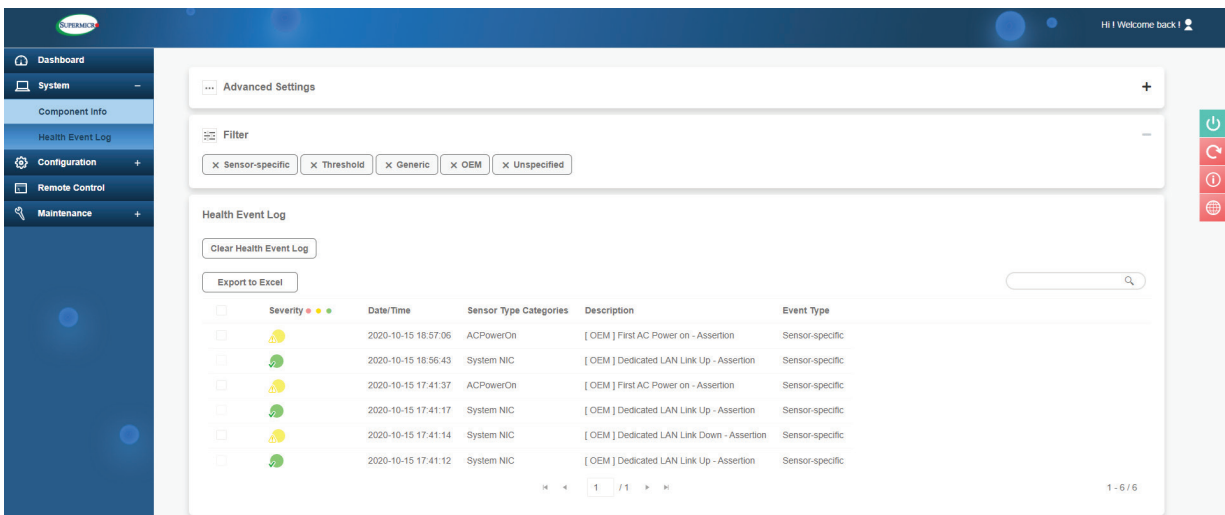


Figure 7-4. IPMI Event Log

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

7.6 UEFI BIOS Recovery

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

Overview

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

Recovering the UEFI BIOS Image

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

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

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

Recovering the Main BIOS Block with a USB Device

This feature allows the user to recover the main BIOS image using a USB-attached device without additional utilities used. A USB flash device such as a USB Flash Drive, or a USB CD/DVD ROM/RW device can be used for this purpose. However, a USB Hard Disk drive cannot be used for BIOS recovery at this time.

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

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

1. Using a different machine, copy the "Super.ROM" binary image file into the Root "\\" directory of a USB device or a writable CD/DVD.

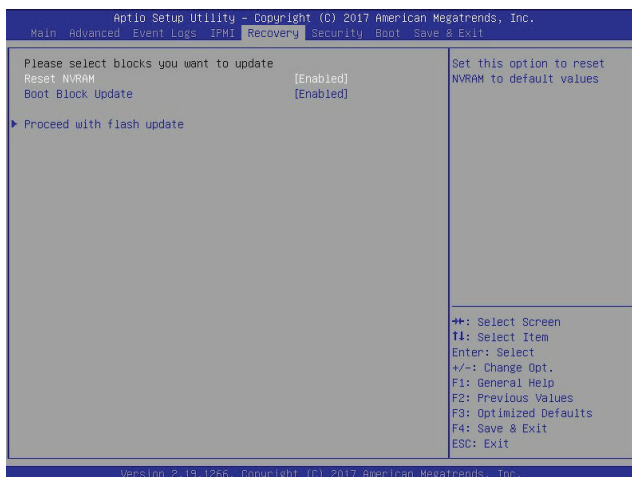
Note 1: If you cannot locate the "Super.ROM" file in your drive disk, visit our website at www.supermicro.com to download the BIOS package. Extract the BIOS binary image into a USB flash device and rename it "Super.ROM" for the BIOS recovery use.

Note 2: Before recovering the main BIOS image, confirm that the "Super.ROM" binary image file you download is the same version or a close version meant for your motherboard.

2. Insert the USB device that contains the new BIOS image ("Super.ROM") into your USB drive and reset the system when the following screen appears.
3. After locating the healthy BIOS binary image, the system will enter the BIOS Recovery menu as shown below.



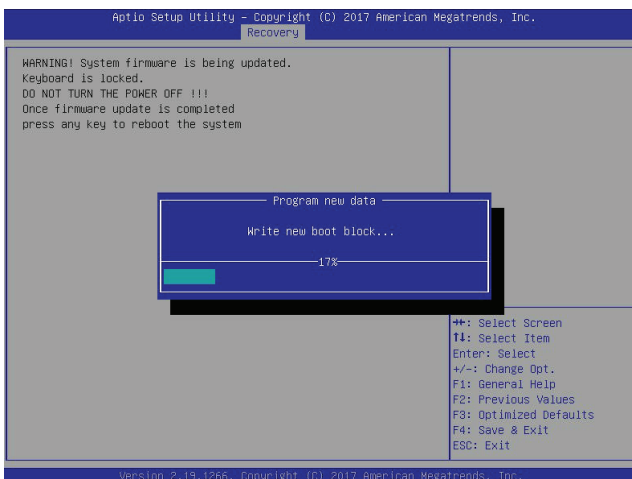
Note: At this point, you may decide if you want to start the BIOS recovery. If you decide to proceed with BIOS recovery, follow the procedures below.



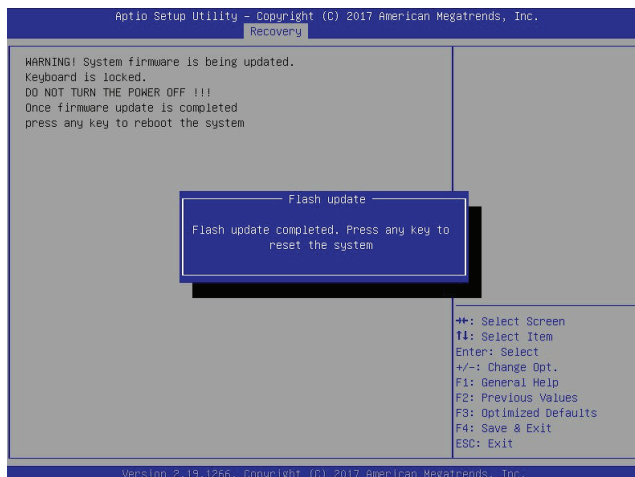
4. When the screen as shown above displays, use the arrow keys to select the item "Proceed with flash update" and press the <Enter> key. You will see the BIOS recovery progress as shown in the screen below.

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

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

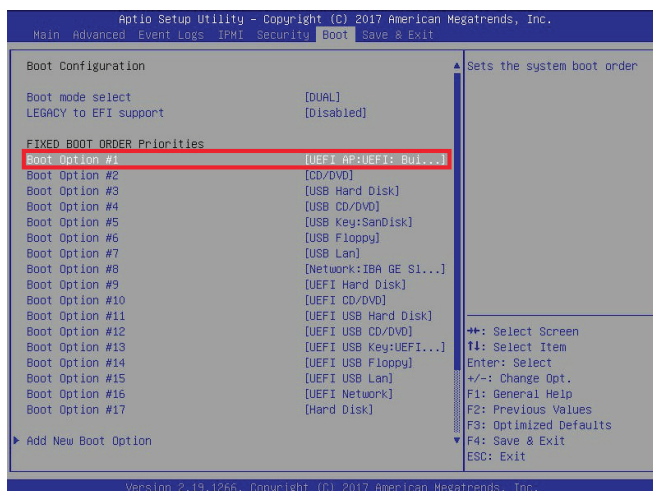


7. Press continuously during system boot to enter the BIOS Setup utility. From the top of the tool bar, select Boot to enter the submenu. From the submenu list, select Boot



Option #1 as shown below. Then, set Boot Option #1 to [UEFI AP:UEFI: Built-in EFI Shell]. Press <F4> to save the settings and exit the BIOS Setup utility.

8. When the UEFI Shell prompt appears, type fs# to change the device directory path. Go to the directory that contains the BIOS package you extracted earlier from Step 6. Enter flash.nsh BIOSname.### at the prompt to start the BIOS update process.



Note: *Do not interrupt this process* until the BIOS flashing is complete.

```

UEFI Interactive Shell v2.1
EDK II
UEFI v2.50 (American Megatrends, 0x0005000C)
Mapping table
  FS0: Alias(s):HD0:0B:BLK1:
      PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)/HD(1,MBR,0x37901D72,0x800,0x1
DR3592)
  BLK0: Alias(s):
      PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)
Press F8 in 1 seconds to skip startup.nsh or any other key to continue.
Shell> fs0:
FS0:\> cd \AFUDOS
FS0:\AFUDOS> cd SNIJPM2_03162017
FS0:\AFUDOS\SNIJPM2_03162017> flash.nsh X110PU7_314

```

9. The screen above indicates that the BIOS update process is complete. When you see the screen above, unplug the AC power cable from the power supply, clear CMOS, and plug

```

Done.
[ Access Cmos Port Ex ]
<Read>
Index 0x51: 0x10

Done.
*****
*
* Program BIOS and ME (including FDT) regions...
*
*****
| AMT Firmware Update Utility v5.09.01.1917 |
| Copyright (C)2017 American Megatrends Inc. All Rights Reserved. |
*****
CPUID = 50652

Reading flash ..... done
- ME Data Size checking - ok
- FFS checksums ..... ok
- Check RomLayout ..... Ok
Erasing Boot Block ..... done
Updating Boot Block ..... done
Verifying Boot Block ..... done
_Erasing Main Block ..... 0x00132000 (0x)

```

the AC power cable in the power supply again to power on the system.

10. Press continuously to enter the BIOS Setup utility.

```

Verifying NDB Block ..... done
- Update success for FDR
- Update success for IE
- Successful Update Recovery Loader to OPR!!
- Successful Update MFSBI!
- Successful Update FPR!!
- Successful Update MFS, IVBI and IVB2!!
- Successful Update FLOG and UTDK!!
- ME Entire Image update success !!
WARNING : System must power-off to have the changes take effect!
Moving FS0:\AFUDOS\SNIJPM2_03162017\Fdtv64.efi -> FS0:\AFUDOS\SNIJPM2_03162017\
dt1.smc
- [ok]
Moving FS0:\AFUDOS\SNIJPM2_03162017\afuef1x64.efi -> FS0:\AFUDOS\SNIJPM2_0316201
7\afuef1.smc
- [ok]
*****
* Please ignore this 'Shell: Cannot read from file - Device Error'
* warning message due to it does not impact flashing process.
*
*****
Deleting "Setup.nsh"
Delete successful.
FS0:\>

```

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

7.7 CMOS Clear

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

To Clear CMOS

1. First [power down](#) the system completely.
2. [Remove chassis side cover](#) to access the motherboard.
3. [Remove the onboard battery](#) from the motherboard.
4. Short the CMOS pads with a metal object such as a small screwdriver for at least four seconds.
5. Remove the screwdriver or shorting device.
6. Re-install the battery.
7. Replace the cover, reconnect the power cords and power on the system.

Notes: Clearing CMOS will also clear all passwords.

Do not use the PW_ON connector to clear CMOS.



JBT1 contact pads

7.8 Where to Get Replacement Components

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

7.9 Reporting an Issue

Technical Support Procedures

Before contacting Technical Support, please take the following steps. If your system was purchased through a distributor or reseller, please contact them for troubleshooting services. They have the best knowledge of your specific system configuration.

1. Please review the [Troubleshooting Procedures](#) in this manual and [Frequently Asked Questions](#) on our website before contacting Technical Support.
2. BIOS upgrades can be downloaded from our website. **Note:** Not all BIOS can be flashed depending on the modifications to the boot block code.
3. If you still cannot resolve the problem, include the following information when contacting us for technical support:
 - System, motherboard, and chassis model numbers and PCB revision number
 - BIOS release date/version (this can be seen on the initial display when your system first boots up)
 - System configuration

An example of a Technical Support form is posted on our [website](#). Distributors: For immediate assistance, please have your account number ready when contacting our technical support department by email.

Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online (<http://www.supermicro.com/support/rma/>).

Whenever possible, repack the chassis in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the chassis securely, using packaging material to surround the chassis so that it does not shift within the carton and become damaged during shipping.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Vendor Support Filing System

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

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

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

7.10 Feedback

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

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 اُجوة 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!

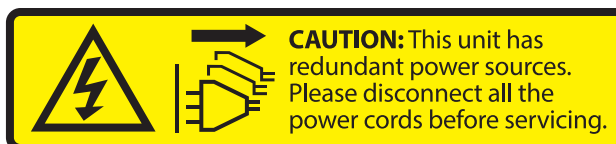
이 제품은 전원의 단락(과전류)방지에 대해서 전적으로 건물의 관련 설비에 의존합니다. 보호장치의 정격이 반드시 250V(볼트), 20A(암페어)를 초과하지 않도록 해야 합니다.

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、シャーシー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 châssis pour installer ou enlever des composants de système.

אזהרה מפני ניתוק חשמלי

אזהרה!

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

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

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 채시 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せん。

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

此装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 بها ف مناطق محظورة تم .

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

경고!

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

Waarschuwing

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

Battery Handling



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

電池の取り扱い

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

警告

電池更換不當會有爆炸危險。請只使用同類電池或制造商推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 فعلى
اسبدال البطارية
فقط بنفس النوع أو ما يعادلها مما أوصت به الشركة المصنعة
جخلص من البطاريات المسحومة وفقا لعمليات الشركة الصانعة

경고!

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

Waarschuwing

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

Redundant Power Supplies



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

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告

此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告

此装置连接的电源可能不只一个，必须切断所有电源才能停止对该装置的供电。

Warnung

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

¡Advertencia!

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

Attention

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

אם קיים יותר מספק אחד

אזהרה!

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

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة .

يجب إزالة كافة الاتصالات لعسل الوحدة عن الكهرباء

경고!

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

Waarschuwing

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

Backplane Voltage



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

バックプレーンの電圧

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

修理する際には注意ください。

警告

当系统正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告

當系統正在進行時，背板上危險的電壓或能量，進行維修時務必小心。

Warnung

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

¡Advertencia!

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

Attention

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

מתח בפנל האחורי

אזהרה!

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

העבודה.

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

경고!

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

Waarschuwing

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

Comply with Local and National Electrical Codes



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

地方および国の電気規格に準拠

機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告

设备安装必须符合本地与本国电气法规。

警告

設備安裝必須符合本地與本國電氣法規。

Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

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

Attention

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

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

تركيب المعدات الكهربائية يجب أن يمتثل للقوايه المحلية والبطية المتعلقة
بالكهرباء

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

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

Product Disposal



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

製品の廃棄

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

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

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

¡Advertencia!

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

Attention

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

סילוק המוצר

אזהרה!

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

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

경고!

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

Waarschuwing

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

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה!

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

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

경고!

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

Waarschuwing

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

Power Cable and AC Adapter



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

電源コードとACアダプター

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

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

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

AC ימאתמו מיילמשח מילבכ

!הרהזא

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

תאלבאלא אארשב מץ וא עדדחמלא וא ערפוטמלא תאליטוטלא מאדחטסאב מץ, גתנמלא בייקרת דנע לכלז יפ אמב עילחמלא עמאלסלא תאבלטתמו נינאוץב מאזתלאלא עמ דדרתמלא ראיטלא תאלוחמו עיזאברמלא קיירח וא לטע יפ בבסטטי דץ ירזא תאלוחמו תאלבאלא יא מאדחטסא. מילסלא סבאלאו לטוומלא מץח CSA וא UL לביק נמ ענדמתעמלא תאלבאלא מאדחטסא תאדעמלא עיזאברמלא עזחאלל עמאלסלא נונאק רזחי Supermicro לביק נמ עדדחמלא עינעמלא תאגתנמלא ריז עירזא תאדעמ יא עמ (UL/CSA) עמאלע למחתיטלאו

전원 케이블 및 AC 어댑터

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

다른 케이블이나 어댑터를 사용하면 오작동이나 화재가 발생할 수 있습니다. 전기 용품 안전법은 UL 또는 CSA 인증 케이블 (코드에 UL / CSA가 표시된 케이블)을 Supermicro가 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

Dual 3rd Gen Intel Xeon Scalable Processors in Socket P+ LGA 4189 with up to 38 cores and a thermal design power (TDP) of up to 270W

Note: Refer to the motherboard specifications pages on our website for updates to supported processors.

Chipset

Intel PCH C621A

BIOS

AMI BIOS

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

Memory

Supports up to 4 TB of 3DS LRDIMM/LRDIMM/3DS RDIMM/RDIMM DDR4 (288-pin) ECC memory with speeds of 3200/2933/2666 MHz (in 16 blue memory slots) and up to 4 TB of Intel Optane PMem 200 Series with speeds of up to 3200 MHz (in two black PMem slots)

Storage Drives

Eight hot-swap 3.5" SATA drives

Optional two fixed SATA or NVMe drives

Optional 5.25" DVD drive

PCI Expansion Slots

Two PCIe 4.0 x8 slots (CPU1 Slot1/CPU2 Slot6)

Four PCIe 4.0 x16 slots (CPU1 Slot2/CPU1 Slot3/CPU2 Slot4/CPU2 Slot5)

One PCIe 4.0 x4 M.2 slot (supports M-Key 2280 and 22110)

Two PCIe 4.0 x8 SlimSAS ports with support of two connections each port (P1-NVME 0/1, P1-NVME 2/3)

Networking

Two 10G Ethernet LAN ports supported by Intel X550 for X12DPi-NT6

Two 1G Ethernet LAN ports supported by Intel i350 for X12DPi-N6

One dedicated IPMI LAN located on the rear I/O panel (via AST2600 BMC)

Input/Output

COM: one rear serial COM port, one onboard serial COM header

SATA: eight I-SATA 3.0 ports, four S-SATA 3.0 ports, two S-SATA 3.0 ports with SuperDOM

VGA: one rear VGA port, one onboard VGA header

USB: four rear USB 3.0 ports, one onboard USB 2.0 header with two connections, one onboard USB 3.0 header with two connections, one onboard USB 2.0 Type-A header

Motherboard

X12DPi-N(T)6

Chassis

CSE-745BTS-R1K23BP

System Cooling

Three 8-cm internal hot-swappable fans, two external heavy-duty hot-swappable fans, two CPU heatsinks, one air shroud

Power Supply

Model: PWS-1K23A-SQ, 1200 W redundant modules, 80Plus Titanium level

AC Input

100-127 Vac, 9-7.5A, 50-60 Hz

200-240 Vac, 6-5A, 50-60 Hz

+12V

Max: 66.7 A, Min: 0 A (100 Vac–127 Vac)

Max: 83 A, Min: 0 A (200 Vac–240 Vac)

+5 V standby: Max: 4 A, Min: 0 A

Operating Environment

Operating Temperature: 10° to 40° 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)

Regulatory Compliance

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

Applied Directives, Standards

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

FCC Part 15

ICE-003

VCC 32-1

AS/NZS CISPR 32

EN55032

EN55035

CISPR 24

EN 61000-3-2

EN 61000-3-3

EN 61000-4-2

EN 61000-4-3

EN 61000-4-4

EN 61000-4-5

EN 61000-4-6

EN 61000-4-8

EN 61000-4-11

Green Environment:

2011/65/EU (RoHS Directive)

EC 1907/2006 (REACH)

2012/19/EU (WEEE Directive)

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

UL/CSA 60950-1, 62368-1 (USA and Canada)

IEC/EN 60950-1, 62368-1

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"