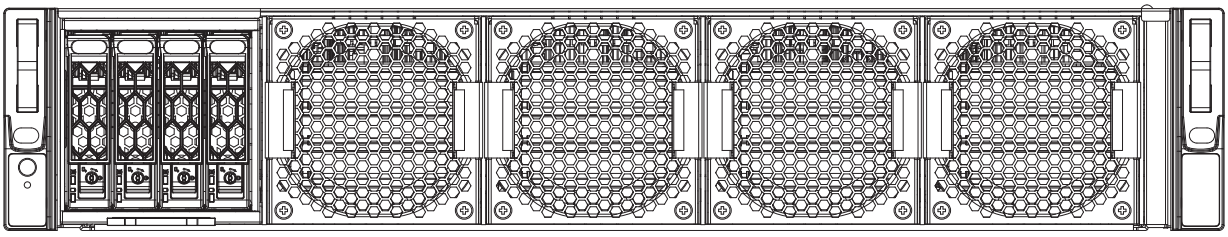
A+ Server
AS -2124GQ-NART
AS -2124GQ-NART+



USER'S MANUAL

Revision 1.0a

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Manual Revision 1.0a

Release Date: May 11, 2021

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 A+ Server . Installation and maintenance should be performed by experienced technicians only.

Please refer to the AS -2124GQ-NART/NART+ 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: www.supermicro.com/wdl/driver/AMD/SP3
- Product safety info: http://www.supermicro.com/about/policies/safety_information.cfm

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

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

Secure Data Deletion

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

Warnings

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

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

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

Contents

Chapter 3 Maintenance and Component Installation

Chapter 4 Motherboard Connections

Chapter 5 Software

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Chapter 1

Introduction

1.1 Overview

This chapter provides an outline of the functions and features of the AS -2124GQ-NART/NART+ A+ server. It is based on the H12DSG-Q-CPU6 motherboard and the CSE-228GTS-R000NP chassis. To maintain quality and integrity, this product is sold only as a completely-assembled system (with min, two CPUs, four DIMMs, four GPUs installed). Add on Cards (AOCs) are recommended to be installed by Supermicro due to optimized density of the 2U form factor. Service: OSNBD3 is highly recommended. In addition to the motherboard and chassis, several important parts that are included with the system are listed below.

Main Parts List		
Description	**Part Number**	**Quantity**
Power supply modules (AS -2124GQ-NART)	PWS-2K21G-2R	2
Power supply modules (AS -2124GQ-NART+)	PWS-3K02G-2R	2
Backplane	BPN-NVMe4-228N-S4	1
Add-on card for fan board	AOC-228G-FAN-P	1
Add-on card for PCIe transition from GPU backplane connectors to SlimSAS low-profile PCIe Gen 4 data cables (attach to the motherboard)	AOC-PCIE4-SXM4-Q-P	1
Add-on card for rear I/O ports	AOC-PIO-i2XT-P	1
GPU riser card with two PCIe 4.0 x16 slots	RSC-G-66G4	3
8-cm hotswap, counter-rotating fans	FAN-0197L4-1	4
Nvidia® Tesla® A100 baseboard with four SXM4 A100 mezzanine-style GPU modules (up to 400W TDP)	GPU-NVTHGX-A100-SXM4-4	1
Toolless motherboard air shrouds	MCP-310-22803-0N	1 each
Passive CPU heatsinks	SNK-P0063P	2
Passive GPU heatsinks	SNK-P4006PV	4
Black Gen3 hot-swap 2.5" HDD trays with lock	MCP-220-00178-0B	4
Rackmount rails	MCP-290-00144-1N	1 set

Note: the following safety models associated with the AS -2124GQ-NART/NART+ have been certified as compliant with UL: 228G-R22H12, 228G-H12, 228G-22, 228G-GPU.

1.2 Unpacking the System

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

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

1.3 System Features

The following table is an overview of the main features of the AS -2124GQ-NART/NART+ server.

System Features
Motherboard
H12DSG-Q-CPU6
Chassis
CSE-228GTS-R000NP
CPU
Dual AMD EPYC™ 7002/7003 Series Processors in SP3 sockets **Note:** AMD EPYC 7003 series processor support requires BIOS version 2.0 or newer.
Management Chipset
ASPEED A2600 BMC/IPMI management controller with enhanced security
Memory
Up to 8TB 3DS ECC DDR4-3200 SDRAM memory in 32 slots
Storage Drives
Four hot-swap 2.5" bays (SATA/NVMe Hybrid or SAS with optional HBA, SSD-only support, no HDDs)
Expansion Slots
Four PCIe x16 Gen 4 slots (low-profile) One PCIe x8 Gen 4 slot (low-profile) One mechanical LP slot for BBU/Supercap/CacheVault.
Power
AS -2124GQ-NART: Dual 2200W 80Plus Platinum modules with PMBus with Smart Power throttling AS -2124GQ-NART+: Dual 3000W 80Plus Platinum modules with PMBus with Smart Power throttling
Cooling
Four hot-swap 80-mm, counter-rotating PWM fans; one air shroud, two CPU heatsinks, four GPU heatsinks
Input/Output
I/O ports supported with AOC-PIO-i2XT-P add-on card: LAN: two RJ45 10GbE-aggregate host LAN ports, one RJ45 1GbE dedicated IPMI management port Two USB 3.0 ports One VGA port
Security
One TPM 2.0 header
Form Factor
2U rackmount, (WxHxD) 17.2 x 3.5 x 32.4 in. (437 x 89 x 823 mm)

1.4 Chassis Features

Control Panel

Power switches and status LEDs are located on the control panel on the front of the chassis.

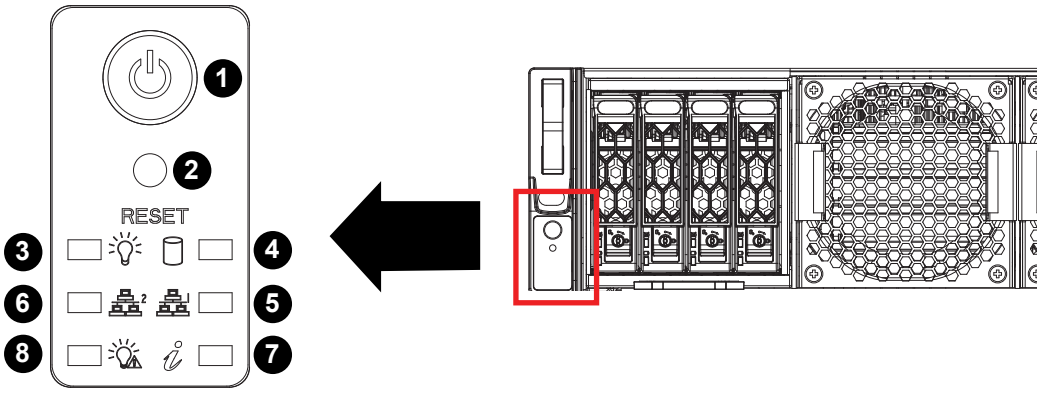


Figure 1-1. Control Panel

Control Panel Features		
Item	**Feature**	**Description**
1	Power button	The main power switch applies or removes primary power from the power supply to the server but maintains standby power. To perform most maintenance tasks, unplug the rear power cables completely from the system and wait 30 seconds for capacitors to discharge.
2	Reset button	Reboots the system.
3	Power LED	Indicates power is being supplied to the system power supply units. This LED is illuminated when the system is operating normally.
4	HDD LED	Indicates hard disk drive activity.
5	Network LED	Indicates network activity on LAN1 when flashing.
6	Network LED	Indicates network activity on LAN2 when flashing.
7	Information LED	Alerts operator to several states, as noted in the table below.
8	Power Fail LED	Indicates a power supply module has failed.

Information LED	
Status	**Description**
Continuously on and red	An overheat condition has occurred. (This may be caused by cable congestion.)
Blinking red (1Hz)	Fan failure, check for an inoperative fan.
Blinking red (0.25Hz)	Power failure, check for a non-operational power supply.
Solid blue	UID has been activated locally to locate the server in a rack environment.
Blinking blue	UID has been activated using IPMI to locate the server in a rack environment.

System: Front View

The illustration below shows the features included on the front of the chassis. Externally accessible hard drive carriers display status lights.

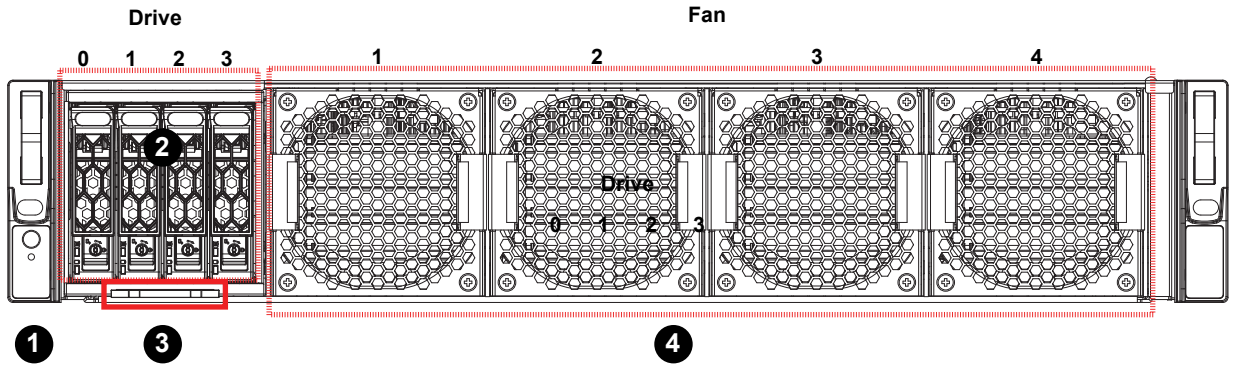


Figure 1-2. System Front View

Front System Features		
Item	**Feature**	**Description**
1	Control Panel	Described in previous section
2	Hard Drives	Four 2.5" NVMe/SATA or SAS hot-swap storage drive bays (with optional HBA)
3	Pull-out Tag	Pull-out service tag feature. Useful for barcode, RFID, or other custom system markings.
4	System Cooling Fans	Front grille with hot-swappable system cooling fans

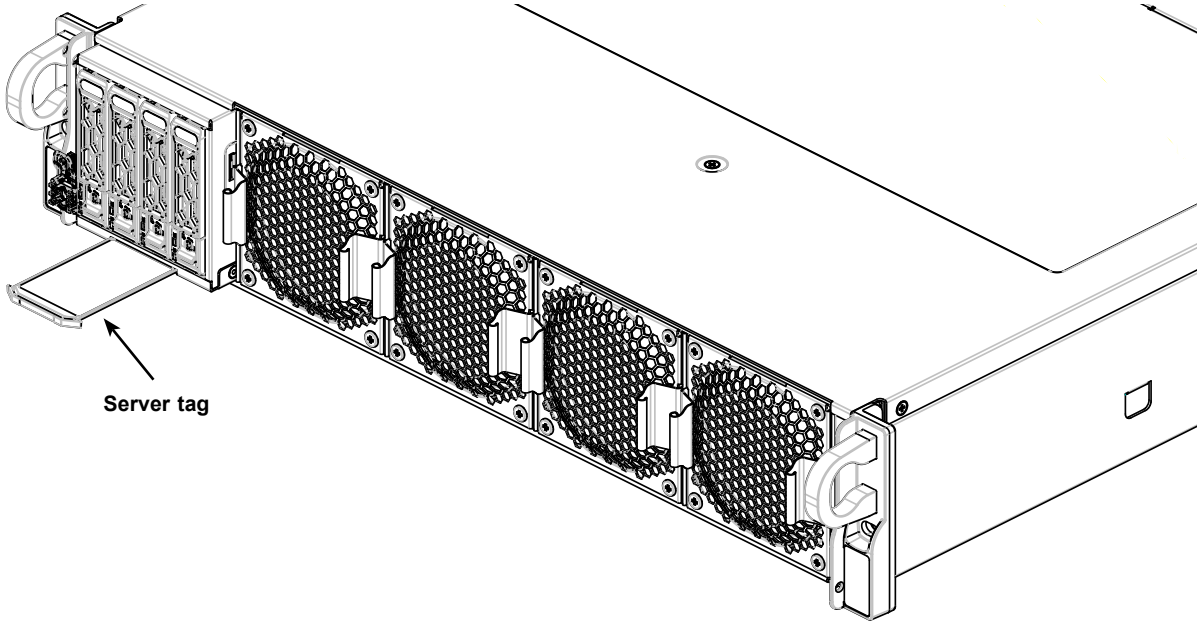


Figure 1-3. Location of the BMC Password Label

System: Rear View

The illustration below shows the features on the rear of the chassis.

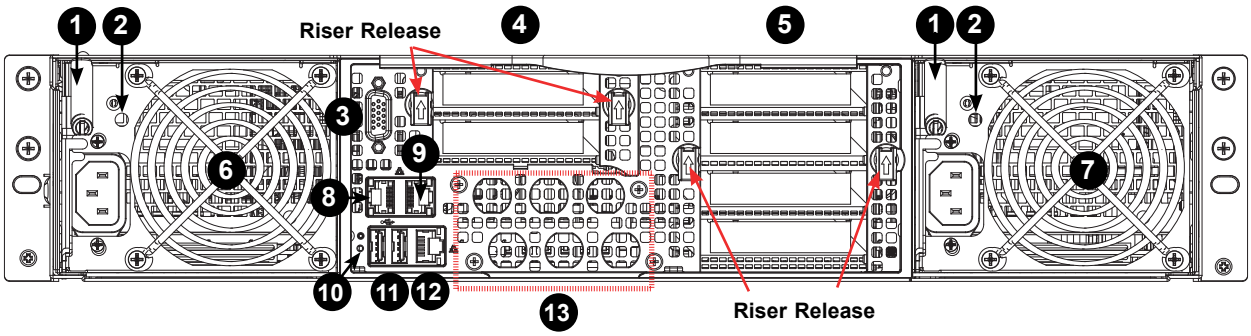


Figure 1-4 System Rear View

Rear System Features		
Item	**Feature**	**Description**
1	PSU Latch	Power supply release latch
2	PSU LED	Power supply LED
3	VGA	VGA video port
4	Slots 1-2	Top to bottom: slots 1, 2 (see table below for PCIe capability)
5	Slots 3-6	Top to bottom: slots 3, 4, 5, 6 (see table below for PCIe capability)
6	PSU1	Hot swappable power supply #1
7	PSU2	Hot swappable power supply #2
8	LAN1 (10G)	10Gigabit-aggregate Ethernet LAN port #1
9	LAN2 (10G)	10Gigabit-aggregate Ethernet LAN port #2
10	UID	UID Button and LED
11	USB1/USB2	USB1 and USB2 ports (USB3.0)
12	IPMI	IPMI LAN port (for Remote Management)
13	Cooling Ports	Liquid cooling ports (optional system SKU, not available as add-on)

Riser Card/PCIe Slot Locations		
Slot Location (# above)	**Riser Card**	**Description**
4 (slots 1,2*)	RSC-G-66GR #1	PCIe Gen4 x8 (in a x16 slot, upper slots only)
5 (slots 3,4,5,6)	RSC-G-66GR #2 & #3	PCIe Gen4 x16 (upper and lower slots)

*Slot 2 is slot for optional BBU and bracket (mechanical only).

1.5 System Architecture

Data Plane Block Diagram

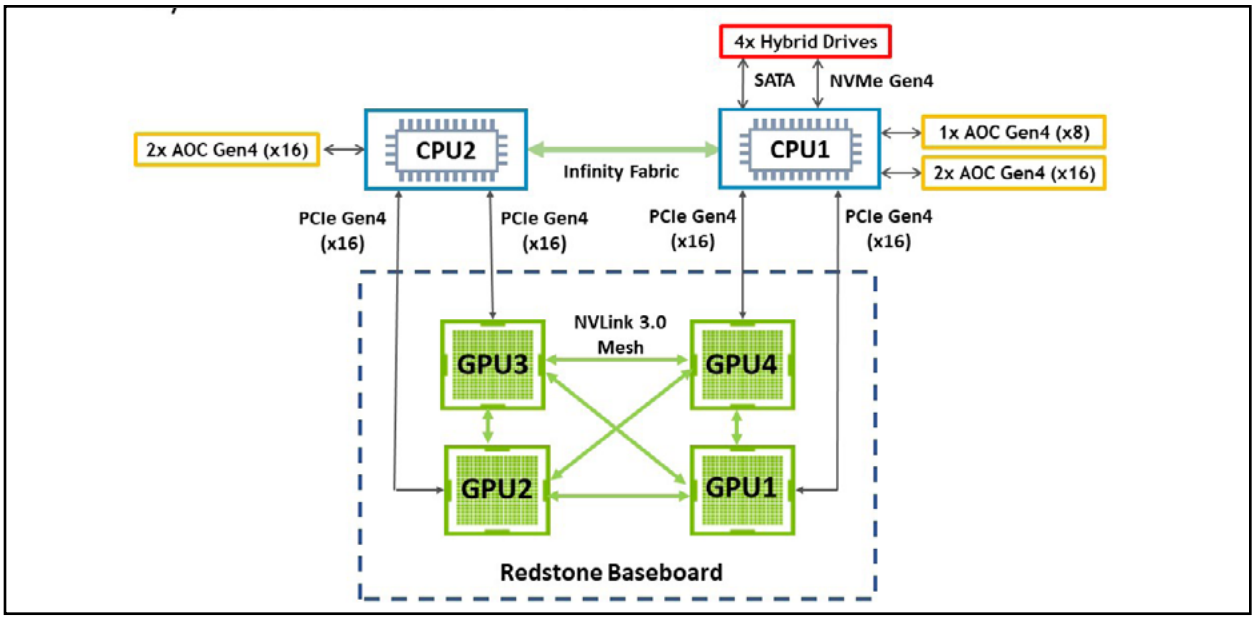


Figure 1-5. System Architecture Block Diagram: Data Plane

Note: the GPU numbering in the figure above is based on IPMI numbering. See the GPU mapping table for more info.

Motherboard Block Diagram

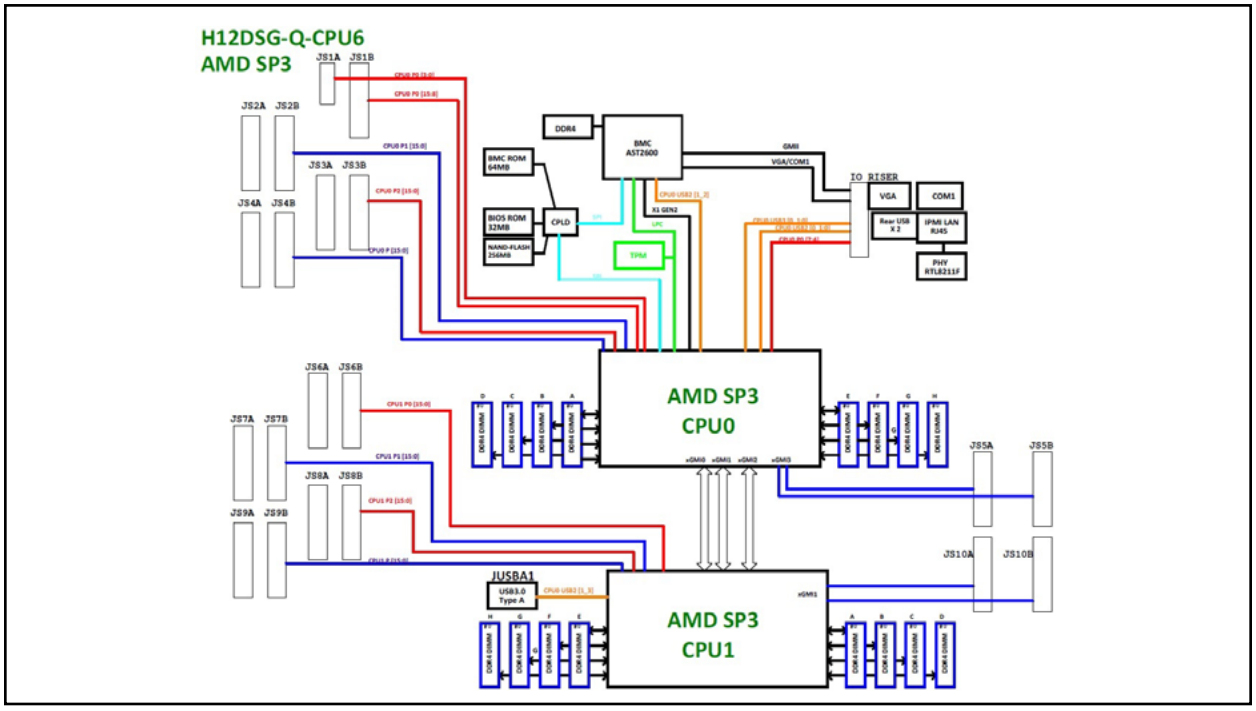


Figure 1-6. Motherboard Block Diagram

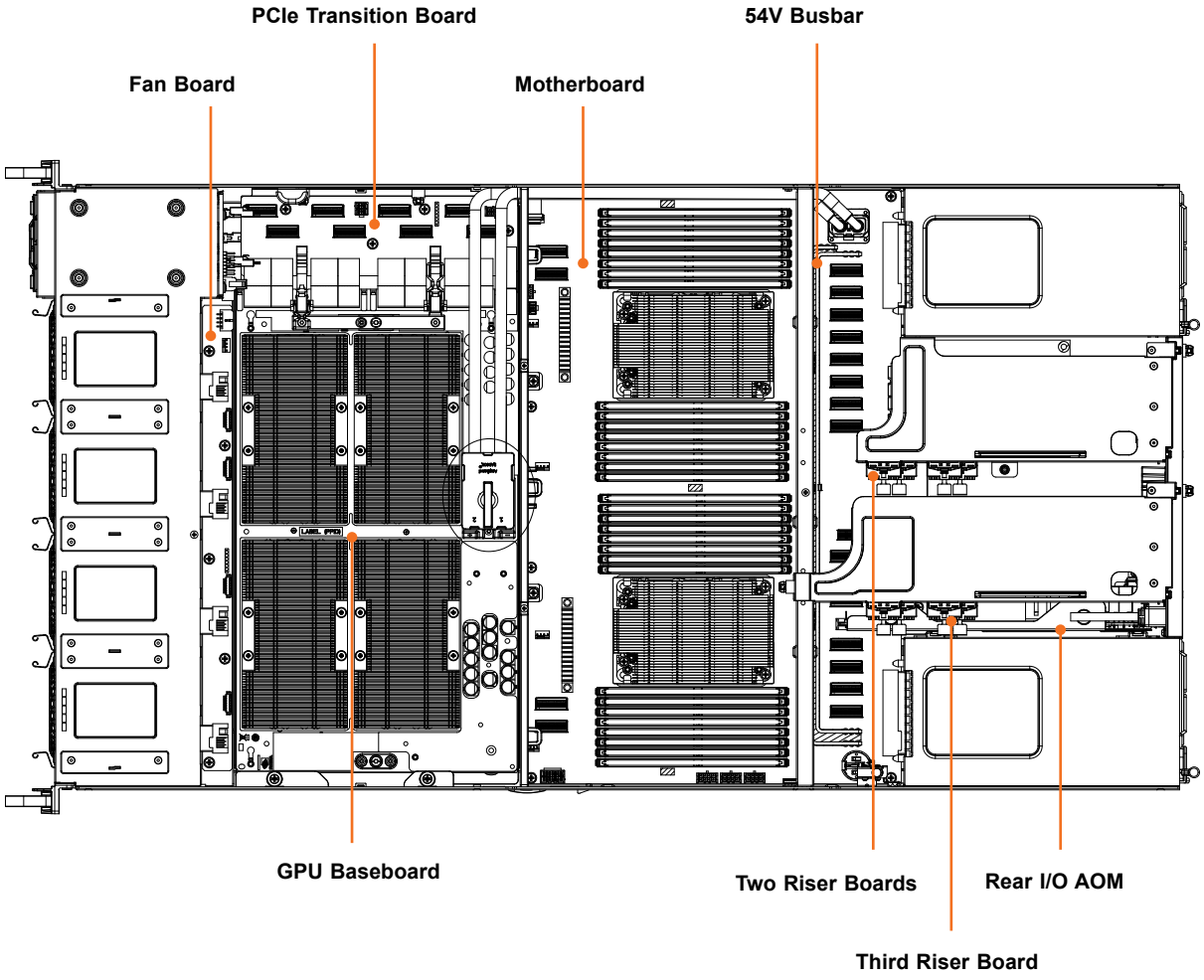


Figure 1-7. Board Locations

1.6 Motherboard Layout

Below is a layout of the H12DSG-Q-CPU6 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.

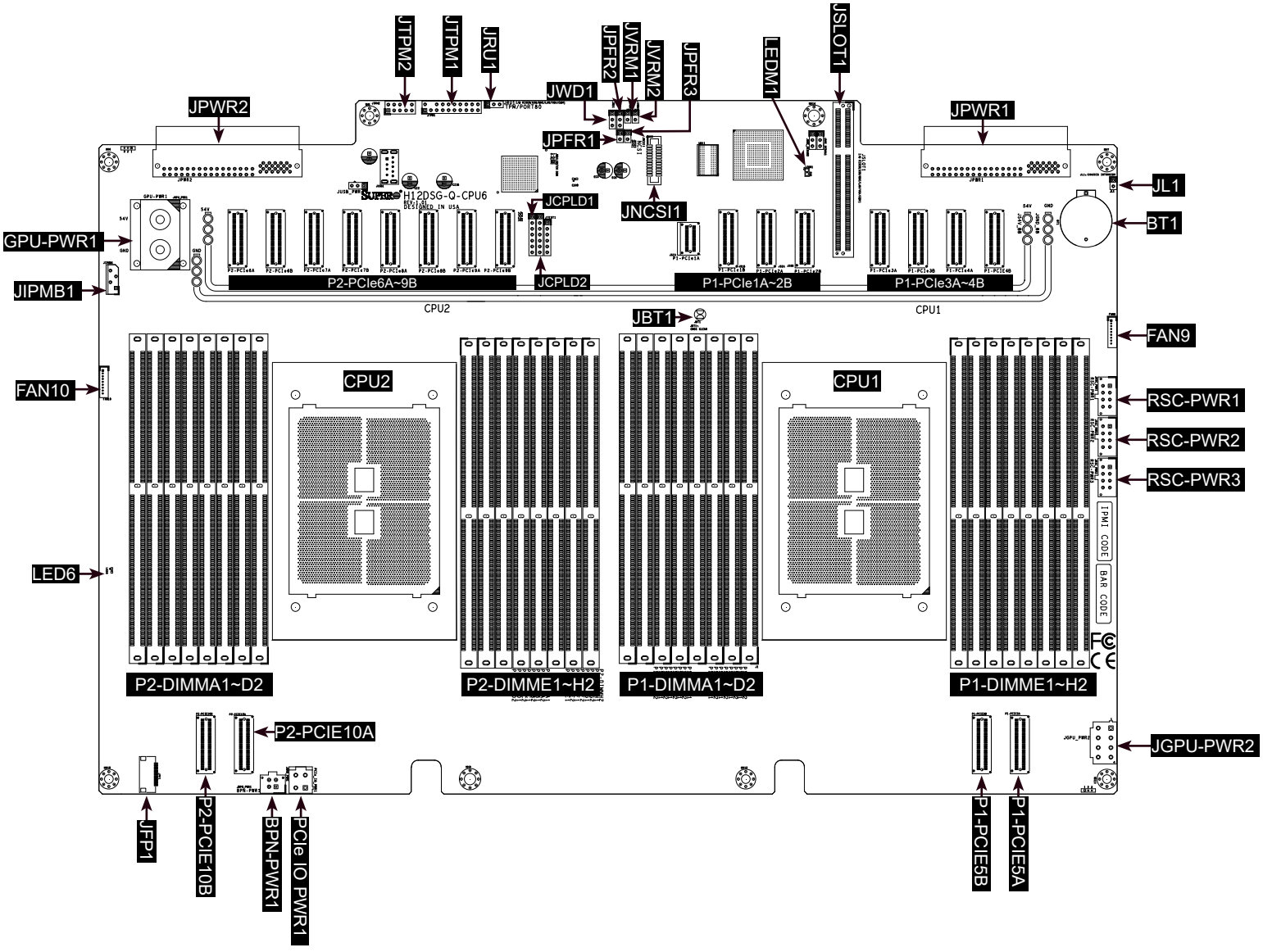


Figure 1-8. Motherboard Layout

Quick Reference Table

Jumper	Description	Default Setting
JBT1	CMOS Clear	Open (Normal)
JWD1	Watch Dog	Pins 1-2 (Reset)
JPFR1	Manufacture Mode	Open (Normal)
JPFR3	PFR Function	Open (Normal)

LED	Description	Status
LEM1	BMC Heartbeat LED	Green: Blinking (BMC Normal) Green: Fast blinking (BMC Initializing)
LED6	Power LED	Solid Green: Power On

Connector	Description
JIPMB1	4-pin External I^2C Header (for an IPMI Card)
BT1	Onboard Battery
JSLOT1	Supermicro I/O Riser Slot (AOM-PIO-i2XT)
P1-PCIE1A/JS1A	Processor 1 SATA Ports
P1-PCIE1B / JS1B P1-PCIE2A / JS2A P1-PCIE2B / JS2B P1-PCIE3A / JS3A P1-PCIE3B / JS3B P1-PCIE4A / JS4A P1-PCIE4B / JS4B P1-PCIE5A / JS5A P1-PCIE5B / JS5B	Processor 1 PCIe 4.0 x8. See Cable Mapping Table for more info on GPU and riser slots.
P2-PCIE6A / JS6A P2-PCIE6B / JS6B P2-PCIE7A / JS7A P2-PCIE7B / JS7B P2-PCIE8A / JS8A P2-PCIE8B / JS8B P2-PCIE9A / JS9A P2-PCIE9B / JS9B	Processor 2 PCIe 4.0 x8. See Cable Mapping Table for more info on GPU and riser slots.
P2-PCIE10A / JS10A P2-PCIE10B / JS10B	Processor 2 NVMe Ports
FAN9~FAN10	9-pin Pump Headers
JCPLD1	Complex-Programmable Logical Device (CPLD) Header
JFP1	Front Control Panel Header 1
JNCSI1	NCSI
JL1	Chassis Intrusion Header
JCPLD2	Complex-Programmable Logical Device (CPLD) Header
GPU PWR1	54V 2-pin Power Connector for Redstone GPU

Connector	Description
GPU-PWR2	Power for GPU Card
RSC-PWR1~3	Power for Riser Cards RSC-G-66G4
PCIe_IO_PWR1	Power for PCIe Transition Board AOM-PCIE-SXM4-Q
BPN-PWR1	Power for SATA/NVMe Backplane BPN-NVMe4-228N-S4
JTPM1	Trusted Platform Module/Port 80 Connector
JTPM2	Trusted Platform Module (SPI, reserved)

Note: Jumpers in the table not described are for manufacturing testing purposes only and are not covered in this manual.

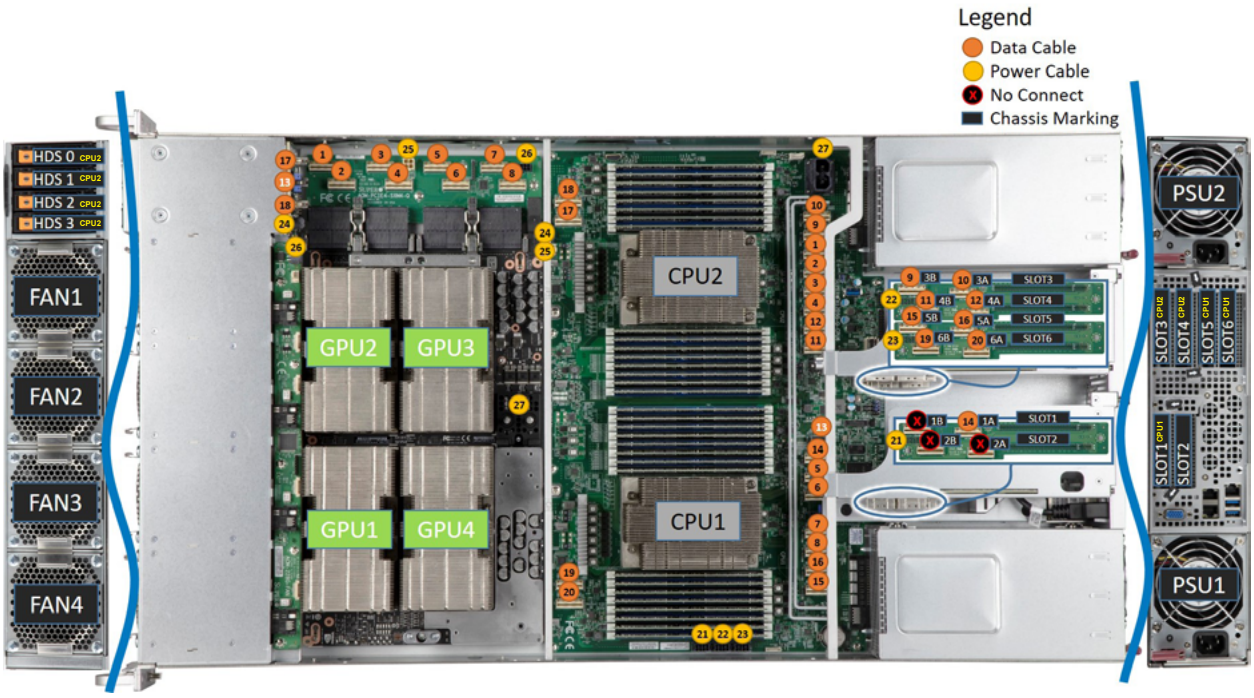


Figure 1-9. Cable Mapping Guide

Note: the GPU numbering in the figure above is based on IPMI numbering. See the GPU mapping table for more info.

GPU Mapping Table			
IPMI Numbering	**IPMI Address**	**Linux OS Numbering**	**Linux OS Address**
GPU1	0x98	GPU2	:81.00.00
GPU2	0x9A	GPU3	:C1.00.00
GPU3	0x9C	GPU1	:41.00.00
GPU4	0x9E	GPU0	:01.00.00

Power Cable Mapping Table				
Cable#	**Cable Part Number**	**Length**	**Description**	**Function**
21	CBL-PWEX-1114-30	30cm	Microfit 2x4	Riser Slot1,2 12V Power
22	CBL-PWEX-1094-43	43cm	Microfit 2x4	Riser Slot3,4 12V Power
23	CBL-PWEX-1094-43	43cm	Microfit 2x4	Riser Slot5,6 12V Power
24	CBL-PWEX-1093-36	36cm	Microfit 2x2	Backplane 12V/5V Power
25	CBL-PWEX-1092-23	23cm	Microfit 2x2	PCIe Trans Brd 12V/5V Power
26	CBL-PWEX-1114-30	30cm	Microfit 2x4	Fan Board 48V/3.3V Power
27	CBL-PWEX-1096-43	43cm	Radsok SurLok to Amphe-D	54V GPU Baseboard Power

Data Cable Mapping Table						
Cable #	**Cable P/N**	**Length**	**Lanes**	**MB Connector Name: Reference Designator**	**CPU**	**Function**
1	CBL-SAST-1262LP-85	62cm	x8	P2-PCIE7A: JS7A	CPU2	GPU1 (IPMI)
2	CBL-SAST-1262LP-85	62cm	x8	P2-PCIE7B: JS7B	CPU2	GPU1 (IPMI)
3	CBL-SAST-1262LP-85	62cm	x8	P2-PCIE8A: JS8A	CPU2	GPU2 (IPMI)
4	CBL-SAST-1262LP-85	62cm	x8	P2-PCIE8B: JS8B	CPU2	GPU2 (IPMI)
5	CBL-SAST-1266LP-85	66cm	x8	P1-PCIE2A: JS2A	CPU1	GPU3 (IPMI)
6	CBL-SAST-1266LP-85	66cm	x8	P1-PCIE2B: JS2B	CPU1	GPU3 (IPMI)
7	CBL-SAST-1266LP-85	66cm	x8	P1-PCIE3A: JS3A	CPU1	GPU4 (IPMI)
8	CBL-SAST-1266LP-85	66cm	x8	P1-PCIE3B: JS3B	CPU1	GPU4 (IPMI)
9	CBL-SAST-1224LP-85	24cm	x8	P2-PCIE6B: JS6B	CPU2	Riser Slot 3B
10	CBL-SAST-1224LP-85	24cm	x8	P2-PCIE6A: JS6A	CPU2	Riser Slot 3A
11	CBL-SAST-1216LP-85	16cm	x8	P2-PCIE9B: JS9B	CPU2	Riser Slot 4B
12	CBL-SAST-1216LP-85	16cm	x8	P2-PCIE9A: JS9A	CPU2	Riser Slot 4A
13	CBL-SAST-1272-100	72cm	x4	P1-PCIE1A: JS1A	CPU1	Backplane SATA 0-3
14	CBL-SAST-1216LP-85	16cm	x8	P1-PCIE1B: JS1B	CPU1	Riser Slot 1A
15	CBL-SAST-1224LP-85	24cm	x8	P1-PCIE4B: JS4B	CPU1	Riser Slot 5B
16	CBL-SAST-1224LP-85	24cm	x8	P1-PCIE4A: JS4A	CPU1	Riser Slot 5A
17	CBL-SAST-1228LP-85	28cm	x8	P2-PCIE10A/NVMe/VPP: JS10A	CPU2	Backplane NVMe 0,1
18	CBL-SAST-1228LP-85	28cm	x8	P2-PCIE10B/NVMe: JS10B	CPU2	Backplane NVMe 2,3
19	CBL-SAST-1259LP-85	59cm	x8	P1-PCIE5B/NMVe: JS5B	CPU1	Riser Slot 6B
20	CBL-SAST-1259LP-85	59cm	x8	P1-PCIE5A/NMVe/Vpp: JS5A	CPU1	Riser Slot 6A

1.7 Where to Get Replacement Components

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

1.8 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.

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 4 for details on installing those specific components.

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

2.2 Preparing for Setup

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

Choosing a Setup Location

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

Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are extended to the floor so that the full weight of the rack rests on them.

- In single rack installations, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a server or other component from the rack.
- You should extend only one server or component at a time - extending two or more simultaneously may cause the rack to become unstable.

Server Precautions

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

Rack Mounting Considerations

Ambient Operating Temperature

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

Airflow

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

Mechanical Loading

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

Circuit Overloading

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

Reliable Ground

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

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

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

2.3 Rack Mounting Instructions

This section provides information on installing the chassis into a rack unit with the rails provided. There are a variety of rack units on the market, which may mean that the assembly procedure will differ slightly from the instructions provided. You should also refer to the installation instructions that came with the rack unit you are using. **Note:** This rail will fit a rack between 28" and 33.5" deep.

Overview of the Rack Rails

The package includes two rail assemblies. Each is specifically designed for the left or right side of the chassis, and so marked. Each rail consists of two sections: a front section which secures to the front post of the rack and a rear section which adjusts in length and secures to the rear post of the rack.

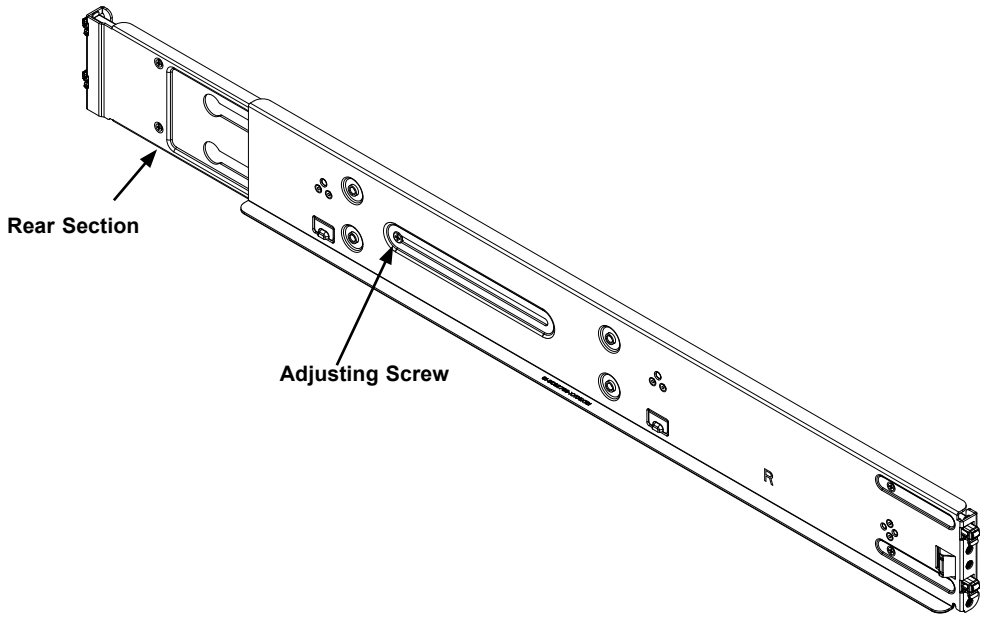


Figure 2-1. Rackmount Rail
(Right rail assembly shown)

Adjusting the Rail Length

Each rail assembly has a locking screw to adjust the length of the rail to fit the depth of your rack.

Installing the Rails on a Rack

1. Loosen the adjusting screw to allow the rear section to slide in the front section.
2. Push the small hooks on the front section of the rail into the holes on the front post of the rack and then down, until the spring-loaded pegs snap into the rack holes. Secure the rail to the rack with screws.
3. Pull out the rear section of the outer rail, adjusting the length until it fits within the posts of the rack and align the small hooks with the appropriate holes on the rear post of the rack. Be sure the rail is level, then mount the rear section onto the rack. Secure the rail with screws.
4. Tighten the adjusting screw.

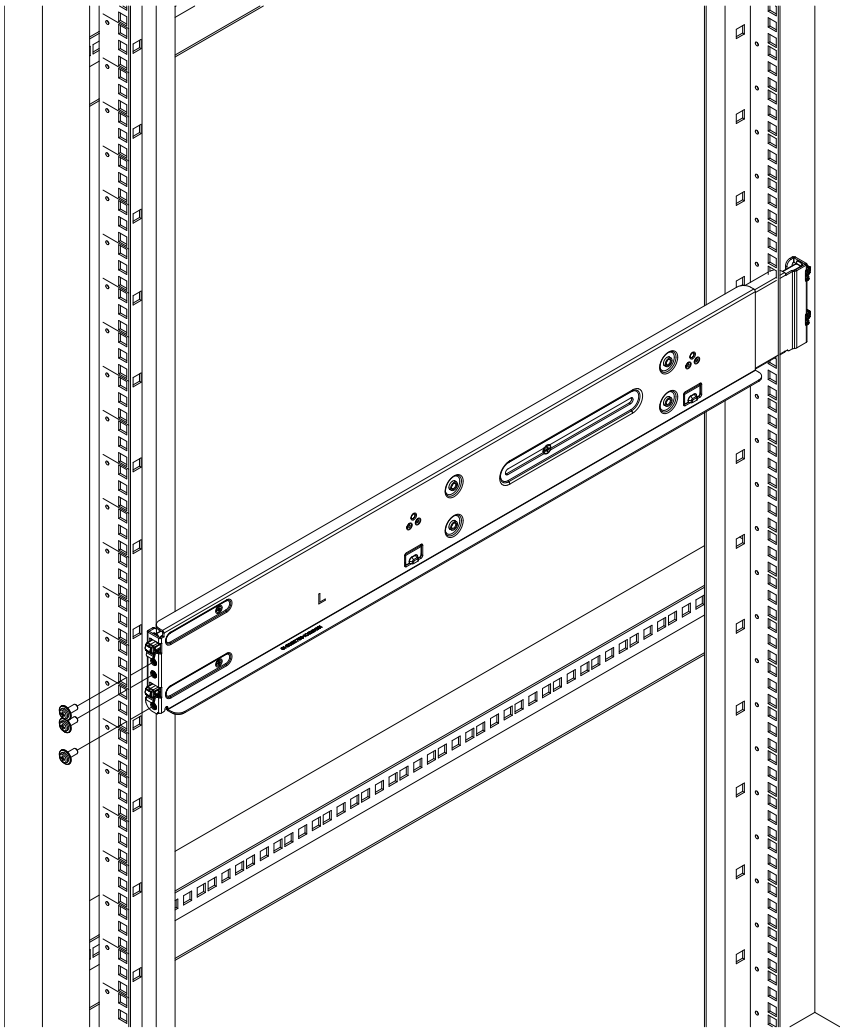


Figure 2-2. Attaching the Rail Front to the Rack
(Left rail shown)

Note: Figures are for illustrative purposes only. Always install servers into racks from the bottom up.

Chassis Installation

Slide the chassis into the rack so that the bottom of the chassis slides onto the bottom lip of the rails.

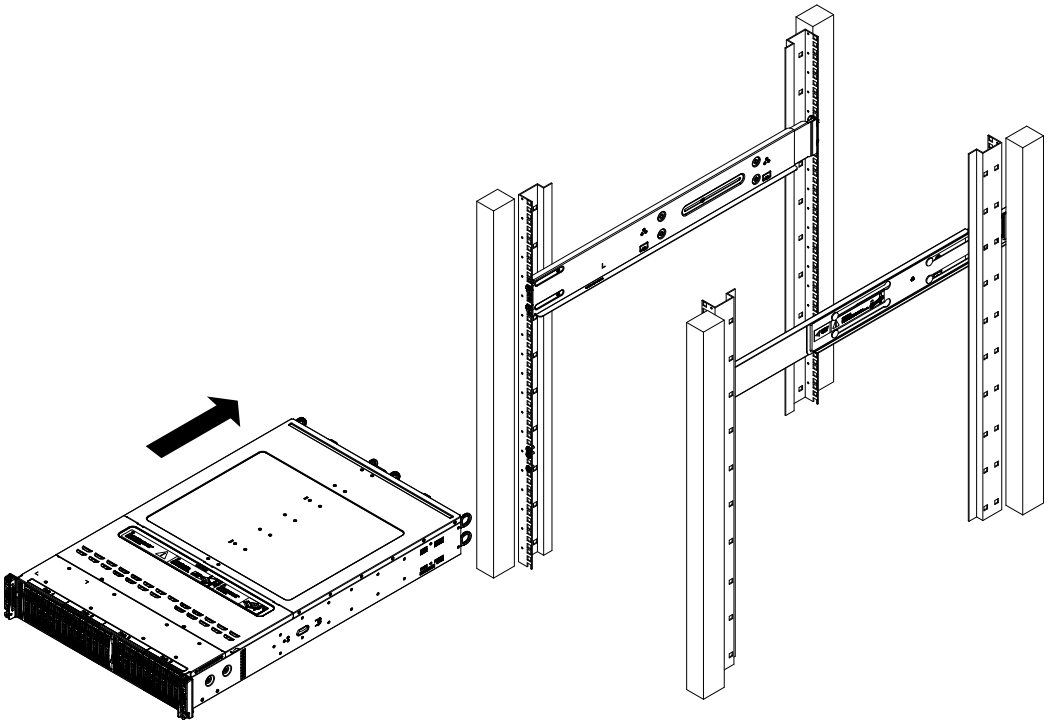


Figure 2-3. Sliding the Chassis into the Rack

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

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

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

Chapter 3

Maintenance and Component Installation

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

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

3.1 Removing Power

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

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

3.2 Accessing the System

The CSE-228GTS has a removable two-piece top cover that allows access to the components.

Check that all ventilation openings in the chassis are clear and unobstructed.

Removing the Top Cover

1. Remove the four screws on the sides and one screw on the top of the front-facing cover to release and remove it from the chassis.
2. Remove the two screws on the sides and three screws on the top of the rear-facing cover to release and remove it from the chassis.
3. Push the rear top cover towards the rear of the unit, which will separate the two top covers. Now each top cover can be removed by lifting them up.

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

Caution: High voltage (54V) is present in the system.

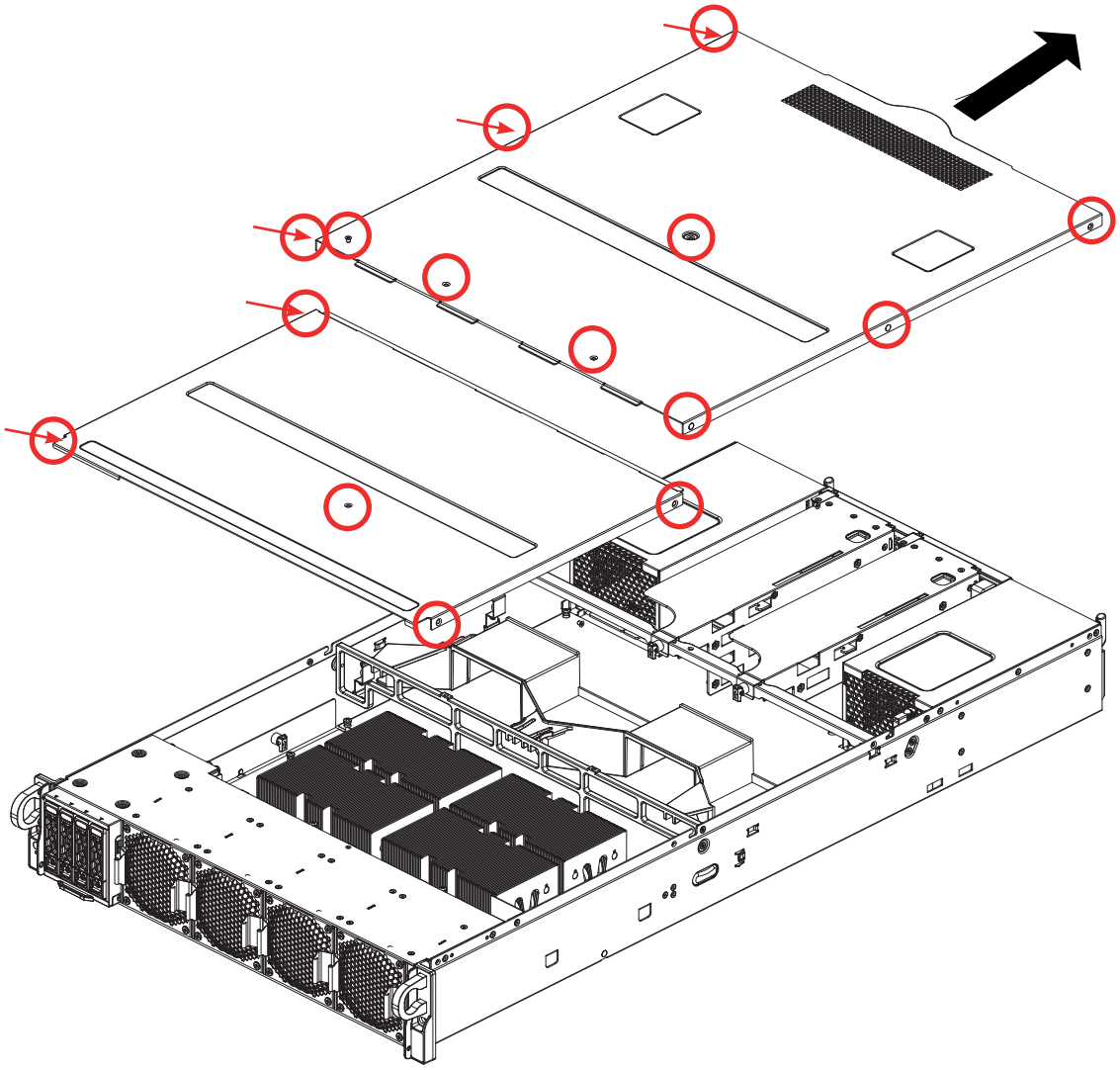


Figure 3-1. Removing the Chassis Cover

3.3 Motherboard Components

Processor and Heatsink Installation

Cautions:

- When handling the processor (CPU) package, avoid placing direct pressure on the label area of the CPU or CPU socket.
- Improper CPU installation or socket misalignment can cause serious damage to the CPU or motherboard which may result in RMA repairs.
- Take all standard precautions to avoid electrostatic discharge (ESD) which can damage components.
- Read thoroughly and follow all instructions.

Notes:

- The motherboard should be installed into the chassis first and the processor should be installed into the CPU socket before you install a CPU heatsink.
- If you bought a CPU separately, make sure that you use a Supermicro-designed heatsink only.
- When receiving a motherboard without a processor pre-installed, make sure that the plastic CPU socket cap is in place and none of the socket pins are bent; otherwise, contact your retailer immediately.
- Refer to the Supermicro website for updates on CPU support.

Installing the Processor and Heatsink

Begin by removing power from the system as described in Section 3.1.

1. Use a Torx T20 driver to loosen the screws holding down Force Frame in the sequence of 3-2-1. The screws are numbered on the Force Frame next to each screw hole. Tighten to 16.1 kgf-cm (14 lbf-in) of torque.
2. The spring-loaded Force Frame will raise up after the last screw (#1) is removed. Gently allow it to lift up to its stopping position.

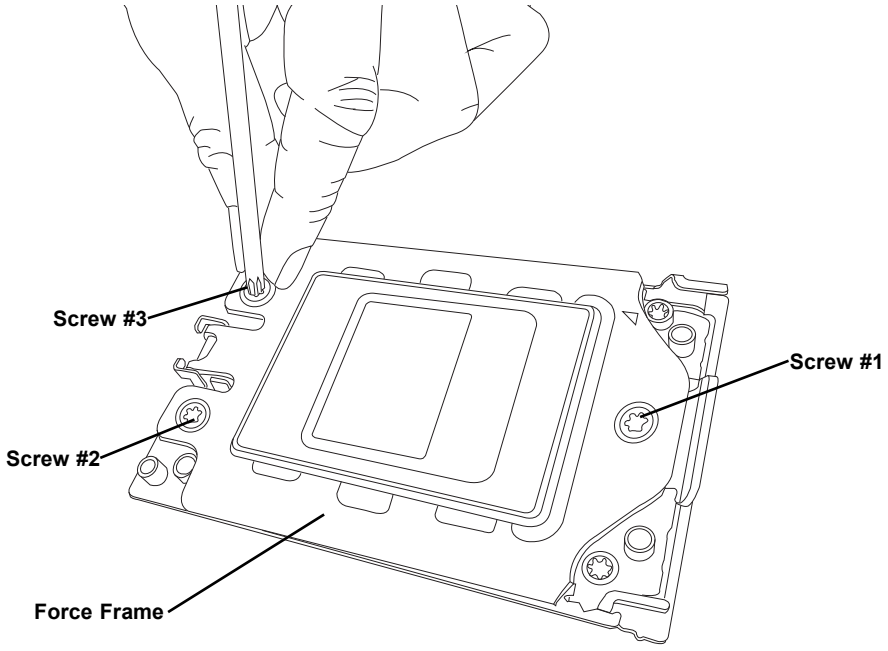


Figure 3-2. Removing the Processor Force Frame

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

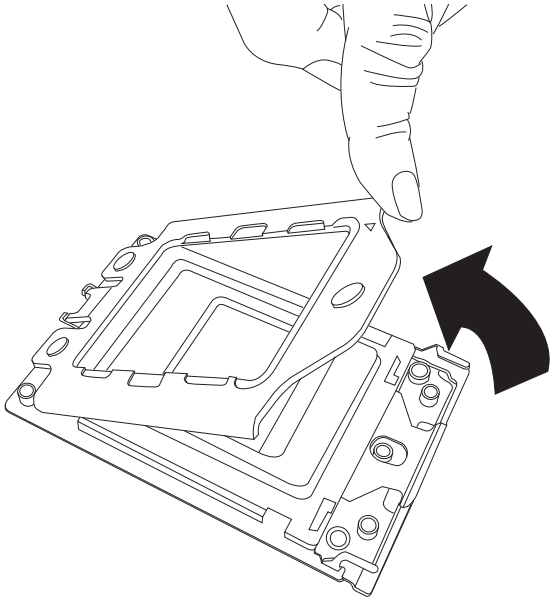


Figure 3-3. Raising the Force Frame

of removing the External Cap.

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

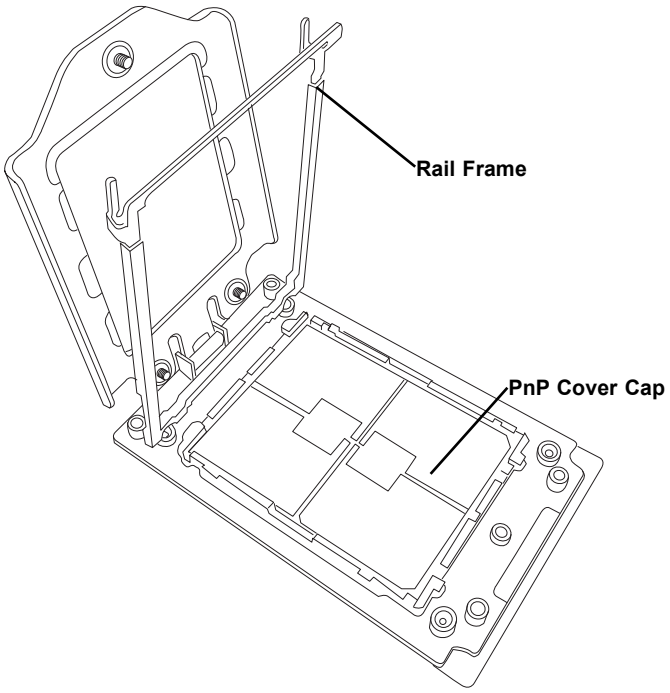


Figure 3-4. Lifting the Rail Frame

4. Remove the External Cap from the Rail Frame by pulling it upwards through the rail guides on the Rail Frame.

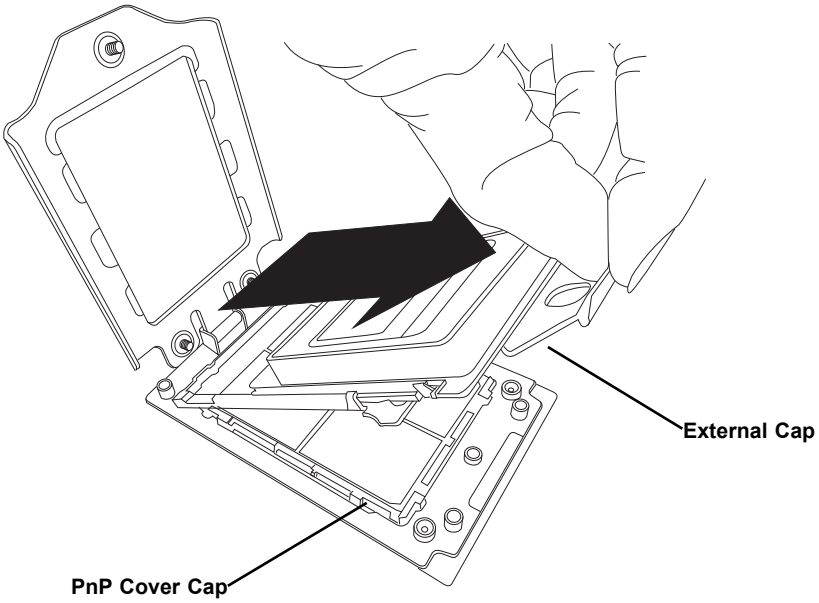


Figure 3-5. Removing the External Cap

5. The CPU Package is shipped from the factory with the green Carrier Frame pre-assembled. Grip the handle of the Carrier Frame/CPU Package assembly from its shipping tray, and while gripping the handle, align the flanges of the Carrier Frame onto the rails of the Rail Frame so its pins will be at the bottom when the Rail Frame is lowered later.

6. Slide the Carrier Frame/CPU Package downwards to the bottom of the Rail Frame. Ensure the flanges are secure on the rails as you lower it downwards.

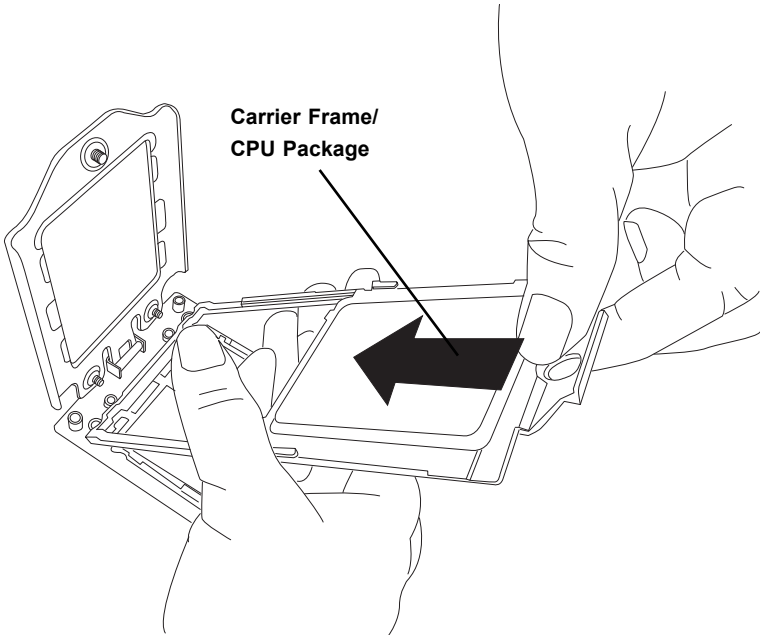


Figure 3-6. Inserting the Carrier Frame/CPU Package

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

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

Caution: The exposed socket contacts are extremely vulnerable and can be damaged easily. Do not touch or drop objects onto the contacts and be careful removing the PnP Cover Cap and when placing the Rail Frame over the socket.

8. Gently lower the Rail Frame down onto the socket until the latches on the Rail Frame engage with the Socket housing. and it rests in place. Do not force it into place!

9. Gently lower the Force Frame down onto the Rail Frame and hold it in place until it is seated in the Socket housing. Note that the Force Frame is spring loaded and has to be held in place before it is secured.

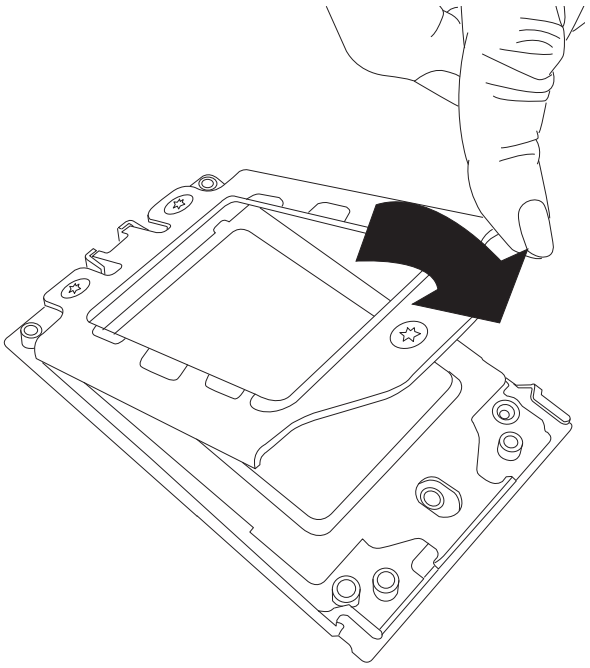


Figure 3-7. Lowering the Force Frame

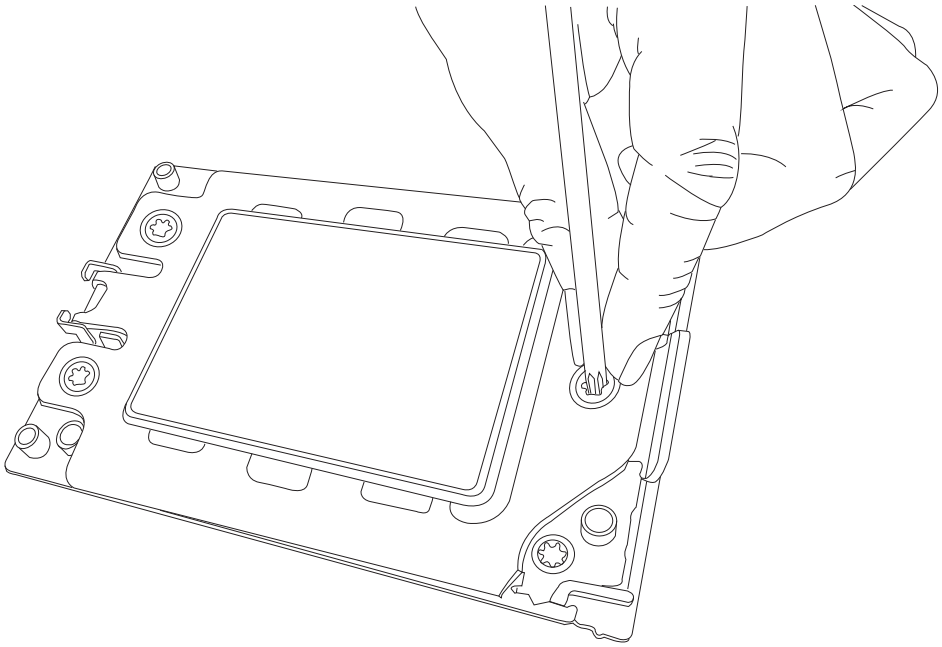


Figure 3-8. Securing the Force Frame

10. Replace the screws in the order 1-2-3, tightening to 16.1 kgf-cm (14 lbf-in) of torque. The Force Frame secures both the Rail Frame and CPU Package.

Caution: Tightening must be executed in proper 1-2-3 sequence to avoid causing catastrophic damage to the socket or CPU Package.

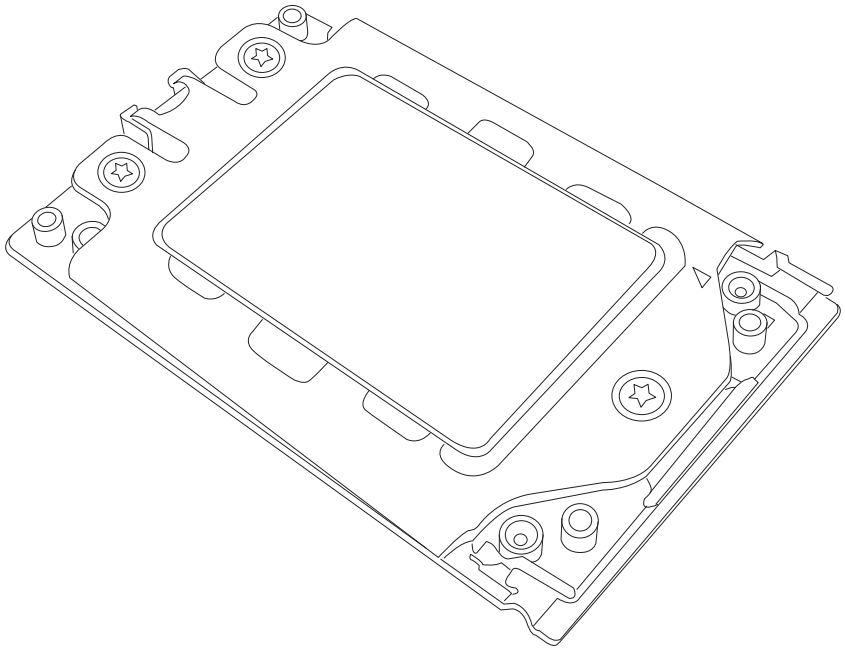


Figure 3-9. The Force Frame Secured

11. Lower the heatsink down till it rests securely on CPU Package over the four screw holes on the socket frame. **Note:** your heatsink may look different than that shown here.

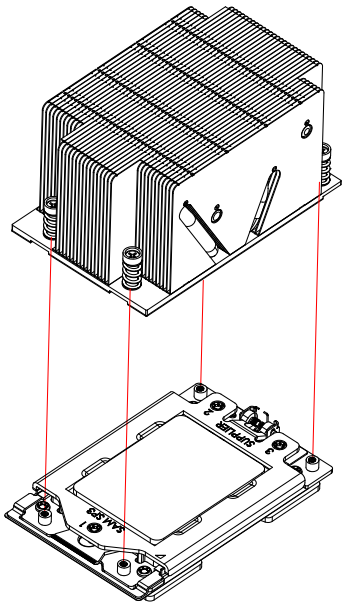


Figure 3-10. Mounting the Heatsink

12. Using a diagonal pattern (as numbered below) and a Torx T20 driver, tighten the four heatsink screws evenly to 16.1 kgf-cm (14.0 lbf-in) of torque.

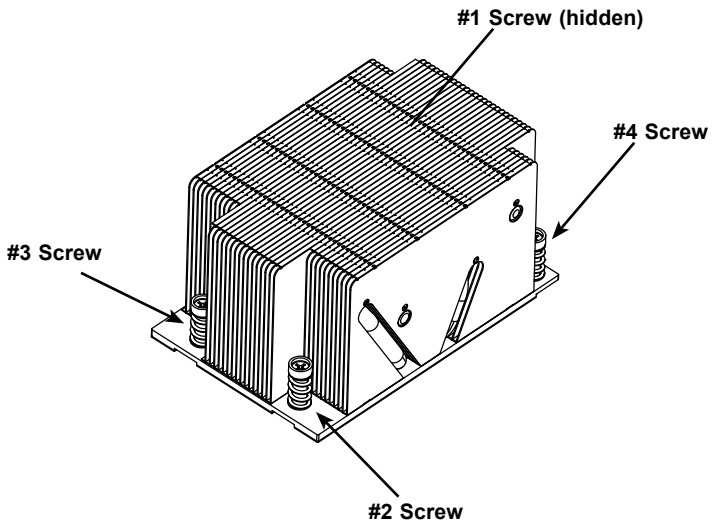


Figure 3-11. Securing the Heatsink

The processor and heatsink installation is complete. Repeat this procedure for any remaining CPU sockets on the motherboard.

Removing the Processor and Heatsink

We do not recommend removing the heatsink. If necessary, please follow the instructions below to prevent damage to the CPU or the CPU socket.

Note: Wait for the heatsink to cool down before removing it.

1. Remove the heatsink attached to the top of the CPU package by reversing the installation procedure.
2. Clean the thermal grease left by the heatsink on the CPU package lid to limit the risk of it contaminating the CPU package land pads or contacts in the socket housing.
3. Reverse the procedure for installing the force frame onto the socket, unscrewing the plate in the 3-2-1 screw ordern then lifting the force frame to the vertical position.
4. Lift the rail frame using the lift tabs near the front end of the rail frame. Note that the rail frame is spring loaded, so be careful lifting it up into a vertical position.
5. Grip the handle of the carrier frame and pull upwards to extract it from the rail frame. Return the carrier frame/CPU package to its original shipping container.
6. Grip the handle on the external cap and return it to the rail frame sliding it downwards until it rests in the frame.
7. Gripping the rail frame, rotate it downwards till it rests above and locks over the socket housing in its horizontal position.
8. Push and rotate down the force frame till it is over the external cap and rail frame into a horizontal position.
9. While holding down the force frame, secure it back to the socket frame by securing screw 1 in place. Note that it is not necessary to tighten down screws 2 and 3 without a CPU package in place.

Memory Installation

Note: Check the Supermicro website for recommended memory modules.

Important: Exercise extreme care when installing or removing DIMM modules to prevent any possible damage.

Memory Support

The H12DSG-Q-CPU6 supports up to 8TB of ECC DDR4 3200 MHz speed, RDIMM/ LRDIMM/3DS/NVDIMM memory in 32 slots. Refer to the tables below for additional memory information.

Processors and their Corresponding Memory Modules	
Number of DIMMs	**Memory Population Sequence**
4	P1-DIMMA2 / P2-DIMMA2 / P1-DIMMB2 / P2-DIMMB2
8	P1-DIMMA2 / P2-DIMMA2 / P1-DIMMB2 / P2-DIMMB2 / P1-DIMMC2 / P2-DIMMC2 / P1-DIMMD2 / P2-DIMMD2
16	P1-DIMMA2 / P2-DIMMA2 / P1-DIMMB2 / P2-DIMMB2 / P1-DIMMC2 / P2-DIMMC2 / P1-DIMMD2 / P2-DIMMD2 / P1-DIMME2 / P2-DIMME2 / P1-DIMMF2 / P2-DIMMF2 / P1-DIMMG2 / P2-DIMMG2 / P1-DIMMH2 / P2-DIMMH2
24	P1-DIMMA2 / P2-DIMMA2 / P1-DIMMB2 / P2-DIMMB2 / P1-DIMMC2 / P2-DIMMC2 / P1-DIMMD2 / P2-DIMMD2 / P1-DIMME2 / P2-DIMME2 / P1-DIMMF2 / P2-DIMMF2 / P1-DIMMG2 / P2-DIMMG2 / P1-DIMMH2 / P2-DIMMH2 P1-DIMMA1 / P2-DIMMA1 / P1-DIMMB1 / P2-DIMMB1 / P1-DIMMC1 / P2-DIMMC1 / P1-DIMMD1 / P2-DIMMD1
32	(All slots populated)

Populating RDIMM/RDIMM 3DS/LRDIMM/LRDIMM 3DS DDR4 Memory Modules with 7002 Processors					
Type	**DIMM Population**		**Maximum DIMM Capacity (GB)**		**Maximum Frequency (MHz)**
	DIMM1	**DIMM2**	**1 Channel**	**8 Channel**	
RDIMM		1R	32GB	256GB	3200
	1R	1R	64GB	512GB	2933
		2R or 2DR	64GB	512GB	3200
	1R	2R or 2DR	96GB	768GB	2933
	2R or 2DR	2R or 2DR	128GB	1TB	2933
LRDIMM dual die package		4DR	128GB	1TB	3200
	4DR	4DR	256GB	2TB	2933
LRDIMM 3DS		2S2R	128GB	1TB	3200
		2S4R	256GB	2TB	3200
	2S2R	2S2R	256GB	2TB	2933
	2S2R	2S4R	384GB	3TB	2933
	2S4R	2S4R	512GB	4TB	2933
3DS RDIMM		2S2R	128GB	1TB	2933
	2S2R	2S2R	256GB	2TB	2666
		2S4R	256GB	2TB	2933
	2S2R	2S4R	384GB	3TB	2666
	2S4R	2S4R	512GB	4TB	2666

DIMM Module Population Sequence

When installing memory modules, the DIMM slots should be populated in the following order: DIMMA2, DIMMB2, DIMMC2, DIMMD2, DIMME2, DIMMF2, DIMMG2, DIMMH2, then DIMMA1, DIMMB1, DIMMC1, DIMMD1, DIMME1, DIMMF1, DIMMG1, DIMMH1.

- The blue slots must be populated first.
- Always use DDR4 DIMM modules of the same type, size and speed.
- Mixed DIMM speeds can be installed. However, all DIMMs will run at the speed of the slowest DIMM.
- The motherboard will support odd-numbered modules (1 or 3 modules installed). However, to achieve the best memory performance, fully populate the motherboard with validated memory modules.

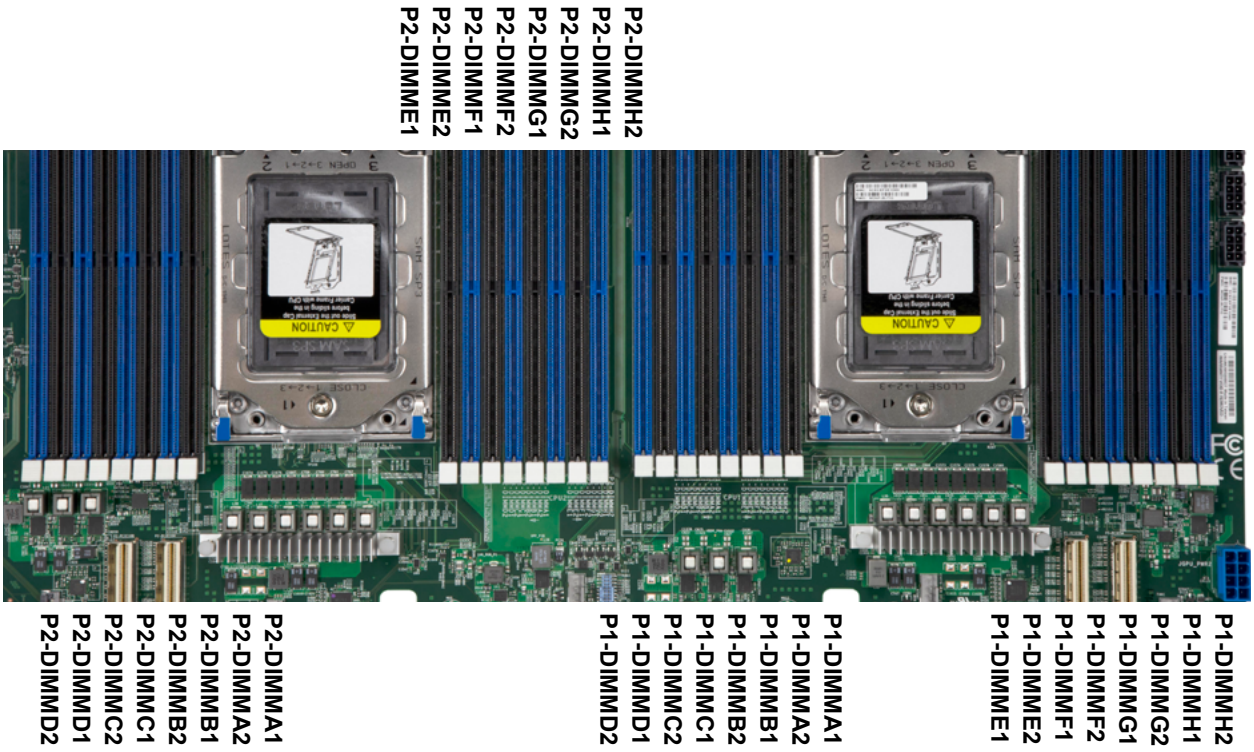


Figure 3-12. DIMM Numbering

Installing Memory

ESD Precautions

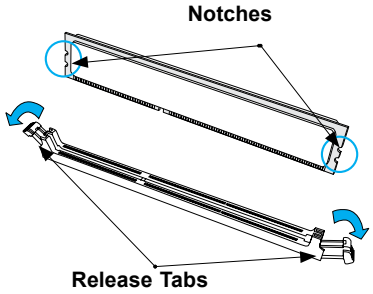
Electrostatic Discharge (ESD) can damage electronic components including memory modules. To avoid damaging DIMM modules, it is important to handle them carefully. The following measures are generally sufficient.

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

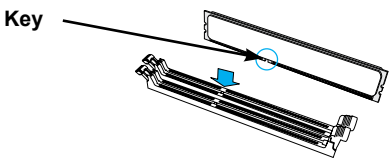
Installing Memory

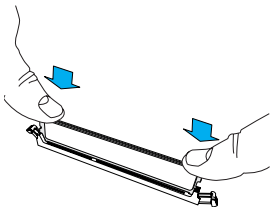
Begin by powering off the system as described in Section 3.1, and removing the node from the chassis. Then remove the air shroud buy squeezing the middle tabs and lifting it out, being careful of components and cables that may be adjacent to the air shroud. Follow the memory population sequence described on the previous pages to insert the desired number of DIMMs.

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



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





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

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

Removing Memory

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

Motherboard Battery

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

Replacing the Battery

Begin by removing power from the system as described in section 3.1.

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

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

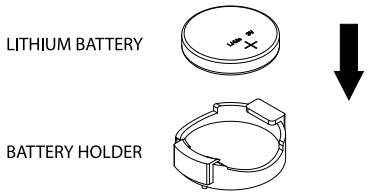


Figure 3-13. Installing the Onboard Battery

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

3.4 Chassis Components

Storage Drives

The CSE-228GTS chassis supports up to four 2.5" storage drives in drive carriers to simplify their removal from the chassis. These carriers also help promote proper airflow. Note that only SSDs are supported, spindle-type HDDs are not.

All four drive carriers reside in a storage module that has Slim-SAS connectors at the rear where the data cables attach to the motherboard. A rear power connector is also used to provide input power to the module backplane from the motherboard. This design enables a true hybrid solution with any slot able to support NVMe U.2, SATA or SAS with optional HBA.

Note: Enterprise level hard disk drives are recommended for use in Supermicro chassis and servers.

Drive Carrier Indicators

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

Drive Carrier LED Indicators			
	Color	**Blinking Pattern**	**Behavior for Device**
Activity LED	Blue	Solid On	SAS drive installed
	Blue	Blinking	I/O activity
Status LED	Red	Solid On	Failure of drive with RSTe support
	Red	Blinking at 1 Hz	Rebuild drive with RSTe support
	Red	Blinking with two blinks and one stop at 1 Hz	Hot spare for drive with RSTe support *(not supported in VMD mode)*
	Red	On for five seconds, then off	Power on for drive with RSTe support
	Red	Blinking at 4 Hz	Identify drive with RSTe support

Removing/Installing Drives

Removing Drive Carriers from the Chassis

1. Push the release button on the drive carrier. This releases and extends the drive carrier handle. If the release button does not release it, the handle may be locked: use a flat-head screwdriver to unlock the release.

2. Use the handle to pull the carrier out of the chassis as shown below.

Caution: Except for short periods of time (swapping drives), do not operate the server with the drive carriers removed from the bays, regardless of how many drives are installed, for proper airflow.

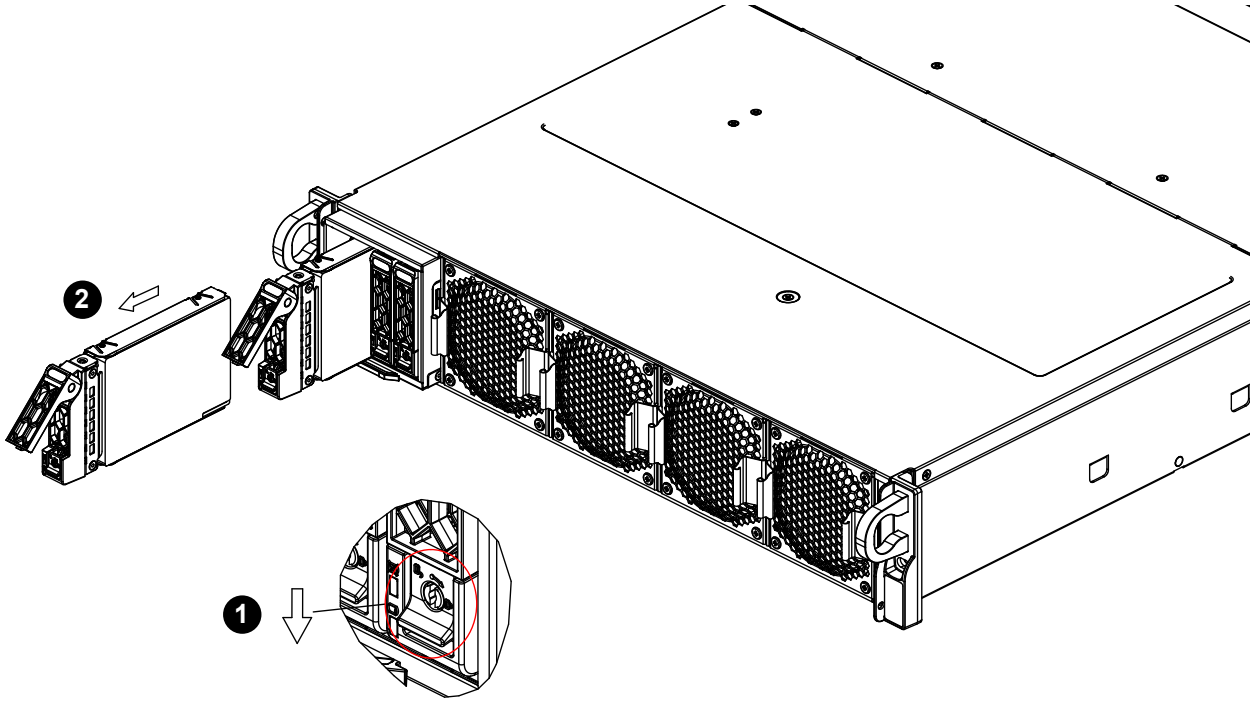


Figure 3-14. Removing a Drive Carrier

Installing a 2.5" Hard Drive

1. Place the hard drive carrier on a flat surface.
2. Orient the drive with the connector facing the bottom rear of the carrier. The drive can be inserted from above into the clips until a "click" is heard.
3. Use the open handle of the drive carrier to insert the carrier into the open drive bay.
4. Secure the drive carrier into the drive bay by closing the drive carrier handle. Toolless drive carriers (supported) have a lock feature that functions by turning with a small flat-head screwdriver when the latch is in the closed positon.

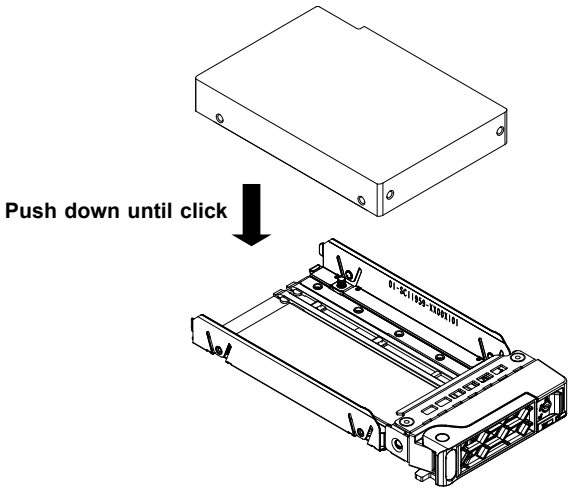


Figure 3-15. Installing a 2.5" Hard Drive

Removing a 2.5" Hard Drive

1. After removing the carrier from the system, push up from the bottom of the drive to remove it from the carrier.
2. Replace with a new drive and insert the carrier back into the open drive bay.

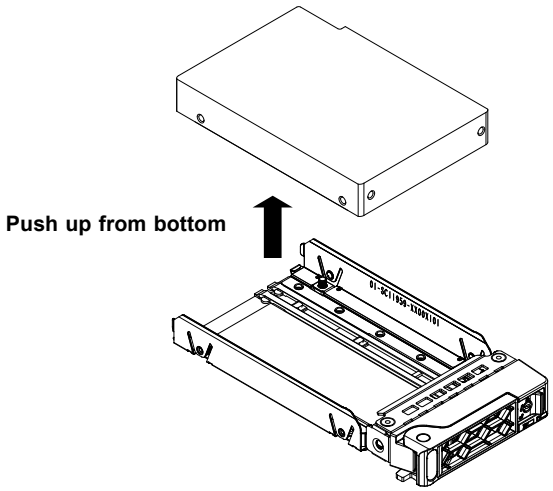


Figure 3-16. Removing a 2.5" Hard Drive

Installing Expansion Cards

The system has four low-profile (LP) PCIe Gen4 x16 slots for expansion add-on cards (AOCs, such as RDMA, 200G IB, and 200G Ethernet) and one LP PCIe Gen4 x8 slot for an AOC up to 100G or HBA/RAID. In addition, there is one mechanical LP slot for a RAID Battery Backup Unit (BBU)/SuperCap/CacheVault. AOCs are recommended to be serviced by Supermicro due to the optimized density of the 2U form factor.

Installing an Expansion Card

1. Power down the system, remove power cables and wait 30 seconds then remove cover. **Note:** Due to the weight of the system, this should not be attempted in the rack. The system needs to be placed on a flat ESD-safe surface with ample support.
2. Begin by removing the riser assemblies from left to right (when viewed from the rear).
3. At the rear of the chassis, remove the PCI riser by unlatching the riser release (see Figure 1-4 for locations). There are three at rear of the chassis and one for each riser located at the metal chassis rear crossbar.
4. Slide the PCI riser out of expansion slot from the back of the chassis by lifting each riser assembly vertically.
5. Once the riser releases are extended to the open position, lift each riser assembly vertically. Be careful not to damage the power or data cables attached to the assemblies. If more room is needed the cables can be detached, however, it is important to note the cable numbers and their mated connectors. Please see the cable mapping guide in Chapter 1.
6. Install and secure the expansion cards into the PCI riser.
7. Return and lock the PCI riser back into the back of the chassis and lock its release.

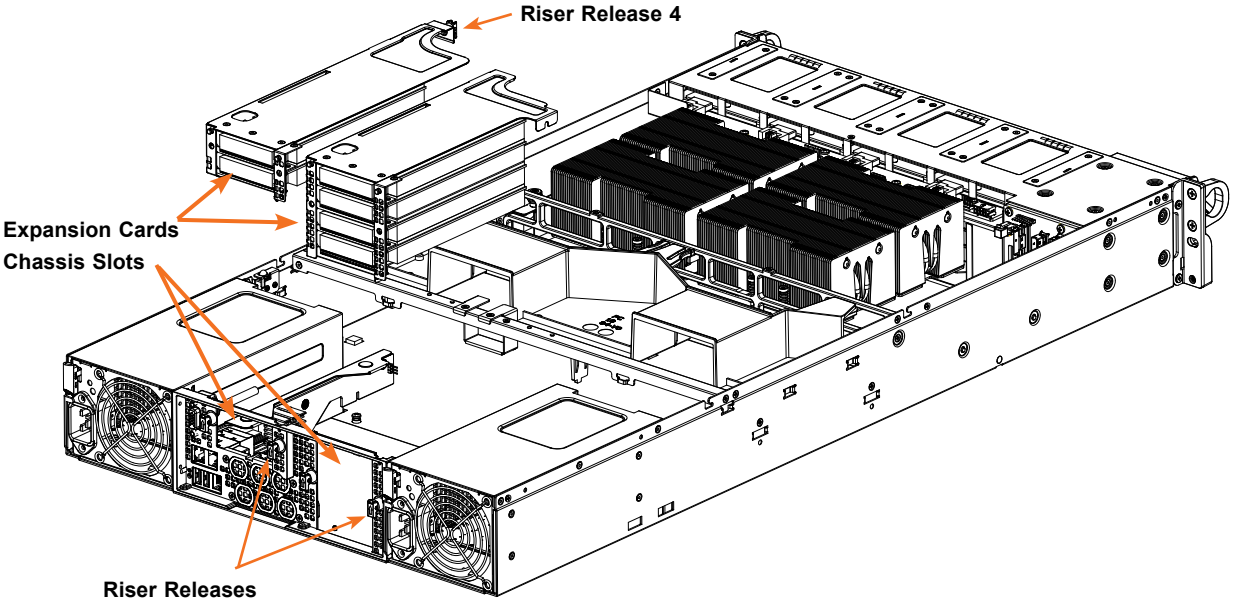


Figure 3-17. Installing Expansion Cards

Replacing GPUs

Individual GPU and GPU baseboards are recommended to be serviced by Supermicro due to the optimized density of the 2U form factor.

Prior to submitting an RMA for GPUs, Nvidia requires that their Field Diagnostic tool is first run to isolate hardware failures and obtain a log file for review. Check with Supermicro Technical Services for more details. In addition, more details can be found in Nvidia reference document Baseboard Field Diagnostics Software Guide DU-09163-001.

Replacing GPU Baseboard Module

1. Run Nvidia's Field Diagnostic tool to isolate failures and obtain a log file for review.
2. Remove the GPU heatsinks on the GPU baseboard so that it is lighter and easier to handle.
3. Disconnect the GPU baseboard module's 54V power cable by extending the red colored finger release of the Radsok/Surlok cable (cable #27 as illustrated in Chapter 1) and pulling up. Use a small plastic tool or Velcro loop to gain access to the finger release if needed.
4. Unscrew the GPU baseboard latch and T-handle screws using a T10 torx head driver
5. Release the "bail latch", which will separate the GPU baseboard from the PCIe transition board assembly. The baseboard should then be loose.
6. Hold the "T" handle with one hand while lifting the bail latch at the other end of the baseboard.
7. Lift the GPU baseboard vertically and at a slight angle to remove the GPU baseboard. Be careful not to scratch the GPU baseboard or your hands on the chassis metal edges.

For installation reverse the above steps.

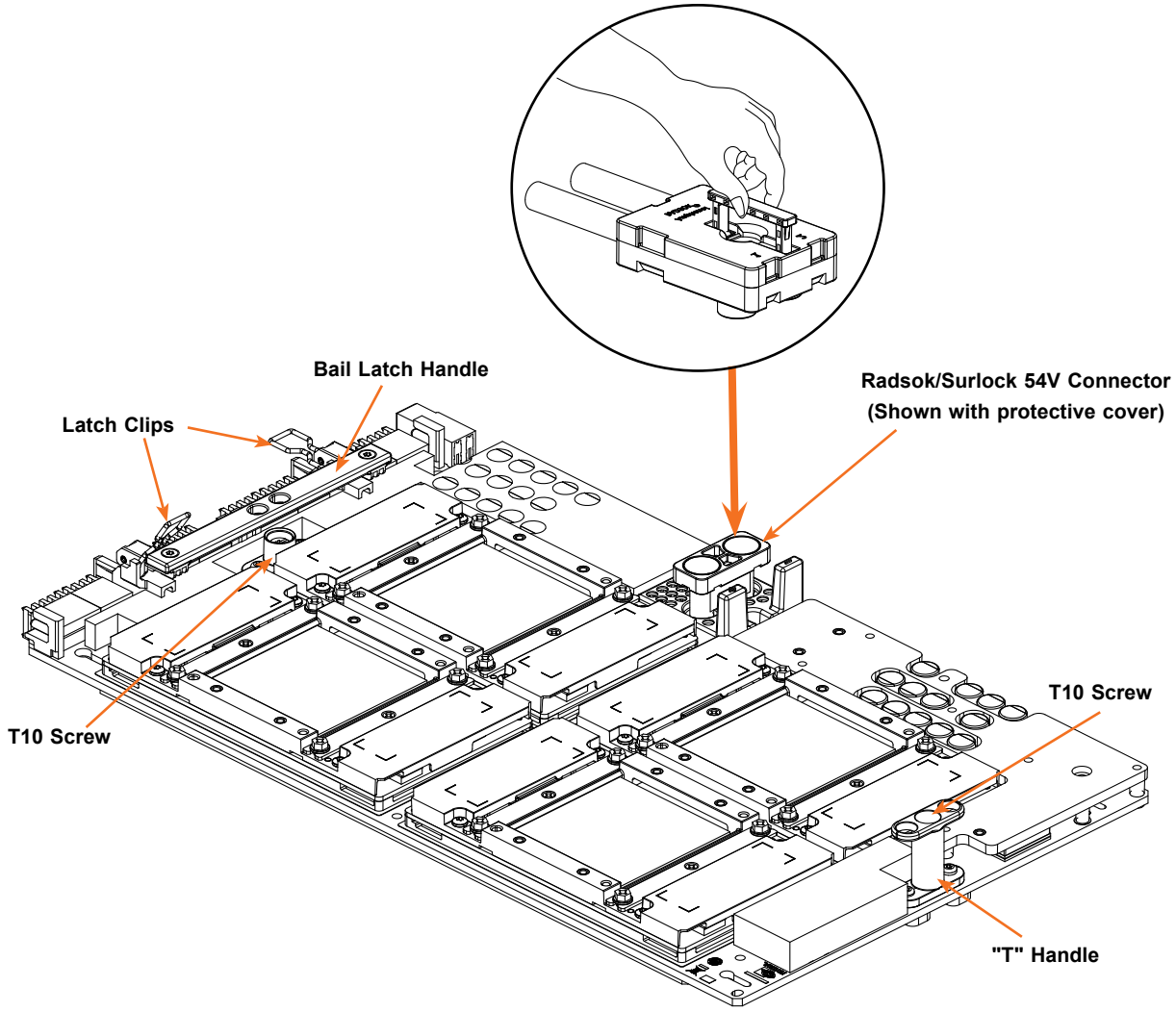


Figure 3-18. Replacing GPU Baseboard Module

Replacing Individual GPUs

Prior to submitting an RMA for GPUs, Nvidia requires that their Field Diagnostic tool is first run to isolate hardware failures and obtain a log file for review. Check with Supermicro Technical Services for more details. In addition, more details can be found in Nvidia reference document Baseboard Field Diagnostics Software Guide DU-09163-001. Use these tools to determine the failed GPU and locate using the Cable Mapping Guide Figure and GPU Mapping Table. Be sure to identify the failed GPU correctly and if any questions reach out to Supermicro Technical Service team to help.

Note: GPU heatsink and individual GPU SXM4 replacement is recommended to be done by qualified a Supermicro service technician. Always ensure that new heatsinks are used. Qualified heatsinks include thermal interface material (TIM) with specified dimension and thickness."

1. Prior to assembly, ensure the GPU devices have no thermal material or grease. Also check that the heatsinks are new and have unused thermal interface material (TIM) present.
2. Gently place the heatsink over the GPU baseboard's SXM4 socket while keeping the heatsink steady and level with one hand while using a screwdriver with the other hand.
3. Line up the screws to the socket screw holes underneath prior to screwing down
4. Use a Philips-head screwdriver to screw down screws in this order: 1,2,3,4. Ensure a torque force between 3 to 4 lbf-in is used. The use of a torque screwdriver with torque setting feature is recommended.
5. To remove the individual GPU SXM4 module, please follow "Nvidia A100 SXM4/GPU Module: Removal and Installation Instruction" in Nvidia document #1055915.

For installation reverse the above steps.

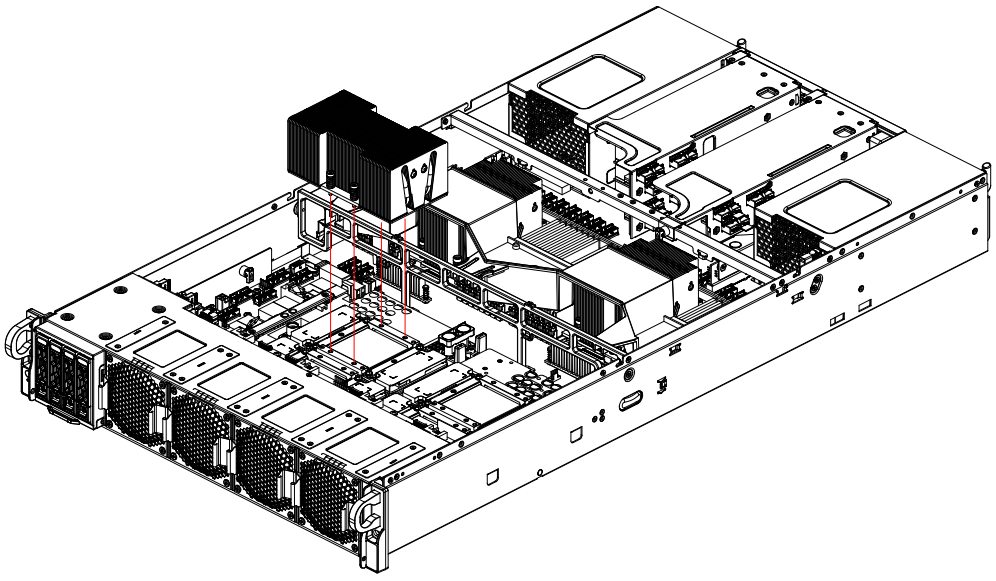


Figure 3-19. Installing GPU Heatsinks (screw locations shown))

System Fans

Four hot-swap fans provide cooling. They can be replaced without powering down the system. However, failed fans should be replaced quickly to maintain proper system airflow.

Fan speed is controlled by a system temperature setting in IPMI. If a fan fails, the remaining fans will ramp up to full speed. The system can continue to run with a failed fan. Replace any failed fan at your earliest convenience with the same type and model.

Note: For system fan operation the following hardware is required: GPU Baseboard module, PCIe transition board, fan board, motherboard, PSUs, and cabling.

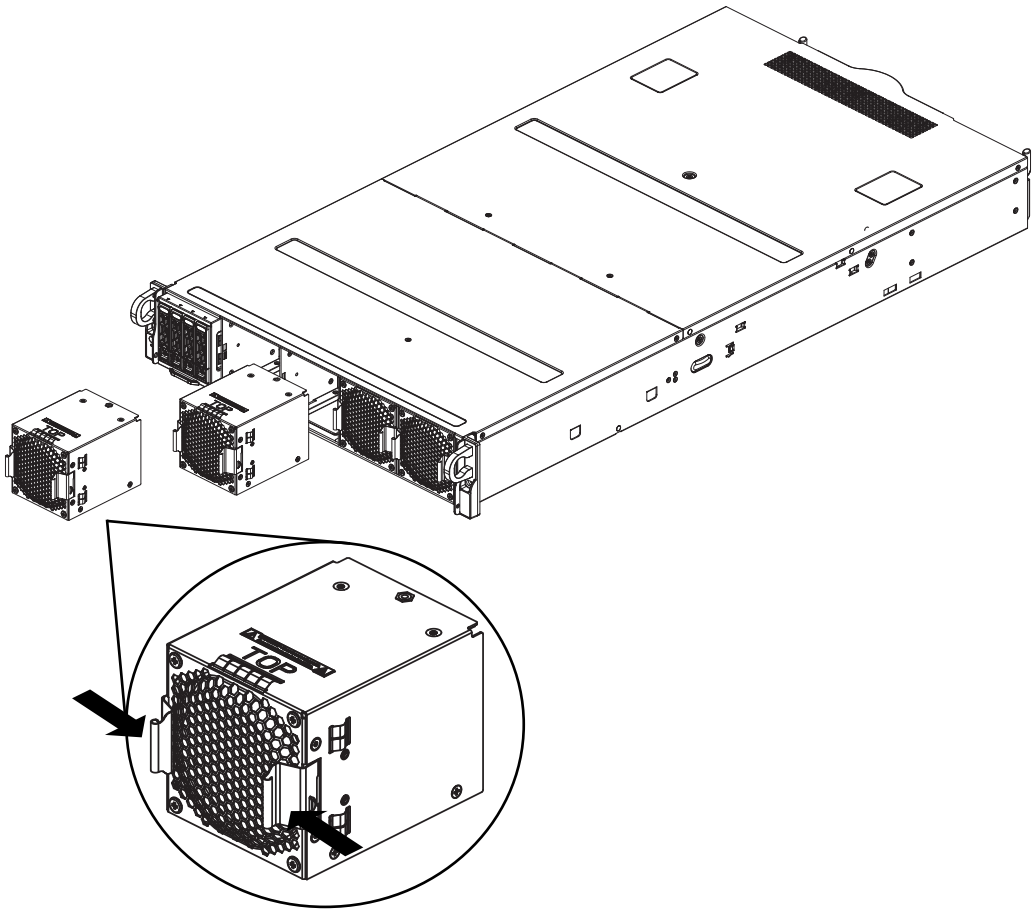


Figure 3-20. Removing System Fans

Changing a System Fan

1. Determine which fan is failing. If possible, use IPMI. If not, while the power is on, examine the fans to determine which one has failed.
2. Remove the failed fan from the chassis by squeezing together the two tabs on either side then pulling it out from the chassis.
3. Replace the fan with a new one, making sure it is within specifications.

4. Push the fan into the housing until it is secure and running.
5. Confirm that the fan is working properly.

Checking the Server Air Flow

- Make sure there are no objects to obstruct airflow in and out of the server.
- If you are using a front bezel, make sure the bezel filter is replaced periodically.
- Do not operate the server without drives or drive trays in the drive bays.
- Use only recommended server parts.
- Make sure no wires or foreign objects obstruct air flow through the chassis. Pull all excess cabling out of the airflow path or use shorter cables.

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

Overheating

There are several possible responses if the system overheats.

Overheat Temperature Setting

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

Responses

If the server overheats:

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

Air Shroud

Air shrouds help to funnel the airflow provided by the fans over the system components that generate the most heat.

Installing the Air Shroud

1. First ensure the CPU, CPU heatsinks, and configured DIMMs are installed
2. Gently place the airshroud over the CPU heatsinks with the front snap locations lining up with metal chassis middle crossbar. Be careful that the airshroud legs at either end do not interfere with any motherboard components such as DIMMs. Guide the airshroud around cable bundles as necessary.

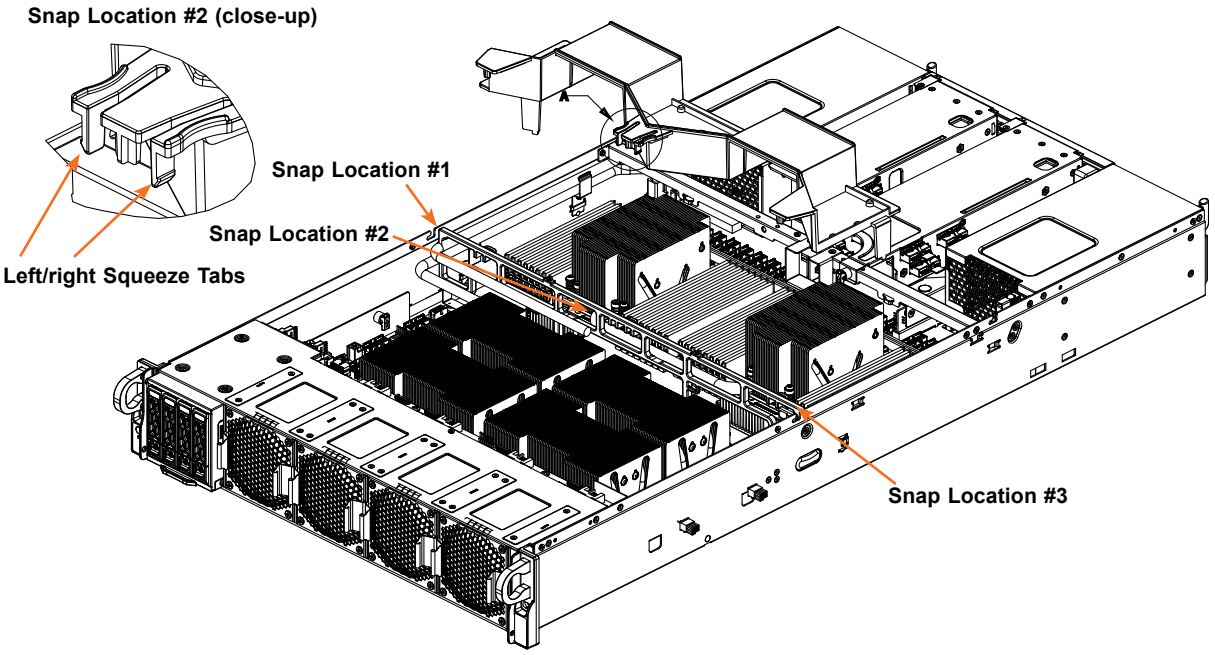


Figure 3-21. Installing Air Shrouds

Power Supply

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

These power supplies are auto-switching capable. This feature enables them to automatically sense the input voltage and operate at a 100-120v or 180-240v (For high-power or fully configured systems 180-240V service is required). An amber light will be illuminated on the power supply when the power is off. An illuminated green light indicates that the power supply is operating.

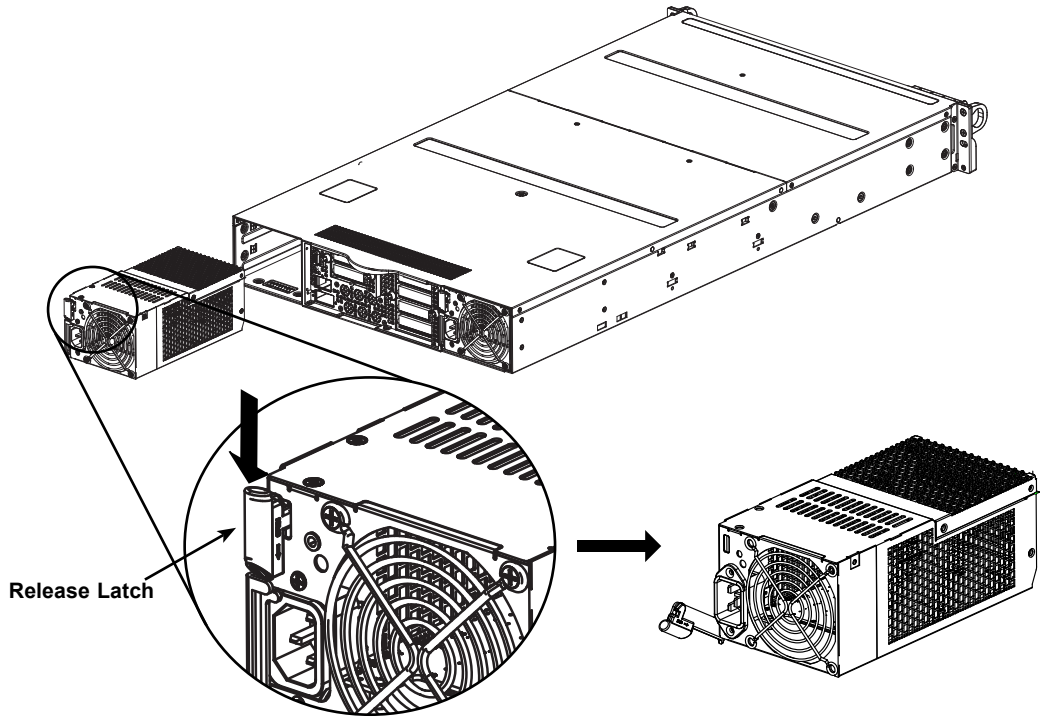


Figure 3-22. Removing the Power Supply

Replacing the Power Supply

1. Unplug the AC cord from the module to be replaced.
2. Push the release latch on the back of the power supply down (see above figure).
3. Pull the power supply out using the latch once released.
4. Replace the failed power module with the same model.
5. Push the new power supply module into the power bay until it clicks.
6. Plug the AC power cord back into the module.

Chapter 4

Motherboard Connections

This section describes the connections, jumpers and LED indicators on the motherboard and provides pinout definitions. Not all connections are required. A motherboard layout indicating component locations may be found in Chapter 1.

Please review the Safety Precautions in appendix B before installing or removing components.

4.1 Power Connections

The power connections on the H12DSG-Q-CPU6 (JPRW1 and JPRW2) are automatically made when the motherboard node is installed into the chassis.

4.2 Headers and Connectors

The data cables in the system have been carefully routed to maintain airflow efficiency. If you disconnect any of these cables, take care to re-route them as they were originally.

Important! Make sure cables maintain proper clearances and are not being bent or pinched on chassis metal parts.

GPU 12V 8-pin Power Connector

JGPU-PWR2 is a 8-pin 12V DC power input header that is available for GPU auxiliary power only (reserved for future use). Refer to the table below for pin definitions.

GPU 8-pin Power Pin Definitions

Pin#	Definition	Pin#	Definition
1	Ground	5	+12V
2	Ground	6	+12V
3	Ground	7	+12V
4	Ground	8	+12V

Font Panel Connector (JFP1)

JFP1 contains various buttons and indicators that are normally located on a control panel at the front of the chassis. The JFP1 connector is designed specifically for use with Supermicro chassis.

TPM Header/Port 80 Connector

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

Additonally, the JTPM1 header may also be used for Debug POST Code modules.

Please go to the following link for more information on TPM: http://www.supermicro.com/manuals/other/TPM.pdf.

Trusted Platform Module Header Pin Definitions

Pin#	Definition	Pin#	Definition
1	LCLK	2	GND
3	LFRAME#	4	
5	LRESET#	6	NC
7	LAD3	8	LAD2
9	3.3V	10	LAD1
11	LAD0	12	GND
13	NC	14	NC
15	3.3V_STBY	16	SERIRQ
17	GND	18	NC
19	NC	20	NC

SATA Ports

The H12DSG-Q-CPU6 has four SATA 3.0 ports through the P1-PCIe1A port and HDD backplane board BPN-NVMe4-228N-S4 with a specific cable.

NVM Express Connections

Four NVM Express ports are located on the serverboard (from CPU2). These ports provide high-speed, low-latency PCIe 4.0 x4 connections directly from the CPU to NVMe Solid State Drives (SSD). This greatly increases SSD data-throughput performance and significantly reduces PCIe latency by simplifying driver/software requirements resulted from direct PCIe interface from the CPU to the NVMe SSD drives.

Chassis Intrusion

A Chassis Intrusion header is located at JL1 on the motherboard. Attach the appropriate cable from the chassis to the header to inform you when the chassis is opened.

Chassis Intrusion Pin Definitions	
Pin#	**Definition**
1	Intrusion Input+
2	Intrusion Input-

IPMB System Management Bus Header

A System Management Bus header for IPMI 2.0 is located at JIPMB1. Connect the appropriate cable here to use the IPMB I^2C connection on your system.

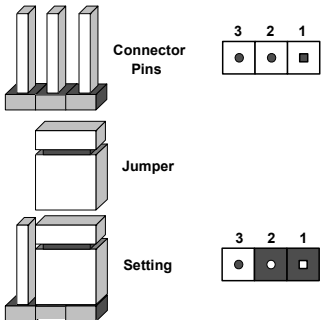
IPMB Header Pin Definitions	
Pin#	**Definition**
1	Data
2	Ground
3	Clock
4	3.3V Standby

4.3 Jumpers

Explanation of Jumpers

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

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



CMOS Clear

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

To Clear CMOS

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

Notes: Clearing CMOS will also clear all passwords.

Do not use the PW_ON connector to clear CMOS.


JBT1 contact pads

Watch Dog

JWD1 controls the Watch Dog function. Watch Dog is a monitor that can reboot the system when a software application hangs. Jumping pins 1-2 will cause Watch Dog to reset the system if an application hangs. Jumping pins 2-3 will generate a non-maskable interrupt signal for the application that hangs. Watch Dog must also be enabled in BIOS.

The default setting is Reset.

Note: When Watch Dog is enabled, the user must to write their own application software to disable it.

Watch Dog Jumper Settings

Jumper Setting	Definition
Pins 1-2	Reset
Pins 2-3	NMI
Open	Disabled

4.4 LED Indicators

Onboard Power LED

LED6 is an onboard power LED. When this LED is lit, it means system is in power-on state, and the onboard power status is ok. Turn off the system and unplug the power cord before removing or installing components.

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

BMC Heartbeat LED

A BMC Heartbeat LED is located at LEDM1 on the serverboard. When LEDM1 is blinking, BMC functions normally. See the table below for more information.

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

Chapter 5

Software

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

5.1 Microsoft Windows OS Installation

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. 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.

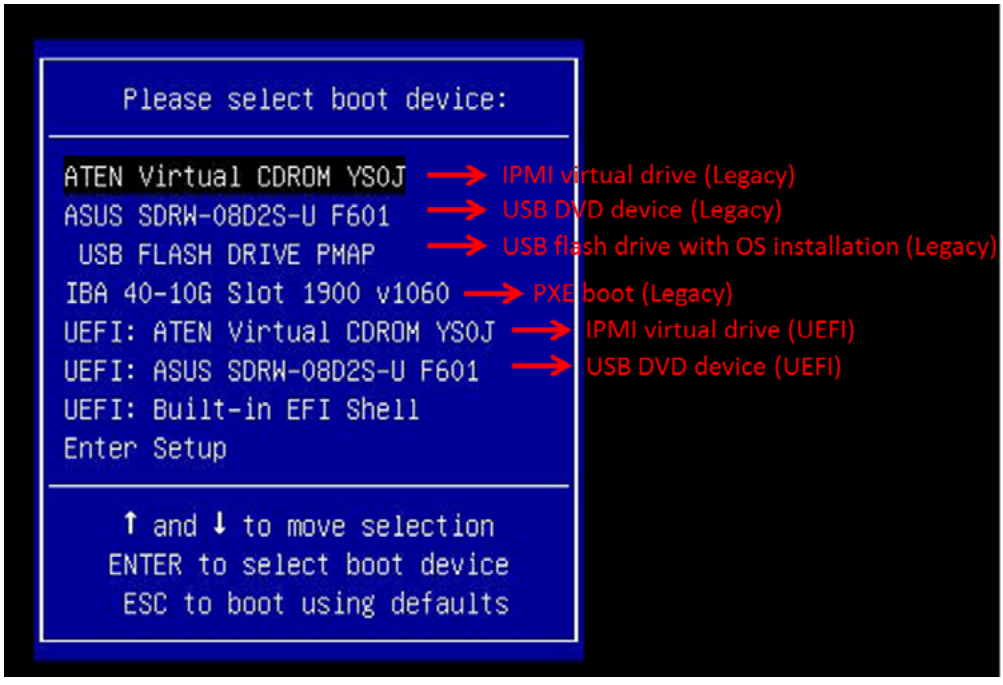


Figure 5-1. Select Boot Device

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.

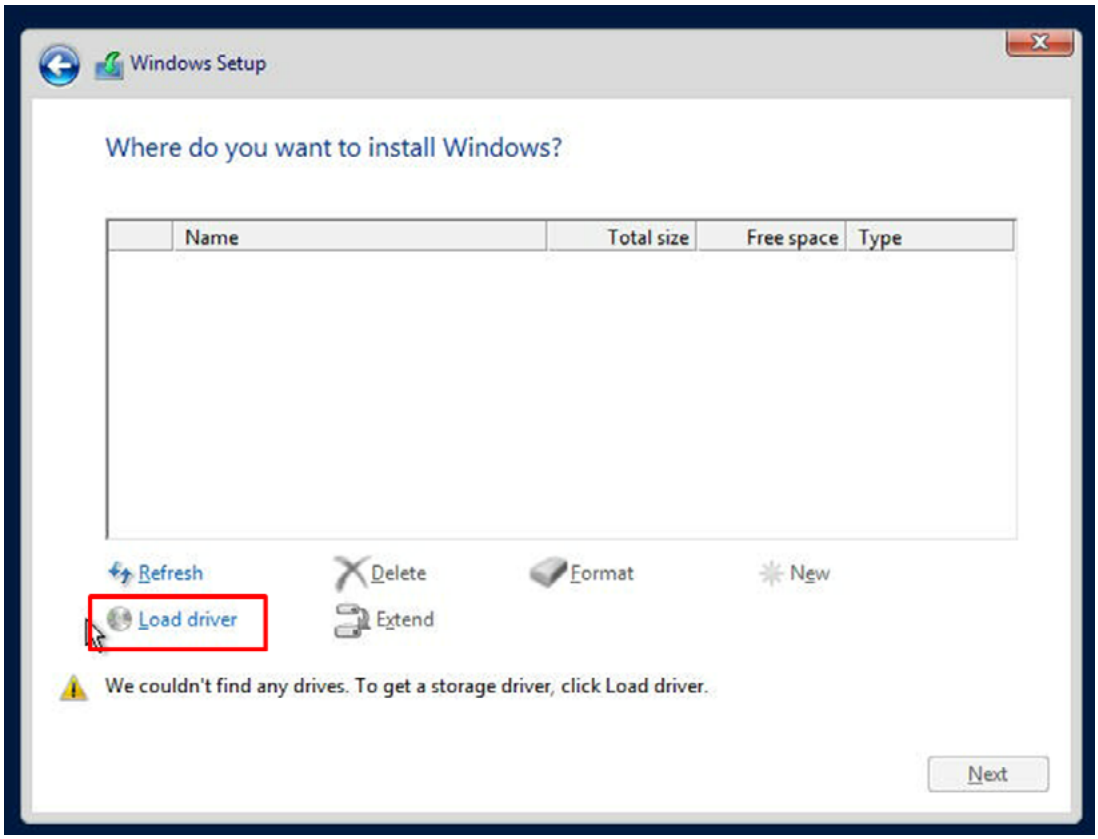


Figure 5-2. Load Driver Link

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

- 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 www.supermicro.com/wdl/driver/AMD/SP3. Some of these must be installed, such as the chipset driver.

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

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

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

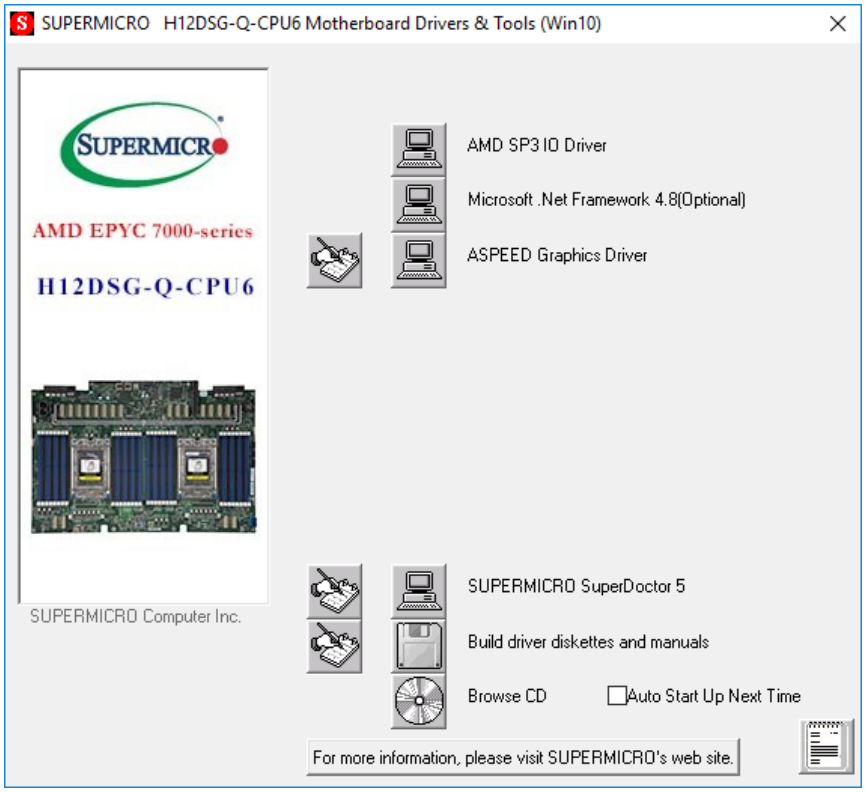


Figure 5-3. Driver & Tool Installation Screen

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

5.3 SuperDoctor® 5

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

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

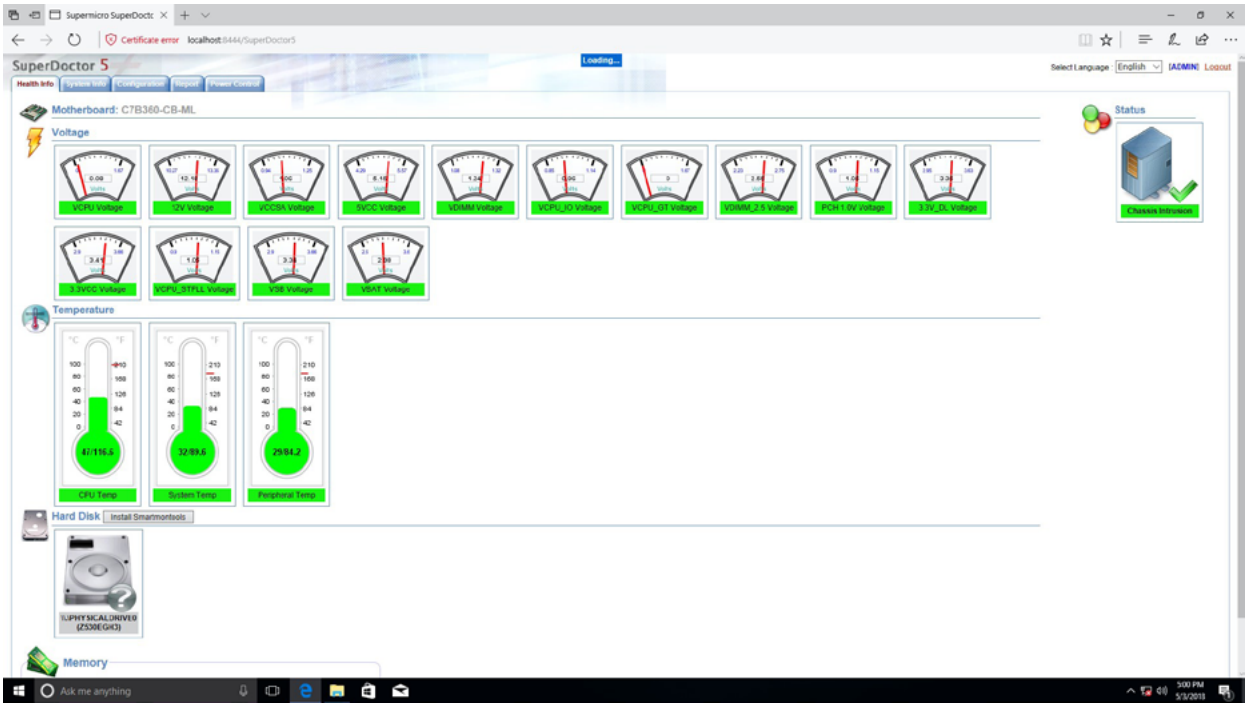


Figure 5-4. SuperDoctor 5 Interface Display Screen (Health Information)

5.4 IPMI

The H12DSG-Q-CPU6 supports the Intelligent Platform Management Interface (IPMI). IPMI 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 IPMI. For general documentation and information on IPMI, visit our website at: http://www.supermicro.com/products/nfo/IPMI.cfm.

BMC ADMIN User Password

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

Figure 5-5. BMC Password Label

See Chapter 1 for the location of the label.

Chapter 6

UEFI BIOS

6.1 Introduction

This chapter describes the AMIBIOS™ setup utility for the H12DSG-Q-CPU6 motherboard. The BIOS is stored on a chip and can be easily upgraded using a flash program.

Note: Due to periodic changes to the BIOS, some settings may have been added or deleted and might not yet be recorded in this manual. Please refer to the Manual Download area of our website for any changes to the BIOS that may not be reflected in this manual.

Starting the Setup Utility

To enter the BIOS setup utility, press the <Delete> key while the system is booting-up. (In most cases, the <Delete> key is used to invoke the BIOS setup screen. There are a few cases when other keys are used, such as <F1>, <F2>, etc.) Each main BIOS menu option is described in this manual.

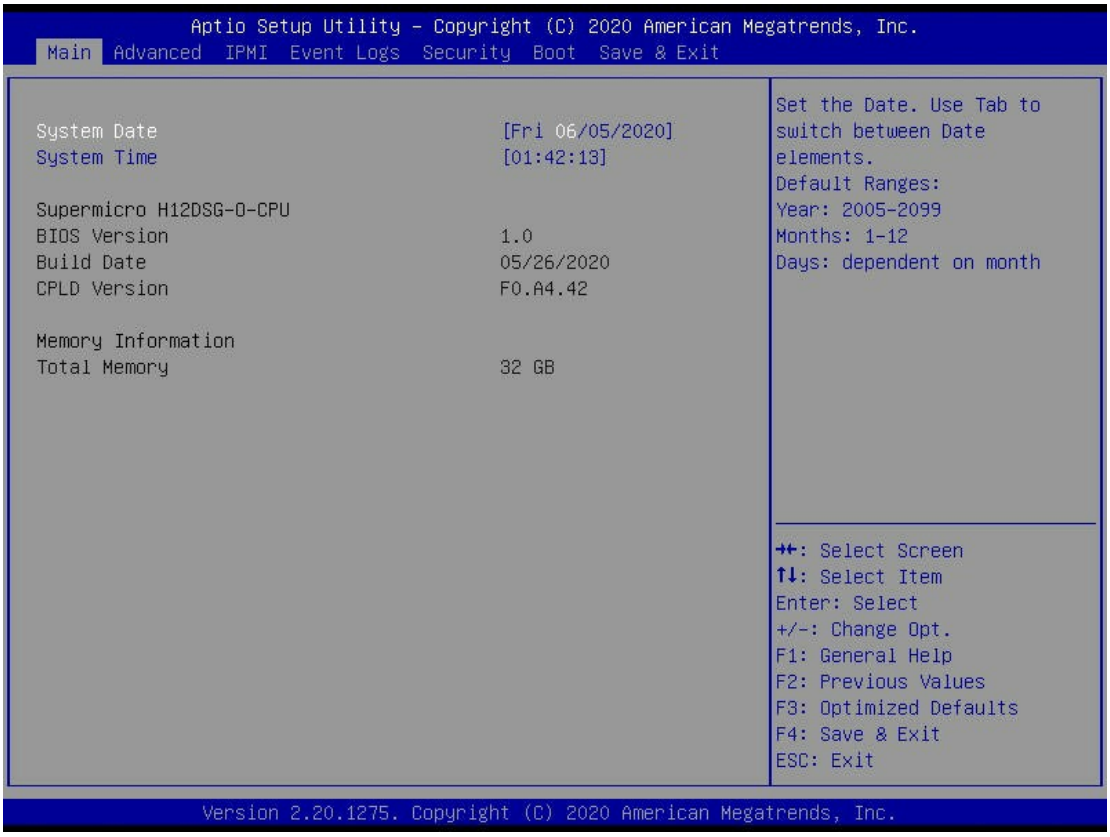
The Main BIOS screen has two main frames. The left frame displays all the options that can be configured. “Grayed-out” options cannot be configured. The right frame displays the key legend. Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it. (Note that BIOS has default text messages built in. We retain the option to include, omit, or change any of these text messages.) Settings printed in **Bold** are the default values.

A "▶" indicates a submenu. Highlighting such an item and pressing the <Enter> key will open the list of settings within that submenu.

The BIOS setup utility uses a key-based navigation system called hot keys. Most of these hot keys (<F1>, <F2>, <F3>, <F4>, <Enter>, <ESC>, <Arrow> keys, etc.) can be used at any time during the setup navigation process.

6.2 Main Setup

When you first enter the AMI BIOS setup utility, you will see the Main setup screen. You can always return to the Main setup screen by selecting the Main tab on the top of the screen. The Main BIOS setup screen is shown below.



System Date/System Time

Use this item to change the system date and time. Highlight *System Date* or *System Time* using the arrow keys. Enter new values using the keyboard. Press the <Tab> key or the arrow keys to move between fields. The date must be entered in Day MM/DD/YYYY format. The time is entered in HH:MM:SS format.

Note: The time is in the 24-hour format. For example, 5:30 P.M. appears as 17:30:00. The date's default value is the BIOS build date after the RTC (Real Time Clock) reset.

Supermicro H12DSG-Q-CPU6

BIOS Version

This feature displays the version of the BIOS ROM used in the system.

Build Date

This feature displays the date when the version of the BIOS ROM used in the system was built.

CPLD Version

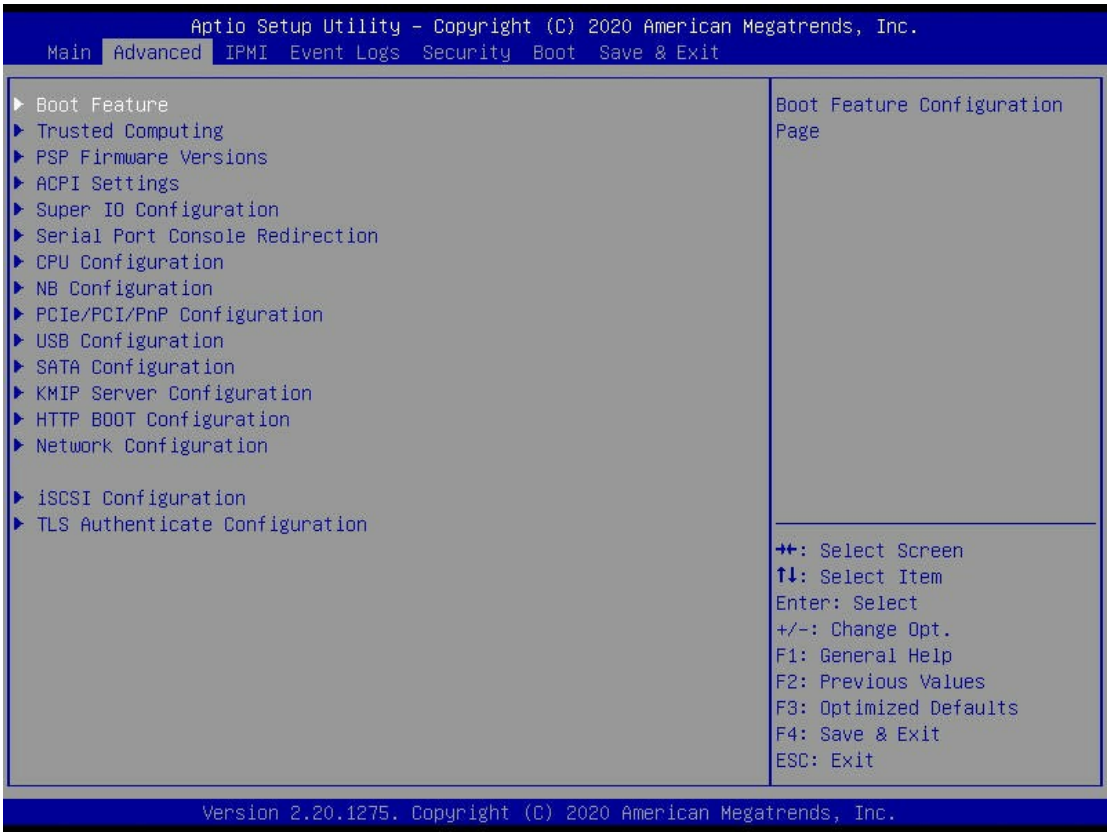
This feature displays the version of the CPLD (Complex-Programmable Logical Device) used in the system.

Memory Information

Total Memory

This feature displays the total size of memory available in the system.

6.3 Advanced



Warning: Take caution when changing the Advanced settings. An incorrect value, a very high DRAM frequency, or an incorrect DRAM timing setting may make the system unstable. When this occurs, revert to the default to the manufacture default settings.

▶Boot Feature

Quiet Boot

Use this feature to select the screen display between the POST messages and the OEM logo upon bootup. Select Disabled to display the POST messages. Select Enabled to display the OEM logo instead of the normal POST messages. The options are Disabled and **Enabled**.

Option ROM Messages

Use this feature to set the display mode for the Option ROM. Select Keep Current to display the current AddOn ROM setting. Select Force BIOS to use the Option ROM display set by the system BIOS. The options are **Force BIOS** and Keep Current.

Bootup NumLock State

Use this feature to set the Power on state for the <Numlock> key. The options are **On** and Off.

Wait For "F1" If Error

Use this feature to force the system to wait until the 'F1' key is pressed if an error occurs. The options are Disabled and **Enabled**.

INT19 (Interrupt 19) Trap Response

Interrupt 19 is the software interrupt that handles the boot disk function. When this item is set to Immediate, the ROM BIOS of the host adaptors will "capture" Interrupt 19 at bootup immediately and allow the drives that are attached to these host adaptors to function as bootable disks. If this item is set to Postponed, the ROM BIOS of the host adaptors will not capture Interrupt 19 immediately and allow the drives attached to these adaptors to function as bootable devices at bootup. The options are **Immediate** and Postponed.

Re-try Boot

If this item is enabled, the BIOS will automatically reboot the system from a specified boot device after its initial boot failure. The options are **Disabled**, Legacy Boot, and EFI Boot.

Power Configuration

Watch Dog Function

If enabled, the Watch Dog Timer will allow the system to reset or generate NMI based on jumper settings when it is expired for more than 5 minutes. The options are **Disabled** and Enabled.

Restore on AC Power Loss

Use this feature to set the power state after a power outage. Select Stay-Off for the system power to remain off after a power loss. Select Power-On for the system power to be turned on after a power loss. Select Last State to allow the system to resume its last power state before a power loss. The options are Stay Off, Power On, and **Last State**.

Power Button Function

This feature controls how the system shuts down when the power button is pressed. Select 4 Seconds Override for the user to power off the system after pressing and holding the power button for 4 seconds or longer. Select Instant Off to instantly power off the system as soon as the user presses the power button. The options are **Instant Off** and 4 Seconds Override.

▶Trusted Computing

Configuration

Security Device Support

If this feature and the TPM jumper on the motherboard are both set to Enabled, onboard security devices will be enabled for TPM (Trusted Platform Module) support to enhance data integrity and network security. Please reboot the system for a change on this setting to take effect. The options are Disabled and **Enabled**.

▶PSP Firmware Versions

This section displays the Platform Security Processor (PSP) firmware versions.

PSP Directory Level 1 (Fixed)

- PSP Recovery BL Ver
- SMU FW Version
- ABL Version

PSP Directory Level 2 (Updateable)

- PSP Bootloader Version
- SMU FW Version
- ABL Version

▶ACPI Settings

PCI AER Support

The options are **Disabled** and Enabled.

High Precision Event Timer

The High Precision Event Timer (HPET) can produce periodic interrupts and is used to synchronize multimedia streams, providing smooth playback and reducing the need to use other timestamp calculations. The options are Disabled and **Enabled**.

NUMA Node Per Socket

This feature specifies the number of desired Non-Uniform Memory Access (NUMA) nodes per socket. Setting this to zero will attempt to interleave the two sockets together. The options are NPS0, NPS1, NPS2, NPS4 and **Auto**.

ACPI SRAT L3 Cache As NUMA Domain

Use this setting to enabe/disable ACPI SRAT L3 Cache As NUMA Domain. The options are Disabled, Enabled and **Auto**.

▶AST2600 Super IO Configuration

The following Super IO information will display:

Super IO Chip AST2600

▶Serial Port 1 Configuration

Serial Port

Select Enabled to enable the selected onboard serial port. The options are Disabled and **Enabled**.

Device Settings

This item displays the status of a serial part specified by the user.

Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of a serial port specified by the user. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address. The options are **Auto**, IO=3F8h; IRQ=4, IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12, IO=2F8h; IRQ=4, IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12, IO=3E8h; IRQ=4, IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12, and IO=2E8h; IRQ=4, IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12.

▶SOL Configuraiton

Serial Port

Select Enabled to enable the selected onboard serial port. The options are Disabled and **Enabled**.

Device Settings

This item displays the status of a serial part specified by the user.

Change SOL Settings

This feature specifies the base I/O port address and the Interrupt Request address of a serial port specified by the user. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address. The options are **Auto,** IO=2F8h; IRQ=3, IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12, IO=2F8h; IRQ=4, IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12, IO=3E8h; IRQ=4, IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12, and IO=2E8h; IRQ=4, IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12.

Serial Port 2 Attribute

The options are **SOL** and COM.

▶Serial Port Console Redirection

COM1

Console Redirection

Select Enabled to enable console redirection support for a serial port specified by the user. The options are **Disabled** and Enabled.

If the item above set to Enabled, the following items will become available for user's configuration:

▶Console Redirection Settings

Terminal Type

This feature allows the user to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, **VT100+**, VT-UTF8, and ANSI.

Bits per second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 38400, 57600 and **115200** (bits per second).

Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 and **8**.

Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark, and Space.

Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are **1** and 2.

Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

VT-UTF8 Combo Key Support

Select Enabled to enable VT-UTF8 Combination Key support for ANSI/VT100 terminals. The options are Disabled and **Enabled**.

Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

Resolution 100x31

Select Enabled for extended-terminal resolution support. The options are Disabled and **Enabled**.

Legacy OS Redirection Resolution

For Legacy OS systems, use this setting to specify the number of Rows and Columns supported for redirection. Options include 80x24 and **80x25**.

Putty KeyPad

This feature selects the settings for Function Keys and KeyPad used for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SC0, ESCN, and VT400.

Redirection After BIOS POST

For this setting, when the Bootloader is selected, then the Legacy Console Redirection is disabled before booting to the legacy OS. If you select Always Enable, then the Legacy Console Redirection is enabled for legacy OS systems. Default option for this system is **Always Enable**. The options are **Always Enable** and BootLoader.

SOL

Console Redirection

Select Enabled to enable SOL console redirection support for a serial port specified by the user. The options are Disabled and **Enabled**.

If the item above set to Enabled, the following items will become available for user's configuration:

▶Console Redirection Settings

Terminal Type

This feature allows the user to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select

VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, **VT100+**, VT-UTF8, and ANSI.

Bits per second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 38400, 57600 and **115200** (bits per second).

Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 and **8**.

Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark, and Space.

Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are **1** and 2.

Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

VT-UTF8 Combo Key Support

Select Enabled to enable VT-UTF8 Combination Key support for ANSI/VT100 terminals. The options are Disabled and **Enabled**.

Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

Resolution 100x31

Select Enabled for extended-terminal resolution support. The options are Disabled and **Enabled**.

Legacy OS Redirection Resolution

For Legacy OS systems, use this setting to specify the number of Rows and Columns supported for redirection. Options include 80x24 and **80x25**.

Putty KeyPad

This feature selects the settings for Function Keys and KeyPad used for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SC0, ESCN, and VT400.

Redirection After BIOS POST

For this setting, when the Bootloader is selected, then the Legacy Console Redirection is disabled before booting to the legacy OS. If you select Always Enable, then the Legacy Console Redirection is enabled for legacy OS systems. Default option for this system is **Always Enable**.The options are **Always Enable** and BootLoader.

▶Legacy Console Redirection Settings

Legacy Serial Redirection Port

For this setting, select a COM port to display redirection of Legacy OS and Legacy OPROM messages. Options include **COM1** and SOL.

Serial Port for Out-of-Band Management/Windows Emergency Management Services (EMS)

Console Redirection

Select Enabled to enable EMS console redirection support for a serial port specified by the user. The options are **Enabled** and Disabled.

If the item above set to Enabled, the following items will become available for user's configuration:

▶Console Redirection Settings

Out-of-Band Mgmt Port

The feature selects a serial port in a client server to be used by the Microsoft Windows Emergency Management Services (EMS) to communicate with a remote host server. The options are **COM1** and SOL.

Terminal Type

Use this feature to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII character set. Select VT100+ to add color and function key support. Select ANSI to use the extended ASCII character set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, VT100+, **VT-UTF8**, and ANSI.

Bits per second

This item sets the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 57600, and **115200** (bits per second).

Flow Control

Use this item to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None**, Hardware RTS/CTS, and Software Xon/Xoff.

Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 and **8**.

Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark, and Space.

Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are **1** and 2.

▶CPU Configuration

SMT Control

Use this setting to specify Simultaneous Multithreading. Options include Off for 1T single thread and **Auto** for 2T two-thread if your system is capable of it.

Core Performance Boost

This setting is used to configure for Core Performance Boost. Options include Disabled and **Auto**.

Global C-state Control

This setting is used to configure for Global C-state Control. Options include Disabled, Enabled and **Auto**.

Local APIC Mode

Use this setting to adjust local APIC mode. Options include xAPIC, x2APIC and **Auto**.

CCD Control

Use this setting to disable CCDs in the CPU. Options include **Auto**, 2 CCDs, 3 CCDs, 4 CCDs and 6 CCDs.

Core Control

This sets the number of cores to be used by your system. Once this option has been used to remove any cores, a power cycle is required in order for the future selections to take effect. Options include **Auto**, TWO (1+1), FOUR (2 + 2), and SIX (3 + 3). If unsure, leave this to Auto.

L1 Stream HW Prefetcher / L2 Stream HW Prefetcher

This setting is used to enable or disable the L1/L2 Stream Hardware Prefetcher. The options are Disabled, Enabled and **Auto**.

SVM Mode

This setting **Enables** or Disables CPU Virtualization.

SMEE

This setting Enables or **Disables** secure memory encryption.

▶CPU1/CPU2 Information

These sections are for informational purposes. They will display some details about the detected CPUs on the motherboard, such as:

- CPU Version
- Number of Cores Running
- Processor Family

- Processor Model
- Microcode Patch Level
- L1 Instruction Cache (Size/Method)
- L1 Data Cache (Size/Method)
- L2 Data Cache (Size/Method)
- L3 Cache per Scoket (Size/Method)

▶NB Configuration

Determinism Control

Use this setting to configure the Determinism Control. Options include **Auto** and Manual.

Determinishm Slider

Options inlcude Auto, **Power**, and Performance.

cTDP Control

Use this setting to configure the cTDP Control. Options include Manual and **Auto**.

IOMMU

Use this setting to enable/disable IOMMU. Options include **Disabled**, Enabled, and Auto.

ACS Enable

Use this setting to enable/disable ACS. Options include Enabled, Disabled and **Auto**.

Package Power Limit Control

Use this setting for Package Power Limit Control. Options include Manual and **Auto**.

APBDIS

Use this setting to set APBDIS. Options include 0, 1 and **Auto**.

DF Cstates

Use this setting to enable/disable DF Cstates. Options include Disabled, Enabled, and **Auto**.

Preferred IO

Use this setting for Preferred IO. Options include Manual and **Auto**.

▶Memory Configuration

Memory Clock

This setting allows you to select different memory clock speed. The options are **Auto**, 2666MHz, 2933MHz and 3200MHz.

Memory Interleaving

This setting controls fabric level memory interleaving. Note that the channel, die and socket have requirements on memory populations and it will be ignored if the memory doesn't support the selected option. The options are Enabled, Disabled and **Auto**.

Memory Interleaving Size

This setting controls the memory interleaving size. This determines the starting address of the interleave (bit 8, 9, 10 or 11). The options are 256 Bytes, 512 Bytes, 1 KB, 2 KB and **Auto**.

Chipselect Interleaving

This setting controls interleave memory blocks across the DRAM chip for node 0. The options are Disabled and **Auto**.

BankGroupSwap

This setting controls the Bank Group Swap. The options are Enabled, Disabled and **Auto**.

DRAM Scrub Time

This setting provides a value that is the number of hours to scrub memory. The options are Disabled, 1 hour, 4 hours, 8 hours, 16 hours, 24 hours, 48 hours and **Auto**.

▶CPU1 Memory Configuration

These sections are for informational purposes. They will display some details about the detected memory according to each CPU on the motherboard, such as:

- Detected Size (per slot, in MB)
- Current Speed (MT/s)

▶CPU2 Memory Configuration

These sections are for informational purposes. They will display some details about the detected memory according to each CPU on the motherboard, such as:

- Detected Size (per slot, in MB)
- Current Speed (MT/s)

▶PCIe/PCI/PnP Configuration

This menu provides PCIe/PCI/PnP configuration settings and information.

PCI Bus Driver Version

PCI Devices Common Settings:

Above 4G Decoding

This setting **Enables** or Disables 64-bit capable devices ability to be decoded in above 4G address space (only if the system supports 64-bit PCI decoding).

SR-IOV Support

If the system has SR-IOV capable PCIe devices, this setting will **Enable** or Disable the Single Root IO Virtualization Support for the system.

BME DMA Mitigation

Re-enable Bus Master Attribute disabled during Pci enumeration for PCI Bridges after SMM Locked. The options are **Disabled** and Enabled.

PCIe ARI Support

Use this setting to Enable, Disable or **Auto** control the Alternative Routing-ID Interpretation.

PCIe Spread Spectrum

Use this setting to Enable or **Disable** PCIe Spread Spectrum for your system.

VGA Priority

Use this setting to select between onboard or offboard VGA support. The options are **Onboard** and Offboard.

NVMe Firmware Source

Use this setting to select between the AMI Native firmware support or the device vendor-defined firmware support. The options are **Vendor Defined Firmware** and AMI Native Support.

SLOT1 PCI-E 4.0 x16 OPROM

This setting enables or disables the listed PCI/PCIX/PCIe Slot OPROM option. The options include Disabled and **EFI**.

SLOT2 PCI-E 4.0 x16 OPROM

This setting enables or disables the listed PCI/PCIX/PCIe Slot OPROM option. The options include Disabled and **EFI**.

SLOT3 PCI-E 4.0 x16 OPROM

This setting enables or disables the listed PCI/PCIX/PCIe Slot OPROM option. The options include Disabled and **EFI**.

SLOT4 PCI-E 4.0 x16 OPROM

This setting enables or disables the listed PCI/PCIX/PCIe Slot OPROM option. The options include Disabled and **EFI**.

SLOT5 PCI-E 4.0 x16 OPROM

This setting enables or disables the listed PCI/PCIX/PCIe Slot OPROM option. The options include Disabled and **EFI**.

SLOT6 PCI-E 4.0 x16 OPROM

This setting enables or disables the listed PCI/PCIX/PCIe Slot OPROM option. The options include Disabled and **EFI**.

SLOT7 PCI-E 4.0 x16 OPROM

This setting enables or disables the listed PCI/PCIX/PCIe Slot OPROM option. The options include Disabled and **EFI**.

SLOT8 PCI-E 4.0 x16 OPROM

This setting enables or disables the listed PCI/PCIX/PCIe Slot OPROM option. The options include Disabled and **EFI**.

SLOT9 PCI-E 4.0 x16 OPROM

This setting enables or disables the listed PCI/PCIX/PCIe Slot OPROM option. The options include Disabled and **EFI**.

Onboard LAN1 Option ROM

Use this setting to select which firmware function is to be loaded for onboard LAN1 on the system. Options include Disabled and **EFI**.

Onboard NVMe1 Option ROM

Select EFI to allow the user to boot the computer using an EFI (Extensible Firmware Interface) device installed on the NVME connector specified by the user. Select Legacy to allow the user to boot the computer using a legacy device installed on the NVME connector specified by the user. The options include Disabled and **EFI**.

Onboard NVMe2 Option ROM

Select EFI to allow the user to boot the computer using an EFI (Extensible Firmware Interface) device installed on the NVME connector specified by the user. Select Legacy to allow the user to boot the computer using a legacy device installed on the NVME connector specified by the user. The options include Disabled and **EFI.**

Onboard NVMe3 Option ROM

Select EFI to allow the user to boot the computer using an EFI (Extensible Firmware Interface) device installed on the NVME connector specified by the user. Select Legacy to allow the user to boot the computer using a legacy device installed on the NVME connector specified by the user. The options include Disabled and **EFI**.

Onboard NVMe4 Option ROM

Select EFI to allow the user to boot the computer using an EFI (Extensible Firmware Interface) device installed on the NVME connector specified by the user. Select Legacy to allow the user to boot the computer using a legacy device installed on the NVME connector specified by the user. The options include Disabled and **EFI**.

Onboard Video Option ROM

Use this setting to select which firmware function is to be loaded for onboard video option ROM on the system. Disabled and **EFI**.

Options include **Auto**, x16, x8x8, x4x4x8, and x4x4x4x4.

▶Network Stack Configuration

Network Stack

This setting allows you to enable or disable the UEFI Network Stack. The options are Disabled and **Enabled**.

IPv4 PXE Support

This setting allows you to enable or disable IPv4 PXE boot support. If disabled, IPv4 PXE boot support will not be available. The options are Disabled and **Enabled**.

IPv4 HTTP Support

This setting allows you to enable or disable IPv4 HTTP boot support. If disabled, IPv4 HTTP boot support will not be available. The options are **Disabled** and Enabled.

IPv6 PXE Support

This setting allows you to enable or disable IPv6 PXE boot support. If disabled, IPv6 PXE boot support will not be available. The options are Disabled and **Enabled**.

IPv6 HTTP Support

This setting allows you to enable or disable IPv6 HTTP boot support. If disabled, IPv6 HTTP boot support will not be available. The options are **Disabled** and Enabled.

PXE boot wait time

This setting allows you to set in a number field the wait time to press <ESC> to abort the PXE boot. The default value is **0**.

Media detect count

This setting allows you set in a number field the number of times presence of media will be checked. The default value is **1**.

▶USB Configuration

USB Configuration

USB Module Version

USB Controllers

USB Devices

Legacy Support

Select Enabled to support onboard legacy USB devices. Select Auto to disable legacy support if there are no legacy USB devices present. Select Disable to have all USB devices available for EFI applications only. The options include **Enabled**, Disabled and Auto.

XHCI Hand-off

This is a work-around solution for operating systems that do not support XHCI (Extensible Host Controller Interface) hand-off. The XHCI ownership change should be claimed by the XHCI driver. The options include **Enabled** and Disabled.

Port 60/64 Emulation

Select Enabled for I/O port 60h/64h emulation support, which in turn, will provide complete legacy USB keyboard support for the operating systems that do not support legacy USB devices.The options include Disabled and **Enabled**.

▶SATA Configuration

This section displays the detected SATA devices installed on the system.

SATA Enable

This setting enables or disables the on chip SATA controller. The options are Disabled, Enabled, and **Auto**.

SATA Hotplug

This setting enables or disables the on chip SATA hot plug feature. The options are Disabled, and **Enabled**.

▶SATA Information

This section displays information on the detected SATA devices:

- SATA0 ~ SATA7

▶KMIP Server Configuration

KMIP Server IP address

KMIP TCP Port number

TimeZone

Clinet UserName

Client Password

▶CA Certificate

The options include Update, Delete, Export

▶Client Certificate

▶Client Private Key

▶HTTP Boot Configuration

HTTP Boot One Time

The default setting is Dsabled.

Input the description

Boot URI

A new Boot Option will be created according to this Boot URI. It is only supported on Dual or EFI Boot Mode.

▶Network Configuration

(Available when EFI is selected in LAN OPROM after reboot)

▶VLAN Configuration

▶Enter Configuration Menu

Create New VLAN

VLAN ID

This option is an input field used to enter a unique numeric VLAN ID. The valid range is from 0~4096.

Priority

This option is an input field used to enter a unique numeric VLAN 802.1Q priority. The valid range is from 0~7.

Add VLAN

Click this option to create the new VLAN.

Configuration VLAN List

Remove VLAN

Click this option to remove an existing VLAN.

▶MAC:B03AF2B6059F-IPv4 Network Configuration

Configured

Select Enabled to activate IPv4 network configuration. The options include **Disabled** and Enabled.

If the item above is set to Enabled, the following item will become available for configuration:

Enable DHCP

This feature allows the user to select the source of the IP address for this computer. If Disabled is selected, you will need to know the local IP address of this computer and enter it to the system manually in the field. If Enabled is selected, the system will search for a DHCP (Dynamic Host Configuration Protocol) server in the network that it is attached to and request the next available IP address for this computer. The options include **Disabled** and Enabled.

If the item above is set to Disabled, the following items will become available for configuration:

Local IP Address

This item sets and displays the Local IP address for this computer. This should be in decimal and in dotted quad form.

Local NetMask

This item sets the sub-network that this computer belongs to. The value of each three-digit number separated by dots should not exceed 255.

Local Gateway

This item sets the Gateway IP address for this computer. This should be in decimal and in dotted quad form (i.e., 172.31.0.1).

Local DNS Servers

This item sets the address for the local DNS servers for this computer. This should be in decimal and in dotted quad form (i.e., 172.31.0.1).

Save Changes and Exit

Use this item to save the changes above and exit.

▶iSCSI Configuration

iSCSI Initiator Name

This feature allows the user to enter the unique name of the iSCSI Initiator in IQN format. Once the name of the iSCSI Initiator is entered into the system, configure the proper settings for the following items.

▶Add an Attempt

Use this setting to add an attempt.

▶Delete Attempts

Use this setting to delete one or more attempts.

▶Change Attempt Order

Use this setting to change the order of attempts.

▶TLS Authentication Configuration

This submenu allows the user to configure Transport Layer Security (TLS) settings.

▶Server CA Configuration

This feature allows the user to configure the client certificate that is to be used by the server.

▶Enroll Certification

This feature allows the user to enroll the certificate in the system.

▶Enroll Certification Using File

Use this feature to enroll certification from a file.

Certification GUID

Use this feature to enroll to input the certification GUID.

▶Commit Changes and Exit

Use this feature to save all changes and exit TLS settings.

▶Discard Changes and Exit

Use this feature to enroll to discard all changes and exit TLS settings.

▶Delete Certification

Use this feature to delete certification.

6.4 IPMI

Use this feature to configure Event Log settings.

▶System Event Log

SEL Components

Select Enabled for all system event logging at bootup. The options include Disabled and **Enabled**.

Erashing Settings

Erase SEL

Select Yes, On next reset to erase all system event logs upon next system reboot. Select Yes, On every reset to erase all system event logs upon each system reboot. Select No to keep all system event logs after each system reboot. The options include **No**, Yes, On next reset, and Yes, On every reset.

When SEL is Full

This feature allows the user to decide what the BIOS should do when the system event log is full. Select Erase Immediately to erase all events in the log when the system event log is full. The options include **Do Nothing** and Erase Immediately.

▶BMC Network Configuration

Update IPMI LAN Configuration

Select Yes for the BIOS to implement all IP/MAC address changes at the next system boot. The options include **No** and Yes.

If the item above set to Yes, the following item will become available for user's configuration:

Configuration Address Source

This feature allows the user to select the source of the IP address for this computer. If Static is selected, you will need to know the IP address of this computer and enter it to the system manually in the field. If DHCP is selected, the BIOS will search for a DHCP (Dynamic Host Configuration Protocol) server in the network that is attached to and request the next available IP address for this computer. The options include Static and **DHCP**.

VLAN

This item configures the virtual LAN settings. The options include **Disabled** and Enabled.

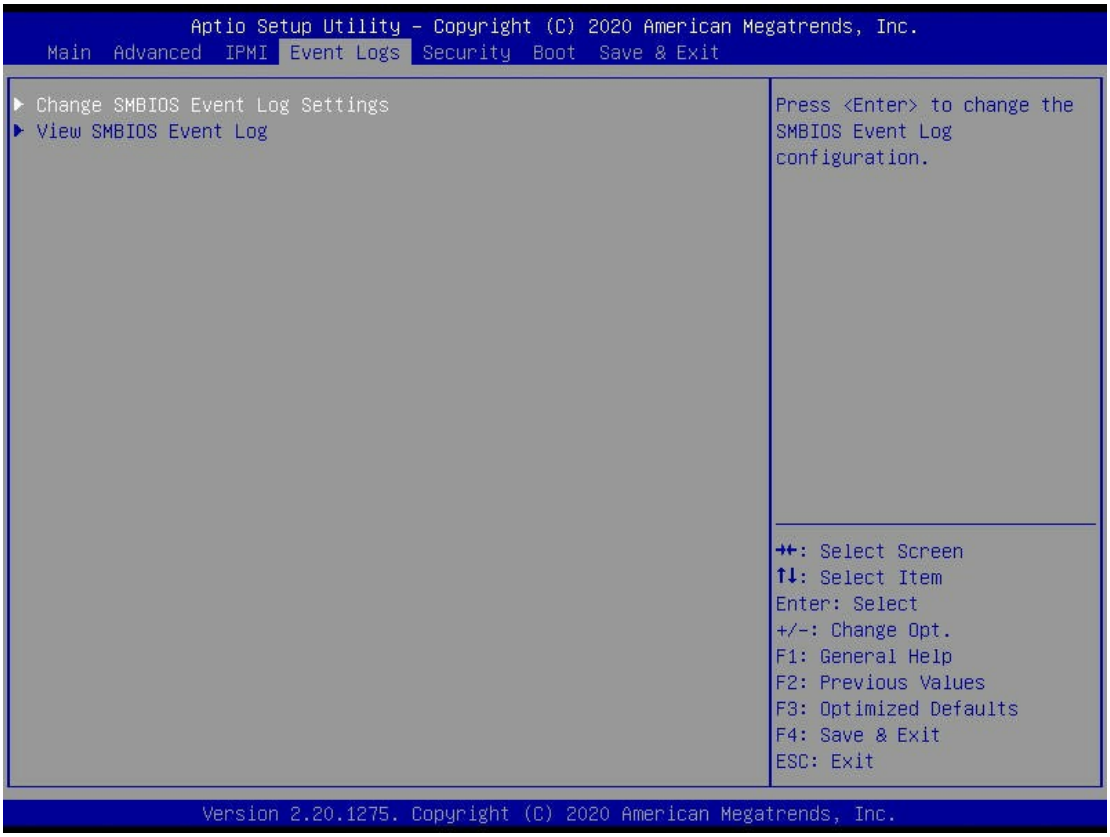
IPv6 Support

Use this feature to enable IPv6 support. The options include Enabled and **Disabled**.

6.5 Event Logs

Use this feature to configure Event Log settings.

Note: After you've made a change on a setting below, please be sure to reboot the system for the change to take effect.



▶Change SMBIOS Event Log Settings

Enabling/Disabling Options

SMBIOS Event Log

Select Enabled to enable SMBIOS (System Management BIOS) Event Logging during system boot. The options are Disabled and **Enabled**.

Erasing Settings

Erase Event Log

Select No to keep the event log without erasing it upon next system bootup. Select Yes, Next Reset to erase the event log upon next system reboot. The options are **No**, Yes, Next reset, and Yes, Every eset.

When Log is Full

Select Erase Immediately to immediately erase all errors in the SMBIOS event log when the event log is full. Select Do Nothing for the system to do nothing when the SMBIOS event log is full. The options are **Do Nothing** and Erase Immediately.

SMBIOS Event Log Standard Settings

Log System Boot Event

Select Enabled to log system boot events. The options are Enabled and **Disabled**.

MECI (Multiple Event Count Increment)

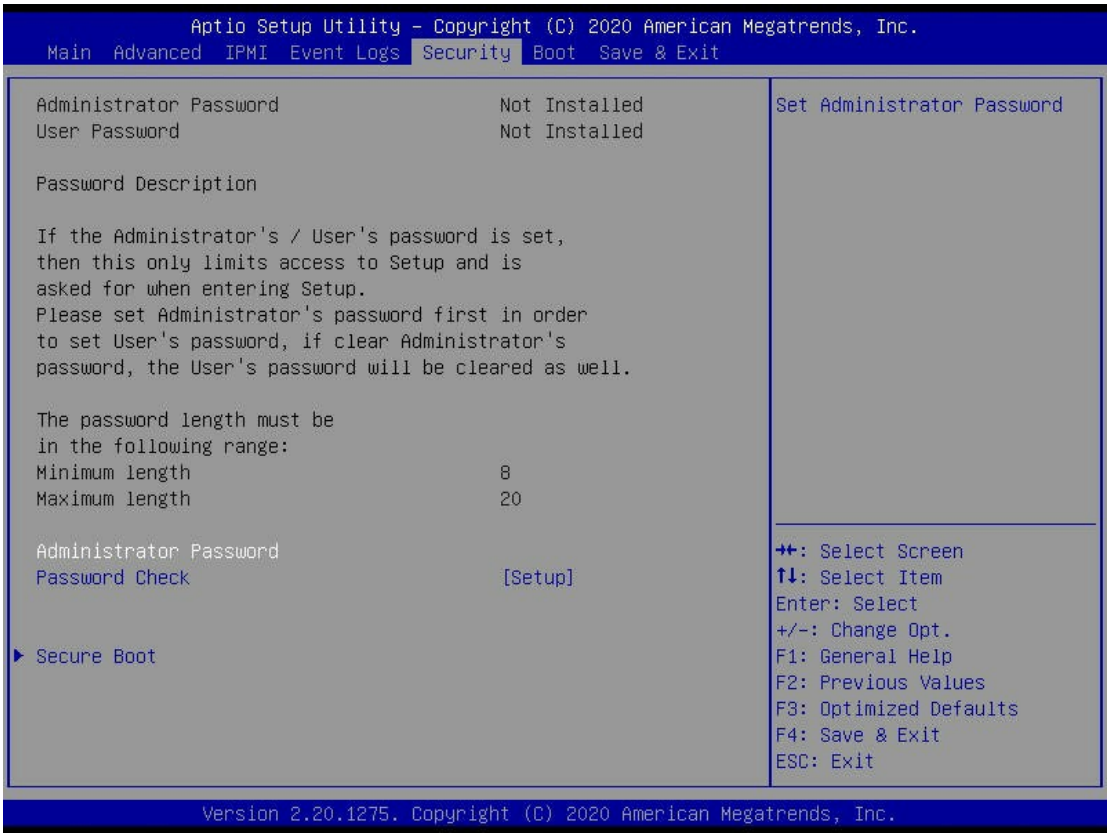
Enter the increment value for the multiple event counter. Enter a number between 1 to 255. The default setting is **1**.

METW (Multiple Event Count Time Window)

This feature is used to determine how long (in minutes) should the multiple event counter wait before generating a new event log. Enter a number between 0 to 99. The default setting is **60**.

6.6 Security Settings

This menu allows the user to configure the following security settings for the system.



Administrator Password

Use this feature to set the administrator password which is required to enter the BIOS setup utility. The length of the password should be from 3 characters to 20 characters long.

Password Check

Select Setup for the system to check for a password at Setup. Select Always for the system to check for a password at system boot and upon entering the BIOS Setup utility. The options are **Setup** and Always.

▶Secure Boot

When you select this submenu and press the <Enter> key, the following items will display:

- System Mode
- Vendor Keys

- Sucre Boot

Secure Boot

Select Enabled to use Secure Boot settings. The options are **Disabled** and Enabled.

Secure Boot Mode

Use this feature to select the desired secure boot mode for the system. The options are Standard and **Custom**.

CMS Support

If this feature is set to Enabled, legacy devices will be supported by the system. The options are Disabled and **Enabled**.

▶Key Management

Provision Factory Defaults

The options are **Disabled** and Enabled.

▶Restore Factory Keys

Select Yes to restore manufacturer default keys used to ensure system security. The options are **Yes** and No.

▶Reset to Setup Mode

Select Yes to reset the system to the Setup Mode. The options are **Yes** and No.

▶Export Secure Boot Variables

This feature is used to copy the NVRAM content of Secure Boot variables to a storage device.

▶Enroll Efi Image

Select this feature and press <Enter> to specify an EFI (Extensible Firmware Interface) image for the system to use when it operates in the Secure Boot mode.

Device Guard Ready

▶Remove 'UEFI CA' from DB

Select Yes to remove UEFI CA from the database. The options are **Yes** and No.

▶Restore DB defaults

Select Yes to restore database variables to the manufacturer default settings. The options are **Yes** and No.

Secure Boot Variable/Size/Keys/Key Source

▶Platform Key (PK)

This feature allows the user to enter and configure a set of values to be used as platform firmware keys for the system. The sizes, keys numbers, and key sources of the platform keys will be indicated as well. Select Update to update the platform key.

▶Key Exchange Keys

This feature allows the user to enter and configure a set of values to be used as Key-Exchange-Keys for the system. The sizes, keys numbers, and key sources of the Key-Exchange-Keys will be indicated as well. Select Update to update your "Key Exchange Keys". Select Append to append your "Key Exchange Keys".

▶Authorized Signatures

This feature allows the user to enter and configure a set of values to be used as Authorized Signatures for the system. These values also indicate the sizes, keys numbers, and the sources of the authorized signatures. Select Update to update your "Authorized Signatures". Select Append to append your "Authorized Signatures". The settings are **Update**, and Append.

▶Forbidden Signatures

This feature allows the user to enter and configure a set of values to be used as Forbidden Signatures for the system. These values also indicate sizes, keys numbers, and key sources of the forbidden signatures. Select Update to update your "Forbidden Signatures". Select Append to append your "Forbidden Signatures". The settings are **Update**, and Append.

▶Authorized TimeStamps

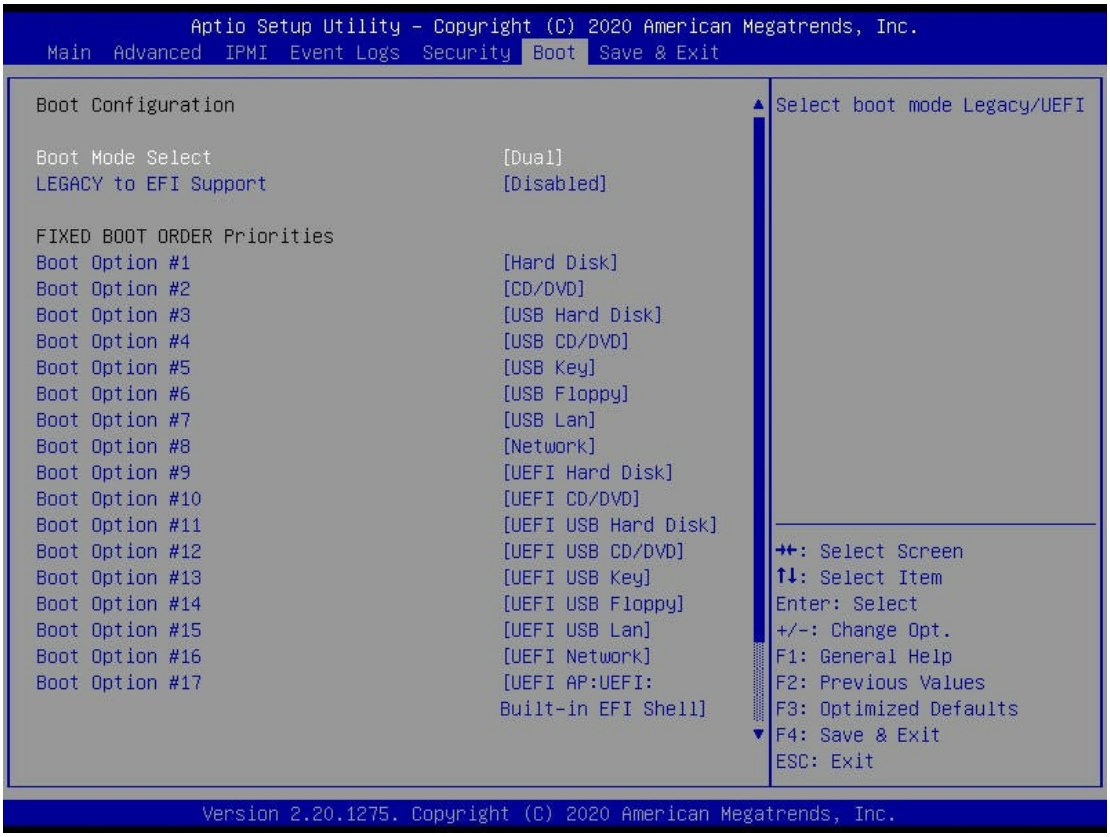
This feature allows the user to set and save the timestamps for the authorized signatures which will indicate the time when these signatures are entered into the system. Select Update to update your "Authorized TimeStamps". Select Append to append your "Authorized TimeStamps". The settings are **Update**, and Append.

▶Os Recovery Signatures

This feature allows the user to set and save the authorized signatures used for OS recovery. Select Update to update your "OS Recovery Signatures". Select Append to append your "OS Recovery Signatures". The settings are **Update**, and Append.

6.7 Boot Settings

Use this feature to configure Boot Settings:



Boot Mode Select

Use this feature to select the type of devices from which the system will boot. The options are Legacy, UEFI (Unified Extensible Firmware Interface), and **Dual**.

LEGACY to EFI Support

Select Enabled for the system to boot from an EFI OS when the Legacy OS fails. The options are **Disabled** and Enabled.

FIXED BOOT ORDER Priorities

This feature prioritizes the order of a bootable device from which the system will boot. Press <Enter> on each item sequentially to select devices.

When the item above -"Boot Mode Select" is set to **Dual** (default), the following items will be displayed for user's configuration:

Boot Option #1 - Boot Option #17

When the item above -"Boot Mode Select" is set to Legacy, the following items will be displayed for configuration:

- Boot Option #1 - Boot Option #8

When the item above -"Boot Mode Select" is set to UEFI, the following items will be displayed for configuration:

- Boot Option #1 - Boot Option #9

▶Delete Boot Option

Use this feature to select a boot device to delete from the boot priority list.

Delete Boot Option

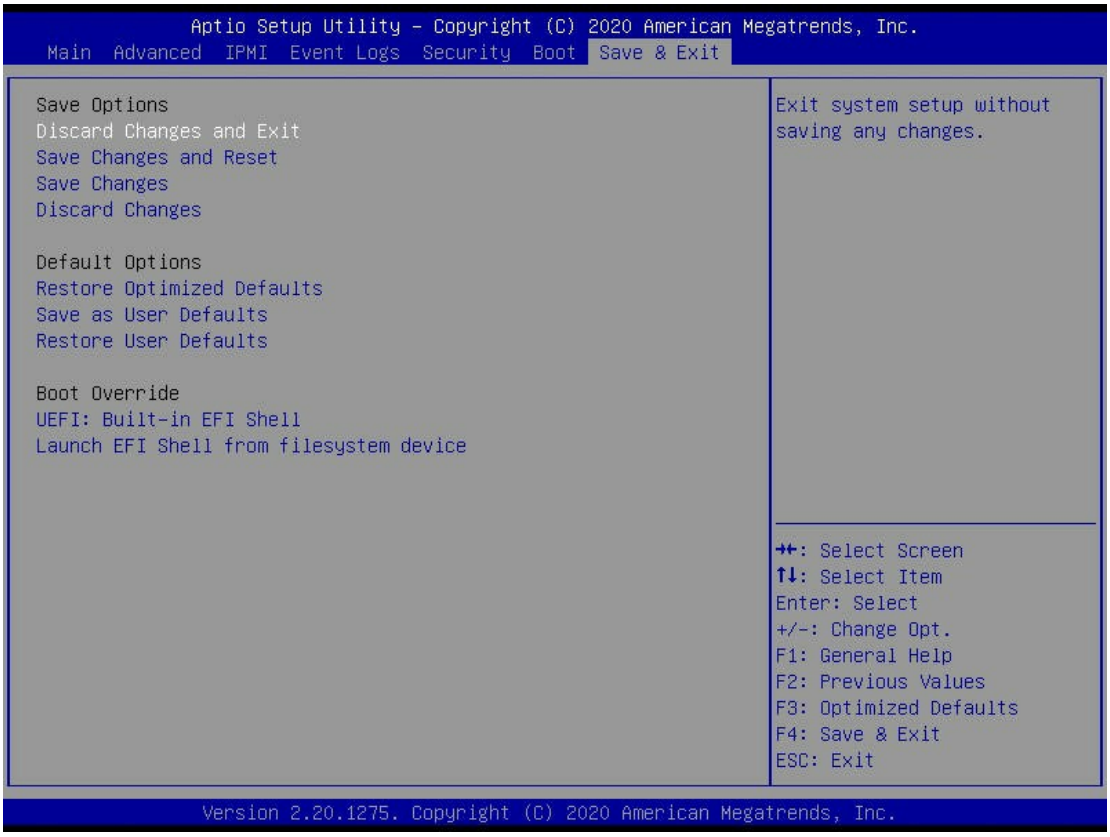
Use this feature to remove an EFI boot option from the boot priority list.

▶UEFI Application Boot Priorities

Use this feature to set the system boot order.

6.8 Save & Exit

Select the Save & Exit menu from the BIOS setup screen to configure the settings below.



Save Options

Discard Changes and Exit

Select this option to exit from the BIOS setup utility without making any permanent changes to the system configuration and reboot the computer.

Save Changes and Reset

When you have completed the system configuration changes, select this option to leave the BIOS setup utility and reboot the computer for the new system configuration parameters to become effective.

Save Changes

When you have completed the system configuration changes, select this option to save all changes made. This will not reset (reboot) the system.

Discard Changes

Select this option and press <Enter> to discard all the changes you've made and return to the AMI BIOS setup utility.

Default Options

Restore Optimized Defaults

To set this feature, select Restore Defaults from the Exit menu and press <Enter> to load manufacturer default settings which are intended for maximum system performance but not for maximum stability.

Save as User Defaults

To set this feature, select Save as User Defaults from the Exit menu and press <Enter>. This enables the user to save all changes to the BIOS setup for future use.

Restore User Defaults

To set this feature, select Restore User Defaults from the Exit menu and press <Enter>. Use this feature to retrieve user-defined default settings that were saved previously.

Boot Override

This feature allows the user to override the Boot priorities sequence in the Boot menu, and immediately boot the system with a device specified by the user instead of the one specified in the boot list. This is a one-time override.

IBA XE Slot 6100 v2364

UEFI: Built-in EFI Shell

Launch EFI Shell from filesystem device

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。

此警告符号代表危险。

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

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 הצהרות אזהרה

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

יש לקרוא את הנספח במלואו לפני התקנת או הגדרת הרכיבים במארזי סופרמיקרו.

ا كً ف حالة وٌكي أى تتسبب ف اصابة جسد ةٌ هذا الزهز عٌ خطز !تحذ زٌ .
قبل أى تعول على أي هعذات،كي على علن بالوخاطز ال ٱجوة عي الذوائز
الكهزبائ ةٍ
وكي على درا ةٌ بالووارسات البقائ ةٍ لو عٌ وقع أي حادث
استخذم رقن الب إٍى الو صٌص ف هًا ةٌ كل تحذ زٌ للعشر تزجوتها

안전을 위한 주의사항

경고!

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

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

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

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

BEWAAR DEZE INSTRUCTIES

Installation Instructions

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

設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

警告

将此系统连接电源前,请先阅读安装说明。

警告

將系統與電源連接前，請先閱讀安裝說明。

Warnung

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

¡Advertencia!

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

Attention

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

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

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

Circuit Breaker

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

サーキット・ブレーカー

この製品は、短絡（過電流）保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

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

هذا المنتج يعتمد على معداث الحمايت مه الدوائرالقصيرة 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 electrische installatie. Controleer of het beveiligde aparaat 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 chassis pour installer ou enlever des composants de systéme.

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 فصم انتظاو من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد

انطاقت قبم

انصل إنى انمناطق انداخهيت نههيكم نتثبيج أو إزانت مكناث الجهاز

경고!

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

Waarschuwing

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

Equipment Installation

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

機器の設置

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

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה!

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

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

경고!

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

Waarschuwing

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

Restricted Area

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

アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

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

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

אזור עם גישה מוגבלת

אזהרה!

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

تخصيص هذه انحذة نترك بُها ف مناطق محظورة تم .
،مَكن انصبل إن منطقت محظورة فقط من خلال استخذاو أداة خاصت
أو أ وس هُت أخري نلالأمما قفم ومفتاح

경고!

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

Waarschuwing

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

Battery Handling

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

电池更换不当会有爆炸危险。请只使用同类电池或制造商推荐的功能相当的电池更换原有电池。请按制造商的说明处理废旧电池。

警告

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

Warnung

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

Attention

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

¡Advertencia!

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

!אזהרה

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

هناك خطر من انفجار في حالة اسحبذال البطارية بطريقة غير صحيحة فعليل
اسحبذال البطارية
فقط بنفس النبع أو ما يعادلها مما أوصث به الشرمة المصنعة
جخلص من البطاريات المسحعملة وفقا لحعليمات الشرمة الصانعة

경고!

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

Waarschuwing

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

Redundant Power Supplies

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

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告
此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

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

Warnung

Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein trom 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!

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

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة .

يجب إزالة كافة الاتصالات لعسل الوحدة عن الكهرباء

경고!

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

Waarschuwing

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

Backplane Voltage

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

バックプレーンの電圧

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

修理する際には注意ください。

警告

当系统正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告

當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

Warnung

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

¡Advertencia!

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

Attention

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

מתח בפנל האחורי

אזהרה!

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

هناك خطر مه التيار الكهزبائي أوالطاقة المجبدة على اللحة
عندما يكن النظام يعمل كه حذرا عند خدمة هذا الجهاس

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

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

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

تركيب المعدات الكهربائية يجب أن يمتثل للقاويه المحلية والسطية 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 القانين واللائح البطنية 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

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

Warnung

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

¡Advertencia!

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

Attention

Pieces mobiles dangereuses. Se tenir a l'ecart 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 בפעולהכאשר מסירים את חלקי
המאוורר מהמארז, יתכן והמאוררים עדיין עובדים. יש להרחיק למרחק בטוח את
האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר

تحذير! أجزاء متحركة خطرة. ابتعد عن شفرات المروحة المتحركة.من الممكن أن
المراوح لا تزال تدورعند 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. 섀시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조림품 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 Adapater, die Ihre örtlichen Sicherheitsstandards einhalten. Der Gebrauch von anderen Kabeln und Adapter können Fehlfunktionen oder Feuer verursachen. Die Richtlinien untersagen das Nutzen von UL oder CAS zertifizierten Kabeln (mit UL/CSA gekennzeichnet), an Geräten oder Produkten die nicht mit Supermicro gekennzeichnet sind.

¡Advertencia!

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

Attention

Lors de l'installation du produit, utilisez les cables de connection fournis ou désigné ou achetez des cables, cables de puissance et adaptateurs respectant les normes locales et les conditions de securite y compris les tailles de cables et les prises electriques appropries. L'utilisation d'autres cables et adaptateurs peut provoquer un dysfonctionnement ou un incendie. Appareils électroménagers et la Loi sur la Sécurité Matériel interdit l'utilisation de câbles certifies- 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.

כבלים חשמליים ומתאמי AC

!אזהרה

כאשר מתקינים את המוצר, יש להשתמש בכבלים, ספקים ומתאמים AC אשר נרכשו או הותאמו לצורך ההתקנה, ואשר הותאמו לדרישות הבטיחות המקומיות, כולל מידה הנכונה של הכבל והתקע . שימוש בכל כבל או מתאם מסוג אחר, עלול לגרום לתקלה או קצר חשמלי. בהתאם לחוקי השימוש במכשירי החשמל וחוקי הבטיחות, קיים איסור להשתמש בכבלים המוסמכים ב- UL או ב-CSA (כאשר מופיע עליהם קוד של UL/CSA) עבור כל מוצר חשמלי אחר, אלא רק במוצר אשר הותאם ע"י Supermicro בלבד.

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

전원 케이블 및 AC 어댑터

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

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

Stroomkabel en AC-Adapter

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

Appendix B

System Specifications

Processors

Dual AMD EPYC™ 7002/7003 Series Processors in SP3 socket

Chipset

System on Chip

BIOS

256Mb SPI AMI BIOS
ACPI 6.2, SMBIOS 3.1.1, Plug-and-Play (PnP), RTC (Real Time Clock) wakeup, riser card auto-detection

Memory

Up to 8TB ECC DDR4-3200 SDRAM memory in 32 slots
Note: See the memory section in Chapter 3 for details and our website for updates to supported memory

GPU Support

Four Nvidia Tesla A100 40GB SXM4 GPUs with NVlink GPU interconnect and PCIe Gen4 to host CPUs (up to 400W TDP)

Drive Bays

Four hot-swap 2.5" bays (SATA/NVMe Hybrid or SAS with optional HBA, SSDs only)

PCI Expansion Slots

Four PCIe x16 Gen 4 slots (low-profile)
One PCIe x8 Gen 4 slot (low-profile)

Motherboard

H12DSG-Q-CPU6 ; 17" (L) x 16.8" (W) (431.8 x 426.72 mm)

Chassis

CSE-228GTS-R000NP; 2U rackmount, 17.2 (W) x 3.5 (H) x 32.4 (D) in. (437 x 89 x 823 mm)

Weight

Net Weight: 78.5 lbs (35.6 kg)
Gross Weight: 88.5 lbs (40.2 kg)

System Cooling

Four 80-mm PWM fans, one air shroud

Power Supply

AS -2124GQ-NART: Model PWS-2K21G-2R; 80Plus Platinum level
Total Output Power: 1000W: 100-127Vac / 2000W: 220-240Vac
Input:
  100-127 Vac / 12 - 9 A / 50-60 Hz
  200-240 Vac / 11 - 10 A / 50-60 Hz
AS -2124GQ-NART+: PWS-3K02G-2R; 80Plus Titanium level
Total Output Power:
  2880W with 200 - 207Vac input
  3000W with 207.1 - 240Vac input
  3000W with 240Vdc input
Input:
  200-207 Vac / 16 - 15.7A / 50-60 Hz
  207.1-240 Vac / 16 - 14.5A / 50-60 Hz

Operating Environment

Operating Temperature: 10º to 35º C (50º to 95º F)
Non-operating Temperature: -40º to 60º C (-40º to 140º 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 Subpart B
ICES-003
VCCI-CISPR 32
AS/NZS CISPR 32
EN55032
EN55035
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 62368-1 (USA and Canada)
IEC/EN 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”

Appendix C

BSMI Chinese Safety Warnings

Declaration of the Presence Condition of the Restricted Substances Marking

設備名稱：伺服器/ Server
Equipment name
型號（型式）： 228G-R22H12
Type designation (Type)
(系列型號:): AS -2124GQ-NART ,228G-22, 228G-R30H12 , 228G-30, AS -2124GQ-NART+

單元Unit	Restricted substances and its chemical symbols 限用物質及其化學符號					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
機殼 (Chassis)	○	○	○	○	○	○
機殼風扇 (Chassis Fan)	-	○	○	○	○	○
線材 (Cable)	○	○	○	○	○	○
主機板 (Motherboard)	-	○	○	○	○	○
電源供應器 (Power Supply)	-	○	○	○	○	○
硬碟 (HDD, SSD)	-	○	○	○	○	○
電源背板 (PDB)	-	○	○	○	○	○
附加卡 (Add-on Card)	-	○	○	○	○	○

備考1.〝超出0.1 wt %〞及〝超出0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。

Note 1：“Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.

備考2.〝○〞係指該項限用物質之百分比含量未超出百分比含量基準值。

Note 2：“o” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考3.〝-〞係指該項限用物質為排除項目。

Note 3：The “–” indicates that the restricted substance corresponds to the exemption.

輸入額定:

***PWS-2K21G-2R**

200-240 Vac,50-60 Hz,10-9.5 AĐ

***PWS-3K02G-2R**

200-240 Vac,50-60 Hz,15-14.5A

***使用者不能任意拆除或替換內部配備**

警告使用者：

此為甲類資訊技術設備，於居住環境中使用時，可能會造成射頻擾動，在此種情況下，使用者會被要求採取某些適當的對策。