A+ Server®

AS -1126HS-TN

USER'S MANUAL

Revision 1.0a (MNL-2730)

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Preface

About This Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the AS -1126HS-TN server. Installation and maintenance should be performed by certified service technicians only.

Notes

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

- Supermicro product manuals: https://www.supermicro.com/support/manuals
- Product drivers and utilities: https://www.supermicro.com/wdl
- Product safety info: https://www.supermicro.com/about/policies/safety_information.cfm
- 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
- Frequently Asked Questions: https://www.supermicro.com/FAQ/index.php
- If you still have questions after referring to our FAQs, contact our support team. Region-specific Technical Support email addresses can be found at: "Contacting Supermicro" on page 11
- If you have any feedback on Supermicro product manuals, contact our writing team at: Techwriterteam@supermicro.com

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

Conventions Used in the Manual

Special attention should be given to the following symbols for proper installation and to prevent damage done to the components or injury to yourself.

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

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

Important: Important information given to ensure proper system installation or to relay safety precautions.

Note: Additional information given to differentiate various models or to provide information for proper system setup.

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Contacting Supermicro

Headquarters

Address:	Super Micro Computer, Inc. 980 Rock Ave. San Jose, CA 95131 U.S.A.
Tel:	+1 (408) 503-8000
Fax:	+1 (408) 503-8008
Email:	Marketing@supermicro.com (General Information) Sales-USA@supermicro.com (Sales Inquiries) Government_Sales-USA@supermicro.com (Gov. Sales Inquiries) Support@supermicro.com (Technical Support) RMA@Supermicro.com (RMA Support) Webmaster@supermicro.com (Webmaster)
Website:	https://www.supermicro.com

Europe

Address:	Super Micro Computer B.V. Het Sterrenbeeld 28, 5215 ML 's-Hertogenbosch, The Netherlands
Tel:	+31 (0) 73-6400390
Fax:	+31 (0) 73-6416525
Email:	Sales_Europe@supermicro.com (Sales Inquiries) Support_Europe@supermicro.com (Technical Support) RMA_Europe@supermicro.com (RMA Support)
Website:	https://www.supermicro.nl

Asia-Pacific

Address:	Super Micro Computer, Inc. 3F, No. 150, Jian 1st Rd. Zhonghe Dist., New Taipei City 235 Taiwan (R.O.C)
Tel:	+886 (2) 8226-3990
Fax:	+886 (2) 8226-3992
Email:	Sales-Asia@supermicro.com.tw (Sales Inquiries) Support@supermicro.com.tw (Technical Support) RMA@supermicro.com.tw (RMA Support)
Website:	https://www.supermicro.com.tw

Chapter 1:

Introduction

This chapter provides a brief outline of the functions and features of the AS -1126HS-TN system. It is based on the H14DSH motherboard and the CSE-HS101-R000NFP chassis.

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1.1 Overview

This chapter provides a brief outline of the functions and features of the A+ Server AS -1126HS-TN system. The following provides an overview of the product specifications and capabilities.

System Overview	
Motherboard	H14DSH
Chassis	CSE-HS101-R000NFP
Processor	Dual AMD EPYC™ 9005/9004 Series processors in Socket SP5 and a Thermal Design Power (TDP) unit up to 500 W **Note:** Dependent on thermal validation and system configuration. Contact a Supermicro representative for details.
Memory	24 DIMM slots with 1DPC that support up to • 6 TB of ECC DDR5/3DS RDIMM at 6400 MT/s (9005 Series CPU) • 6 TB of ECC DDR5/3DS RDIMM at 4800 MT/s (9004 Series CPU) **Note:** For detail, please refer to Section 3.5.
Drive Support	Up to 12 2.5" front hot-swap NVMe/SAS/SATA drive bays (drive options require additional parts) Two M.2 NVMe PCIe 3.0 x4 slots in 2280 and 22110 form factors
Expansion Slots	Two PCIe 5.0 x16 FHFL One PCIe 5.0 x16 FHHL
I/O Ports	One AIOM slot for flexible networking (OCP 3.0 compatible) Three USB 3.0 ports (two rear, one front) One VGA Port (rear) One RJ45 dedicated BMC LAN port
System Cooling	Eight 4-cm heavy duty fans with optimal fan speed control Two air shrouds
Power	Selectable dual redundant power supplies, either 1200 W / 1600 W / 2000 W / 2600 W (Titanium Level) or 1300 W / 2000 W redundant DC power supplies **Note:** Full redundancy based on configuration and application load
Form Factor	1U rackmount: 17.2" x 1.7" x 30.66" (43 x 437 x 779 mm) (W x H x D)

Notes: A Quick Reference Guide can be found on the product page of the Supermicro website. The following safety models associated with the AS -1126HS-TN have been certified as compliant with UL or CSA: HS101-R12H14, HS101-R12, HS101-R16H14, HS101-R16, HS101-R20H14, HS101-R20 HS101-R26H14, HS101-R26, HS101-R16DH14, HS101-R16D, HS101-R20DH14, HS101-R20D, HS101-R13DH14, and HS101-R13D.

1.2 System Features

The following views of the system display the main features. Refer to the System Specifications appendix of this manual for additional specifications.

Front View

Figure 1-1. System Front View: Default Eight-Drive Configuration

Figure 1-2. System Front View: Optional Twelve-Drive Configuration

System Features: Front	
Feature	**Description**
USB	One USB 3.0 port
Control Panel	One control panel (see "Control Panel" on page 18 for details)
Storage I/O Bays	Additional storage I/O bays
Service/Asset Tag	A pull-out service tag with BMC admin [assword

Logical Storage Drive Numbers	
Item	**Description**
0-7	Eight hot-swap 2.5" NVMe/SATA/SAS drive bays
8-11	*Optional four hot-swap 2.5" NVMe/SATA/SAS drive bays
NVMe/SATA/SAS support require additional parts. See"Cable Routing Diagrams" on page 74 for optional configurations and part numbers. ***Additional parts are needed for optional four drives support.**	

Drive Carrier Indicators

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

Drive Carrier LED Indicators			
	Color	**Blinking Pattern**	**Behavior for Device**
Activity LED	Blue	Solid On	Idle SAS/NVMe drive installed
	Blue	Blinking	I/O activity
	Off		Idle SATA drive installed
Status LED	Red	Solid On	Drive failure
	Red	Blinking at 1 Hz	Rebuilding drive
	Red	Blinking with two blinks and one stop at 1 Hz	Hot spare for drive
	Red	On for five seconds, then off	Power on for drive
	Red	Blinking at 4 Hz	Identifying drive
	Green	Solid On	Safe to remove NVMe drive
	Amber	Blinking at 1 Hz	Do not remove NVMe drive

Control Panel

The switches and LEDs located on the control panel of the AS -1126HS-TN server are described below.

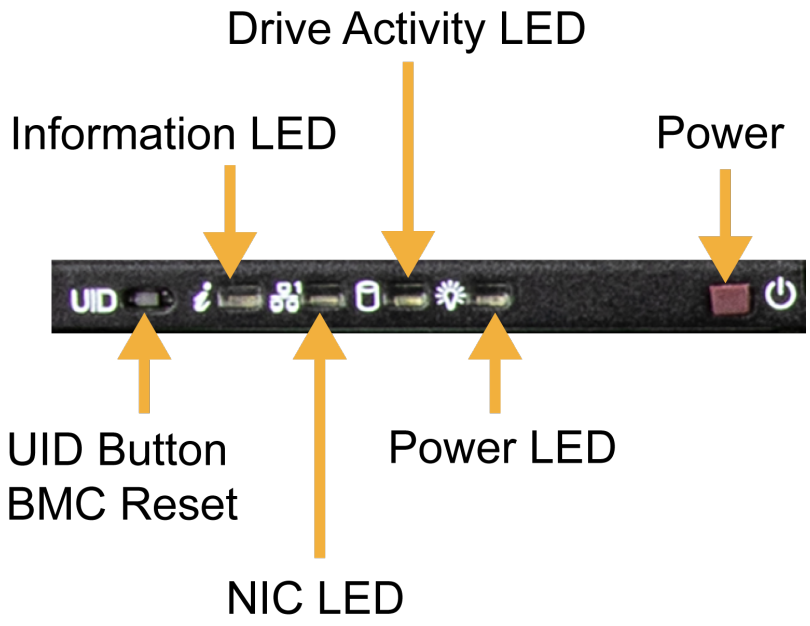

Figure 1-3. Control Panel

Control Panel Features	
Feature	**Description**
UID button/ BMC reset	The unit identification (UID) button turns on or off the blue light function of the Information LED. This button can also be used to reset the BMC.
Information LED	Alerts operator to several states, as noted in the table below.
NIC LED	Indicates network activity on LANs when flashing.
Drive Activity LED	Indicates activity on the storage drives when flashing.
Power LED	Blinking at 4 Hz – Checking BIOS/BMC integrity Blinking at 4 Hz and "i" LED is blue – BIOS firmware updating Two blinks at 4 Hz, one pause 2 Hz and "i" LED blue – BMC firmware updating Blinking at 1 Hz and "i" LED red – Fault detected
Power button	The main power switch applies or removes primary power from the power supply to the server but maintains standby power. Hold for four seconds to force a shut-down.

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

Rear View

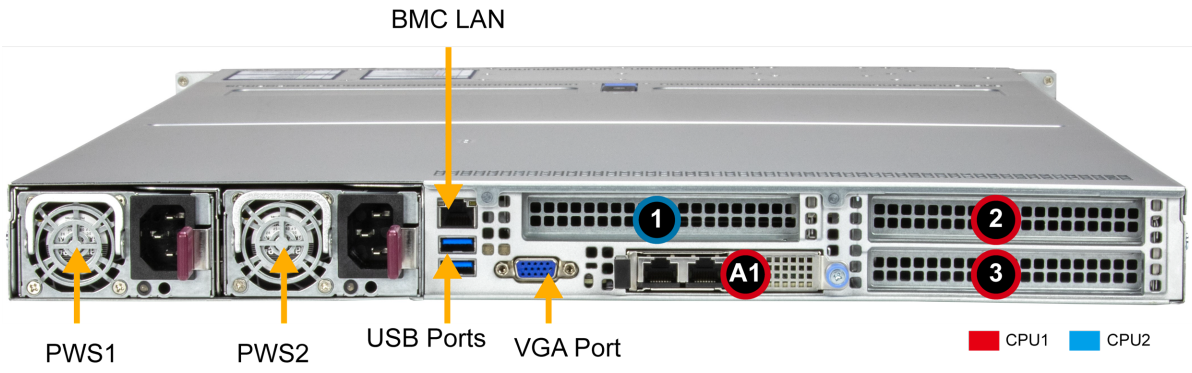

Figure 1-4. System: Rear View

System Features: Rear	
Feature	**Description**
Power Supply modules	Two redundant power supply modules, PWS1 on the left, PWS2 on the right. Full power supply redundancy is based on selected power supply, system configuration, and application load. For options, see "Power Supply Modules" on page 103.
USB	Two USB 3.0 ports
BMC LAN Port	One RJ45 dedicated BMC LAN port
VGA	One VGA port

Expansion Card Slots	
Item	**Description**
A1	PCIe 5.0 x16 AIOM Slot (OCP 3.0 compatible)
1	PCIe 5.0 x16 Slot (FHFL)
2	PCIe 5.0 x16 Slot (FHFL)
3	PCIe 5.0 x16 Slot (FHFL)
***Expansion slot capabilities are affected by the storage drive configurations.**	

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

1.3 System Architecture

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

Main Components

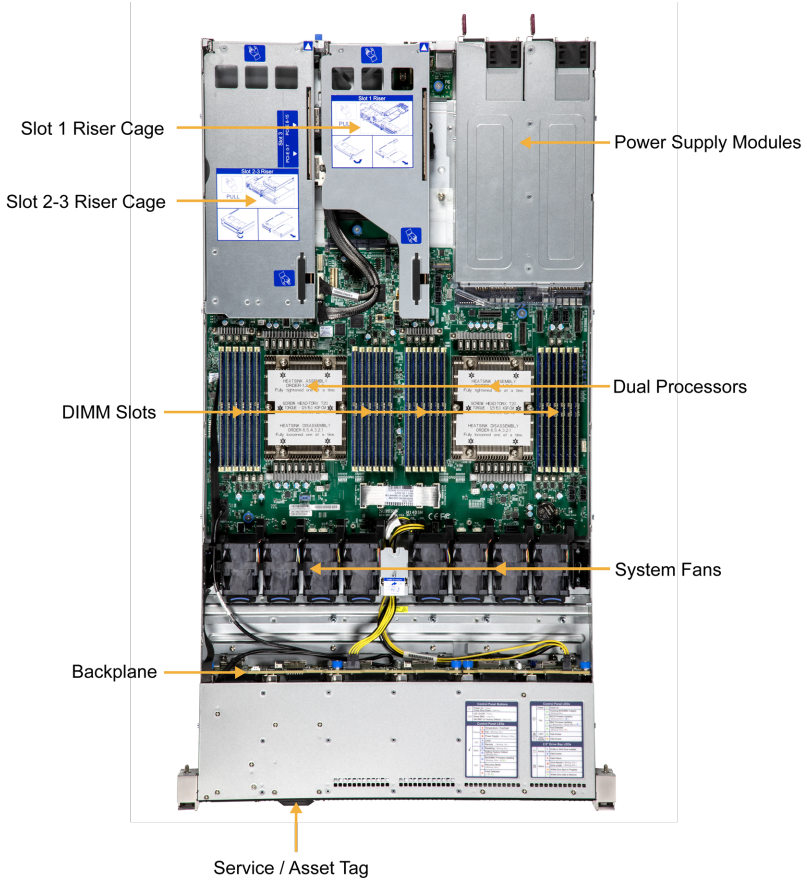

Figure 1-5. Main Component Locations

System Features: Top	
Feature	**Description**
Power Supply Modules	Dual redundant modules
DIMM Slots	24 DIMM slots
Processor	Dual AMD EPYC™ 9005/9004 Series processors in SP5 socket
System Fans	Eight 4-cm heavy duty fans with optimal fan speed control, FAN-0230L4-1
Service/Asset Tag	Service/Asset tag with BMC ADMIN password

System Features: Top	
Feature	**Description**
Backplane	Default: One BPN-NVME5-HS119N-S8L, eight NVMe/SATA/SAS storage device backplanes Optional: One BPN-NVME5-HS119N-S4R, for support of an additional four NVMe/SATA/SAS storage devices
Slot 1 Riser Cage	Riser Cage for one PCIe slot with riser card RSC-H-A6G5H
Slot 2-3 Riser Cage	Riser Cage for two PCIe slots with riser card RSC-H-A66G5H

System Block Diagram

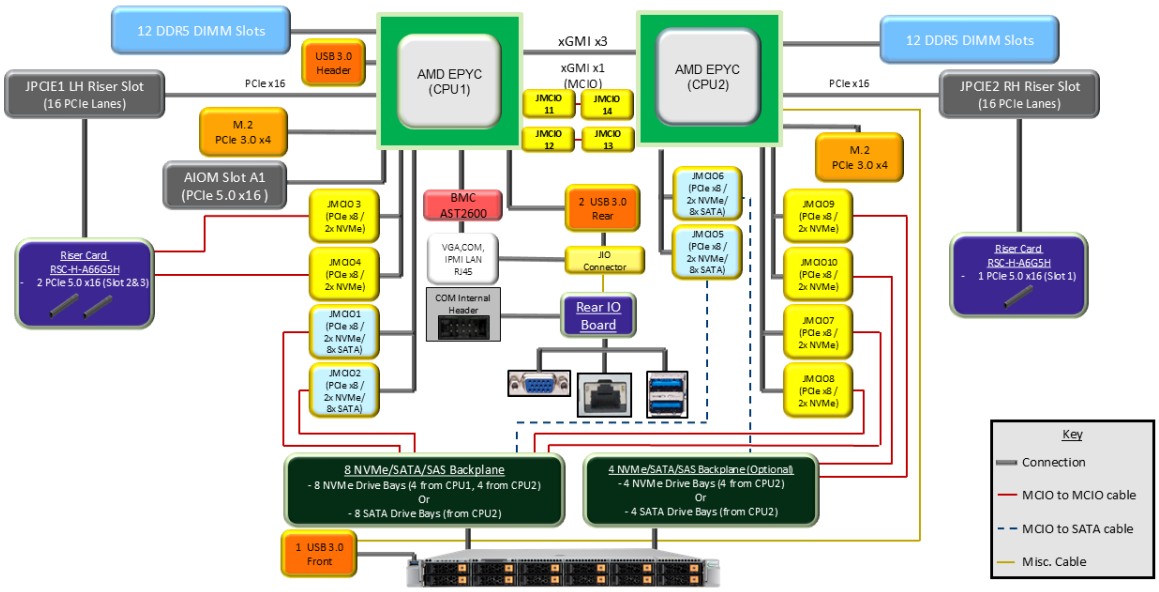

Figure 1-6. System Block Diagram

1.4 Motherboard Quick Reference

For details on the H14DSH motherboard layout and other quick reference information, refer to the content below.

Motherboard Layout

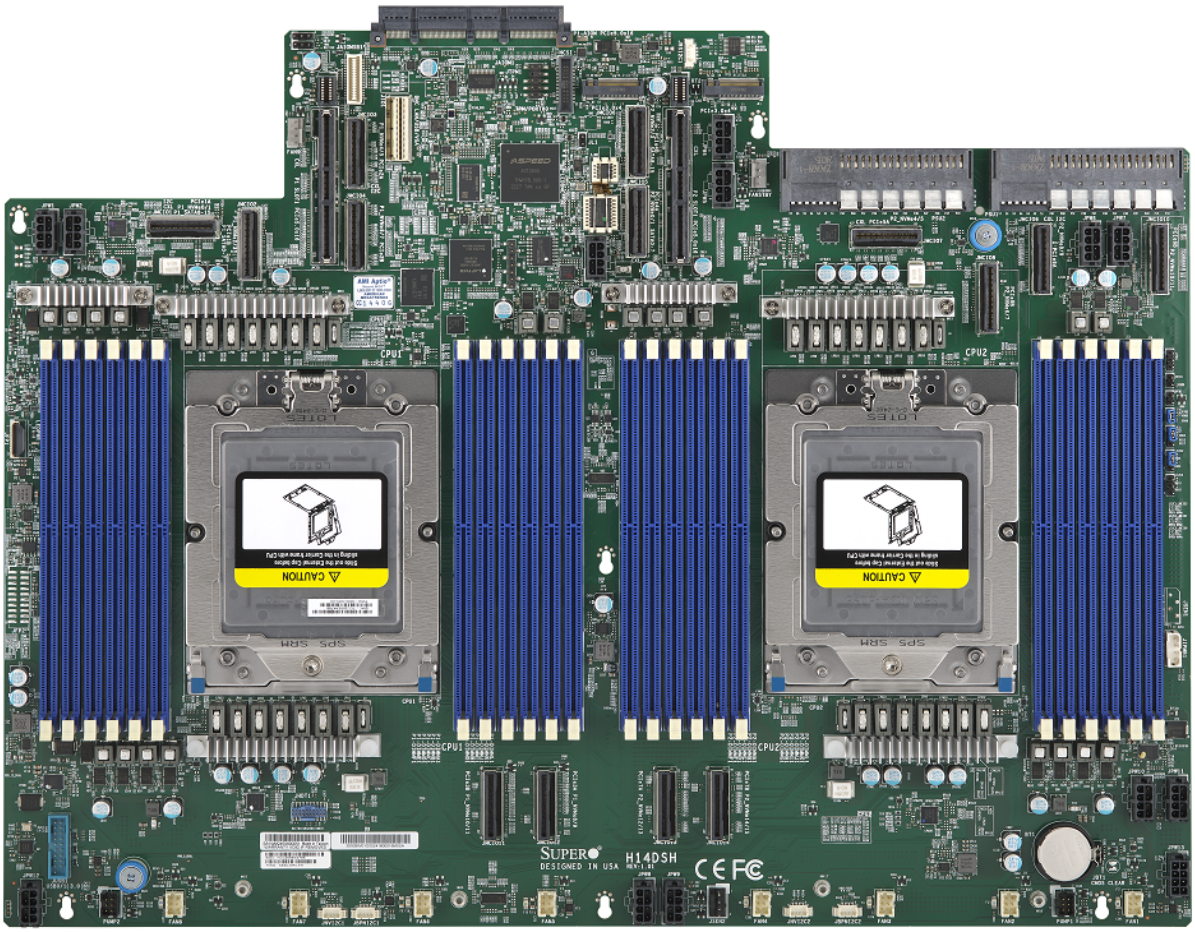

Figure 1-7. Motherboard Image

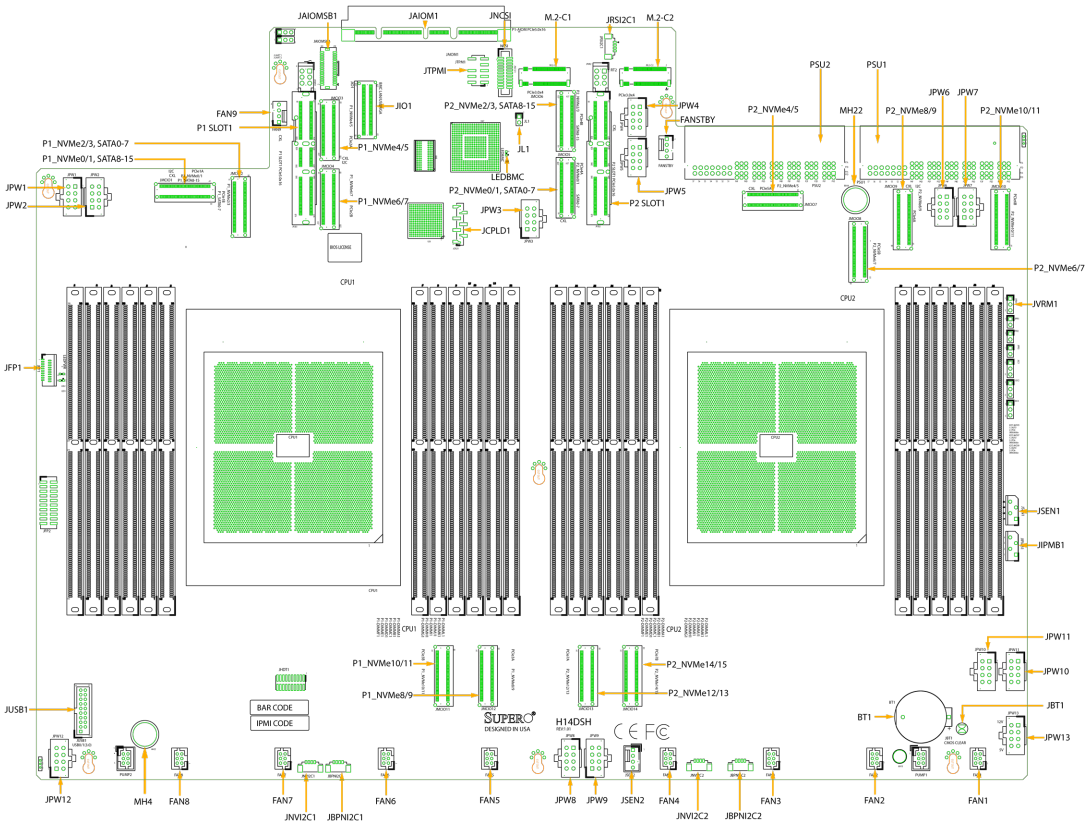

Figure 1-8. Motherboard Layout

Notes:

- See "Maintenance and Component Installation" on page 42 for detailed information on jumpers, connectors, and LED indicators.
- "■" indicates the location of pin 1.
- Components not documented are for internal testing-purposes only.
- Use only the correct type of onboard CMOS battery as specified by the manufacturer. Do not install the onboard battery upside down to avoid possible explosion.

Quick Reference Table

Jumper	Description	Default Setting
JBT1	CMOS Clear	Open (Normal)

LED	Description	Status
LEDBMC	BMC Heartbeat LED	Green Blinking: BMC Normal Green Blinking Fast: BMC Initializing

Connector	Description
BT1	Onboard Battery
FAN1–FAN8	6-pin Fan Headers
FAN9, FANSTBY	4-pin Fan Headers
JAIOM	Supermicro Advanced Input/Output Module (AIOM) PCIe 5.0 x16 Connector
JBPNI2C1, 2	4-pin BMC External I²C Headers for backplane
JNVI2C1, 2	4-pin I²C Headers for NVMe Backplane Hot-swap Support
JRSI2C1	4-pin BMC External I²C Header for Riser Card
JFP1	Front Control Panel Connector
JIO1	Onboard VGA/USB/NIC I/O Module Connector
JIPMB1	4-pin External BMC I²C Header
JL1	Chassis Intrusion Header
JNCSI1	NC-SI Connector
JPW1–12	12V 8-pin GPU/BPN/AOC Power Connector
JPW13	5 V/ 12 V Backplane Power Connector
JSEN2	4-pin BMC External I²C Header for Liquid Cooling Module leak detection sensor
JTPM1	Trusted Platform Module/Port 80 Connector
JUSB1	Front Panel USB Connector
M.2-C1, M.2-C2	M.2 PCIe Interfaces (NVMe only)

Connector	Description
MH4, MH22	Thumbscrews for mounting the motherboard
P1_NVMe0/1, PCIe 1A P1_SATA8-15	NVMe Ports 0/1, P1_SATA 8-15, supported by CPU1
P1_NVMe2/3, PCIe 1B P1_SATA0-7	NVMe Ports 2/3, P1_SATA 0-7, supported by CPU1
P1_NVMe4/5, PCIe 2A	NVMe Ports 4/5, supported by CPU1
P1_NVMe6/7, PCIe 2B	NVMe Ports 6/7, supported by CPU1
P1_NVMe8/9, PCIe 3A	NVMe Ports 8/9, XGMI, supported by CPU1
P1_NVMe10/11, PCIe 3B	NVMe Ports 10/11, XGMI, supported by CPU1
P2_NVMe0/1, PCIe 4A P2_SATA0-7	NVMe Ports 0/1, P1_SATA 0-7, supported by CPU2
P2_NVMe2/3, PCIe 4B P2_SATA8-15	NVMe Ports 2/3, P1_SATA 8-15, supported by CPU2
P2_NVMe4/5, PCIe 5A	NVMe Ports 4.5, supported by CPU2
P2_NVMe6/7, PCIe 5B	NVMe Ports 6/7, supported by CPU2
P2_NVMe8/9, PCIe 6A	NVMe Ports 8/9, supported by CPU2
P2_NVMe10/11, PCIe 6B	NVMe Ports10/11, supported by CPU2
P2_NVMe12/13, PCIe7A	NVMe Ports 12/13, XGMI, supported by CPU2
P2_NVMe14/15, PCIe7B	NVMe Ports 14/15, XGMI, supported by CPU2
P1 SLOT1	PCIe 5.0 x16 slot, CPU1
P2 SLOT1	PCIe 5.0 x16 slot, CPU2
PSU1, PSU2	Power Supply Module Connectors

Chapter 2:

Server Installation

This chapter provides advice and instructions for mounting your server in a server rack. If your server is not already fully integrated with processors, system memory, etc., refer to "Maintenance and Component Installation" on page 42 for details on installing those specific components.

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

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2.1 Unpacking the System

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

Decide on a suitable location for the rack unit that will hold the server. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. It will also require a grounded AC power outlet nearby. Be sure to read the precautions and considerations noted in "Standardized Warning Statements for AC Systems" on page 165.

2.2 Preparing for Setup

The box in which the AS -1126HS-TN server was shipped should include the rackmount hardware needed to install it into the rack. Read this section in its entirety before you begin the installation.

Choosing a Setup Location

- The server 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.

System Precautions

- Review the electrical and general safety precautions in "Standardized Warning Statements for AC Systems" on page 165.
- Determine the placement of each component in the rack before you install the rails.
- Install the heaviest server components at the bottom of the rack first and then work your way up.

- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges and voltage spikes and to keep your system operating in case of a power failure.
- Allow any drives and power supply modules to cool before touching them.
- When not servicing, always keep the front door of the rack and all covers/panels on the servers closed to maintain proper cooling.

Rack Mounting Considerations

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

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

Ambient Operating Temperature

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

Airflow

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

Mechanical Loading

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

Circuit Overloading

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

Reliable Ground

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

2.3 Installing the Rails

This section provides information on installing the CSE-HS101-R000NFP 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.

The instruction in this section are specific to the rail set with part number MCP-290-11902-0N

Note: This rail will fit a rack between 26.5" and 36.4" deep.

Identifying the Rails

The CSE-HS101-R000NFP chassis package includes two rail assemblies. Each assembly consists of three sections: an inner rail that secures directly to the chassis, an outer rail that secures to the rack, and a middle rail which extends from the outer rail. These assemblies are specifically designed for the left and right side of the chassis and labeled.

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

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

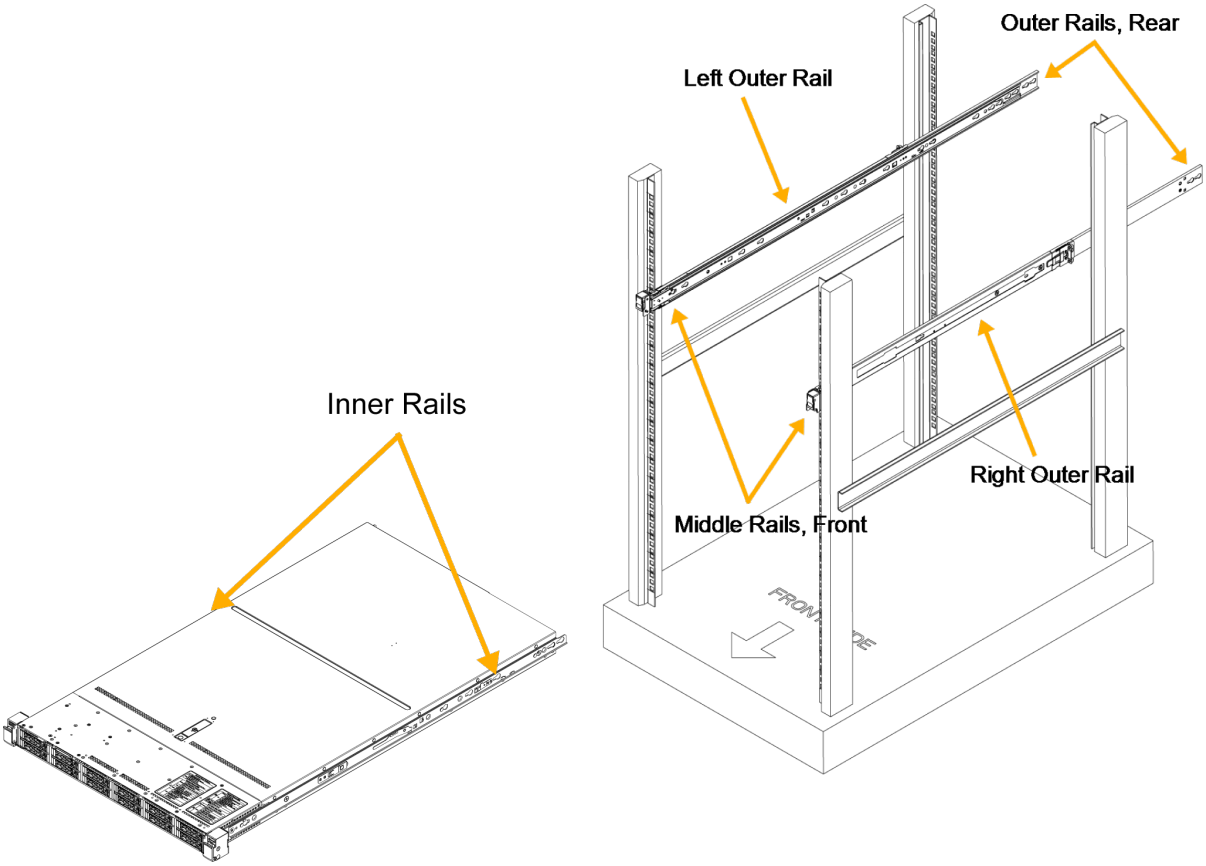

Figure 2-1. Identifying the Rails

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

Releasing the Inner Rail

It is necessary to release the inner rail from the middle and outer rails before installing the inner rail on the CSE-HS101-R000NFP chassis.

Releasing the Inner Rail from the Middle and Outer Rails

Important: 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.

1. Lift the front latch on the inner rail and pull the inner rail out of the middle rail, and the middle rail out of the outer rail until the rails are fully extended.

2. Press down the locking lever on the inside of the inner rail to release the inner rail. Continue to pull the inner rail out of the middle rail.

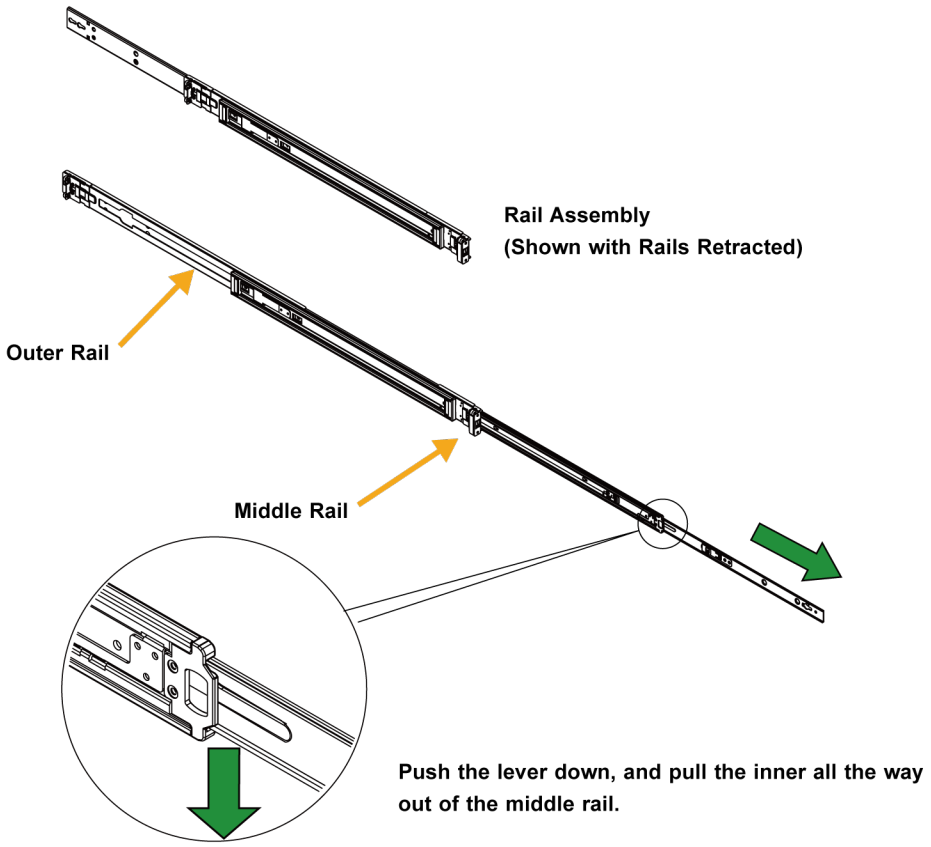

Figure 2-2. Extending the Rails and Releasing the Inner Rail

Installing the Inner Rails onto the Chassis

Begin the rack mounting procedure by installing the inner rails to the CSE-HS101-R000NFP chassis.

1. Confirm that the left and right inner rails have been correctly identified.
2. Place the inner rail firmly against the side of the chassis, aligning the pins on the side of the chassis with the holes in the inner rail.
3. Slide the inner rail toward the rear of the chassis until the pins are at the end of the narrow slot, which secures the inner rail to the chassis.
4. Optionally, you can further secure the inner rail to the chassis with a screw.
5. Repeat for the other inner rail.

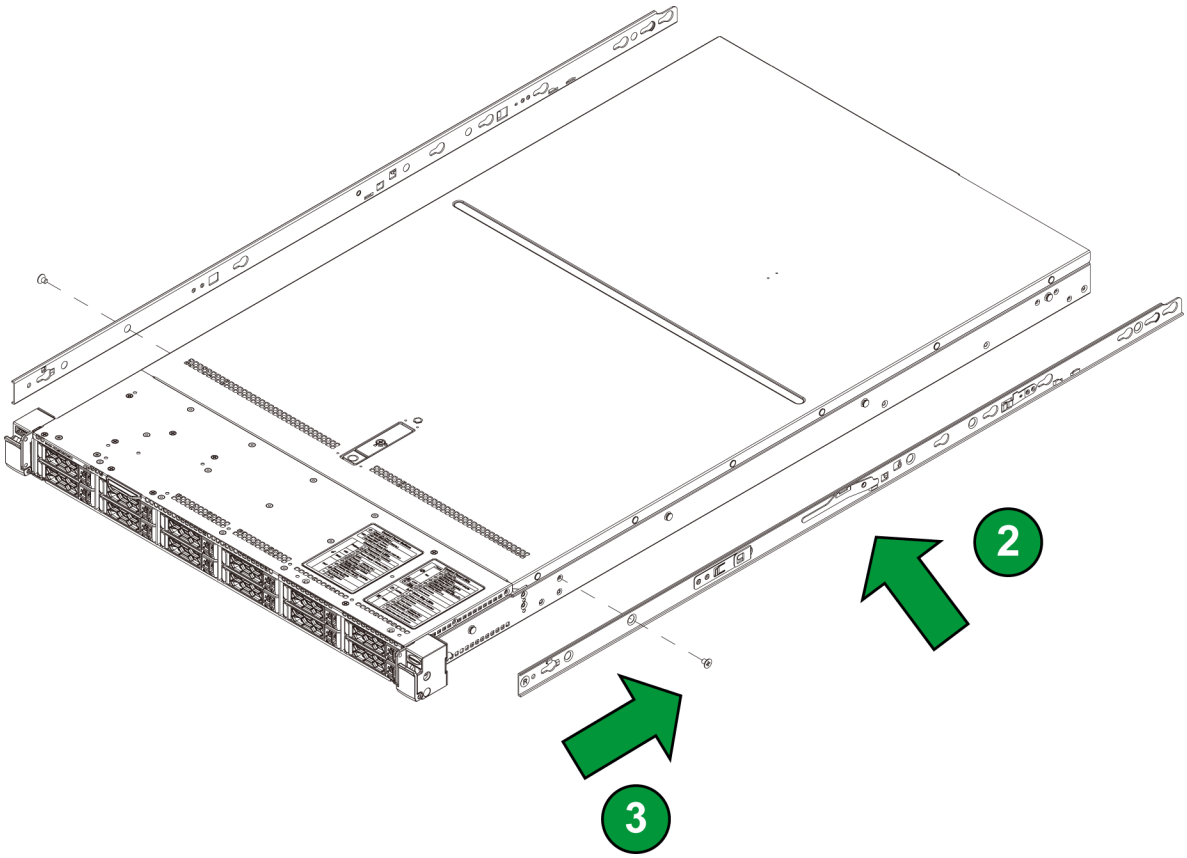

Figure 2-3. Installing the Inner Rails

Installing the Outer Rails onto the Rack

After the inner rails are installed onto the CSE-HS101-R000NFP chassis, begin installing the outer rails onto the rack.

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

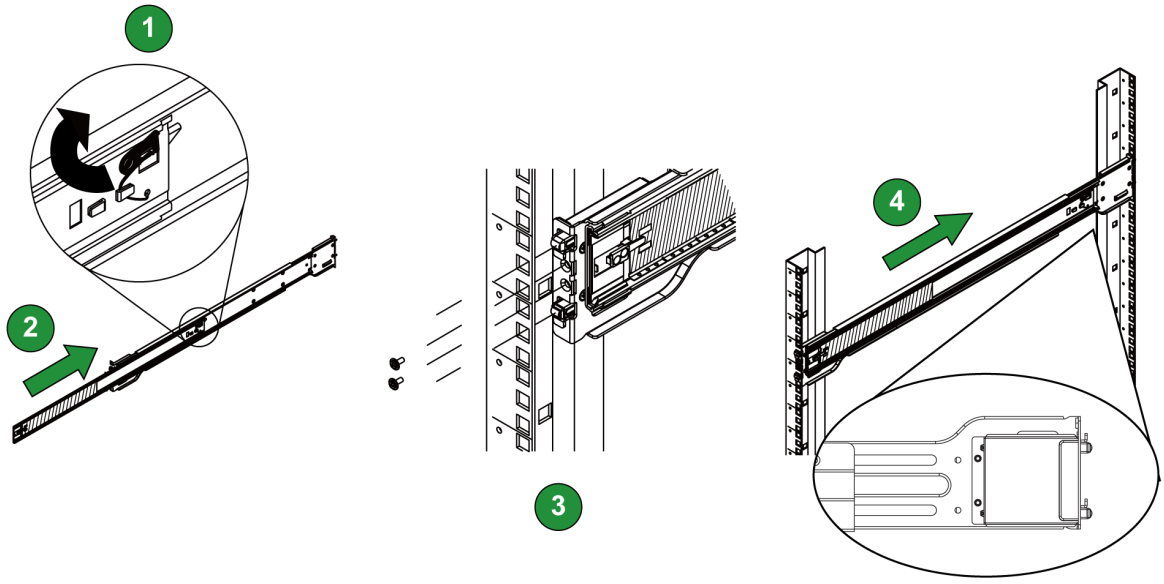

Figure 2-4. Extending and Mounting the Outer Rails

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

2.4 Installing the Chassis into the Rack

After the rails are installed on the CSE-HS101-R000NFP chassis and on the rack, the server can be installed in the rack. It is heavy and requires two to three people to lift.

Installing the Chassis

1. Pull both middle rails out the front of the outer rail until each clicks to a stop.
2. Align the inner rails on the chassis with the front of the middle rails.
3. Slide the inner rails on the chassis into the middle rails, keeping the pressure even on both sides. When partially in, the locking levers will stop further progress.
4. Press down the locking levers on the inside of the inner rails and push the chassis all the way into the rear of the rack. The front latches will click into place.

The chassis is now mounted in the rack. It can be pulled partially out for service by lifting both front latches.

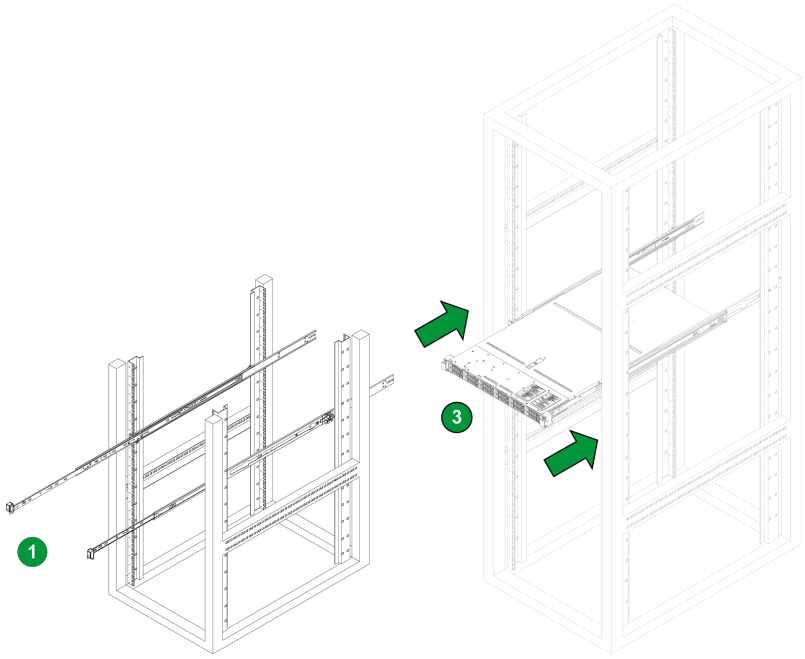

Figure 2-5. Installing the Chassis into the Rack

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

Removing the Chassis from the Rack

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

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

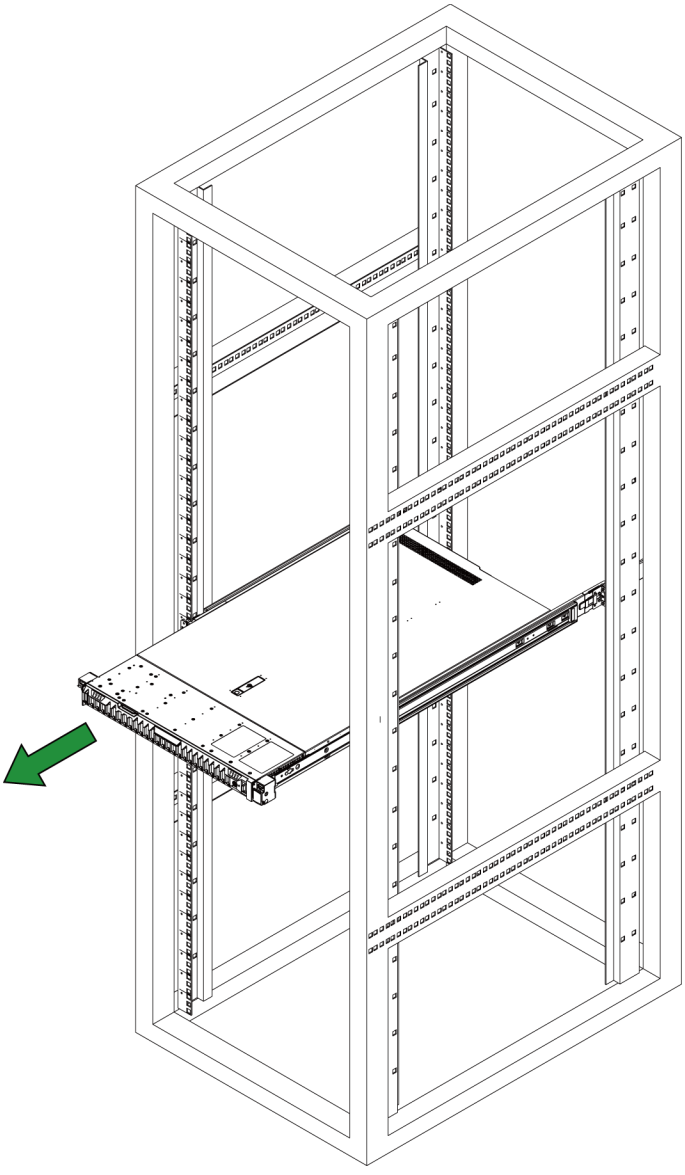

Figure 2-6. Removing the Chassis from the Rack

Removing the Outer Rails from the Rack

In the uncommon event that it is necessary to remove the outer rails from the rack, follow these instructions. The CSE-HS101-R000NFP chassis must be out of the rack.

Releasing the Outer Rails

1. On the front of the outer rail, slide the small plastic safety slider up and hold it while pushing the plastic release button just below it.
2. While holding the release button in, pull the outer rail forward to disengage the pins and the front of the rail from the rack.
3. Support the front of the outer and middle rail assembly while releasing the rear.
4. Remove the outer rail from the rear of the rack in the same way as the front. Slide the safety slider up and push and hold the release button, then pull the rear pins out of the rack and remove the rail.

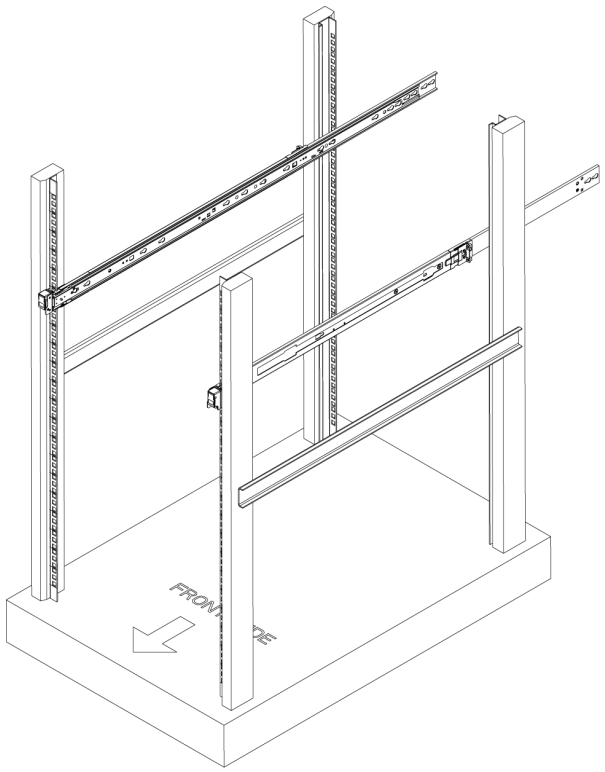

Figure 2-7. Removing the Outer Rails

Chapter 3:

Maintenance and Component Installation

This chapter provides instructions on installing and replacing main system components for the AS -1126HS-TN server. 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. Follow the procedures given in each section.

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3.1 Removing Power

Use the following procedure to ensure that power has been removed from the AS -1126HS-TN server. 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-HS101-R000NFP chassis features a removable top cover for access to the internal components. When performing service on components inside the system, remove the system from the rack and place it on a work bench or desk. *Do not service with the system extended from the rack.*

Removing the Chassis Cover

Important: 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.

1. Remove the screws securing each side of the cover (if used).
2. Press the release button and slide the cover toward the rear.
3. Lift the top cover up.

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

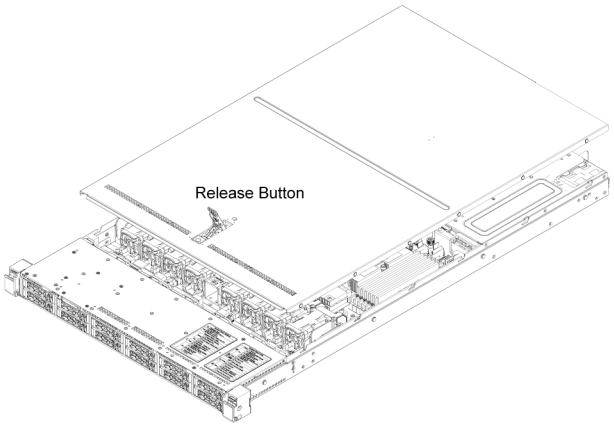


Figure 3-1. Removing the Chassis Cover

3.3 Static-Sensitive Devices

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

Precautions

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing the board from the antistatic bag.
- Handle the motherboard by its edges only. Do not touch its components, peripheral chips, memory modules, or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the motherboard and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure that your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners, and the motherboard.
- Use only the correct type of onboard CMOS battery. Do not install the onboard battery upside down to avoid possible explosion.

3.4 Processor and Heatsink Installation

This section provides procedures to install the processor(s) and heatsink(s).

Notes:

- Take industry standard precautions to avoid ESD damage. For details, see "Static-Sensitive Devices" on the previous page.
- Before starting, make sure that the plastic socket cap is in place and none of the socket pins are bent. If any damage is noted, contact your retailer.
- Do not connect the system power cord before the processor and heatsink installation is complete.
- When handling the processor, avoid touching or placing direct pressure on the LGA lands (gold contacts). Improper installation or socket misalignment can cause serious damage to the processor or processor socket.
- When buying a processor separately, use only a Supermicro certified heatsink.
- Refer to the Supermicro website for the most recent processor support.
- When installing the heatsink, ensure a torque driver set to the correct force is used for each screw.
- Thermal grease is pre-applied on a new heatsink. No additional thermal grease is needed.

Preparing the Processor Socket

1. Remove the screw holding down the force frame. The spring-loaded force frame will raise up. Allow it to lift up to its stopped position.

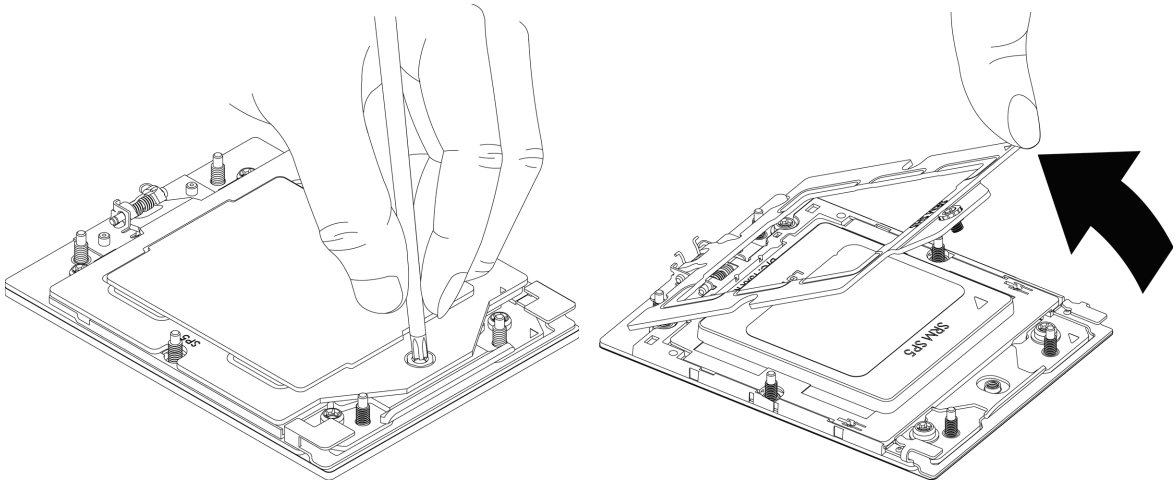


Figure 3-2. Removing Screw from the Force Frame

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

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

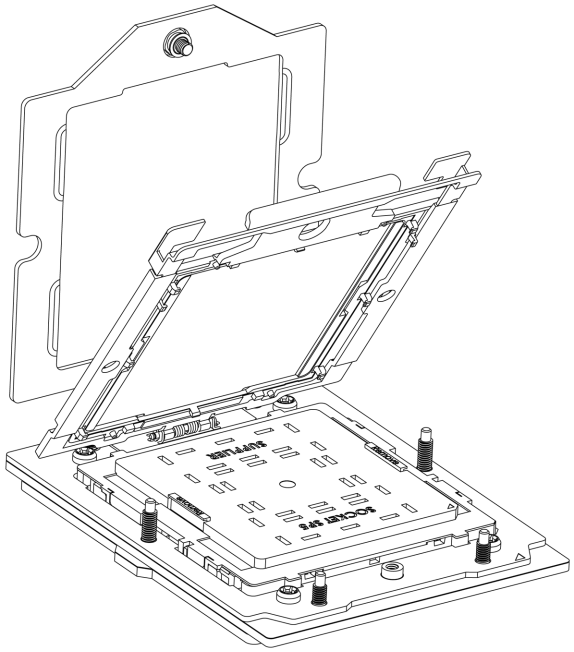


Figure 3-3. Lifting the Frame

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

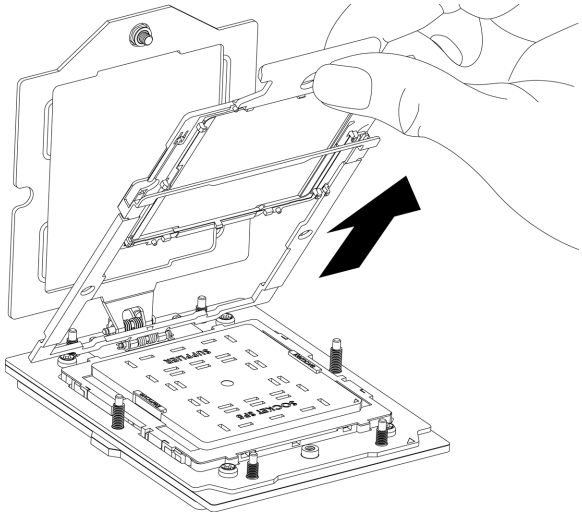


Figure 3-4. Removing the Cap

Installing the Processor into the Frame

1. The processor package is shipped from the factory with the carrier frame pre-assembled. Grip the handle of the carrier frame/processor 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.
2. Slide the carrier frame/processor assembly downwards to the bottom of the rail frame. Ensure the flanges are secure on the rails as you lower it downwards.

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

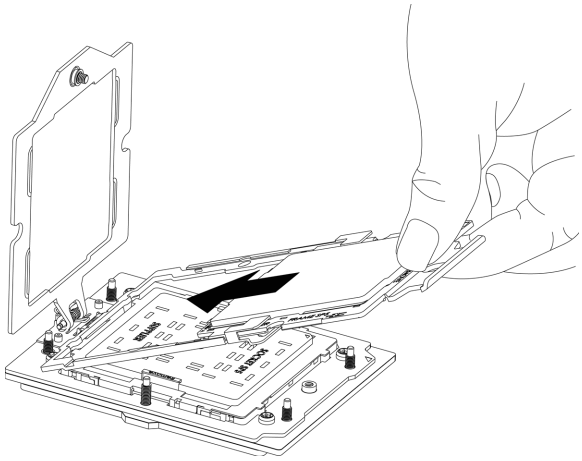


Figure 3-5. Installing into the Rail Frame

3. Lift up the rail frame until it securely rests in upright position. Then remove the PnP cover cap from the 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.

Important: 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.

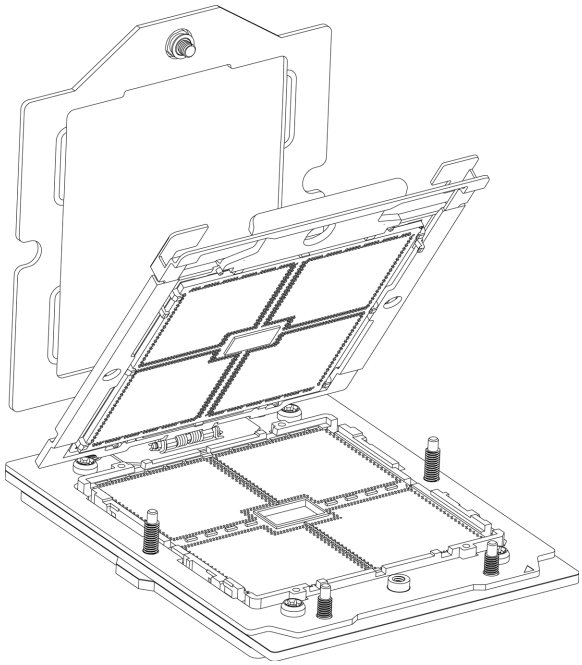


Figure 3-6. Removing the PnP Cap

4. 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! Note that the force frame is spring loaded and must be held in place before it is secured.

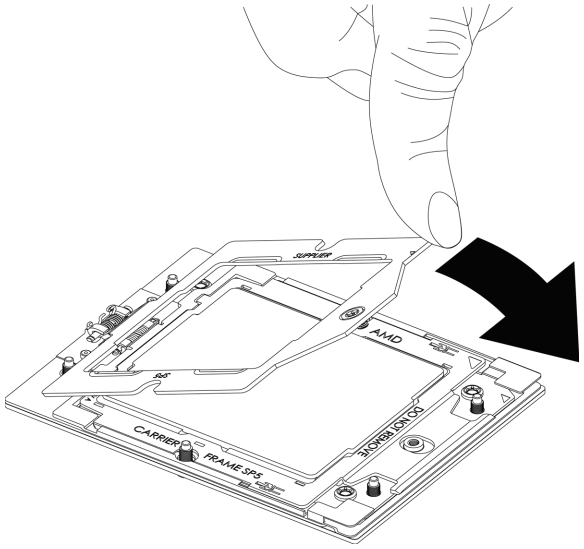


Figure 3-7. Securing the Force Frame

5. Use a T20 bit torque driver, set at 12.5–15.0 kgf-cm (10.8–13.0 in-lbf) to prevent damage to the processor. Replace and tighten the screws in the same order they were removed. When finished, the force frame will be secure over both the rail frame and processor package.

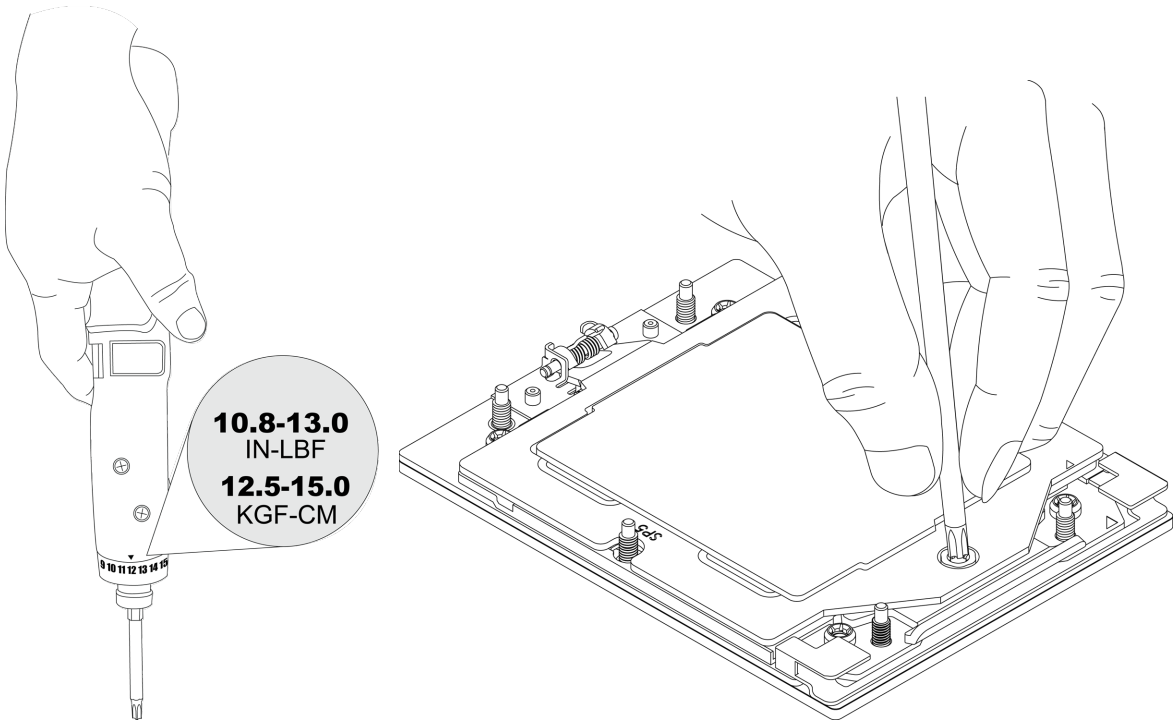


Figure 3-8. Replacing Screws with Torque Driver

Installing the Heatsink

After the force frame is secured and the processor is in place, install the heatsink onto the processor.

1. Place the heatsink so that it rests on the processor aligning the six screws on the socket frame.

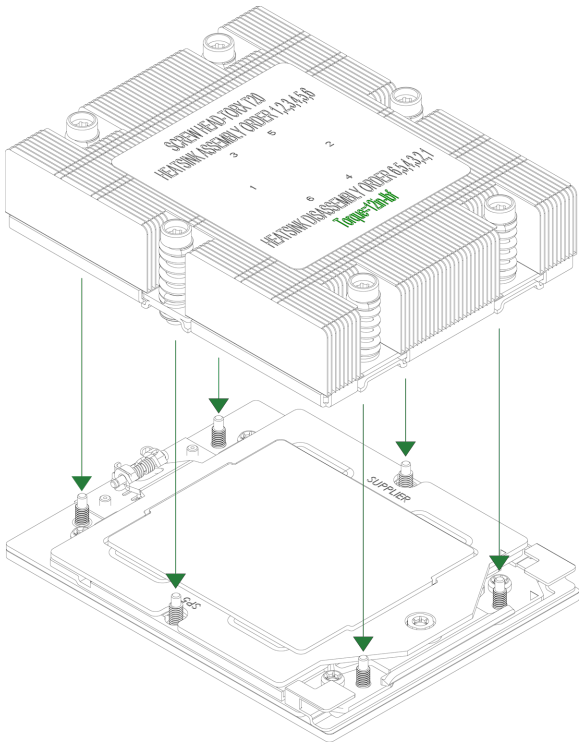


Figure 3-9. Placing the Heatsink

2. Using a T20 torque driver, tighten the screws using the diagonal tightening pattern and torque specifications printed on the heatsink. Tighten the two center screws completely before tightening the four corner screws.

The heatsink is now secured.

Uninstalling the Heatsink and Processor

1. Remove the screws holding the heatsink and gently work it loose.
2. Clean the thermal grease left by the heatsink on the processor assembly to limit the risk of it contaminating the land pads or contacts in the socket housing.
3. Unscrew the plate and lift the force frame to the vertical position.
4. Lift the rail frame using the lift tabs near the front end of the rail frame. Note that the rail frame is spring loaded, so be careful lifting it up into a vertical position.
5. Grip the handle of the carrier frame and pull upwards to extract it from the rail frame. Return the processor assembly to its original shipping container.
6. Grip the handle on the external cap and return it to the rail frame sliding it downwards till it rests in the frame.

7. 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.

3.5 Memory Support and Installation

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

Note: Check the Supermicro website for recommended memory modules.

Memory Support

The AS -1126HS-TN supports up to 6 TB of ECC DDR5 6400 MT/s speed (with AMD 9005 series processors) or 4800 MT/s speed (with AMD 9004 series processors), RDIMM/3DS memory in 24 DIMM slots. Refer to the tables below for additional memory information.

Populating RDIMM/RDIMM 3DS DDR5 Memory Modules with AMD EPYC™ 9005 Series Processors				
Type	**DIMM Population**	**Maximum Frequency (MT/s)**		
	DIMM1	**6400 MT/s Grade DIMM**	**5600 MT/s Grade DIMM**	**4800 MT/s Grade DIMM**
RDIMM	1R (1 rank)	6400	5600	4800
	2R (2 ranks)			
3DS RDIMM	2S2R (4 ranks)			
	2S4R (8 ranks)			

Populating RDIMM/RDIMM 3DS DDR5 Memory Modules with AMD EPYC™ 9004 Series Processors			
Type	**DIMM Population**	**Maximum Frequency (MT/s)**	
	DIMM1	**5600 MT/s Grade DIMM**	**4800 MT/s Grade DIMM**
RDIMM	1R (1 rank)	4800	4800
	2R (2 ranks)		
3DS RDIMM	2S2R (4 ranks)		
	2S4R (8 ranks)		

General Guidelines for Optimizing Memory Performance

- It is recommended to use DDR5 memory of the same type, size, and speed.
- Mixed DIMM speeds can be installed. However, all DIMMs will run at the speed of the slowest DIMM.
- The motherboard will support an odd number amount of memory modules. However, to achieve the best memory performance, a balanced memory population is recommended.
- Memory speed performance may vary depending on the memory DIMM model. Please use Supermicro-validated memory. Contact a Supermicro representative for more details.

DIMM Population

This table shows the recommended slots to populate.

DIMM Population Guide														
Slots Used (Two CPUs)		**One DIMM per Channel**												**Sup-ported Nodes per Socket (NPS)**
		F1	**E1**	**D1**	**C1**	**B1**	**A1**	**G1**	**H1**	**I1**	**J1**	**K1**	**L1**	
2 DIMMs	CPU1						V							NPS1
	CPU2						V							
4 DIMMs	CPU1						V	V						NPS2, NPS1
	CPU2						V	V						
8 DIMMs	CPU1				V		V	V		V				NPS4, NPS2, NPS1
	CPU2				V		V	V		V				
12 DIMMs	CPU1				V	V	V	V	V	V				NPS2, NPS1
	CPU2				V	V	V	V	V	V				
16 DIMMs	CPU1		V		V	V	V	V	V	V		V		NPS4, NPS2, NPS1
	CPU2		V		V	V	V	V	V	V		V		
20 DIMMs	CPU1		V	V	V	V	V	V	V	V	V	V		NPS2, NPS1
	CPU2		V	V	V	V	V	V	V	V	V	V		
24 DIMMs	CPU1	V	V	V	V	V	V	V	V	V	V	V	V	NPS4, NPS2, NPS1
	CPU2	V	V	V	V	V	V	V	V	V	V	V	V	

Note: Fully populate the motherboard with validated memory modules to achieve the best memory performance. NPS setting based on user applications. Selecting “Auto” in the BIOS will default to NPS1.

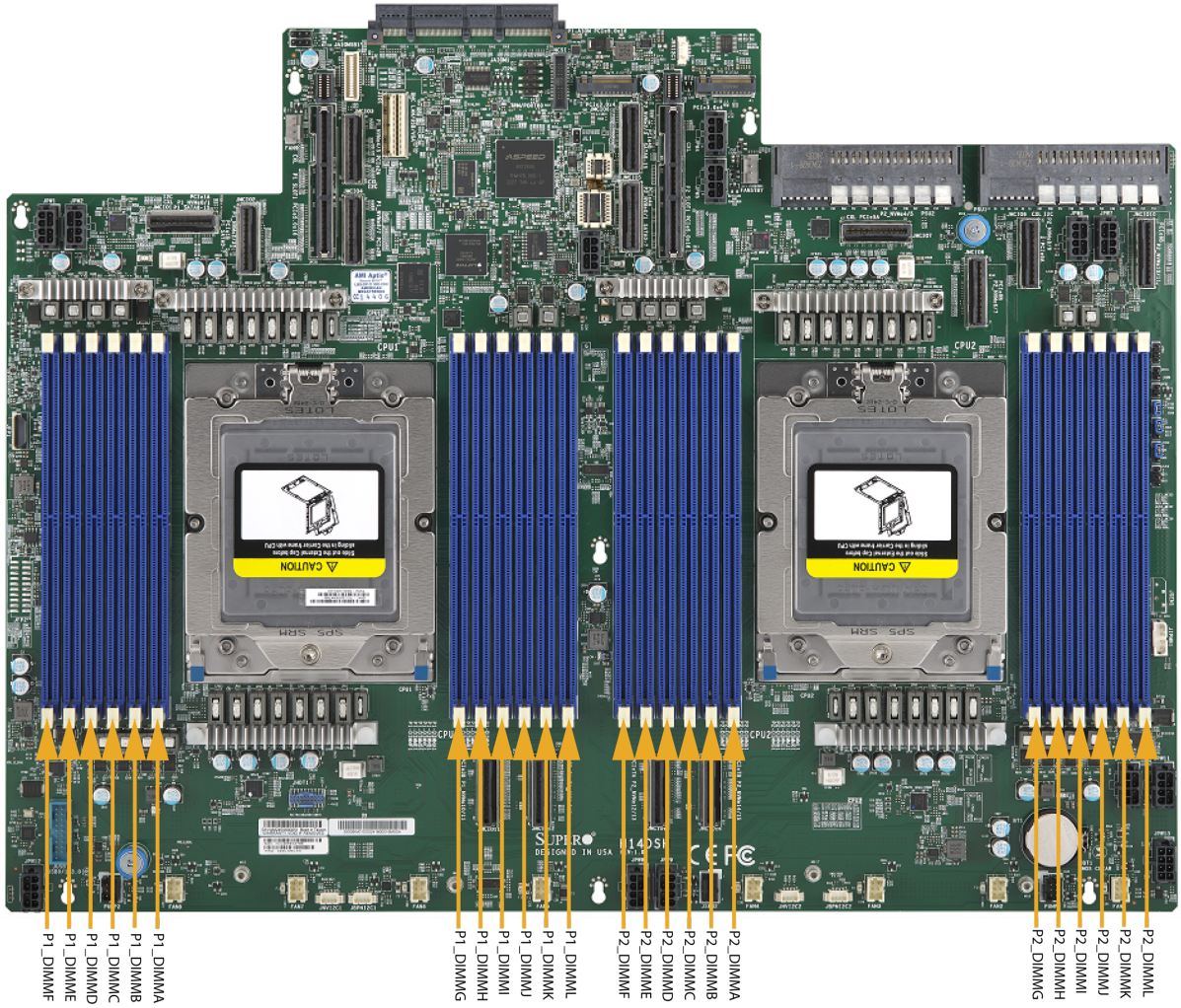


Figure 3-10. DIMM Labels

DIMM Installation

Important: Do not use excessive force when pressing the release tabs on the ends of the DIMM socket to avoid causing any damage to the memory module or the DIMM socket. Handle memory modules with care. Carefully follow all the instructions given in "Static-Sensitive Devices" on page 46 to avoid ESD-related damages done to your memory modules or components.

1. Insert the desired number of DIMMs into the memory slots based on the recommended DIMM population table earlier in this section.
2. Push the release tabs outwards on both ends of the DIMM slot to unlock it.

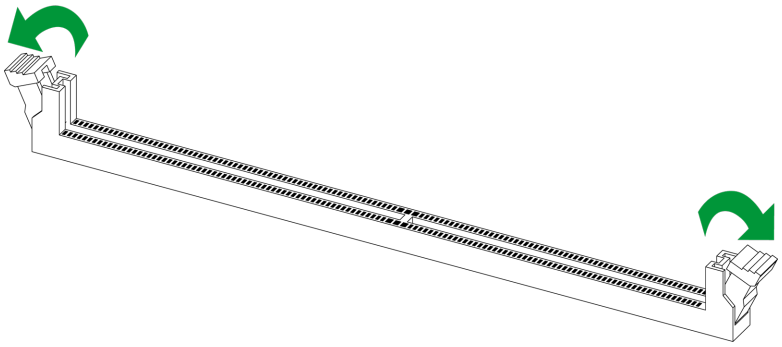


Figure 3-11. Unlocking the DIMM Slot

3. Align the key of the DIMM with the receptive point on the memory slot.

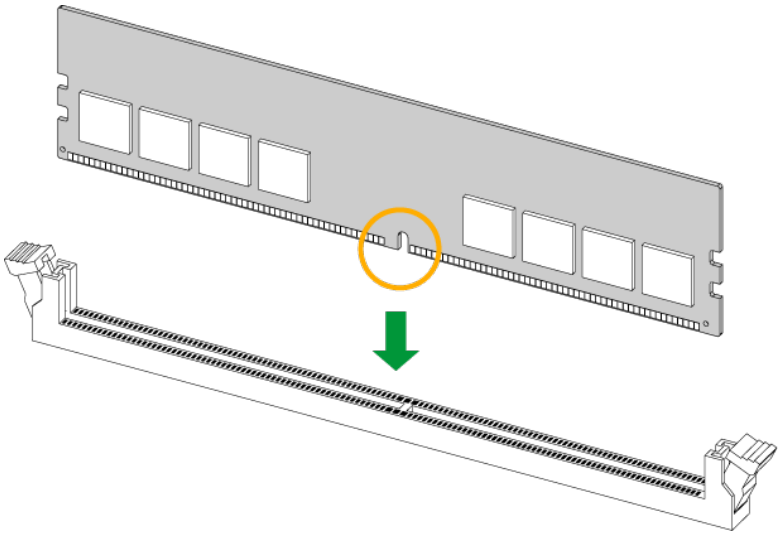


Figure 3-12. Aligning the DIMM Slot with the Receptive Point

4. Align the notches on both ends of the module against the receptive points on the ends of the slot.

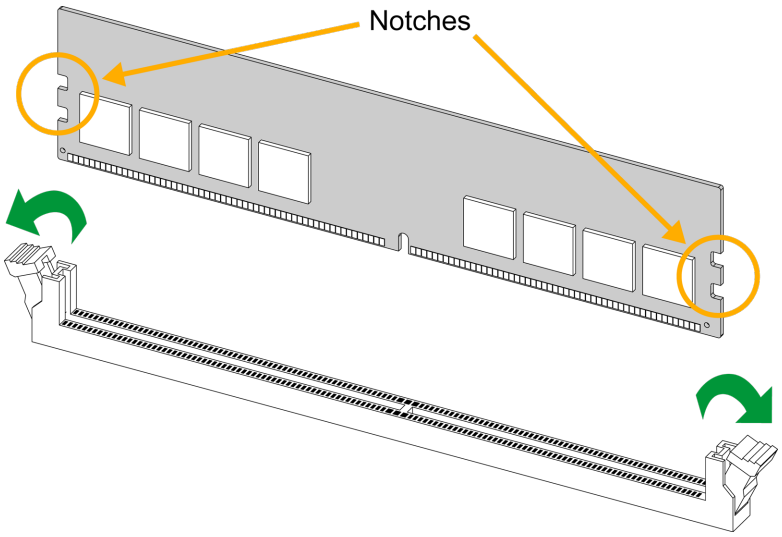


Figure 3-13. Aligning the Notches

5. Press both ends of the module straight down into the slot until the module snaps into place.
6. Press the release tabs to the lock positions to secure the DIMM into the slot.

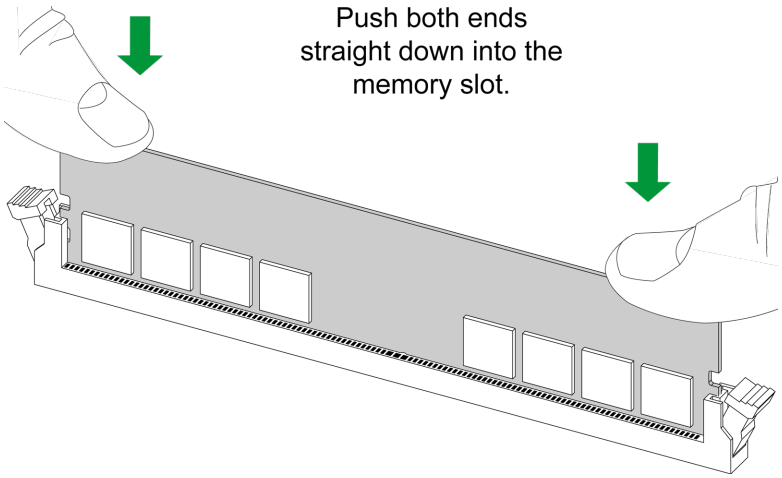


Figure 3-14. Securing the DIMM

For a detailed diagram of the H14DSH motherboard, see the layout under "Motherboard Quick Reference" on page 25.

DIMM Removal

Important: Do not use excessive force when pressing the release tabs on the ends of the DIMM socket to avoid causing any damage to the memory module or the DIMM socket. Handle memory modules with care. Carefully follow all the instructions given in "Static-Sensitive Devices" on page 46 to avoid ESD-related damages done to your memory modules or components.

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

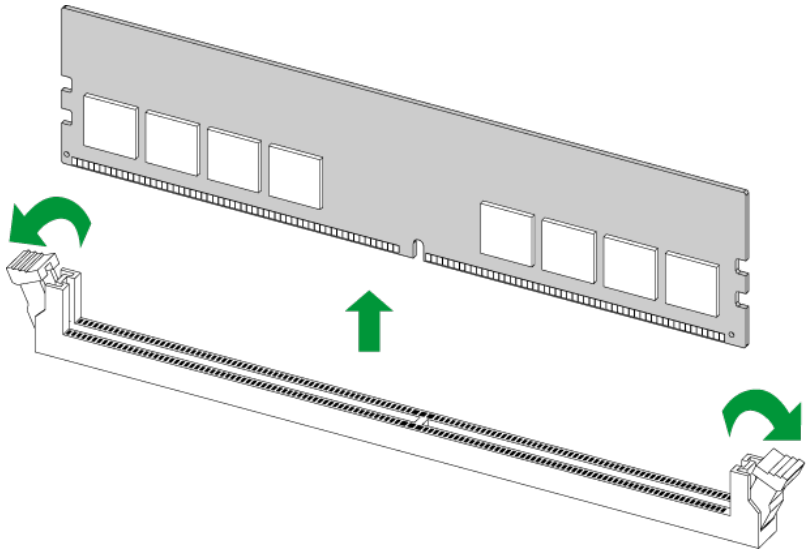


Figure 3-15. Unlocking the DIMM Slot

For a detailed diagram of the H14DSH motherboard, see the layout under "Motherboard Quick Reference" on page 25.

3.6 Motherboard Battery Removal and Installation

Battery Removal

To remove the onboard battery, follow the steps below:

1. Power off your system and unplug your power cable.
2. Locate the onboard battery as shown below.
3. Using a tool such as a pen or a small screwdriver, push the battery lock outwards to unlock it. Once unlocked, the battery will pop out from the holder.
4. Remove the battery.

Proper Battery Disposal

Important: 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. Comply with the regulations set up by your local hazardous waste management agency to dispose of your used battery properly.

Battery Installation

To install an onboard battery, follow steps 1 and 2 above and continue below:

Important: When replacing a battery, be sure to only replace it with the same type.

1. Identify the battery's polarity. The positive (+) side should be facing up.
2. Insert the battery into the battery holder and push it down until you hear a click to ensure that the battery is securely locked.

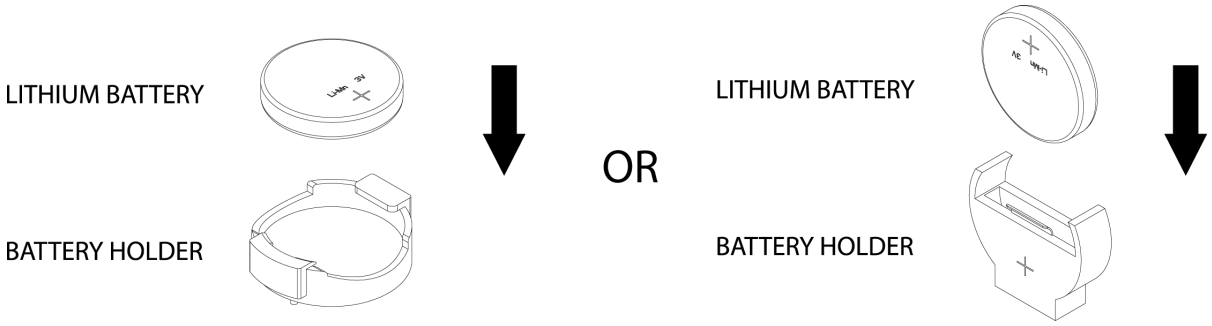


Figure 3-16. Installing a Battery

3.7 Storage Drives

The storage drives are mounted in tool-less drive carriers that simplify their removal from the chassis. These carriers also help promote proper airflow. For compatible storage drives, see the AS -1126HS-TN product page.

Installing Drives

Figure 3-17. Logical Drive Numbers

Note: Enterprise-level storage modules are recommended for use in Supermicro servers. For information on recommended drives, visit the Supermicro website.

Removing a Hot-Swap Drive Carrier from the Chassis

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

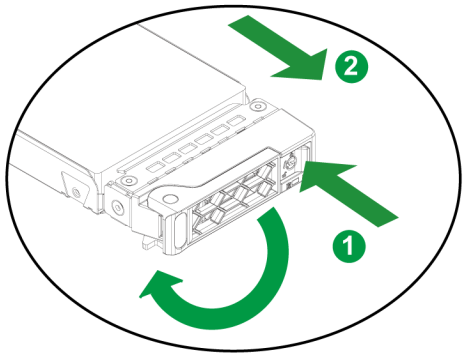


Figure 3-18. Removing Drive Carriers

*

Installing a Drive

1. Insert a drive into the carrier with the PCB side facing down and the connector end toward the rear of the carrier. Place the drive in the carrier so that the screw holes line up.
2. The drive carrier has a tool-less design but you also have the option to secure the drive to the carrier with two M3 screws. These screws are included in the chassis accessory box.

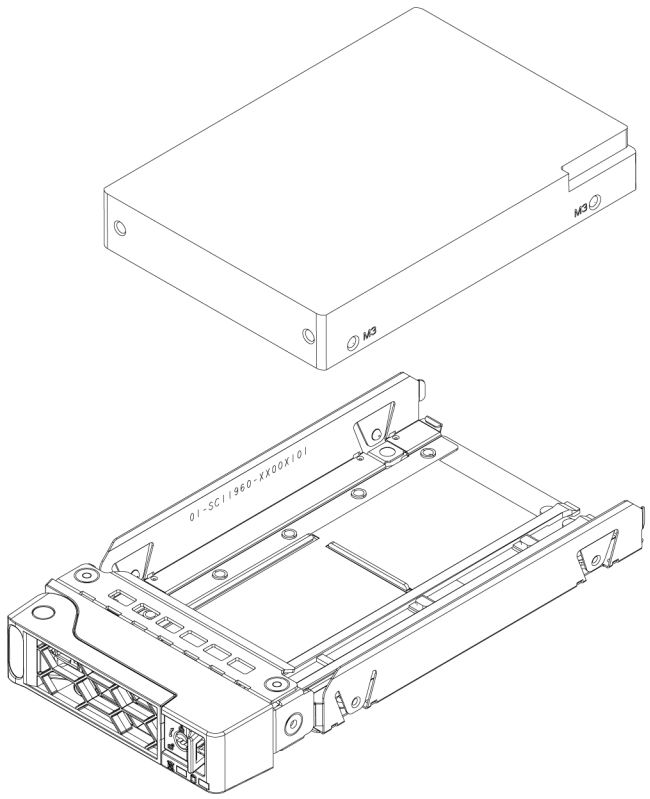


Figure 3-19. Mounting a Drive in the Carrier

3. Insert the drive carrier with the drive into its bay, keeping the carrier oriented so that the drive is on the top of the carrier and the release button is on the right side. When the carrier reaches the rear of the bay, the release handle will retract.
4. Push the handle in until it clicks into its locked position.

Hot-Swap for NVMe Drives

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

Ejecting a Drive

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

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

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

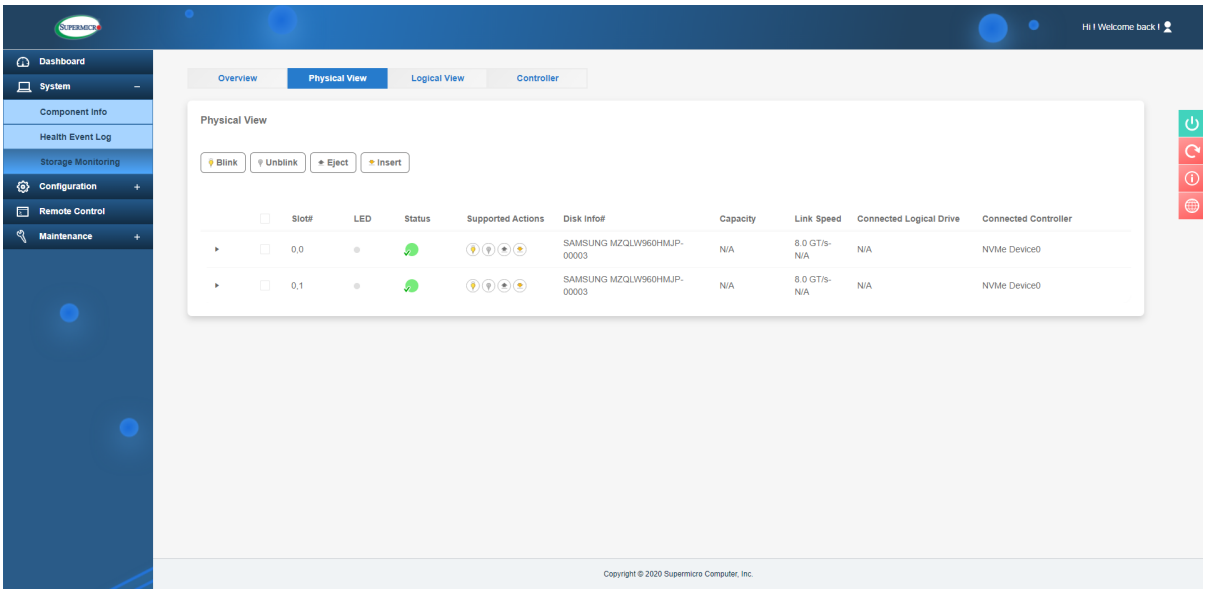


Figure 3-20. BMC Screenshot

Replacing a Drive

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

Installing M.2 SSDs

1. Turn off and remove power from the system as described in "Removing Power" on page 44.
2. Remove the top cover as described in "Accessing the System" on page 45.
3. Refer to the motherboard layout image in "Motherboard Layout" on page 25 and locate the M.2 slot.

Note: The system supports the M.2 22110 form factor by default. To support the M.2 2280 form factor, follow the instructions below:

a. Remove the T-pin standoff at the 80-mm location.

b. Unscrew the two screws and standoffs that are holding the M.2 bracket and move it to the 80-mm position.

4. Insert the M.2 sideways into the connector so that it lies flat, then secure it to the motherboard with the plastic clip provided.
5. Repeat as necessary for more M.2 drives.
6. Replace the cover and restore power to the system.

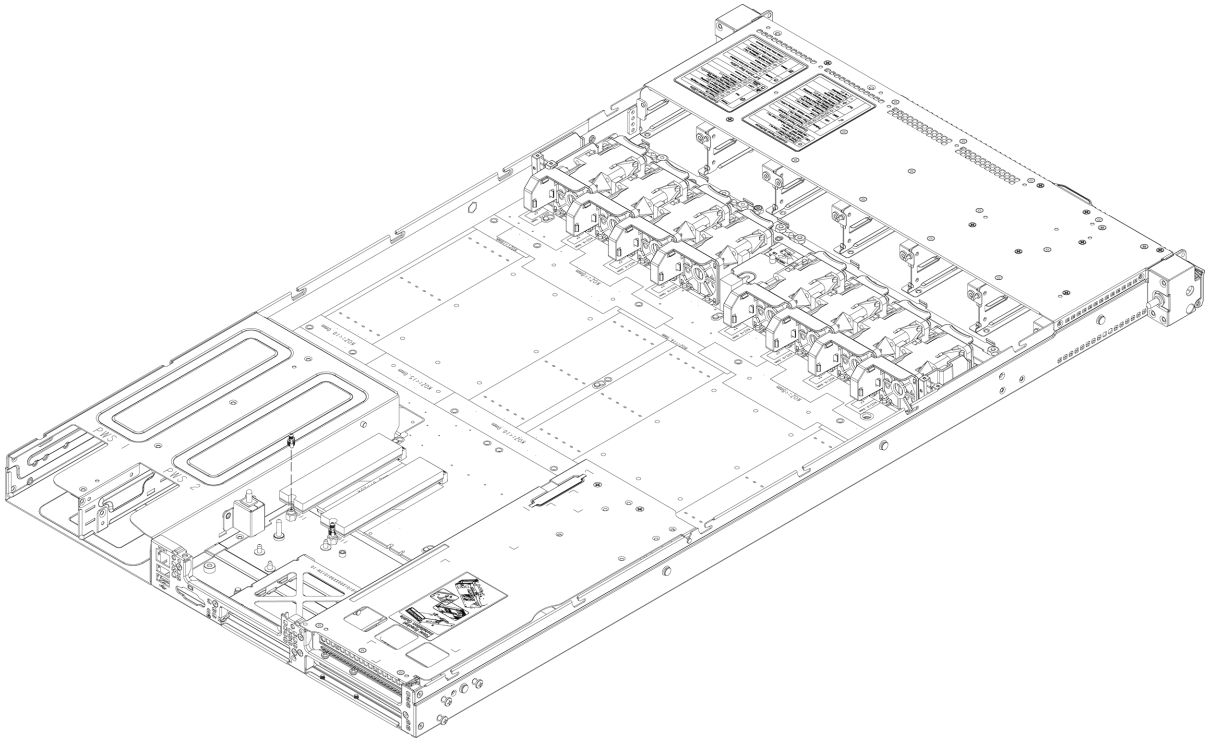


Figure 3-21. Installing M.2 Drives

3.8 System Cooling

Refer to the following sections for information about the cooling capabilities of the AS -1126HS-TN server.

Fans

Eight 4-cm heavy-duty fans provide cooling for the system. Fans are hot-swapped and can be replaced without powering down the system. The electrical connections are automatically made when a fan is inserted into its slot.

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

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

Changing a System Fan

1. Determine which fan is failing using BMC if possible. If not, remove the chassis cover while the power is on and examine the fans to determine which one has failed.
2. Squeeze the fan tabs of the failed fan and lift the fan housing up and out of the chassis.
3. To install a fan, push it into the proper location until it clicks.
4. Finish by fully closing the cover and pushing the system back into the rack.

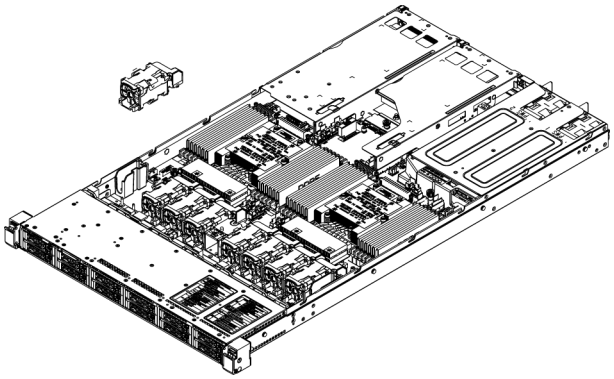


Figure 3-22. Installing a Fan

Air Shrouds

Air shrouds concentrate airflow to maximize fan efficiency. The A+ Server AS -1126HS-TN includes one air shroud for each CPU.

Air Shroud for Memory (CPU1/2)

Two air shrouds cool the DIMM slots controlled by CPUs 1 and 2 (see figure below).

1. Turn off and remove power from the system as described in "Removing Power" on page 44.
2. Remove the system from the rack and remove the cover as described previously.
3. Place each air shroud over twelve DIMM slots at a time for both CPU1 and CPU2-controlled DIMM slots, as illustrated below.
4. Close the cover and push the system back into the rack.

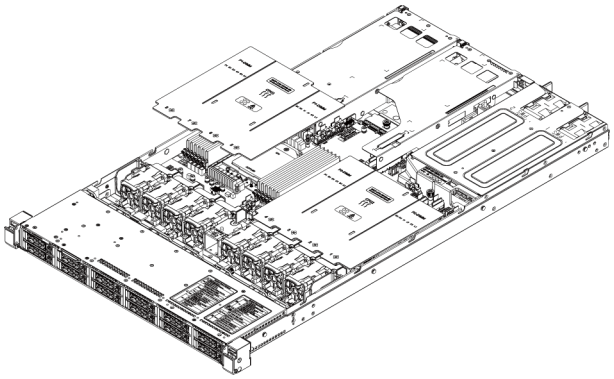


Figure 3-23. Installing Air Shrouds for CPU1/2 DIMMs

3.9 Expansion Cards

Refer to the following sections for information on the expansion cards supported by the AS -1126HS-TN server.

Riser Cards

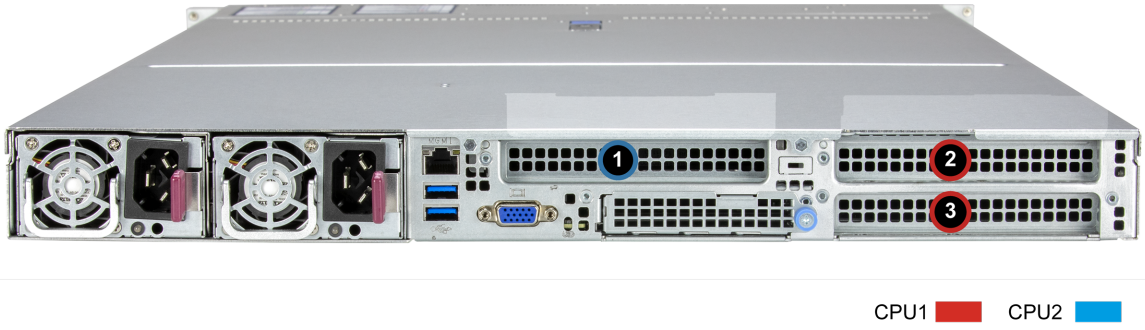


Figure 3-24. Expansion Card Chassis Slots

This system include riser cards that provide PCIe capabilities.

PCIe Slots per Riser Card			
Riser Card	**Part Number**	**Slot**	**Description**
Left (from rear)	RSC-H-A6G5H	1	PCIe 5.0 x16 FHFL, (CPU2)
Right (from rear)	RSC-H-A66G5H	2 3	PCIe 5.0 x16 FHFL, (CPU1) PCIe 5.0 x16 FHFL, (CPU1)

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

Installing Expansion Cards

The A+ Server AS -1126HS-TN includes two riser cards to support the use of expansion (add-on) cards. Before following the procedure below to install expansion cards, first turn off and remove power from the system as described in "Removing Power" on page 44 then remove the top cover.

1. Open any clips next to the slots and remove the PCI shield.
2. Install the riser card to the riser bracket, if necessary.
3. Install one or two expansion cards into the riser card. See"Installing M.2 SSDs" on page 66.
4. Insert the riser card bracket with the expansion cards into the chassis rear and connect cables.
5. Close any opened clips to secure the riser card bracket.

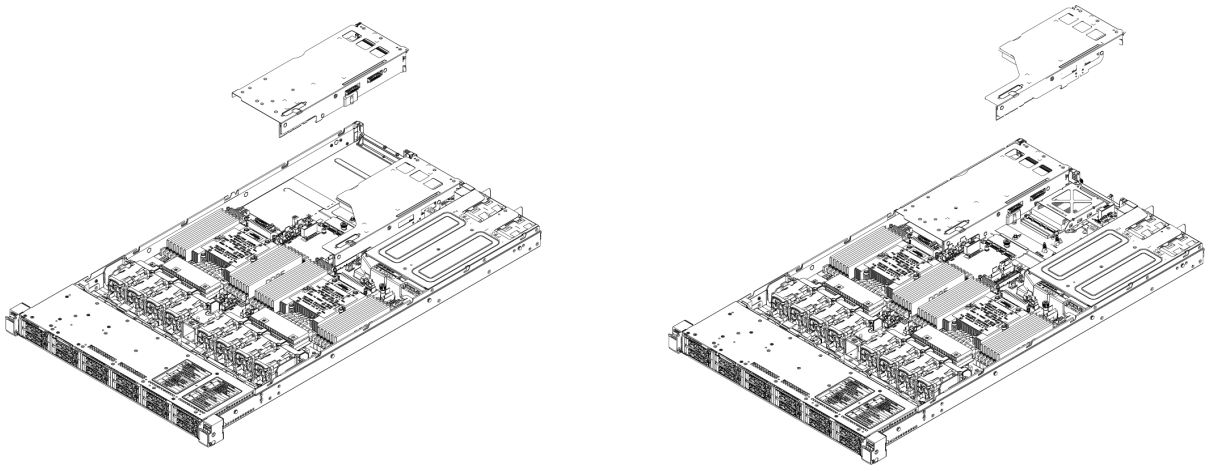


Figure 3-25. Installing Expansion Cards

3.10 AIOM Cards

The system supports up to one AIOM/OCP NIC 3.0 network port card.

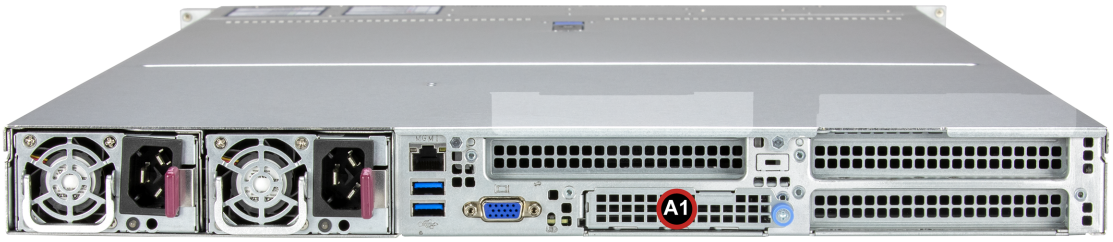


Figure 3-26. AIOM Chassis Slot

AIOM Configuration			
Slot	**Mechanical**	**Electrical**	**Thermal**
A1	Small Form Factor, OCP 3.0	PCIe 5.0 x16 (CPU1)	Up to 15 W (see Note below)

Note: AIOM cards exceeding the 15 W slot class may require restricted conditions to meet thermal specification of the AIOM card. Contact your Supermicro account representative for more information.

Installing AIOM

1. Turn off and remove power from the system as described in ""Removing Power" on page 44."
2. Remove the blank cover plate (A1), unscrewing the thumbscrew.
3. Slide the AIOM card in the opening until it seats in the motherboard slot.
4. Secure with the thumbscrew.

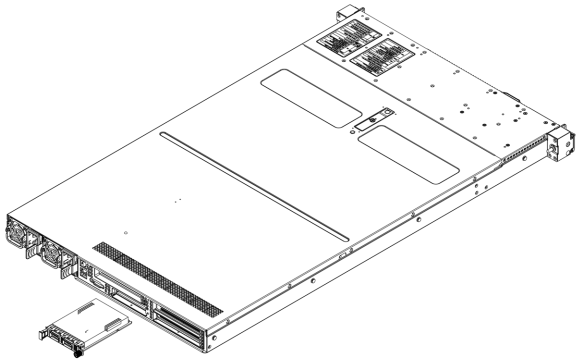


Figure 3-27. Installing AIOM

3.11 Power Supply

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

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

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

Replacing the Power Supply

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

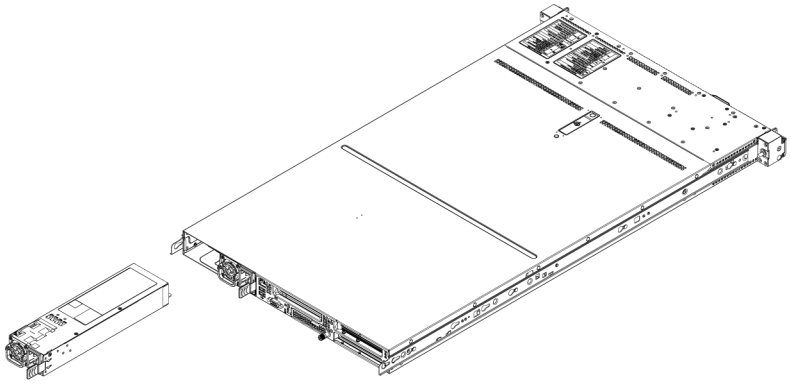


Figure 3-28. Installing a Power Supply Module

3.12 Cable Routing Diagrams

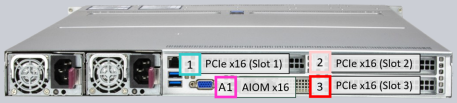
The below diagrams indicate the cable routing for the storage, PCIe, IO, and power cables. When disconnecting cables to add or replace components, refer to the diagrams so you can reroute them in the same manner. If cables are not connected or routed properly it may lead to device detection or performance issues.

Configuration Overview

The A+ Server AS -1126HS-TN server supports the following drive configurations. All riser cards are optional; no PCIe riser cards are included by default.

- Configuration 1: 8 NVMe
- Configuration 2: 12 NVMe
- Configuration 3: 8 SATA
- Configuration 4: 12 SATA
- Configuration 5: 8 SAS
- Configuration 6: 12 SAS

Configuration #	Front	Rear
#1 (8 NVMe) **+ 3 PCIe x16** **+ 1 AIOM**		**1 AIOM slot Default** (AIOM card optional but required to install in slot) + **3 PCIe 5.0 x16 Default (Slot 1, 2, 3)**
#2 (12 NVMe) **+ 3 PCIe x16** **+ 1 AIOM**		
#3 (8 SATA) **+ 3 PCIe x16** **+ 1 AIOM**		
#4 (12 SATA) **+ 3 PCIe x16** **+ 1 AIOM**		
#5 (8 SAS) **+ 3 PCIe x16** **+ 1 AIOM**		
#6 (12 SAS) **+ 3 PCIe x16** **+ 1 AIOM**		

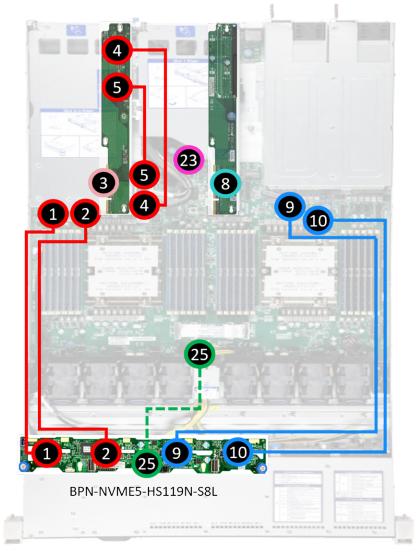


MCIO port from CPU 1
MCIO port from CPU 2
Riser slot from CPU 1
Riser slot from CPU 2
MCIO Port for SATA from CPU 1
MCIO Port for SATA from CPU 2
AIOM slot from CPU 1

Figure 3-29. Configuration Overview

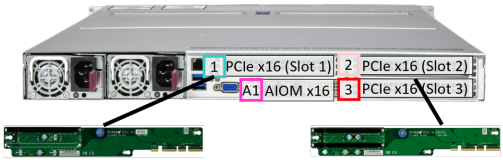
8 NVMe

This configuration of the A+ Server AS -1126HS-TN server supports:



Front Storage Cables

	Cable	Description	MB Port	Backplane/Riser and Port
1	CBL-MCIO-1463M5FLFB1-J (Bundled cable)	NVMe 0-1	JMCIO1	**BPN** CN1
2		NVMe 2-3	JMCIO2	**BPN** CN2
9	CBL-MCIO-1347M5REL	NVMe 4-5	JMCIO7	**BPN** CN3
10	CBL-MCIO-1473M5FRF	NVMe 6-7	JMCIO8	**BPN** CN4
25	CBL-PWEX-1142B-20	**BPN** Power	JPW8	**BPN** JPW1



RSC1
RSC-H-A6G5H (Slot 1)

RSC2
RSC-H-A66G5H (Slot 2-3)

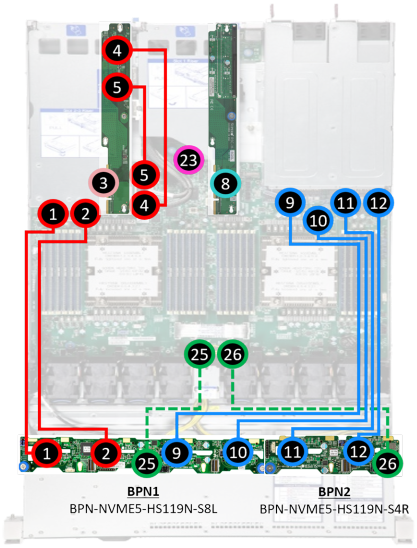
Rear PCIe Slot Cables

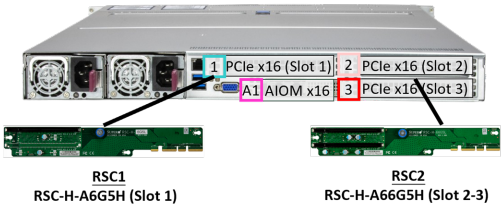
	Cable	Description	MB Port	Backplane/Riser and Port
8	N/A	PCIe 5.0 x16 (Slot 1)	JPCIE2	**RSC1** Gold Finger
3	N/A	PCIe 5.0 x16 (Slot 2)	JPCIE1	**RSC2** Gold Finger
4	CBL-MCIO-1228M5RE	PCIe 5.0 x16 (Slot 3)	JMCIO4	**RSC2** JPCIE2A1
5	CBL-MCIO-1221M5RE		JMCIO3	**RSC2** JPCIE2B1
23	CBL-GNZ5-1307	PCIe 5.0 x16 (AIOM)	JAIOM1	NA

MCIO port from CPU 1
MCIO port from CPU 2
Riser slot from CPU 1
Riser slot from CPU 2
MCIO Port for SATA from CPU 1
MCIO Port for SATA from CPU 2
AIOM slot from CPU 1

12 NVMe

This configuration of the A+ Server AS -1126HS-TN server supports:





MCIO port from CPU 1 | Riser slot from CPU 1 | MCIO Port for SATA from CPU 1 | AIOM slot from CPU 1
MCIO port from CPU 2 | Riser slot from CPU 2 | MCIO Port for SATA from CPU 2

Front Storage Cables

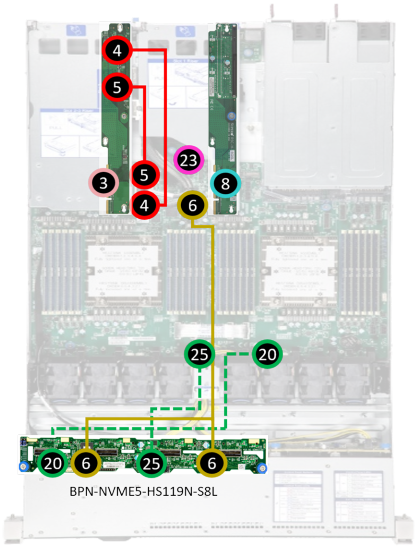
	Cable	Description	MB Port	Backplane/Riser and Port
1	CBL-MCIO-1463M5FLFB1-J (Bundled cable)	NVMe 0-1	JMCIO1	BPN1 CN1
2		NVMe 2-3	JMCIO2	BPN1 CN2
9	CBL-MCIO-1347M5REL	NVMe 4-5	JMCIO7	BPN1 CN3
10	CBL-MCIO-1473M5FRF	NVMe 6-7	JMCIO8	BPN1 CN4
9	CBL-MCIO-1462M5FRFB2 (Bundled cable)	NVMe 8-9	JMCIO9	BPN2 CN1
10		NVMe 10-11	JMCIO10	BPN2 CN2
25	CBL-PWEX-1142B-20	BPN1 Power	JPW8	BPN1 JPW1
26	CBL-PWEX-1136-40	BPN2 Power	JPW9	BPN2 JPW1

Rear PCIe Slot Cables

	Cable	Description	MB Port	Backplane/Riser and Port
8	N/A	PCIe 5.0 x16 (Slot 1)	JPCIE2	RSC1 Gold Finger
3	N/A	PCIe 5.0 x16 (Slot 2)	JPCIE1	RSC2 Gold Finger
4	CBL-MCIO-1228M5RE	PCIe 5.0 x16 (Slot 3)	JMCIO4	RSC2 JPCIE2A1
5	CBL-MCIO-1221M5RE		JMCIO3	RSC2 JPCIE2B1
23	CBL-GNZ5-1307	PCIe 5.0 x16 (AIOM)	JAIOM1	NA

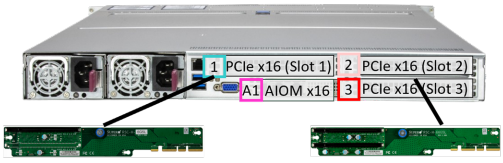
8 SATA

This configuration of the A+ Server AS -1126HS-TN server supports:



Front Storage Cables

	Cable	Description	MB Port	Backplane/Riser and Port
6	CBL-MCIO-1255L4Y	SATA 0-7	JMCIO5	**BPN** JSM1&JSM2
20	CBL-CDAT-1062Y-45	I^2C	JNVI2C2	**BPN** J25
25	CBL-PWEX-1142B-20	**BPN** Power	JPW8	**BPN** JPW1



RSC1
RSC-H-A6G5H (Slot 1)

RSC2
RSC-H-A66G5H (Slot 2-3)

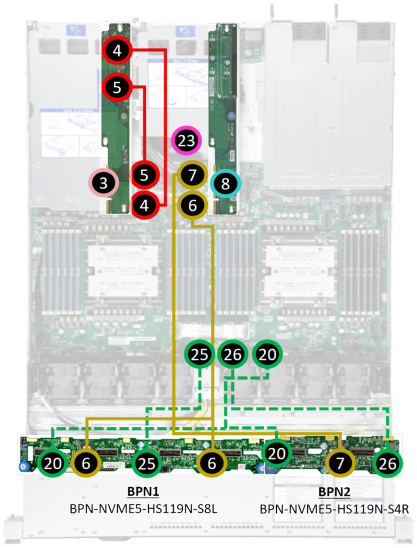
Rear PCIe Slot Cables

	Cable	Description	MB Port	Backplane/Riser and Port
8	N/A	PCIe 5.0 x16 (Slot 1)	JPCIE2	**RSC1** Gold Finger
3	N/A	PCIe 5.0 x16 (Slot 2)	JPCIE1	**RSC2** Gold Finger
4	CBL-MCIO-1228M5RE	PCIe 5.0 x16 (Slot 3)	JMCIO4	**RSC2** JPCIE2A1
5	CBL-MCIO-1221M5RE		JMCIO3	**RSC2** JPCIE2B1
23	CBL-GNZ5-1307	PCIe 5.0 x16 (AIOM)	JAIOM1	NA

MCIO port from CPU 1
MCIO port from CPU 2
Riser slot from CPU 1
Riser slot from CPU 2
MCIO Port for SATA from CPU 1
MCIO Port for SATA from CPU 2
AIOM slot from CPU 1

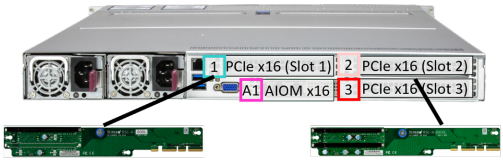
12 SATA

This configuration of the A+ Server AS -1126HS-TN server supports:



Front Storage Cables

	Cable	Description	MB Port	Backplane/Riser and Port
6	CBL-MCIO-1255L4Y	SATA 0-7	JMCIO5	**BPN 1** JSM1&JSM2
7	CBL-MCIO-1255L4Y	SATA 8-11	JMCIO6	**BPN 2** JSM1
20	CBL-CDAT-1062Y-45	I^2C	JNVI2C2	**BPN 1 & BPN 2** J25
25	CBL-PWEX-1142B-20	**BPN 1** Power	JPW8	**BPN 1** JPW1
26	CBL-PWEX-1136-40	**BPN 2** Power	JPW9	**BPN 2** JPW1



RSC1
RSC-H-A6G5H (Slot 1)

RSC2
RSC-H-A66G5H (Slot 2-3)

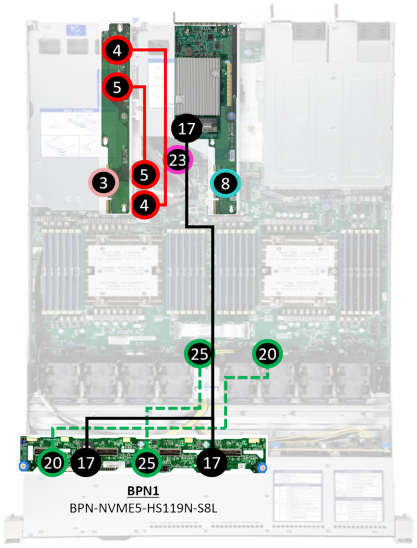
Rear PCIe Slot Cables

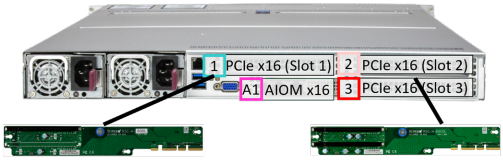
	Cable	Description	MB Port	Backplane/Riser and Port
8	N/A	PCIe 5.0 x16 (Slot 1)	JPCIE2	**RSC1** Gold Finger
3	N/A	PCIe 5.0 x16 (Slot 2)	JPCIE1	**RSC2** Gold Finger
4	CBL-MCIO-1228M5RE	PCIe 5.0 x16 (Slot 3)	JMCIO4	**RSC2** JPCIE2A1
5	CBL-MCIO-1221M5RE		JMCIO3	**RSC2** JPCIE2B1
23	CBL-GNZ5-1307	PCIe 5.0 x16 (AIOM)	JAIOM1	NA

MCIO port from CPU 1
MCIO port from CPU 2
Riser slot from CPU 1
Riser slot from CPU 2
MCIO Port for SATA from CPU 1
MCIO Port for SATA from CPU 2
AIOM slot from CPU 1

8 SAS

This configuration of the A+ Server AS -1126HS-TN server supports:





RSC1
RSC-H-A6G5H (Slot 1)

RSC2
RSC-H-A66G5H (Slot 2-3)

Front Storage Cables

	Cable	Description	MB Port/AOC	Backplane/Riser and Port
17	CBL-SAST-1273LP-100	SAS 0-7	SAS AOC CN1	BPN JSM1&JSM2
20	CBL-CDAT-1062Y-45	I^2C	JNVI2C2	BPN J25
25	CBL-PWEX-1142B-20	BPN Power	JPW8	BPN JPW1

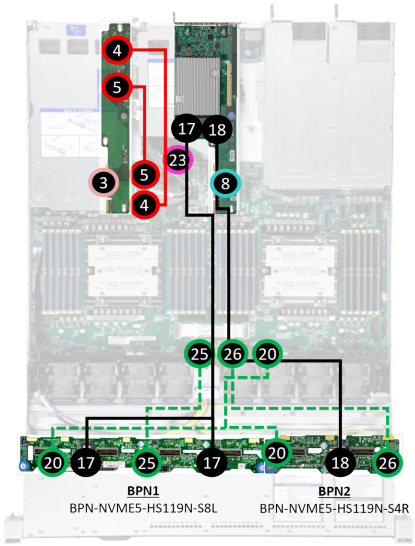
Rear PCIe Slot Cables

	Cable	Description	MB Port	Backplane/Riser and Port
8	N/A	PCIe 5.0 x16 (Slot 1)	JPCIE2	RSC1 Gold Finger
3	N/A	PCIe 5.0 x16 (Slot 2)	JPCIE1	RSC2 Gold Finger
4	CBL-MCIO-1228M5RE	PCIe 5.0 x16 (Slot 3)	JMCIO4	RSC2 JPCIE2A1
5	CBL-MCIO-1221M5RE		JMCIO3	RSC2 JPCIE2B1
23	CBL-GNZ5-1307	PCIe 5.0 x16 (AIOM)	JAIOM1	NA

MCIO port from CPU 1
MCIO port from CPU 2
Riser slot from CPU 1
Riser slot from CPU 2
MCIO Port for SATA from CPU 1
MCIO Port for SATA from CPU 2
AIOM slot from CPU 1
SAS support from SAS AOC

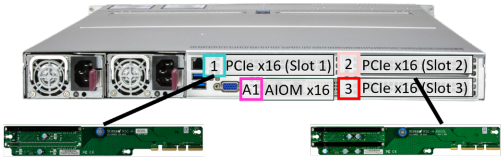
12 SAS

This configuration of the A+ Server AS -1126HS-TN server supports:



Front Storage Cables

	Cable	Description	MB Port	Backplane/Riser and Port
17	CBL-SAST-1273LP-100	SAS 0-7	SAS AOC CN1	**BPN 1** JSM1&JSM2
18	CBL-SAST-1262LP-100	SAS 8-11	SAS AOC CN2	**BPN 2** JSM1
20	CBL-CDAT-1062Y-45	I^2C	JNVI2C2	**BPN 1 & BPN 2** J25
25	CBL-PWEX-1142B-20	**BPN 1** Power	JPW8	**BPN 1** JPW1
26	CBL-PWEX-1136-40	**BPN 2** Power	JPW9	**BPN 2** JPW1



RSC1
RSC-H-A6G5H (Slot 1)

RSC2
RSC-H-A66G5H (Slot 2-3)

Rear PCIe Slot Cables

	Cable	Description	MB Port	Backplane/Riser and Port
8	N/A	PCIe 5.0 x16 (Slot 1)	JPCIE2	**RSC1** Gold Finger
3	N/A	PCIe 5.0 x16 (Slot 2)	JPCIE1	**RSC2** Gold Finger
4	CBL-MCIO-1228M5RE	PCIe 5.0 x16 (Slot 3)	JMCIO4	**RSC2** JPCIE2A1
5	CBL-MCIO-1221M5RE		JMCIO3	**RSC2** JPCIE2B1
23	CBL-GNZ5-1307	PCIe 5.0 x16 (AIOM)	JAIOM1	NA

MCIO port from CPU 1
MCIO port from CPU 2
Riser slot from CPU 1
Riser slot from CPU 2
MCIO Port for SATA from CPU 1
MCIO Port for SATA from CPU 2
AIOM slot from CPU 1
SAS support from SAS AOC

Chapter 4:

Motherboard Connections, Jumpers, and LEDs

This section describes the connections on the motherboard and provides pinout definitions. Note that depending on how the system is configured, not all connections are required. The LEDs on the motherboard are also described here. A motherboard layout indicating component locations may be found in the "Motherboard Layout" on page 25. More detail can be found in the H14DSH motherboard manual.

Review the "Standardized Warning Statements for AC Systems" on page 165 before installing or removing components.

4.1 Power Connectors **83**
4.2 Headers and Connections **84**
4.3 Input/Output Ports **88**
4.4 Jumper Settings **89**
4.5 LED Indicators **91**

4.1 Power Connectors

As with all computer products, a stable power source is necessary for proper and reliable operation. It is even more important for processors that have high CPU clock rates where noisy power transmission is present.

Two power supply connections, located at PSU1/PSU2, provide main power to the system. In addition, JPW1–JPW12 are 12 V 8-pin power connectors. JPW13 is a 5/12 V 8-pin power connector.

JPW1–JPW12 8-pin Power Pin Definitions	
Pin#	**Definition**
1–4	GND
5–8	12 V

JPW13 8-pin Power Pin Definitions	
Pin#	**Definition**
1–4	GND
5–6	12 V
7–8	5 V

4.2 Headers and Connections

For information about the headers of the AS -1126HS-TN server, refer to the following content.

External BMC I²C Header

A System Management Bus header for the BMC is located at JIPMB1 on the H14DSH motherboard. Connect the appropriate cable here to use the IPMB I²C connection on your system.

For a detailed diagram of the H14DSH motherboard, see the layout under "Motherboard Quick Reference" on page 25.

Chassis Intrusion

A Chassis Intrusion header is located at JL1 on the H14DSH motherboard. Attach the appropriate cable from the chassis to inform you when the chassis is opened.

For a detailed diagram of the H14DSH motherboard, see the layout under "Motherboard Quick Reference" on page 25.

Chassis Intrusion Pin Definitions: Two Total	
Pin#	**Definition**
1	Intrusion Input
2	GND

Fan Headers

There are eight 6-pin fan headers (FAN1– FAN8) and two 4-pin fan headers (FAN9, FANSTBY). The 4-pin fan headers are backwards compatible with the traditional 3-pin fans. However, fan speed control is available for 4-pin fans only by Thermal Management using the IPMI 2.0 interface.

6-pin Fan Header Pin Definitions: Six Total			
Pin#	**Definition**	**Pin#**	**Definition**
1	GND	4	+12 V
2	+12 V	5	Tachometer
3	GND	6	PWM

4-pin Fan Header Pin Definitions: Four Total	
Pin#	**Definition**
1	GND (Black)
2	+12 V (Red)
3	Tachometer
4	PWM Control

Liquid Cooling Leak Detector

The JSEN2 header connects to the liquid cooling module leak detection sensor.

Inlet Temp Sensor Pin Definitions	
Pin#	**Definition**
1	GND
2	+12 V Stby
3	ALERT#
4	PRESENT#

M.2 Slots

Two M.2 slots are located at M.2-C1 and M.2-C2 on the motherboard. They support PCIe 3.0 x4 M.2 NVMe SSDs in the 2580 and 25110 form factors.

NC-SI Connection

The Network Controller Sideband Interface (NC-SI) connection is located at JNCSI1 on the H14DSH motherboard. This connection is used to connect a Network Interface Card (NIC) to the motherboard to allow the onboard Baseboard Management Controller (BMC) to communicate with a network.

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

For a detailed diagram of the H14DSH motherboard, see the layout under "Motherboard Quick Reference" on page 25.

Backplane I²C Headers

Connectors JBPNI2C1 and JBPNI2C2 are the management headers for the Supermicro NVMe/SAS/SATA BPN. Connect the I²C cable to these connectors.

BPN I²C Pin Definitions	
Pin#	**Definition**
1	Data
2	Ground
3	CLK
4	+3.3 V

PCIe I²C Header

A PCIe I²C (SMBus) header is located at JRSI^{2}C1 on the H14DSH motherboard. The PCIe SMBus connector is used for PCIe cards to allow the BMC or the BIOS to read drive information or Field Replace Units (FRUs) more effectively.

For a detailed diagram of the H14DSH motherboard, see the layout under "Motherboard Quick Reference" on page 25.

Chassis Intrusion Pin Definitions: Two Total	
Pin#	**Definition**
1	Intrusion Input
2	Ground

TPM/Port 80 Header

The JTPM1 header on the H14DSH motherboard is used to connect a Trusted Platform Module (TPM)/Port 80, which is available from Supermicro (optional). A TPM/Port 80 connector is a security device that supports encryption and authentication in storage drives. It allows the motherboard to deny access if the TPM associated with the storage drive is not installed in the system. Go to the following link for more information on the TPM: https://www.supermicro.com/manuals/other/AOM-TPM-9670V_9670H__X12_H12.pdf.

For a detailed diagram of the H14DSH motherboard, see the layout under "Motherboard Quick Reference" on page 25.

Trusted Platform Module Header Pin Definitions: 10 Total			
Pin#	**Definition**	**Pin#**	**Definition**
1	+3.3 V	2	SPI_CS#
3	RESET#	4	SPI_MISO
5	SPI_CLK	6	Ground
7	SPI_MOSI	8	No Connection
9	+1.8 V Stdby	10	SPI_IRQ#

4.3 Input/Output Ports

For information about input/output ports on the AS -1126HS-TN server, refer to the following content.

I/O Ports

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

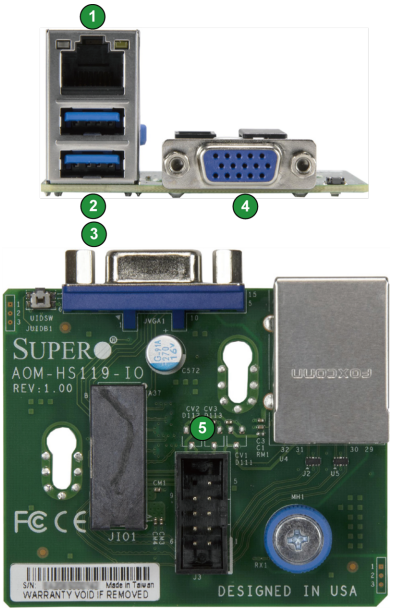


Figure 4-1. I/O Port Locations

I/O Ports from AOM-HS119-IO	
Item	**Description**
1	BMC_LAN Port
2	USB 0 (3.0)
3	USB 1 (3.0)
4	VGA Port
5	COM Port Header

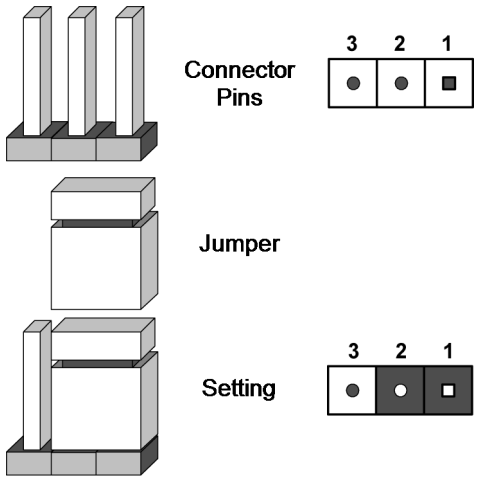
VGA Connections

A VGA header is located at JFP2 on the motherboard.

4.4 Jumper Settings

To modify the operation of the motherboard, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. See the diagram below for an example of jumping pins 1 and 2. Refer to the motherboard layout page for jumper locations.

Note: On two-pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.



CMOS Clear

JBT1 on the H14DSH motherboard 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.

For a detailed diagram of the H14DSH motherboard, see the layout under "Motherboard Quick Reference" on page 25.

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, JBT1, with a metal object such as a small screwdriver for at least four seconds.

Note: Clearing CMOS will also clear all passwords.

5. Remove the screwdriver (or shorting device).
6. Replace the cover, reconnect the power cord(s), and power on the system.

4.5 LED Indicators

For information about the LED indicators on the AS -1126HS-TN server, refer to the following content.

BMC Heartbeat LED

LEDBMC is the BMC heartbeat indicator. When this LED is blinking at moderate speed, the BMC is functioning normally.

BMC Heartbeat LED Indicator	
LED Color	**Definition**
Green: Blinking	BMC Normal
Green: Blinking, fast	BMC Initializing
Green: Solid	BMC Reset or Cold Boot

Chapter 5:

Software

After the AS -1126HS-TN server has been installed, you can install the Operating System (OS), configure RAID settings and install the drivers.

5.1 Microsoft Windows OS Installation **93**
5.2 Driver Installation **95**
5.3 BMC **97**

5.1 Microsoft Windows OS Installation

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

Installing the OS

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

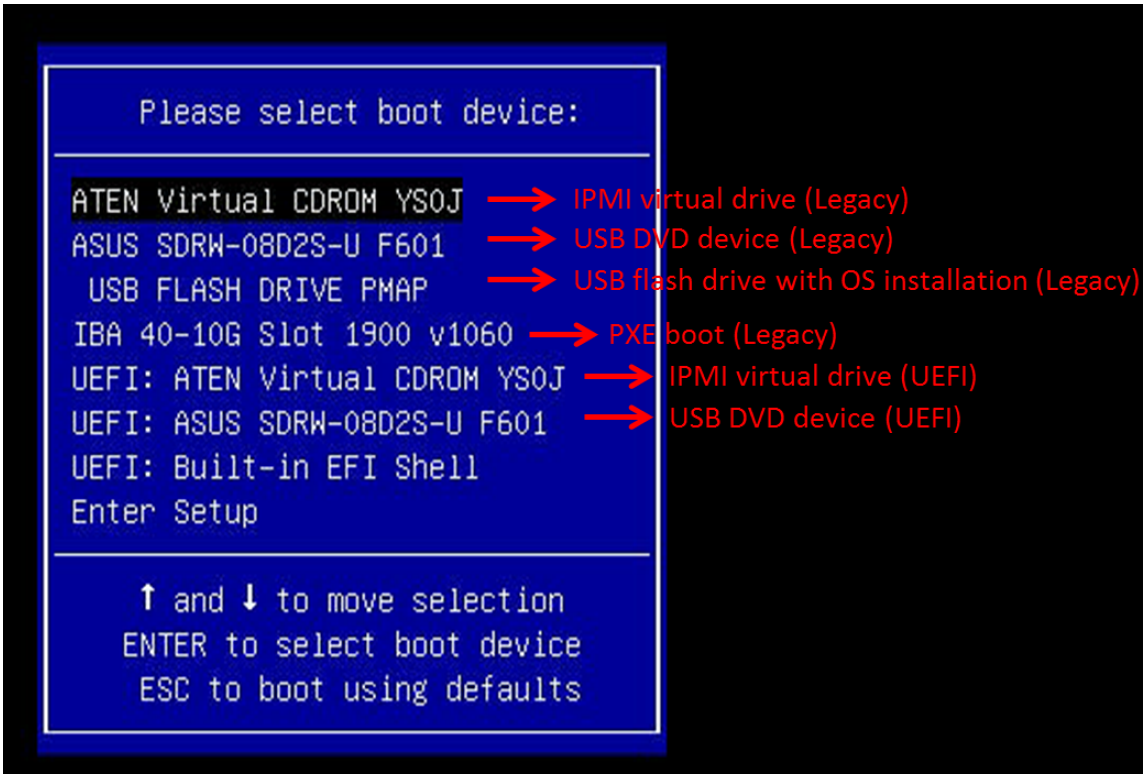


Figure 5-1. Select Boot Device

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

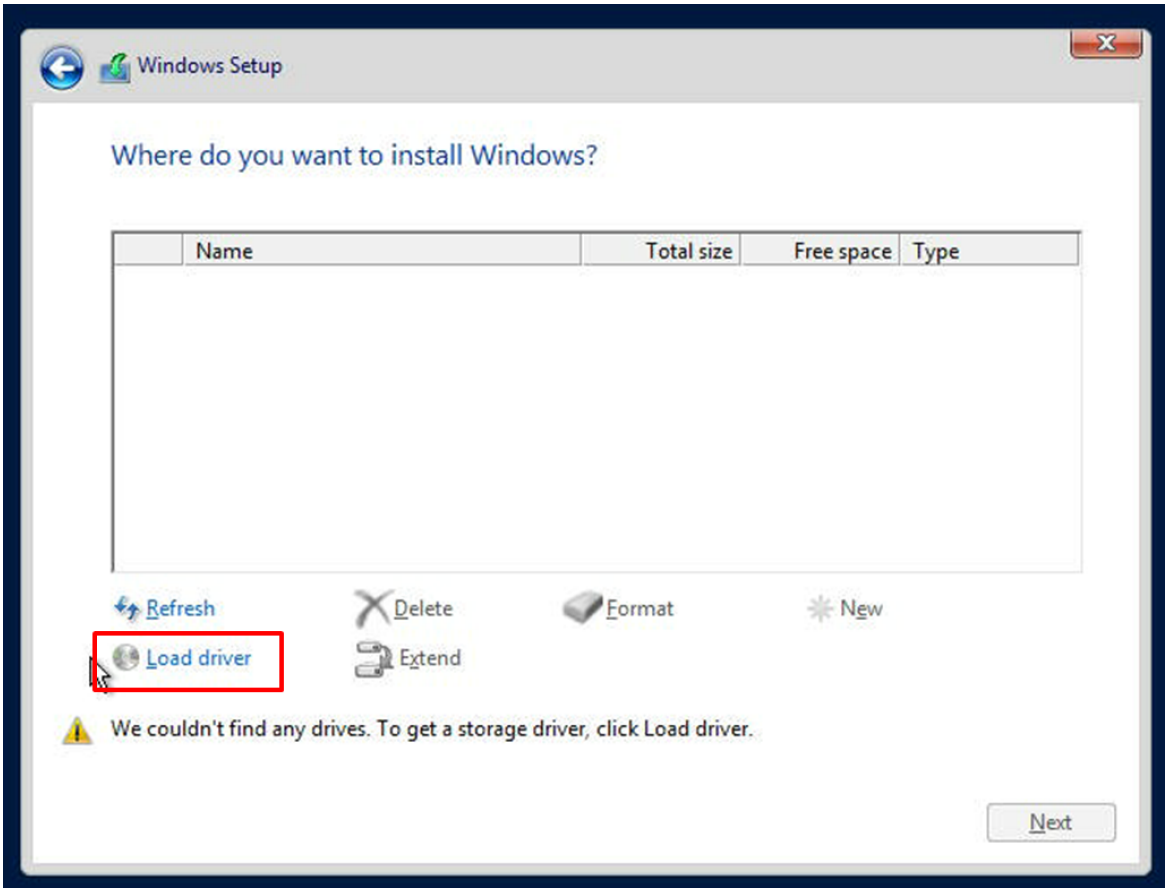


Figure 5-2. Load Driver Link

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

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

5.2 Driver Installation

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

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

Another option is to go to the Supermicro website at https://www.supermicro.com. Find the product page for your motherboard and download the latest drivers and utilities.

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

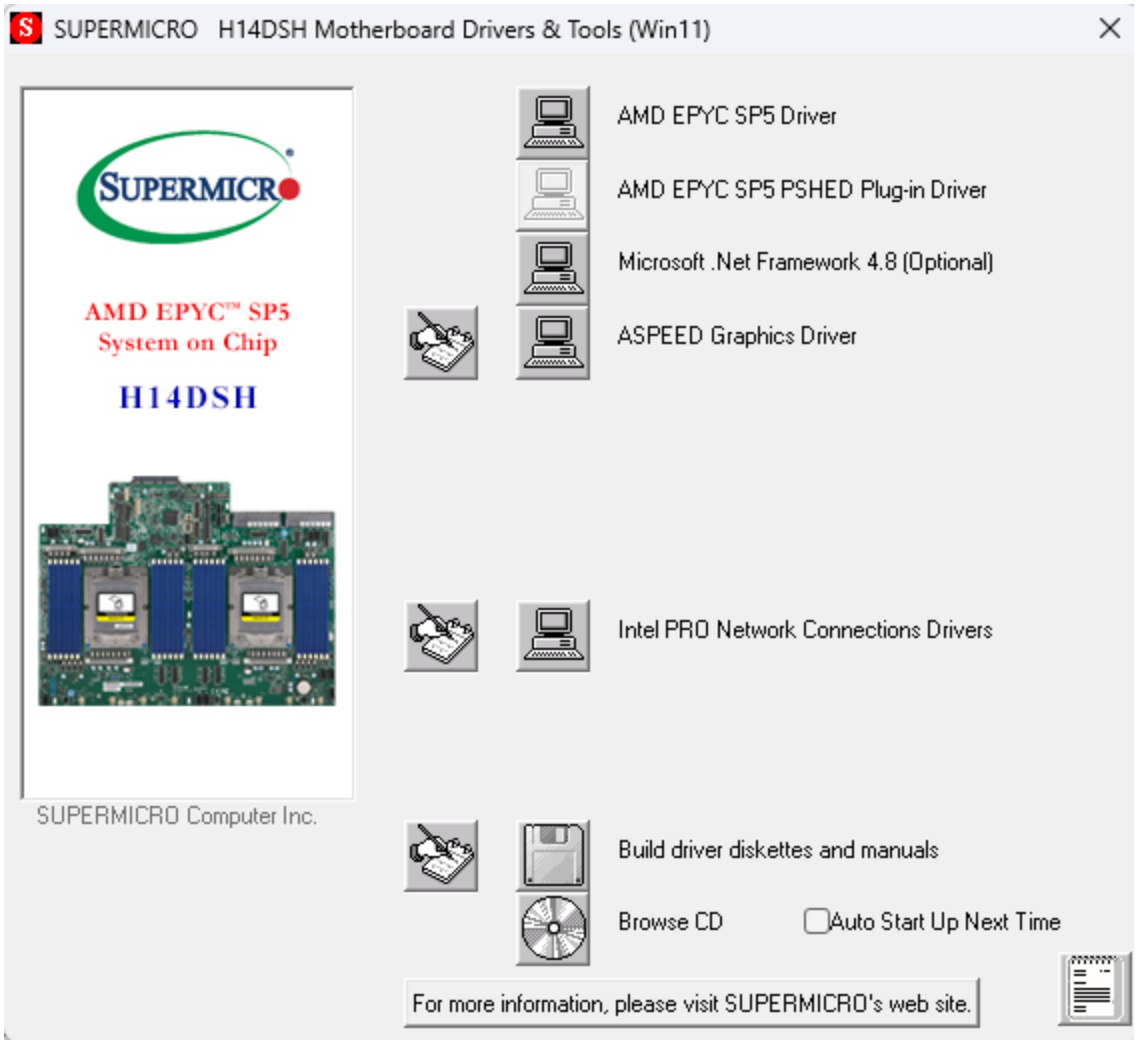


Figure 5-3. Driver Download Screenshot

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 bottom) one at a time. *After installing each item, you must reboot the system before moving on to the next item on the list.* The bottom icon with a CD on it allows you to view the entire contents.

5.3 BMC

The H14DSH motherboard provides remote access, monitoring, and management through the baseboard management controller (BMC) and other management controllers distributed among different system modules. There are several BIOS settings that are related to BMC. For general documentation and information on BMC, visit our website at the following page:

https://www.supermicro.com/en/solutions/management-software/bmc-resources

BMC ADMIN User Password

For security, each system is assigned a unique default BMC password for the ADMIN user. The password can be found on a sticker on the motherboard and a sticker on the chassis, for Supermicro chassis. The sticker also displays the BMC MAC address. If necessary, the password can be reset using the Supermicro IPMICFG tool.

Figure 5-4. BMC Password Label

Chapter 6:

Optional Components

This chapter describes alternate configurations and optional system components for the AS -1126HS-TN server.

6.1 Storage Drive Options **99**
6.2 Storage Control Cards **100**
6.3 Configuration Ordering Information **101**
6.4 Power Supply Modules **103**
6.5 TPM Security Module **104**
6.6 Cable Management Arm **105**

6.1 Storage Drive Options

The storage drive bays can support SATA, SAS, and NVMe in any combination. To enable SAS, SATA, and NVMe, additional hardware is required.

SATA – The system can support up to twelve SATA drives from the onboard SATA controller.

SAS – The system can support up to twelve SAS drives with one of the supported add-on storage controller cards in "Storage Control Cards" on the next page.

NVMe – The system can support up to twelve NVMe drives.

6.2 Storage Control Cards

Storage Control Card Options	
AOC SKU	**Description**
AOC-S3908L-H8iR-16DD	SAS RAID Adapter (RAID 0, 1, 5, 6, 10, 50, 60), eight internal SAS3 ports, Supports up to 16 physical devices with expander, One SlimSAS and eight black (100-Ohm) connector
AOC-S3916L-H16iR-32DD	SAS RAID Adapter (RAID 0, 1, 5, 6, 10, 50, 60), 16 internal SAS3 ports, Supports up to 32 physical devices with expander, Two SlimSAS eight black (100-Ohm) connectors
AOC-S3808L-L8iT	SAS Host Bus Adapter (IT mode), eight internal SAS3 ports, Supports up to 122 physical devices with expander, One SlimSAS and eight black (100-Ohm) connectors
AOC-S3816L-L16iT	SAS Host Bus Adapter (IT mode), 16 internal SAS3 ports, Supports up to 122 physical devices with expander, Two SlimSAS and eight black (100-Ohm) connectors

6.3 Configuration Ordering Information

The AS -1126HS-TN server supports multiple configurations, which require the following parts.

8 Drive Bay Configurations

Figure 6-1. Eight-Drive Bay Configurations

Option 1: 8 NVMe		
Drive Bay #	**Drive Type**	**Part Numbers**
Drive Bays 0-7	NVMe	CBL-MCIO-1463M5FLFB1-J CBL-MCIO-1347M5REL CBL-MCIO-1473M5FRF MCP-220-11902-0B (x2)

Option 2: 8 SATA		
Drive Bay #	**Drive Type**	**Part Numbers**
Drive Bays 0-7	SATA	CBL-CDAT-1062Y-45 CBL-MCIO-1255L4Y MCP-220-11902-0B (x2)

Option 3: 8 SAS		
Drive Bay #	**Drive Type**	**Part Numbers**
Drive Bays 0-7	SAS	CBL-CDAT-1062Y-45 CBL-SAST-1273LP-100 MCP-220-11902-0B (x2) SAS AOC (39xx/38xx, etc.)

12 Drive Bay Configurations

Figure 6-2. 12-Drive Bay Configurations

Option 4: 12 NVMe		
Drive Bay #	**Drive Type**	**Part Numbers**
Drive Bays 0-11	NVMe	CBL-MCIO-1347M5REL CBL-MCIO-1462M5FRFB2 CBL-MCIO-1463M5FLFB1-J CBL-MCIO-1473M5FRF BPN-NVME5-HS119N-S4R CBL-PWEX-1136-40 MCP-220-00178-0B (x4)

Option 5: 12 SATA		
Drive Bay #	**Drive Type**	**Part Numbers**
Drive Bays 0-11	SATA	CBL-CDAT-1062Y-45 CBL-MCIO-1255L4Y (x2) BPN-NVME5-HS119N-S4R CBL-PWEX-1136-40 MCP-220-00178-0B (x4)

Option 6: 12 SAS		
Drive Bay #	**Drive Type**	**Part Numbers**
Drive Bays 0-11	SAS	CBL-CDAT-1062Y-45 CBL-SAST-1273LP-100 CBL-SAST-1262LP-100 BPN-NVME5-HS119N-S4R CBL-PWEX-1136-40 MCP-220-00178-0B (x4) SAS AOC (3916/3816, etc.)

6.4 Power Supply Modules

Select your system's power supply based on system configurations.

Power Supply Module Options		
Watts	**Part Number**	**80Plus Level**
1200	PWS-1K24A-1R	Titanium
1600	PWS-1K63A-1R	Titanium
2000	PWS-2K07A-1R	Titanium
2600	PWS-2K63A-1R	Titanium
1300	PWS-1K31D-1R (DC)	N/A
2000	PWS-2K04D-1R (DC)	N/A
Power cord for PWS-1K31D-1R: CBL-PWEX-0710-JP Power cord for PWS-2K04D-1R: CBL-PWEX-1058		

6.5 TPM Security Module

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

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

Refer to https://www.supermicro.com/manuals/other/AOM-TPM-9670V_9670H__X12_H12.pdf for details and installation procedures.

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

6.6 Cable Management Arm

The AS -1126HS-TN server supports a cable management arm (CMA), which keeps the rear cables organized and clear of the rail mechanisms when the system is extended out the front of the rack for maintenance.

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

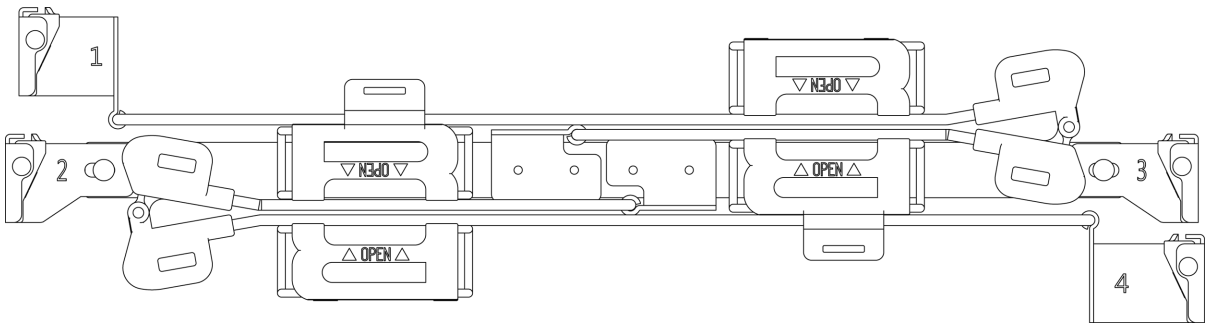


Figure 6-3. Cable Management Arm

Cable Arm Details		
Optional Part	**Part Number**	**Description**
Cable Arm	MCP-290-00168-0N	7.5" deep cable arm
Rail Set	MCP-290-11901-0N	41.2" rails (optimized for 1200 mm deep racks)

Installing the Cable Management Arm

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

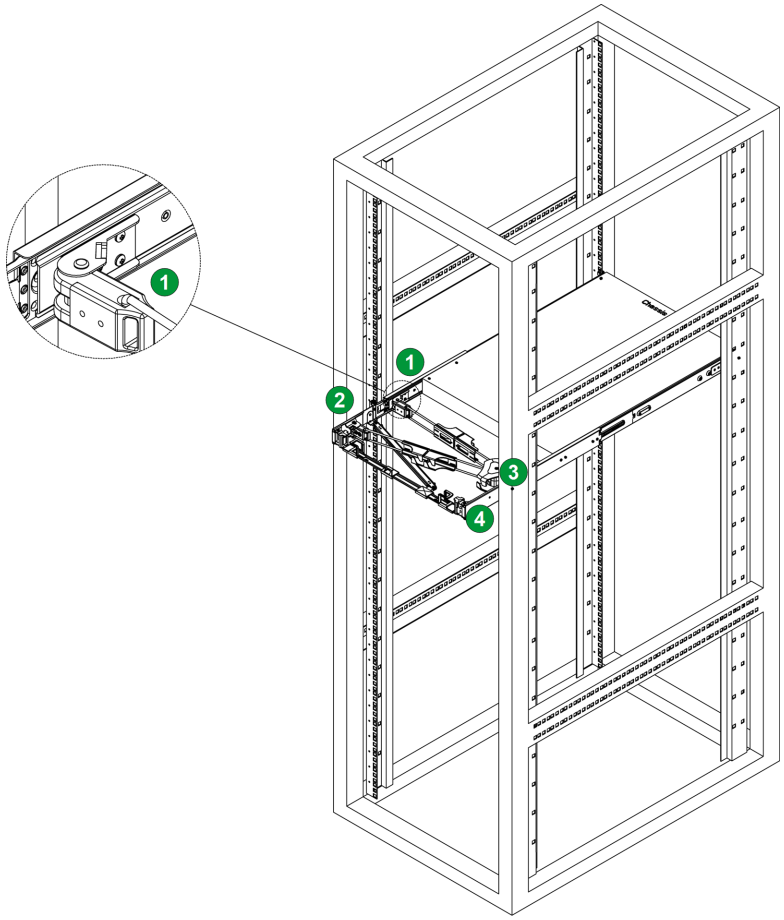


Figure 6-4. Installing the Connectors

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

Removing the Cable Management Arm

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

Chapter 7:

Troubleshooting and Support

The following content contains information on common issues and how to resolve them.

7.1 Online Resources **108**
Direct Links for the A+ Server AS -1126HS-TN System 108
Direct Links for General Support and Information 108
7.2 Baseboard Management Controller (BMC) **109**
7.3 Troubleshooting Procedures **110**
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No Power 110
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Memory Errors 111
Losing the System's Setup Configuration 111
When the System Becomes Unstable 111
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Checking the BMC Error Log 113
7.5 BMC Rest **114**
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7.10 Feedback **120**

7.1 Online Resources

A great deal of information is available on the Supermicro website. From the top menu of the Supermicro home page at https://www.supermicro.com:

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

Direct Links for the A+ Server AS -1126HS-TN System

AS -1126HS-TN specifications page

H14DSH motherboard page for links to the Quick Reference Guide, User Manual, validated storage drives, etc.

Direct Links for General Support and Information

- Frequently Asked Questions: https://www.supermicro.com/FAQ/index.php
- TPM User Guide: https://www.supermicro.com/manuals/other/AOM-TPM-9670V_9670H__X12_H12.pdf
- BMC User Guide: https://www.supermicro.com/manuals/other/BMC_IPMI_X14_H14.pdf
- Product Resources page for validated memory details: https://www.supermicro.com/support/resources/mem.cfm
- Product Matrices page for links to tables summarizing specs for systems, motherboards, power supplies, riser cards, add-on cards, and more: https://www.supermicro.com/en/support/product-matrices
- Security Center for recent security notices: https://www.supermicro.com/en/support/security_center
- Supermicro Phone and Addresses: https://www.supermicro.com/en/about/contact

7.2 Baseboard Management Controller (BMC)

The AS -1126HS-TN server supports the Baseboard Management Controller (BMC). BMC is used to provide remote access, monitoring, and management. There are several BIOS settings that are related to BMC.

For general documentation and information on BMC, visit our website at the following page:

https://www.supermicro.com/en/solutions/management-software/bmc-resources

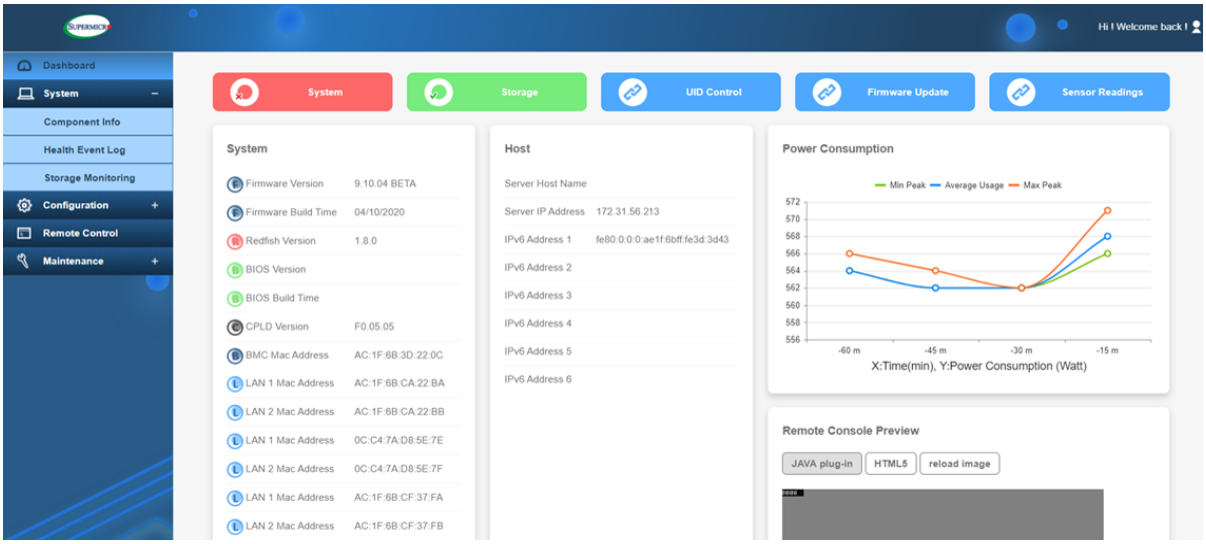

Figure 7-1. BMC Dashboard

7.3 Troubleshooting Procedures

Use the following procedures to troubleshoot your system. If you have followed all of the procedures below and still need assistance, refer to the "Technical Support Procedures" on page 118 section in this chapter. Always disconnect the AC power cord before adding, changing or installing any non hot-swap hardware components. If the below steps do not fix the setup configuration problem, contact your vendor for repairs.

Before Power On

1. Make sure that there are no short circuits between the motherboard and chassis.
2. Disconnect all ribbon/wire cables from the motherboard, including those for the keyboard and mouse.
3. Remove all add-on cards.
4. Install the processor (making sure it is fully seated) and connect the front panel connectors to the motherboard.

No Power

1. Make sure that there are no short circuits between the motherboard and the chassis.
2. The battery on your motherboard may be old. Check to verify that it still supplies approximately 3 VDC. If it does not, replace it with a new one.

No Video

1. If the power is on, but you do not have video, remove all add-on cards and cables.
2. Remove all memory modules and turn on the system (if the alarm is on, check the specs of memory modules, reset the memory, or try a different one).

System Boot Failure

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

1. Remove all components from the motherboard, especially the DIMMs. Power on the system and check if the power-on LED and the BMC Heartbeat LED are on, and system fans are spinning.

2. Turn on the system with only one DIMM installed. If the system boots, check for bad DIMMs or slots by following the Memory Errors Troubleshooting procedure in this chapter.

Memory Errors

When suspecting faulty memory is causing the system issue, check the following:

1. Make sure that the memory modules are compatible with the system and are properly installed. See "Maintenance and Component Installation" on page 42 for installation instructions. (For memory compatibility, refer to the "Tested Memory List" link on the motherboard's product page to see a list of supported memory.)
2. Check if different speeds of DIMMs have been installed. It is strongly recommended that you use the same RAM type and speed for all DIMMs in the system.
3. Make sure that you are using the correct type of DIMMs recommended by the manufacturer.
4. Check for bad DIMMs or slots by swapping a single module among all memory slots and check the results.

Losing the System's Setup Configuration

1. Make sure that you are using a high-quality power supply. A poor-quality power supply may cause the system to lose the CMOS setup information. Refer to "Introduction" on page 12 for details on recommended power supplies.
2. The battery on your motherboard may be old. Check to verify that it still supplies approximately 3 VDC. If it does not, replace it with a new one.

When the System Becomes Unstable

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

   1. Processor/BIOS support: Make sure that your processor is supported and that you have the latest BIOS installed in your system.
   2. Memory support: Make sure that the memory modules are supported. Refer to the product page on our website at https://www.supermicro.com. Test the modules using memtest86 or a similar utility.

      Note: Click on the "Tested Memory List" link on the motherboard's product page to see a list of supported memory.

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

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

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

7.4 Crash Dump Using BMC

In the event of a processor internal error (IERR) that crashes your system, you may want to provide information to support staff. You can download a crash dump of status information using BMC. The BMC manual is available at https://www.supermicro.com/manuals/other/BMC_IPMI_X13_H13.pdf.

Checking the BMC Error Log

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

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

7.5 BMC Rest

The BMC can be reset using the UID button.

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

Note: All BMC settings including username and password will be removed, except the FRU and network settings.

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

BMC Reset Options		
Event	**UID LED**	**BMC Heartberat LED**
Reset	Blue, blinks at 2 Hz	Solid green
Restore Defaults	Blue, blinks at 4 Hz	Off
Update	Blue, blinks at 10 Hz	

7.6 CMOS Clear

JBT1 on the H14DSH motherboard is used to clear CMOS, which will also clear any passwords. For information on clearing CMOS, refer to "CMOS Clear" on page 89 earlier in this manual.

7.7 Motherboard Battery

For information on removing, disposing of, and replacing the motherboard battery of your system, refer to "Motherboard Battery Removal and Installation" on page 62.

7.8 Where to Get Replacement Components

If you need replacement parts for your AS -1126HS-TN server, 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 on the Supermicro website:

https://www.supermicro.com

Under the "Buy" menu, click the "Where to Buy" link.

7.9 Technical Support Procedures

Before contacting Technical Support, take the following steps. Also, note that as a motherboard manufacturer, Supermicro also sells motherboards through its channels, so it is best to first check with your distributor or reseller for troubleshooting services. They should know of any possible problems with the specific system configuration that was sold to you.

1. Refer to Troubleshooting Procedures or see the FAQs on our website (https://www.supermicro.com/FAQ/index.php) before contacting Technical Support.
2. BIOS upgrades can be downloaded from our website (https://www.supermicro.com/support/resources/bios_ipmi.php).
3. If you still cannot resolve the problem, include the following information when contacting Supermicro for technical support:
   - Motherboard model and PCB revision number
   - BIOS release date/version (This can be seen on the initial display when your system first boots up.)
   - System configuration
4. An example of a Technical Support form is on our website at https://webpr3.supermicro.com/SupportPortal.
5. Distributors: For immediate assistance, have your account number ready when placing a call to our Technical Support department. For Supermicro contact information, refer to "Contacting Supermicro" on page 11.

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 the server to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and the shipping package is 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 can be requested online at the following page:

https://www.supermicro.com/RmaForm

Whenever possible, repack the server in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the server securely, using packaging material to surround the server 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 alternation, misuse, abuse or improper maintenance of products.

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

7.10 Feedback

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

Chapter 8:

UEFI BIOS

The following content contains information on BIOS configuration with the AS -1126HS-TN server.

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8.8 Save & Exit **162**

8.1 Introduction

This chapter describes the AMIBIOS™ Setup utility for the motherboard. The BIOS is stored on a chip and can be easily upgraded using the UEFI script (flash.nsh), the BMC WebUI, or the SuperServer Automation Assistant (SAA) utility.

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. Refer to the Manual Download area of our website for any changes to BIOS that may not be reflected in this manual.

Updating BIOS

It is recommended that you do not upgrade your BIOS if you are not experiencing any problems with your system. Updated BIOS files are located on our website at the following page:

https://www.supermicro.com/support/resources/bios_ipmi.php

Check our BIOS warning message and the information on how to update your BIOS on our website. Select your motherboard model and download the BIOS file to your computer. Also, check the current BIOS revision to make sure that it is newer than your BIOS before downloading.

Important: Do not shut down or reset the system while updating the BIOS to prevent possible system boot failure! Read the motherboard README file carefully before you perform the BIOS update.

Unzip the BIOS file onto a bootable USB device and then boot into the built-in UEFI Shell and type "flash.nsh <BIOS filename><BMC Username><BMC Password>" to start the BIOS update. The flash script will invoke the SUM (EFI) tool automatically to perform the BIOS update, beginning with uploading the BIOS image to BMC. After uploading the firmware, the system will reboot to continue the process. The BMC will take over and continue the BIOS update in the background. The process will take 3–5 minutes.

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 hot 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 a BIOS submenu or item 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 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>, <F5>, <F6>, <Enter>, <ESC>, the arrow keys, etc.) can be used at any time during the setup navigation process.

8.2 Main Setup

When you first enter the AMI BIOS Setup utility, you enter 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.

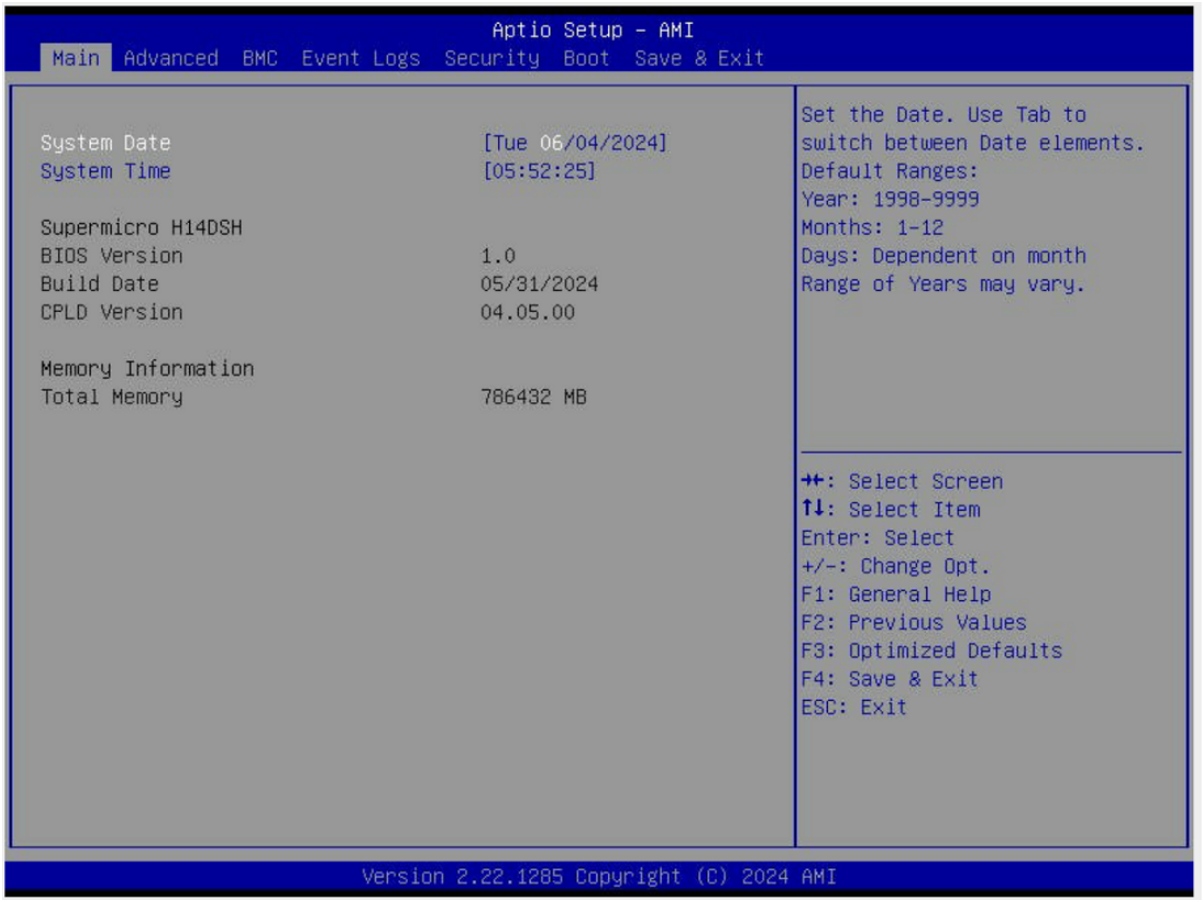


Figure 8-1. BIOS Main Tab Screen

System Date/System Time

Use the two features 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 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.

Supermicro H14DSH

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 Complex-Programmable Logical Device (CPLD) used in the system.

Memory Information

Total Memory

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

8.3 Advanced Setup Configurations

Use the arrow keys to select the Advanced submenu and press <Enter> to access the submenu items.

Important: Use caution when changing the Advanced settings. An incorrect value, an improper DRAM frequency, or a wrong BIOS timing setting may cause the system to malfunction. When this occurs, revert the setting to the manufacture default settings.

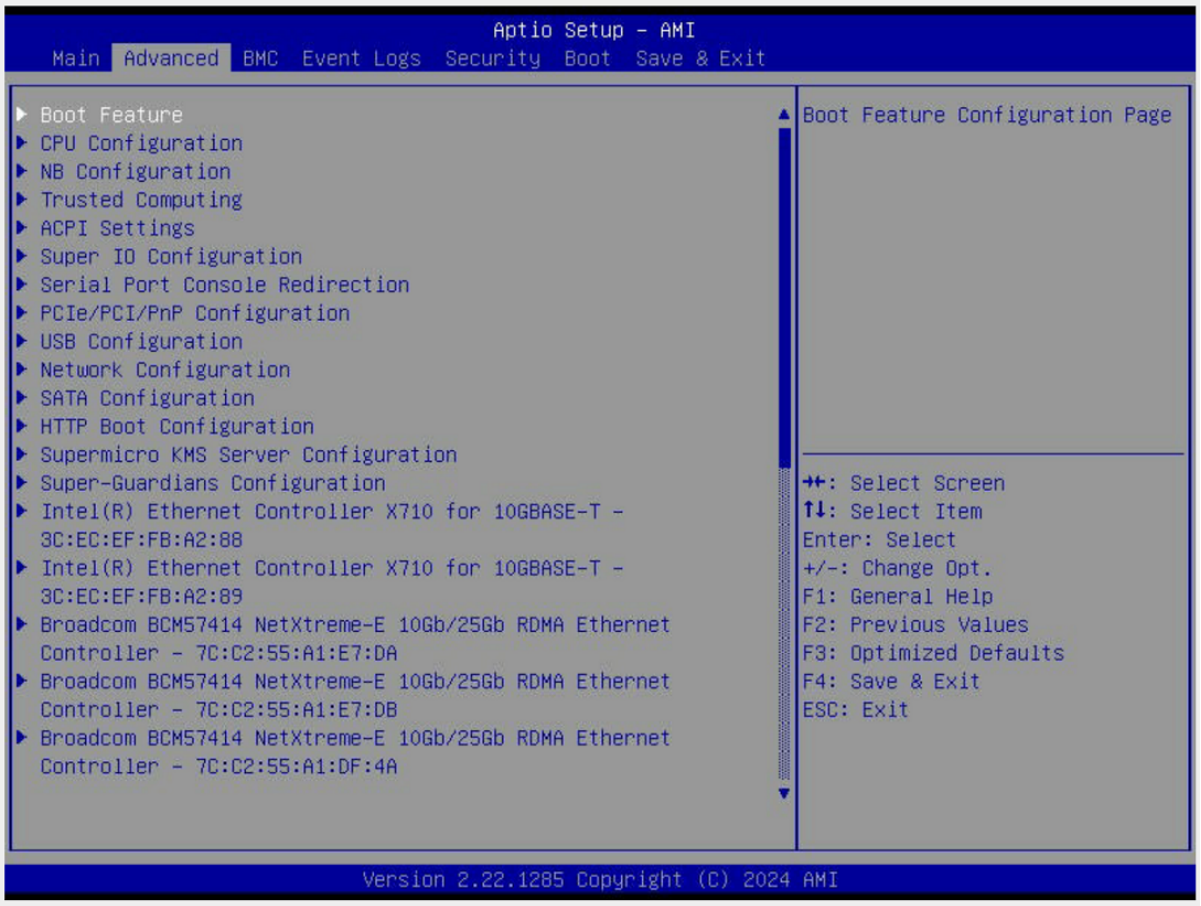


Figure 8-2. Advanced BIOS Screen

Boot Feature Menu

Quiet Boot

Use this feature to select the screen between displaying the Power-on Self Test (POST) messages or 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**.

Note: BIOS POST messages are always displayed regardless of the setting of this feature.

Option ROM Messages

Use this feature to set the display mode for the Option ROM. Select Keep Current to display the current AddOn ROM display settings. Select Force BIOS to use the Option ROM display mode 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

Select Enabled to force the system to wait until the <F1> key is pressed if an error occurs. The options are Disabled and **Enabled**.

Re-try Boot

If this feature is set to Enabled, the system BIOS will automatically reboot the system from an Extensible Firmware Interface (EFI) boot device after an initial boot failure. The options are **Disabled** and Enabled.

Power Configuration

Watch Dog Function

Select Enabled to allow the Watch Dog timer to reboot the system when it is inactive for more than five minutes. The options are **Disabled** and Enabled.

Watch Dog Action (Available when "Watch Dog Function" is set to Enabled)

Use this feature to configure the Watch Dog Time_out setting. The options are **Reset** and NMI.

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 to power off the system after pressing and holding the power button for four seconds or longer. Select Instant Off to instantly power off the system as soon as you press the power button. The options are **Instant Off** and 4 Seconds Override.

CPU Configuration Menu

Workload Profile

This function allows configuring the BIOS settings to match the selected workload. The options are **Disabled**, HPC, I/O, Virtualization, Telco NFVI, Telco NFVI-FP, and Telco FlexRAN.

SMT Control

This setting is used to disable symmetric multithreading. To re-enable SMT, a power cycle is needed after selecting the Enable option. Select Auto based on BIOS PCD default setting. The options are Disabled, Enabled, and **Auto**.

Core Performance Boost

Disable CPB. The options are Disabled and **Auto**.

Global C-state Control

Controls IO based C-state generation and DF C-states. The options are Disabled, Enabled, and **Auto**.

ACPI CST C2 Latency

Use this setting to enter in microseconds the decimal value. Larger C2 latency values will reduce the number of C2 transitions and reduce C2 residency. Fewer transitions can help when the performance is sensitive to the latency of C2 entry and exit. The default value is **100.**

PPIN Opt-in

Select Unlock/Enabled to use the Protected Processor Inventory Number (PPIN) in the system. The options are Disabled, Enabled, and **Auto**.

SMEE

This setting controls Secure Memory Encryption (SME) for the system. The options are Disabled, Enabled, and **Auto**.

Fast Short REP MOVSB (FSRM)

The default is 1, but it can be set to zero for analysis purposes as long as the OS supports it. The options are **Auto**, Enabled, and Disabled.

Enhanced REP MOVSB/STOSB (ERSM)

This setting optimizes CPU string operations. Disabling ERSM (setting it to 0) can be useful for performance analysis if supported by the operating system. The options are Disabled, Enabled, and **Auto**.

AVX512

Enable or disable AVX512. The options are **Auto**, Enabled, and Disabled.

Monitor and MWAIT Disable

This setting controls the availability of the MONITOR, MWAIT, MONITORX, and MWAITX opcodes, which are used for power management and synchronization. The options are Enabled, Disabled, and **Auto**.

L1 Stream HW Prefetcher

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

L2 Stream HW Prefetcher

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

CCD Control

Sets the number of active CCDs. A power cycle is required once this option has been used to remove any CCDs. The options are **Auto**, 2 CCDs, 4 CCDs, 6 CCDs, 8 CCDs, 10 CCDs, 12 CCDs, and 14 CCDs.

Core Control

Sets the number of cores to be used. Once this option has been used to remove any cores, a power cycle is required for future selections to take effect. The options are **Auto**, ONE (1+0), TWO (2+0), THREE (3+0), FOUR (4+0), FIVE (5 +0), SIX (6+0), and SEVEN (7+0), TWO (1+1), FOUR (2+2), SIX (3+3), EIGHT (4+4), TEN (5+5), TWELVE (6+6), FOURTEEN (7+7).

SVM Mode

This setting enables or disables CPU Virtualization. The options are Disabled, and **Enabled**.

►CPU1 Information

Changing the designed PCIe port bifurcation.

CPU information listed,

CPU1 PCIe Package Group P2 The options are **Auto**, x4x4x4x4, x4x4x8, x8x4x4, x8x8, and x16

CPU1 PCIe Package Group G2

CPU1 PCIe Package Group P3

CPU1 PCIe Package Group G3

CPU1 PCIe Package Group P1

CPU1 PCIe Package Group G1

CPU1 PCIe Package Group P0

CPU1 PCIe Package Group G0

►CPU2 Information

Changing the designed PCIe port bifurcation.

CPU information listed,

CPU2 PCIe Package Group P2 The options are **Auto**, x4x4x4x4, x4x4x8, x8x4x4, x8x8, and x16

CPU2 PCIe Package Group G2

CPU2 PCIe Package Group P3

CPU2 PCIe Package Group G3

CPU2 PCIe Package Group P1

CPU2 PCIe Package Group G1

CPU2 PCIe Package Group P0

CPU2 PCIe Package Group G0

NB Configuration

North Bridge Configuration

IOMMU

Use this setting to enable or disable IOMMU. The options are Disabled, Enabled, and **Auto**.

DMAr Support

Use this setting to enable DMAr system protection during POST (Power-On Self-Test). The options are Disabled, Enabled, and **Auto**.

DMA Protection

Use this setting to enable DMA remap support in the IVRS IVinfo field. The options are **Auto**, Enabled, and Disabled.

DRTM Virtual Device Support

This enables or disables the DRTM ACPI Virtual device. The options are Disabled, Enabled, and **Auto**.

DRTM Memory Reservation

This setting reserves 128 MB of memory below for DRTM security functions. it is required to for secured-core servers. The options are Disabled, Enabled, and **Auto**.

ACS Enable

This setting enables Access Control Service (ACS) functionality, which requires AER to be active. The options are Enabled, Disabled, and **Auto**.

TDP Control

Use this setting to set the processor's power consumption (TDP). The options are Manual, and **Auto**.

Package Power Limit Control

Use Auto to apply the default power limit (PPT) or Manual to set a custom PPT. The options are Manual, and **Auto**.

Determinism Control

Use this setting to configure the level of performance determinism. The options are Manual and **Auto**.

APBDIS

Use this setting to control the APBDIS feature. A value of 0 indicates "not APBDIS" (mission mode). The options are 0, 1, and **Auto**.

Power Profile Selection

Use this setting to select a power profile to optimize performance or efficiency. The options are High Performance Mode, Efficiency Mode, Maximum IO Performance Mode, Balanced Memory Performance Mode, Balanced Core Performance Mode, Balanced Core Memory Performance Mode, and **Auto**.

DF Cstates

This setting controls the power-saving states of the data fabric.The options are Disabled, Enabled, and **Auto**.

Data Link Feature Cap

This setting control the activation of advanced data link features. The options are Enabled, Disabled, and **Auto**.

SEV-SNP Support

This setting controls the activation of Secure Encrypted Virtualization - Secure Nested Paging (SEV-SNP) security features.. The options are Disabled, Enabled, and **Auto**.

Periodic Training

This setting controls the method for managing power-saving states. The options are Disabled, and **Legacy**.

EQ Bypass To Highest Rate

This setting determines whether the system can bypass equalization steps at lower data rates and directly attempt equalization at the highest supported rate during the link setup process. The options are Disable, Enable, and **Auto**.

CXL Memory Attribute

This setting determines the memory type for CXL devices. The options are **Auto**, Enabled, and Disabled.

Sync Header Bypass

This setting controls the inclusion of synchronization headers in data transmissions. The options are **Auto**, Enabled, and Disabled.

►xGMI Configuration

xGMI Force Link Width Control (available when xGMI Link Width Control is set to Manual)

This setting forces a specific link width for the xGMI interface, overriding automatic settings for manual control. The options are **Auto**, Unforce, and Force.

xGMI Link Max Speed

This setting controls the maximum speed of the xGMI link. The options are 20 Gbps, 25 Gbps, 32 Gbps, and **Auto**.

►Memory Configuration

Memory Target Speed

Use this setting to specify the memory target speed in MT/s. The options are **Auto**, DDR3600, DDR4000, DDR4400,.DDR4800, and DDR5200.

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 Disabled, Enabled, and **Auto**.

Chipselect Interleaving

This setting allows memory blocks to be interleaved across the DRAM chip selects for node 0, which can enhance memory performance. The options are Disabled and **Auto**.

BankSwapMode

This setting determines the operation of memory banks in relation to CPU usage. The options are **Auto**, Disabled, and Swap CPU.

Power Down Enable

Use this setting to enable or disable DDR power down mode. The options are Disabled, Enabled, and **Auto**.

DRAM Scrub Time

This setting specifies the frequency of memory scrubbing, which helps maintain data integrity by refreshing memory contents. The options are Disabled, 1 hour, 4 hours, 6 hours, 8 hours, 12 hours, 16 hours, **24 hours**, and 48 hours.

TSME

This setting controls the Transparent Secure Memory Encryption feature. The options are **Auto**, Enabled, and Disabled.

Enhanced PPR

Use this setting to enable a full memory test during system setup. While this thorough testing can enhance system stability, it will also increase the overall boot time. The options are **Disabled** and Enabled.

►CPU1 Memory Information

View memory information for CPU1.

►CPU2 Memory Information

View memory information for CPU2.

ACPI Settings Menu

►ACPI Settings

High Precision Event Timer

Enable the High Precision Event Timer. The default is **Enabled**.

PCI AER Support

Use this setting to enable ACPI OS to natively manage PCI advanced error reporting. The default is **Disabled**.

NUMA Nodes per Socket

A NUMA architecture divides hardware resources, including processors, memory, and I/O buses, into groups, called NUMA nodes. This setting specifies the number of desired NUMA odes per sockets. Selecting Zero will attempt to interleave the two sockets together. **Auto** is equivalent to NPS1.

ACPI SRAT L3 Cache As NUMA Domain

This setting determines how the system's NUMA (Non-Uniform Memory Access) domains are defined in relation to the L3 cache. The options are Disabled, Enabled, and **Auto**.

Super IO Configuration Menu

►Super IO Configuration

Note: This submenu is available when your system supports this feature.

The following information is displayed.

- Super IO Chip

Select for Serial Port 1 or Serial Port 2.

Serial Port 1 Configuration Menu

Serial Port 1 Configuration

Serial Port 1

Select Enabled to enable serial port 1. The options are Disabled and **Enabled**.

Device Settings (Available when "Serial Port 1" above is set to Enabled)

This feature displays the base I/O port address and the Interrupt Request address of serial port 1.

Change Settings (Available when "Serial Port 1" above is set to Enabled)

Use this feature to specify the base I/O port address and the Interrupt Request address of serial port 1. Select Auto for the BIOS to automatically assign the base I/O and IRQ address to serial port 1. The options are **Auto**, (IO=3F8h; IRQ=4;), (IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;), (IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;), (IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;), and (IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;).

Serial Port 2 Configuration Menu

Serial Port 2 Configuration

Serial Port 2/SOL ("Serial Port 2" or "SOL" based on your system support)

Select Enabled to enable serial port 2 (or SOL). The options are Disabled and **Enabled**.

Device Settings (Available when "Serial Port 2/SOL" above is set to Enabled)

This feature displays the base I/O port address and the Interrupt Request address of serial port 2 (or SOL).

Change Settings (Available when "Serial Port 2/SOL" above is set to Enabled)

Use this feature to specify the base I/O port address and the Interrupt Request address of serial port 2 (or SOL). Select Auto for the BIOS to automatically assign the base I/O and IRQ address to serial port 2 (or SOL). The options are **Auto**, (IO=2F8h; IRQ=3;), (IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;), (IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;), (IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;), and (IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;).

Serial Port 2 Attribute (Available for Serial Port 2 only)

Select SOL to use serial port 2 as a Serial Over LAN (SOL) port for console redirection. The options are **SOL** and COM.

Serial Port Console Redirection Menu

►Serial Port Console Redirection

COM1 (Available when your system supports the serial port of COM1)

Console Redirection

Select Enabled to enable COM port 1 for Console Redirection, which allows a client machine to be connected to a host machine at a remote site for networking. The options are **Disabled** and Enabled.

Note: This feature will be set to Enabled if there is no BMC support.

►Console Redirection Settings

Note: This submenu is available when "Console Redirection" for COM1 or SOL/COM2 is set to Enabled.

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/COM2. Please note that the option of SOL/COM2 indicates a shared serial port. SOL is available with BMC support.

Terminal Type EMS

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 EMS

This feature 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 EMS

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**, Hardware RTS/CTS, and Software Xon/Xoff.

The following information is displayed.

- **Data Bits EMS**
- **Parity EMS**
- **Stop Bits EMS**

►Console Redirection Settings

Note: This submenu is available when "Console Redirection" for COM1 or SOL/COM2 is set to Enabled.

SOL/COM2

Note: This feature is available when your system supports serial port of SOL and/or COM2. The "SOL/COM2" here indicates a shared serial port, and SOL is used as the default.

Console Redirection

Select Enabled to use the SOL/COM2 port for Console Redirection. The options are Disabled and **Enabled**.

►Console Redirection Settings

Note: This submenu is available when "Console Redirection" for COM1 or SOL/COM2 is set to Enabled.

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/COM2. Please note that the option of SOL/COM2 indicates a

shared serial port. SOL is available with BMC support.

Terminal Type EMS

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 EMS

This feature 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 EMS

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**, Hardware RTS/CTS, and Software Xon/Xoff.

The following information is displayed.

- **Data Bits EMS**
- **Parity EMS**
- **Stop Bits EMS**

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

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** (bits).

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**.

Putty KeyPad

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

Legacy Console Redirection

►Legacy Console Redirection Settings

Legacy Serial Redirection Port

Select a COM port to display redirection of legacy os and legacy oprom messages. The options are **COM1**, and SOL/COM2.

Resolution

On legacy os, the number of rows and columns supported redirection. The options are 80x24, and **80x25**.

Redirection After BIOS Post

When bootloader is selected, then legacy console redirection is disabled before booting to legacy OS. When always is select, then legacy console redirection is enabled ofr legacy os.. The options are **Always Enable** and BootLoader.

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

The feature allows you to configure Console Redirection settings to support Out-of-Band Serial Port management.

Console Redirection EMS

Select Enabled to use the SOL port for Console Redirection. The options are **Disabled** and Enabled.

►Console Redirection Settings

Note: This submenu is available when "Console Redirection EMS" is set to Enabled.

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/COM2. Please note that the option of SOL/COM2 indicates a shared serial port. SOL is available with BMC support.

Terminal Type EMS

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 EMS

This feature 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 EMS

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**, Hardware RTS/CTS, and Software Xon/Xoff.

The following information is displayed.

- **Data Bits EMS**
- **Parity EMS**
- **Stop Bits EMS**

PCIe/PCI/PnP Configuration Menu

Above 4G Decoding

This setting enables 64-bit PCI device access to memory beyond 4 GB for improved memory utilization and performance. The options are Disabled and **Enabled**.

Re-Size BAR Support

This setting enables or disables the Re-Size Base Address Register feature for compatible PCIe devices, which allows the system to allocate more memory to the device. The options are Disabled and **Enabled**.

SR-IOV Support

This setting enables or disables Single Root I/O Virtualization support for the system's PCIe devices. The options are Disabled and **Enabled**.

BME DMA Mitigation

This setting enables or disables Bus Mastering Error (BME) Direct Memory Access (DMA) mitigation for protection during the pre-boot process. The options are **Disabled** and Enabled.

ASPM Support

Configure the Active State Power Management (ASPM) level for PCIe links to optimize power consumption and performance. The options are **Disabled**, Auto, and Force L1.

PCI ARI Support

This setting enables alternative routing- ID interpretation. The options are **Enabled** and

Disabled.

PCIe ARI Enumeration

This setting controls the forwarding of Alternate Routing-ID Interpretation (ARI) information for each downstream port, which is essential for device identification in PCIe systems. The options are Disabled, Enabled and **Auto**.

Relaxed Ordering

This setting determines whether PCI Express devices are permitted to bypass strict transaction ordering, which can lead to potential performance improvements. The options are Disabled and **Enabled**.

Clock Spread Spectrum

This setting allows the BIOS to monitor and reduce the level of Electromagnetic Interference (EMI) generated by system components. The options are **Disabled** and Enabled.

No Snoop

This setting configures the No Snoop option for PCI Express devices, determining whether memory accesses bypass the cache. The options are Disabled and **Enabled**.

VGA Priority

This setting allows you to choose the primary video output source for the system. The options are **Onboard** and External.

PCIe Ten Bit Tag Support

This setting enables the use of ten-bit tags for PCIe devices, which can improve data handling and management. The options are Disabled, Enabled and **Auto**.

NVMe Firmware Source

This setting determines the source of firmware for NVMe devices, allowing you to select between native support or vendor- specific firmware. The options are **Vendor Defined Firmware** and AMI Native Support.

PCI Devices Option ROM Setting

Onboard Video Option ROM

This setting selects the type of firmware to be loaded for onboard video. The options are Disabled and **EFI**.

M.2-C1 OPROM

This setting enables or disables the Option ROM for the M.2-C1 slot. The options are Disabled and **EFI**.

AOC-AG-i4 LAN1 OPROM

This setting enables or disables the onboard LAN OPROM option. The options are Disabled and **EFI**.

USB Configuration

USB Configuration

USB Module Version

USB Controllers: 2 XHCIs

USB Devices: 1 Keyboard, 1 Mouse, 3 Hubs

XHCI Hand-off

This setting provides a workaround for operating systems that do not support XHCI hand-off. The XHCI ownership change must be claimed by the XHCI driver.The options are **Enabled** and Disabled.

Network Configuration Menu

Network Stack

This setting enables the UEFI nework stack. The options are Disabled and **Enabled**.

IPv4 PXE Support

This setting enables IPv4 PXE boot support. The options are Disabled and **Enabled**.

IPv6 HTTP Support

This setting enables IPv6 HTTP boot support. The options are Disabled and **Enabled**.

PXE Boot Wait Time

This sets the wait time, in seconds, to press the ESC key to abort the PXE boot. Use either =/- or numeric keys to set the value. The default value is **0**.

Media Detect Count

This sets the number of times the presence of media will be checked. Use either +/- or numeric keys to set the value. The default value is **1**.

►IPv4 Network Configuration

Configured

This setting indicates whether the network address configured successfully. The options are Disabled and **Enabled**.

Enable DHCP

The options are **Disabled** and Enabled.

Local IP Address

Enter and IP address.

Local NetMask

Enter the Netmask address.

Local Gateway

Enter the Gateway IP address.

Local DNS Servers

Enter the DNS servers IP addresses.

Save Changes and Exit

The options are **Yes** and no.

►IPv6 Network Configuration

Set IPv6 Network parameters.

►Enter Configuration Menu

Interface Name

Interface Type

MAC address

Host addresses

Route Table

Gateway addresses

DNS adresses

Interface ID

DAD Transmit Count

The number of consecutive Neighbor Solicitation messages sent while performing Duplicate Address Detection on a tentative address. A value of zero indicates that Duplicate Address Detection is not performed. The default value is **1**.

►Advanced Configuration

Note: This submenu is available when "Policy" is set to Manual.

New IPv6 address

Use this to set a new manual IP address. It can only be configured under manual policy.

New Gateway addresses

Use this to set new gateway addresses. Gateway IP addresses can only be configured under manual policy.

New DNS addresses

Use this to set new DNS addresses. DNS addresses can only be configured under manual policy.

Commit Changes and Exit

Discard Changes and Exit

Policy

Use this feature to select how the policy is to be configured. The options are **Automatic** and Manual.

Save Changes and Exit

The options are **Yes** and No.

►Advanced Configuration

Note: This submenu is available when "Policy" is set to Manual.

New IPv6 address

Use this to set a new manual IP address. It can only be configured under manual policy.

New Gateway addresses

Use this to set new gateway addresses. Gateway IP addresses can only be configured under manual policy.

New DNS addresses

Use this to set new DNS addresses. DNS addresses can only be configured under manual policy.

Commit Changes and Exit

Discard Changes and Exit

Save Changes and Exit

The options are **Yes** and No.

SATA Configuration Menu

SATA Configuration

SATA Enable

Disable or enable the OnChip SATA controller. The options are Disabled, Enabled, or **Auto**.

SATA Information

Provides SATA devices information.

HTTP Boot Configuration Menu

HTTP Boot Configuration

HTTP Boot Policy

Use this feature to set the HTTP boot policy. The options are Apply to all LANs, **Apply to each LAN**, and Boot Priority #1 instantly.

Configured

The options are **Disabled** and Enabled.

Configured

The options are **Disabled** and Enabled.

Instance of Priority 1: (Available when your motherboard supports this feature)

This feature sets the rank target port. The default setting is **1**.

Select IPv4 or IPv6

This feature specifies which connection the target LAN port should boot from. The options are **IPv4** and IPv6.

Boot Description

Use this feature to enter a boot description, which cannot be longer than 75 characters. Please be sure to enter a boot description; otherwise, the boot option for the URI cannot be created.

Boot URI

Enter a Boot Uniform Research Identifier (URI) with 128 characters or shorter. This Boot URI determines how IPv4 Boot Option and IPv6 Boot Option will be created. This feature is only supported on Dual or EFI Boot Mode.

Supermicro KMS Server Configuration Menu

►Supermicro KMS Server Configuration

Note: Be sure to configure all the features in the submenu of Supermicro KMS Server Configuration and the feature of "KMS Security Policy" in the submenu of Super-Guardians Configuration so that your system can communicate with the KMS server.

Supermicro KMS Server IP address

Use this feature to set the Supermicro Key Management Service (KMS) server IPv4 address in dotted-decimal notation.

Second Supermicro KMS Server IP address

Use this feature to set the second Supermicro KMS server IPv4 address in dotted-decimal notation.

Supermicro KMS TCP Port number

Use this feature to set the TCP port number used in Supermicro KMS Server. The valid range is 100–9999. The default setting is **5696**. Do not change the default setting unless a different TCP port number has been specified and used in the Supermicro KMS Server.

KMS Time Out

Use this feature to enter the KMS server connecting time-out (in seconds). The default setting is **5** (seconds).

TimeZone

Use this feature to set the correct time zone. The default setting is **0** (not specified).

Client UserName

Press <Enter> to set the client identity (UserName). The username can be between 0 and 63 characters in length.

Client Password

Press <Enter> to set the client identity (Password). The password can be between 0 and 31 characters in length.

►CA Certificate

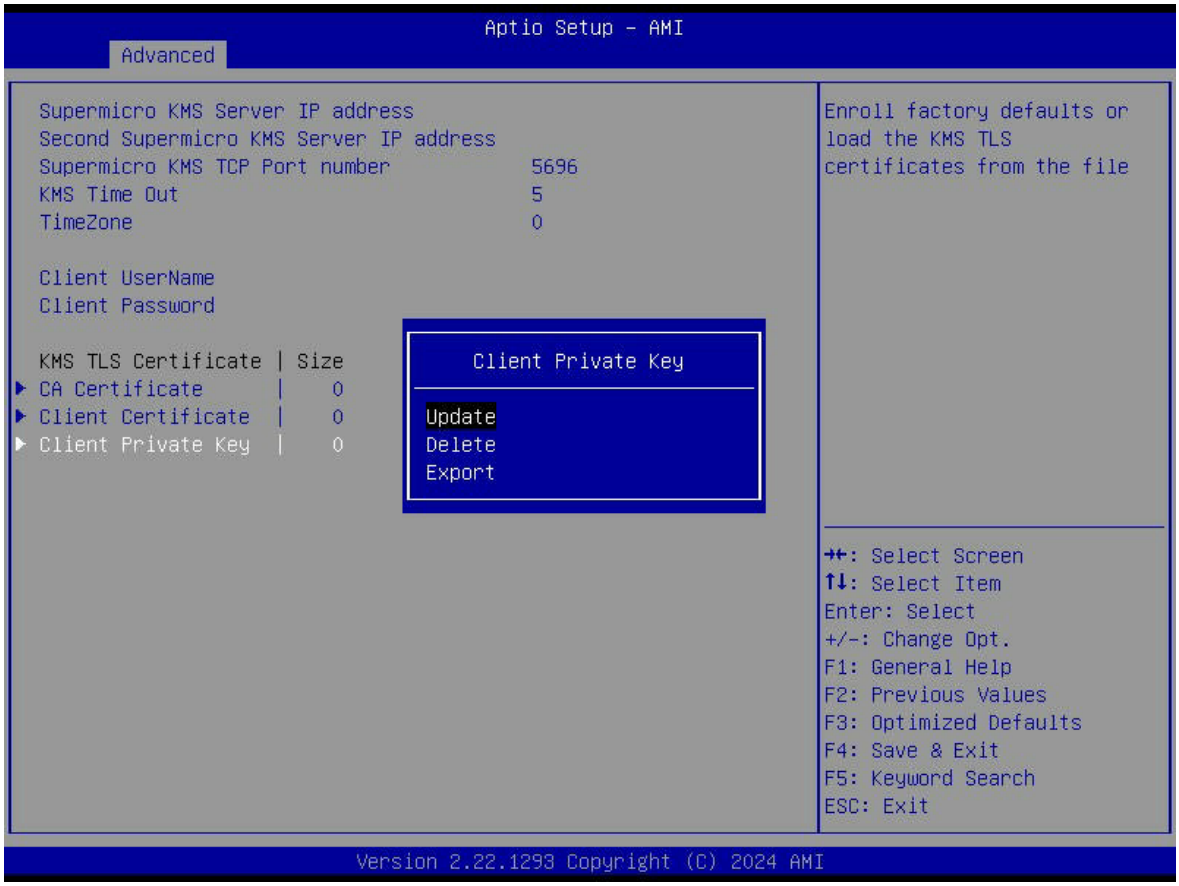
This setting provides options for managing the Certificate Authority (CA) certificate.The options are **Update**, Delete, and Export.

►Client Certificate

This setting provides options for managing the client certificate.The options are **Update**, Delete, and Export.

►Client Private Key

Use the three features to enroll factory defaults or load the KMS Transport Layer Security (TLS) certificates, which are generated by the KMS Server, from the file stored in the USB flash drive as shown below.



Private Key Password (Available when "Client Private Key" above has been set)

Use this feature to change the password for the client private key.

Super-Guardians Configuration Menu

►Super-Guardians Configuration

Super-Guardians Protection Policy

Use this feature to enable the Super-Guardians Protection Policy. The options are **Storage**, System, and System and Storage. Set this feature to Storage to protect and have secure access to Trusted Computing Group (TCG) NVMe devices with the Authentication-Key (AK). Set this feature to System to protect and have secure access to your system/motherboard with the AK. Set this feature to System and Storage to protect and have secure access to your system/motherboard/storage devices with the AK.

KMS Security Policy (Available when "TPM Security Policy" and "USB Security Policy" are set to Disabled)

Set this feature to Enabled to enable the KMS Security Policy. When this feature has not previously been set to Enabled, the options are **Disabled** and Enabled. Changes take effect after you save settings and reboot the system.

When this feature has previously been set to Enabled, the options are **Enabled**, Reset, and Key Rotation. Set this feature to Key Rotation to obtain an existing AK from the KMS server and create a new AK. To disable the KMS Security Policy, set this feature to Reset. When this feature is set to Reset, the system and TCG NVMe devices chosen in "Super-Guardians Protection Policy" will be in the unprotected mode.

Notes:

- Be sure that the KMS server is ready before configuring this feature.
- Use the professional KMS server solutions (e.g., Thales Server) or the Supermicro PyKMIP Software Package to establish the KMS server.

KMS Server Retry Count (Available when "TPM Security Policy" and "USB Security Policy" are set to Disabled)

Use this feature to specify how many times the system will attempt reconnecting to the KMS server. The valid range is 0–10. Press the <+> or <-> key on your keyboard to change the value. The default setting is **5**. If the value is 0, the system will retry infinitely.

TPM Security Policy (Available when "KMS Security Policy" and "USB Security Policy" are set to Disabled)

Set this feature to Enabled to enable the TPM Security Policy. When this feature has not previously been set to Enabled, the options are **Disabled** and Enabled. Changes take effect after you save settings and reboot the system.

When this feature has previously been set to Enabled, the options are **Enabled** and Reset. To disable the TPM Security Policy, set this feature to Reset. When this feature is set to reset, the system and TCG NVMe devices chosen in "Super-Guardians Protection Policy" will be in the unprotected mode.

Note: Be sure to install a TPM 2.0 device to your system before configuring this feature.

Load Authentication- Key (Available when "KMS Security Policy," "TPM Security Policy," and "USB Security Policy" are set to Disabled)

The options are **Disabled** and Enabled. Set this feature to Enabled. Changes take effect after you save settings and reboot the system. While booting, the BIOS will automatically load the Authentication-Key (filename: TPMAuth.bin) from the USB flash drive. Afterwards, the default setting will be set to Disabled by the BIOS.

Notes:

- Be sure to connect a USB flash drive with the Authentication-Key (filename: TPMAuth.bin) to your system before the system reboot.
- Be sure to save the Authentication-Key (filename: TPMAuth.bin) to the USB flash drive and have a backup. Please load the Authentication-Key (filename: TPMAuth.bin) after installing a TPM device. Otherwise, the TPM function can not work properly.

USB Security Policy (Available when "KMS Security Policy" and "TPM Security Policy" are set to Disabled)

Use this feature to enable the USB Security Policy. The options are **Disabled** and Enabled. Set this feature to Enabled. Changes take effect after you save settings and reboot the system. Connect a USB flash drive to your system before the system reboot. While booting, the BIOS will automatically create the USB Authentication-Key (filename: USBAuth.bin) and save it to the USB flash drive.

When this feature has been previously set to Enabled, the options are **Enabled** and Reset. To disable the USB Security Policy, set this feature to Reset. When this feature is set to Reset, the system and TCG NVMe devices chosen in "Super-Guardians Protection Policy" will be in the unprotected mode.

Note: Be sure to connect a USB flash drive to your system before configuring this feature. Save the USB Authentication-Key (filename: USBAuth.bin) to the USB flash drive and keep a backup.

TLS Authenticate Configuration Menu

►Server CA Configuration

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

►Enroll Certification

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

Certification GUID

Press <Enter> and input the certification Global Unique Identifier (GUID).

►Commit Changes and Exit

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

►Discard Changes and Exit

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

►Delete Certification

This feature is used to delete the certificate if a certificate has been enrolled in the system.

►Client Certification Configuration

RAM Disk Configuration

Disk Memory Type

This setting specifies the type of memory to use from the available memory pool in the system to create a disk. the options are **Boot Service Data** and Reserved.

Create raw

Size (Hex):

Set the size of the RAM disk. The valid size should be multiples of the RAM disk block size.

Create & Exit or **Discard & Exit**.

Create from file

Created RAM disk list:

This displays a list of the created RAM disks.

Remove selected RAM disk(s)

8.4 BMC

Use this menu to configure Baseboard Management Console (BMC) settings.

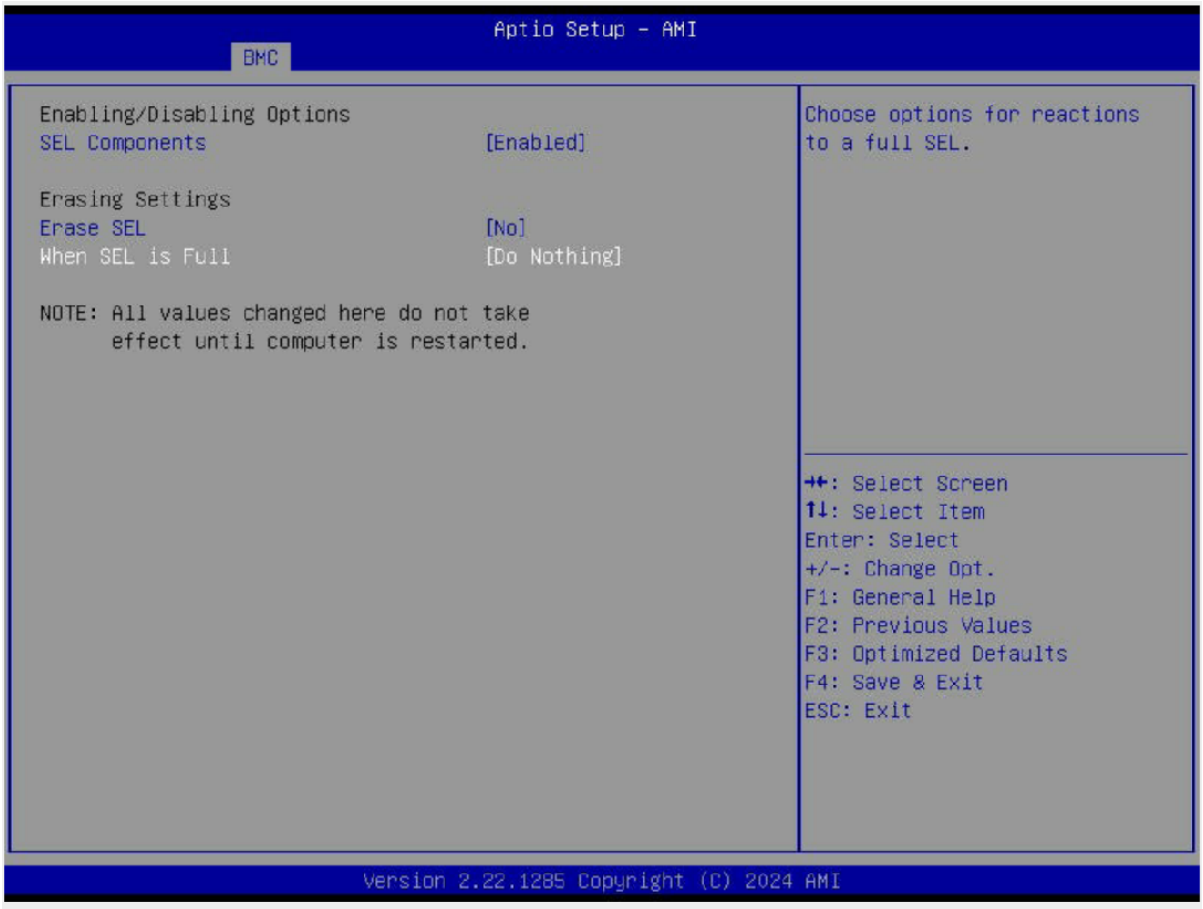


Figure 8-3. BMC Tab Screen

BMC Firmware Revision

This feature indicates the BMC firmware revision used in this system.

BMC STATUS

This feature indicates the status of the BMC firmware installed in this system.

System Event Log Menu

►System Event Log

Note: All values changed in this submenu do not take effect until computer is restarted.

SEL Components

This setting enables event logging for error or progress codes during boot. The options are Disabled or **Enabled**.

Erasing Settings

Erase SEL (Available when "SEL Components" is set to Enabled)

Select (Yes, On next reset) to erase all system event logs upon next system boot. 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 are **No**, (Yes, On next reset), and (Yes, On every reset).

When SEL is Full (Available when "SEL Components" is set to Enabled)

This feature defines 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 are **Do Nothing** and Erase Immediately.

BMC Network Configuration Menu

►BMC Network Configuration

Update BMC LAN Configuration

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

****

Configure IPv4 Support

****

BMC LAN Selection

This feature displays the type of the BMC LAN.

BMC Network Link Status:

This feature displays the status of the BMC network link for this system.

Configuration Address Source (Available when "Update BMC LAN Configuration" is set to Yes)

Use this feature to select the source of the IPv4 connection. If Static is selected, note the IP address of the IPv4 connection and enter it to the system manually in the field. If DHCP is selected, the BIOS will search for a Dynamic Host Configuration Protocol (DHCP) server in the network that is attached to and request the next available IP address for this computer. The options are Static and **DHCP**.

Station IP Address

This feature displays the Station IP address in decimal and in dotted quad form (i.e., 172.29.176.131). It is available for configuration when "Configuration Address Source" above is set to Static.

Subnet Mask

This feature displays the sub- network that this computer belongs to. It is available for configuration when "Configuration Address Source" above is set to Static.

Station MAC Address

This feature displays the Station MAC address for this computer. Mac addresses are six two-digit hexadecimal numbers.

Gateway IP Address

This feature displays the Gateway IP address for this computer. This should be in decimal and in dotted quad form (i.e., 172.29.0.1). It is available for configuration when "Configuration Address Source" above is set to Static.

****

Configure IPv6 Support

****

IPv6 Address Status

This feature displays the status of the IPv6 address.

IPv6 Support (Available when "Update BMC LAN Configuration" is set to Yes)

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

Configuration Address Source (Available when "IPv6 Support" is set to Enabled)

Use this feature to select the source of the IPv6 connection. If Static Configuration is selected, note the IP address of IPv6 connection and enter it to the system manually in the field. If the other two options are selected, the BIOS will search for a DHCP server in the network that is attached to and request the next available IP address for this computer. The options are Static Configuration, **DHCPv6 Stateless**, and DHCPv6 Stateful.

IPv6 Address ("Static," "DHCPv6 Stateless," or "DHCPv6 Stateful," depending on the option you selected for "Configuration Address Source" above)

This feature displays the station IPv6 address. It is available for configuration when "Configuration Address Source" above is set to Static Configuration.

Prefix Length

This feature displays the prefix length. It is available for configuration when "Configuration Address Source" above is set to Static Configuration.

Gateway IP

This feature displays the IPv6 gateway IP address. It is available for configuration when "Configuration Address Source" above is set to Static Configuration.

Advanced Settings (Available when "Configuration Address Source" is set to DHCPv6 Stateless)

Use this feature to set the DNS server IP. The default setting allows this system to obtain the DNS server IP automatically. The options are **Auto obtain DNS server IP** and Manually obtain DNS server IP.

Preferred DNS server IP (Available when "Advanced Settings" above is set to Manually obtain DNS server IP)

This feature displays the preferred DNS server IP. It can be configured via Redfish.

Alternative DNS server IP (Available when "Advanced Settings" above is set to Manually obtain DNS server IP)

This feature displays the alternative DNS server IP. It can be configured via Redfish.

****

Configure VLAN Support

****

VLAN Support (Available when "Update BMC LAN Configuration" is set to Yes)

Use this feature to enable the virtual LAN (VLAN) support. The options are Enabled and **Disabled**.

VLAN ID (Available when "VLAN Support" is set to Enabled)

Use this feature to create a new VLAN ID. The valid range is 1–4094. The default setting is **1**.

8.5 Event Logs

Use this menu to configure Event Logs settings.

Note: After you've made any changes in this section, please be sure to reboot the system for the changes to take effect.

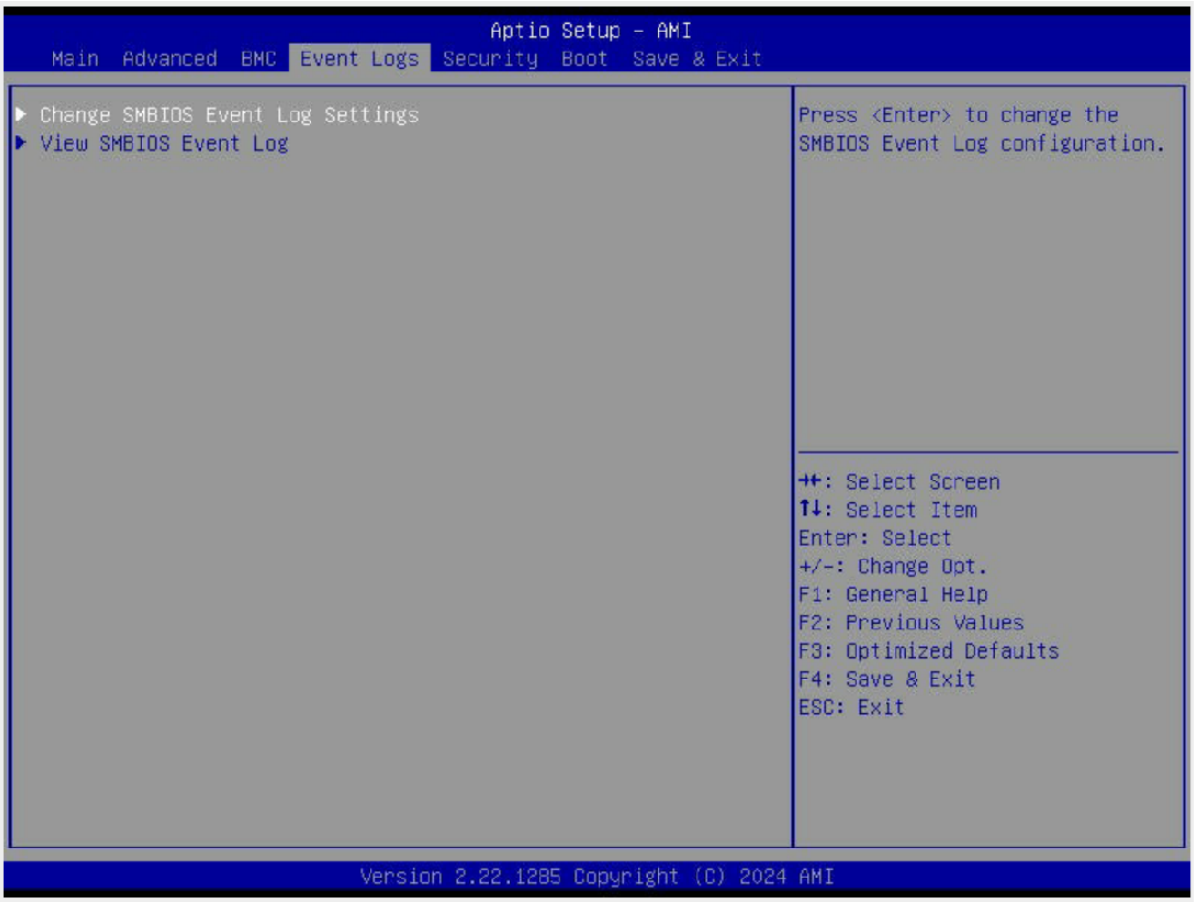


Figure 8-4. Event Logs Tab Screen

►Change SMBIOS Event Log Settings

Note: Reboot the system for the changes in this section to take effect.

Enabling/Disabling Options

SMBIOS Event Log

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

Erasing Settings

Erase Event Log (Available when "SMBIOS Event Log" is set to Enabled)

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 reset).

When Log is Full (Available when "SMBIOS Event Log" is set to Enabled)

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 (Available when "SMBIOS Event Log" is set to Enabled)

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

MECI (Available when "SMBIOS Event Log" is set to Enabled)

Enter the increment value for the multiple event counter. Enter a number between 1 and 255. The default setting is **1**. (MECI is the abbreviation for Multiple Event Count Increment.)

METW (Available when "SMBIOS Event Log" is set to Enabled)

Use this feature to determine how long (in minutes) should the multiple event counter wait before generating a new event log. Enter a number between 0 and 99. The default value is **60**. (METW is the abbreviation for Multiple Event Count Time Window.)

►View SMBIOS Event Log

Use this feature to view the event in the system event log. Select this feature and press <Enter> to view the status of an event in the log. The following information is displayed: DATE / TIME / ERROR CODE / SEVERITY.

8.6 Security

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

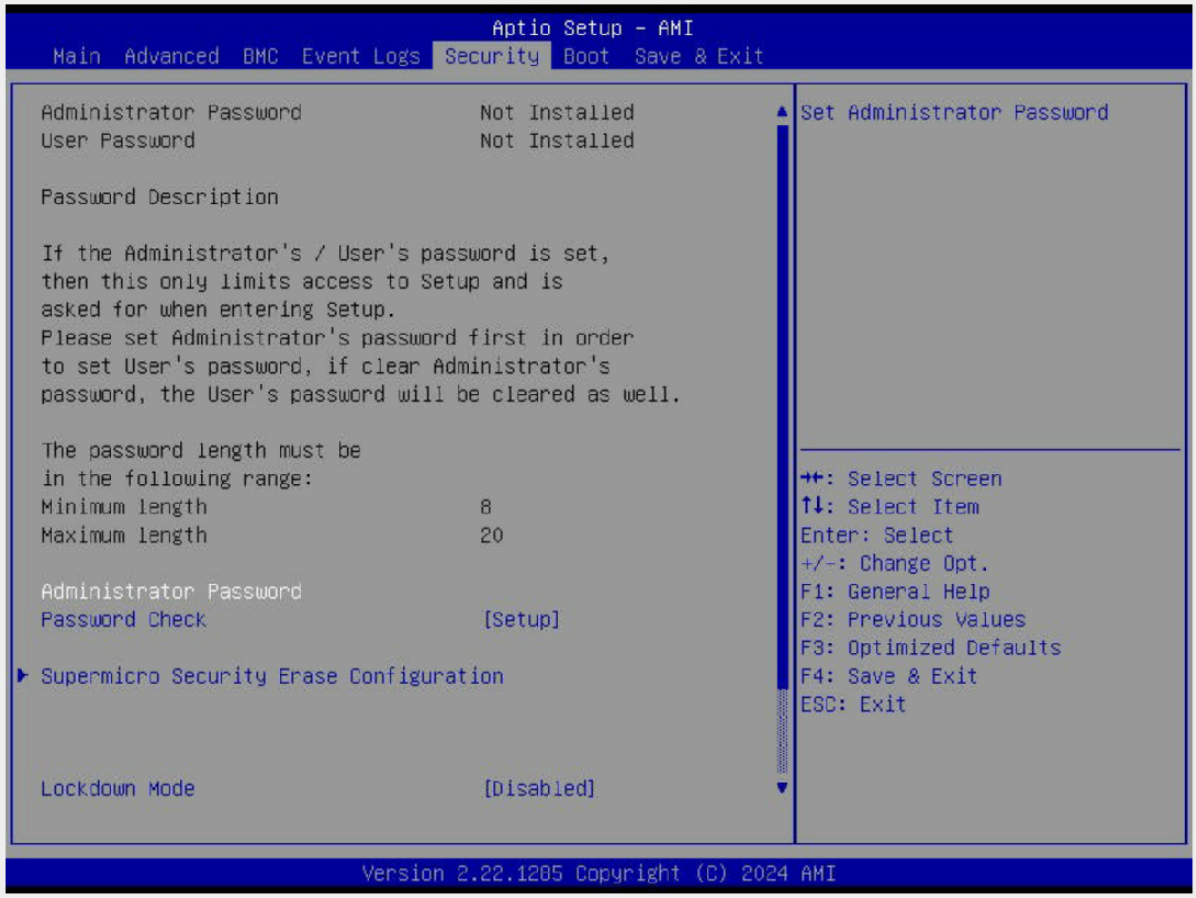


Figure 8-5. Security Tab Screen

Disable Block Sid and Freeze Lock (Available when your storage devices support TCG)

Select Enabled to allow SID authentication to be performed in TCG storage devices. The options are **Disabled** and Enabled.

The following information is displayed:

- Administrator Password
- User Password
- Password Description

Administrator Password

This feature indicates if an administrator password has been installed. Use this feature to set the administrator password, which is required to enter the BIOS Setup utility. The length of the password can be between three and 20 characters long.

User Password (Available when "Administrator Password" has been set)

This feature indicates if a user password has been installed. Use this feature to set the user password which is required to enter the BIOS Setup utility. The length of the password can be between three and 20 characters long.

Password Check

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

Hard Drive Security Frozen

Select Enabled to freeze the Lock Security feature for HDD to protect key data in hard drives from being altered. The options are **Disabled** and Enabled.

Lockdown Mode (Available when the DCMS key is activated)

Select Enabled to support the Lockdown Mode, which prevents the existing data or keys stored in the system from being altered or changed in an effort to preserve system integrity and security. The options are **Disabled** and Enabled.

8.7 Boot

Use this menu to configure Boot settings.

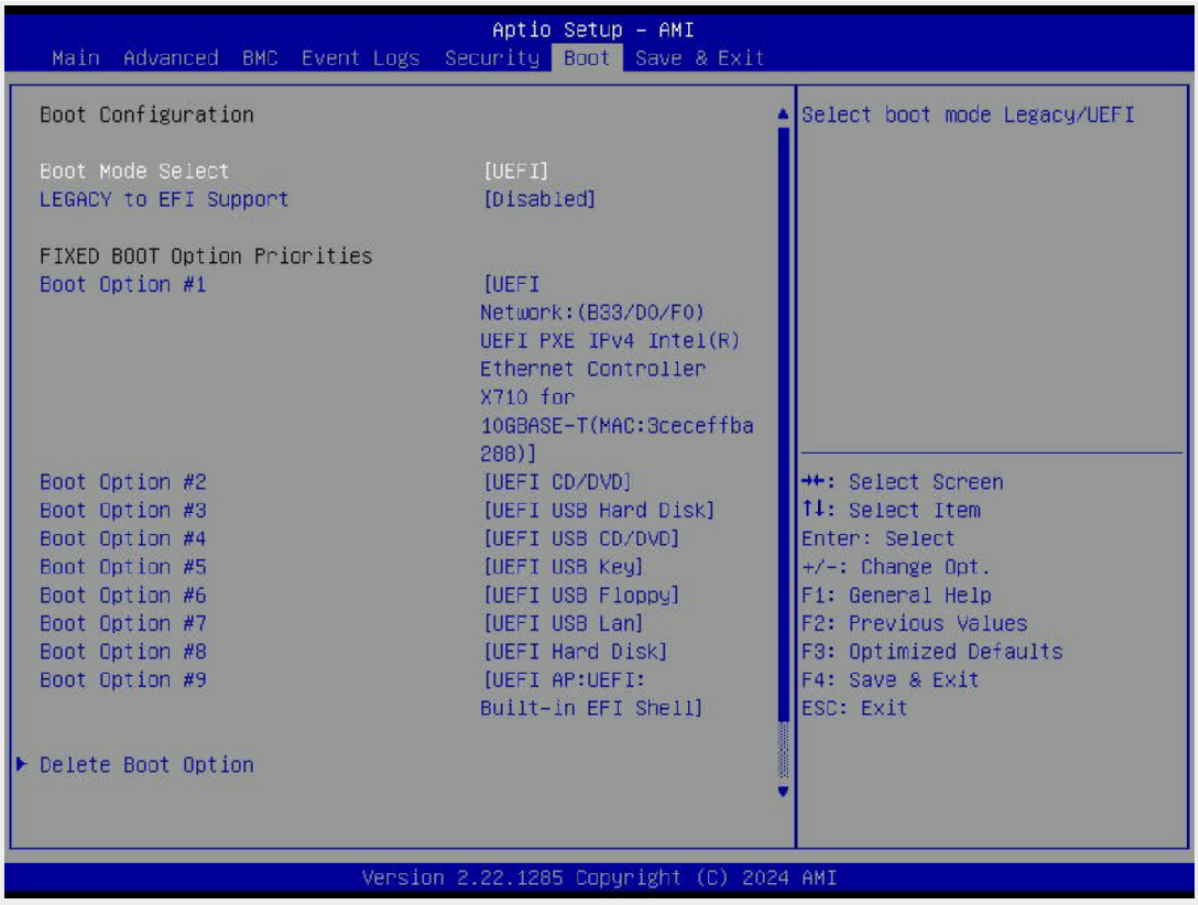


Figure 8-6. Boot Tab Screen

FIXED BOOT ORDER Priorities

Use this feature to prioritize the order of a bootable device from which the system will boot. Press <Enter> on each item sequentially to select the device.

- Boot Option #1 – Boot Option #9

►Add New Boot Option

Use this feature to add a new boot option to the boot priority features for system boot.

Note: This submenu is available when any storage device is detected by the BIOS.

Add boot option

Use this feature to specify the name for the new boot option.

Path for boot option

Use this feature to enter the path for the new boot option in the format fsx:\path\filename.efi.

Boot option File Path

Use this feature to specify the file path for the new boot option.

Create

After setting the name and the file path for the boot option, press <Enter> to create the new boot option in the boot priority list.

►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 NETWORK Drive BBS Priorities

Use this feature to set the system boot order of detected devices.

►UEFI Application Boot Priorities

Use this feature to set the system boot order of detected devices.

►UEFI USB Key Drive BBS Priorities

Use this feature to set the system boot order of detected devices.

►UEFI Hard Disk Drive BBS Priorities

Use this feature to set the system boot order of detected devices.

8.8 Save & Exit

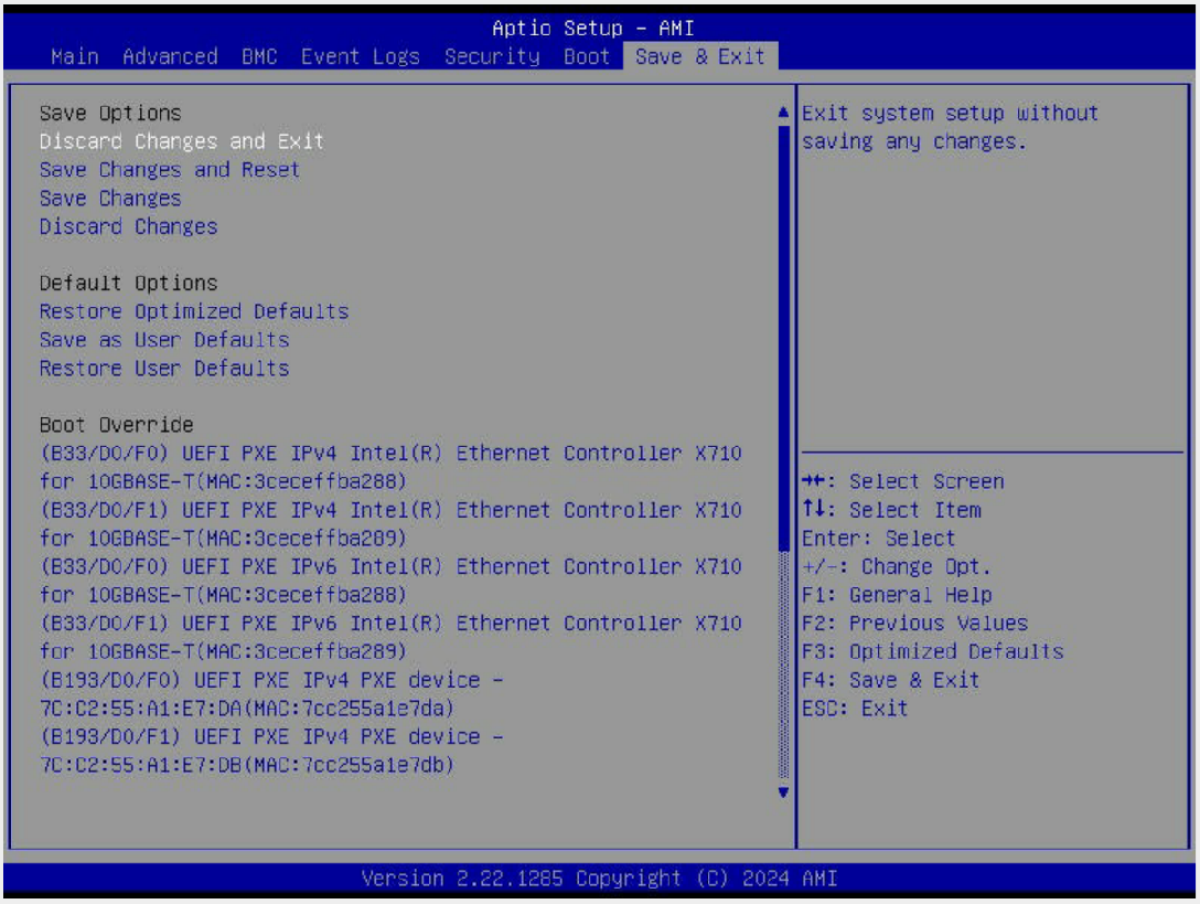


Figure 8-7. Save & Exit Tab

Save Options

Discard Changes and Exit

Use this feature to exit from the BIOS Setup utility without making any permanent changes to the system configuration and reboot the computer.

Save Changes and Reset

On completing the system configuration changes, use this feature to exit the BIOS Setup utility and reboot the computer for the new system configuration parameters to take effect.

Save Changes

On completing the system configuration changes, use this feature to save all changes made. This will not reset (reboot) the system.

Discard Changes

Select this feature and press <Enter> to discard all changes made and return to the BIOS Setup utility.

Default Options

Restore Optimized Defaults

Select this feature and press <Enter> to load manufacturer optimized default settings, which are intended for maximum system performance but not for maximum stability.

Note: After pressing <Enter>, reboot the system for the changes to take effect, which ensures that this system has the optimized default settings.

Save As User Defaults

Select this feature and press <Enter> to save all changes as the default values specified to the BIOS Setup utility for future use.

Restore User Defaults

Select this feature and press <Enter> to retrieve user-defined default settings that have been saved previously.

Boot Override

Note: Use this section to override the Boot priorities sequence in the Boot menu, and immediately boot the system with a device specified here instead of the one specified in the boot list. This is a one-time boot override.

Appendix A:

BIOS Codes

For information about BIOS codes for the AS -1126HS-TN server, refer to the following content.

BIOS Error POST (Beep) Codes

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

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

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

These fatal errors are usually communicated through a series of audible beeps that can be heard on an external buzzer connected to JD1. The table shown below lists some common errors and their corresponding beep codes encountered by users.

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

Additional BIOS POST Codes

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

For information on AMI updates, refer to https://www.ami.com/products.

Appendix B:

Standardized Warning Statements for AC Systems

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

Read this section in its entirety before installing or configuring components in the Supermicro AS -1126HS-TN server.

These warnings may also be found on our website at the following page:

https://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 جسذ ةٌ هذا الز هز عٌ خطز !تحذ زٌ.

قبل أى تعول على أي هعذات،كي على علن بالوخاطز ال اجٌّوة عي الذوائز

الكهزبائ ةٍ

وكي على درا ةٌ بالووارسات النقائ ةٍ لو عٌ وقنع أي حىادث

استخذم رقن الب إى الو صٌنص ف هًا ةٌ كل تحذ زٌ للعثىر 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-250V, 20A

هذا المنتج يعتمد على معداث الحمايت مه الدوائر القصيرة التي تم تثبيتها في

المبنى

تأكد من أن تقييم الجهاز الوقائي ليس أكثر من : 20A, 250V

경고!

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

Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw 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 (except for hot-swap components).

電源切断の警告

システムコンポーネントの取り付けまたは取り外しのために、シャーシ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

انتصل إنى انمناطق انداخهيت نههيكم نتثبيج أو إزانت مكنناث 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 authorized personnel and qualified service persons should be allowed to install, replace, or service this equipment.

機器の設置

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

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה!

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

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

경고!

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

Waarschuwing

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

Restricted Area

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

アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

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

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

אזור עם גישה מוגבלת

אזהרה!

יש להתקין את היחידה באזורים שיש בהם הגבלת גישה. הגישה ניתנת בעזרת

'כלי אבטחה בלבד (מפתח, מנעול וכד.)

اتخصيص هذه انحذة نترك بُها ف مناطق محظورة تم .

مَكن انصل 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

CAUTION There is risk of explosion if the battery is replaced by an incorrect type. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

電池の取り扱い

バッテリーを間違ったタイプに交換すると爆発の危険があります。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

如果更换的电池类型不正确。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

如果更換的電池類型不正確。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

Es besteht Explosionsgefahr, wenn die Batterie durch einen falschen Typ ersetzt wird. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

ADVERTENCIA

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

ATTENTION

Il existe un risque d'explosion si la batterie est remplacée par un type incorrect. 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.

אזהרה!

קיימת סכנת פיצוץ אם הסוללה תוחלף בסוג שגוי. יש להחליף

את הסוללה בסוג התואם מחברת יצרן מומלצת.

סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر الانفجار إذا تم استبدال البطارية بنوع غير صحيح.

اسحبذال البطارية

فقط بنفس النمع أو ما يعادلها مما أوصث به الشرمة المصنعة

جخلص من البطاريات المسحعملة وفقا لحعليمات الشرمة الصانعة

경고!

배터리를 잘못된 종류로 교체하면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

WAARSCHUWING

Er bestaat explosiegevaar als de batterij wordt vervangen door een verkeerd type. 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 خطز مه التيار الكهزبائي أوالطاقة المىجىدة على اللىحة

عندما يكىن 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 للقناويه المحلية والبطنية 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.

عند التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القانين واللنائح النطنية

경고!

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

Waarschuwing

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

Fan Warning

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

ファンの警告

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

警告!

警告！危险的可移动性零件。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 تدور عند إزالة كتلة المروحة من الهيكل يجب إبقاء الأصابع

ومفكات البراغي وغيرها من الأشياء بعيدا عن الفتحات في كتلة المروحة.

경고!

움직이는 위험한 부품. 회전하는 송풍 날개에 접근하지 마세요. 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.

AC ימאתמו סיילמשח סילבכ

הרהזא!

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

تالباكلا ءارشب مق وأ ةددحملا وأ ةرفوتملا تاليصوتلا مادختساب مق ،جتنملا بيكرت دنع كلذ يف امب ةيلحملا ةمالسلا تابلطتمو نيناوقب مازتلالا عم ددرتملا رايتلا تالوحمو ةيئابر هكلا قيرح وأ لطع يف ببستي دق برخأ تالوحمو تالباك يأ مادختسا .ميلسلا سباقلاو لصوملا مجح.

CSA وأ UL لبق نم ةدمتعملا تالباكلا مادختسا تادعملاو ةيئابر هكلا تز هجألل ةمالسلا نوناق رظحي Supermicro لبق نم ةددحملاو ةينعملا تاجتنملا ريغ برخأ تادعم يأ عم (UL/CSA) ةمالع لمحت يتلاو.

전원 케이블 및 AC 어댑터

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

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

Stroomkabel en AC-Adapter

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

Appendix C:

System Specifications

Processors
Dual AMD EPYC™ 9005/9004 Series processors in Socket SP5 with a Thermal Design Power (TDP) unit up to 500 W **Note:** Dependent on thermal validation and system configuration. Contact a Supermicro representative for details.
Chipset
System on Chip (SoC)
BIOS
512 Mb AMI BIOS® SPI Flash BIOS ACPI 6.5, SMBIOS 3.7 or later, Plug-and-Play (PnP), RTC (Real Time Clock) wakeup, Riser Card Auto-Detection support
Memory
24 DIMM slots with 1DPC that support up to • 6 TB of ECC DDR5/3DS RDIMM at 6400 MT/s (9005 Series CPU) • 6 TB of ECC DDR5/3DS RDIMM at 4800 MT/s (9004 Series CPU) **Note:** For detail, please refer to Section 3.5.
Storage Drives
Up to 12 2.5" front hot-swap NVMe/SAS/SATA drive bays (drive options require additional parts) Two M.2 NVMe PCIe 3.0 x4 slots in 2280 and 22110 form factors
PCI Expansion Slots
Two PCIe 5.0 x16 FHFL One PCIe 5.0 x16 FHHL
Input/Output
One AIOM slot for flexible networking (OCP 3.0 compatible) Three USB 3.0 ports (two rear, one front) One VGA port (rear) One RJ45 dedicated BMC LAN port
Motherboard
H14DSH, proprietary 17" (W) x 12.89" (L) (431.8 mm x 327.4 mm)
Chassis
CSE-HS101-R000NFP, 1U: 1.7 x 17.2 x 30.66 in. or 43 x 437 x 779 mm (H x W x D)
System Cooling
Eight 4-cm heavy duty fans with optimal fan speed control Two air shrouds

Security
Trusted Platform Module (TPM) support
Power Supply
Refer to the table at the end of this section for details on this system's power supply options. **Note:** For all power supplies, full redundancy is based on configuration and application load.
Operating Environment
Operating Temperature: 10º to 35º C (50º to 95º F); Operating Temperature based on configurations Non-operating Temperature: -40º to 60º C (-40º to 140º F) Operating Relative Humidity: 8% to 80% (non-condensing) Non-operating Relative Humidity: 8% to 90% (non-condensing)
Regulatory Compliance
FCC, ICES, CE, VCCI, RCM, UKCA, NRTL, CB

Applied Directives, Standards

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

Electromagnetic Compatibility Regulations 2016

FCC Part 15 Subpart B

ICES-003

VCCI-CISPR 32

AS/NZS CISPR 32

BS/EN55032

BS/EN55035

BS/EN 61000-3-2

BS/EN 61000-3-3

BS/EN 61000-4-2

BS/EN 61000-4-3

BS/EN 61000-4-4

BS/EN 61000-4-5

BS/EN 61000-4-6

BS/EN 61000-4-8

BS/EN 61000-4-11

Environment:

2015/863 Delegated Directive (EU)

2011/65/EU (RoHS Directive)

EC 1907/2006 (REACH)

2012/19/EU (WEEE Directive)

California Proposition 65

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

Electrical Equipment (Safety) Regulations 2016

UL/CSA 62368-1 (USA and Canada)

BS/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 https://www.dtsc.ca.gov/hazardouswaste/perchlorate

この装置は、クラスＡ機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI ー A

Power Supply Options

Model PWS-2K07A: Two 2000 W redundant modules, 80 Plus Titanium level

AC Input

1000 W: 100–127 Vac and 50–60 Hz

1800 W: 200–220 Vac and 50–60 Hz

1980 W: 220–230 Vac and 50–60 Hz

2000 W: 230–240 Vac and 50–60 Hz

2000 W: 220–240 Vac and 50–60 Hz (UL only)

2000 W: 230–240 Vdc and 50–60 Hz (CQC only)

+12 V

Max 83 A and min 0 A (100–127 Vac)

Max 150 A and min 0 A (200–220 Vac)

Max 165 A and min 0 A (220–230 Vac)

Max 166 A and min 0 A (230–240 Vac)

12 V SB

Max: 3.5 A / Min: 0 A

Model PWS-1K24A-1R: Two 1200 W redundant modules, 80 Plus Titanium level

AC Input

800 W: 100–127 Vac / 50–60 Hz

1200 W: 200–240 Vac / 50–60 Hz

1200 W: 230–240 Vdc / 50–60 Hz (for CCC only)

+12 V

Max: 66.7 A / Min: 0 A (100–127 Vac)

Max: 100 A / Min: 0 A (200–240 Vac)

Max: 100 A / Min: 0 A (230–240 Vdc) (for CCC only)

12 V SB

Max: 2.1 A / Min: 0 A

Model PWS-1K63A-1R: Two 1600 W redundant modules, 80 Plus Titanium level

AC Input

1000 W: 100–127 Vac / 50–60 Hz

1600 W: 200–240 Vac / 50–60 Hz

1600 W: 200–240 Vdc / 50–60 Hz (for CQC only)

+12 V

Max: 83.3 A / Min: 0 A (100–127 Vac)

Max: 133.3 A / Min: 0 A (200–240 Vac)

12 V SB

Max: 3.5 A

Model PWS-2K63A-1R: Two 2600 W redundant modules, 80 Plus Titanium level

AC Input

2600 W: 200–240 Vac / 50–60 Hz

2600 W: 200–240 Vdc / 50–60 Hz (for CQC only)

+12V

Max: 216 A / Min: 0 A (200–240 Vac)

12 V SB

Max: 3.5 A

Model PWS-1K31D-1R: Two 1300 W redundant modules

DC Input

1300 W: -44 to -65 Vdc

+12 V

Max: 108.3 A / Min: 0 A

12 V SB

Max: 2.1 A

Model PWS-2K04D-1R: Two 1600 W redundant modules

DC Input

2000 W: -48 to -60 Vdc / 50–60 Hz

+12 V

Max: 166.6 A / Min: 0 A

12 V SB

Max: 4 A / Min: 0 A

Appendix D:

RoHS Certification

Supermicro certifies that to the best of our knowledge and belief, all parts listed in this document meet the requirement of the **European Parliament 2011/65/EU and Delegated Directive (EU) 2015/863**, on the restriction of the use of certain hazardous substances in the electrical and electronic equipment with the exemptions listed below. Supermicro bases its knowledge from information obtained by third parties and/or its suppliers. Supermicro makes no representation as to the accuracy of the information and disclaims liabilities with respect to the information.

Restricted Substances

Substance	Amount
Lead	(0,1 %)
Mercury	(0,1 %)
Cadmium	(0,01 %)
Hexavalent chromium	(0,1 %)
Polybrominated biphenyls (PBB)	(0,1 %)
Polybrominated diphenyl ethers (PBDE)	(0,1 %)
Bis(2-ethylhexyl) phthalate (DEHP)	(0,1 %)
Butyl benzyl phthalate (BBP)	(0,1 %)
Dibutyl phthalate (DBP)	(0,1 %)
Diisobutyl phthalate (DIBP)	(0,1 %)

Exemptions

Item	Description
6(c)	Copper alloy containing up to 4% lead by weight
7(a)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead)
7(c)-I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound

Appendix E:

General Data Center Environmental Specifications

Particulate and Gaseous Contamination Limits

Data centers should meet the following requirements to maintain proper air quality.

Particulate Contamination Specifications

All sources of dust inside data centers should be reduced or eliminated. Dust having a deliquescent relative humidity of less than the maximum allowable relative humidity should be filtered out.

The cleanliness of data centers must adhere to ISO Standard 14644-1 Class 8 (ISO 2015) to be within 95% of the levels specified below:

- Each cubic meter of air should contain no more than 3,520,000 particles that are equal to or greater than 0.5 µm in diameter.
- Each cubic meter of air should contain no more than 832,000 particles that are equal to or greater than 1 µm in diameter.
- Each cubic meter of air should contain no more than 29,300 particles that are equal to or greater than 5 µm in diameter.

This level of cleanliness can generally be acheived by an appropriate filtration scheme, as outlined below.

- The room air should be continuously filtered with MERV 8 filters, as recommended by AHRI Standard 1360 (2017).
- The air entering the data center should be filtered with MERV 11 to MERV 13 filters.

Gaseous Contamination Specifications

The total gaseous contamination, i.e., copper and silver corrosion rates, should not exceed ANSI/ISA Standard 71.04-2013, severity level G1 (mild) as described below.

A copper reactivity rate of less than 300 Å/month.

A silver reactivity rate of less than 200 Å/month.

Appendix F:

Statement of Volatility (SOV)

The Statement of Volatility provides information about volatile and non-volatile components of the AS -1126HS-TN server. When power is removed from the system, non-volatile components retain their data, while volatile components lose their data.

SMC Product Number (Customer Product Number, if Applicable)				
Device	**Reference**	**Volatility**	**User Data**	**Procedure to Clear for User Data**
H14DSH				
BIOS CHIP	UM16	NON-VOLATILE	NO	NO ACTION REQUIRED
BMC FIRMWARE	UM11	NON-VOLATILE	NO	NO ACTION REQUIRED
BMC RAM	UM8	NON-VOLATILE	YES	REMOVE AC FOR 20 SECONDS
DUAL BOOT	UM6	NON-VOLATILE	NO	NO ACTION REQUIRED
EMMC	U13	NON-VOLATILE	NO	NO ACTION REQUIRED
CPU0 VDDCR_CPU0 & VDDCR_SOC VRM	UPA13	NON-VOLATILE	NO	NO ACTION REQUIRED
CPU0 VDDCR_CPU1 & VDDIO VRM	UPB1	NON-VOLATILE	NO	NO ACTION REQUIRED
CPU0 VDD11_SUS VRM	UJ5	NON-VOLATILE	NO	NO ACTION REQUIRED
CPU1 VDDCR_CPU0 & VDDCR_SOC VRM	UPA14	NON-VOLATILE	NO	NO ACTION REQUIRED
CPU1 VDDCR_CPU1 & VDDIO VRM	UPB2	NON-VOLATILE	NO	NO ACTION REQUIRED
CPU1 VDD11_SUS VRM	UJ1	NON-VOLATILE	NO	NO ACTION REQUIRED

SMC Product Number (Customer Product Number, if Applicable)				
Device	**Reference**	**Volatility**	**User Data**	**Procedure to Clear for User Data**
BPN-NVME5-HS119N-S8L				
CPLD	U1	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR
EEPROM	U20	NON-VOLATILE	NO	USE UTILITY TO CLEAR

SMC Product Number (Customer Product Number, if Applicable)				
Device	**Reference**	**Volatility**	**User Data**	**Procedure to Clear for User Data**
BPN-NVME5-HS119N-S4R				
CPLD	U1	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR
EEPROM	U11	NON-VOLATILE	NO	USE UTILITY TO CLEAR

SMC Product Number (Customer Product Number, if Applicable)				
Device	**Reference**	**Volatility**	**User Data**	**Procedure to Clear for User Data**
RSC-H-A66G5H				
BR24G02FJ-3AGTE2	U41	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR
BR24G02FJ-3AGTE2	U93	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR

SMC Product Number (Customer Product Number, if Applicable)				
Device	**Reference**	**Volatility**	**User Data**	**Procedure to Clear for User Data**
RSC-H-A6G5H				
BR24G02FJ-3AGTE2	U41	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR
BR24G02FJ-3AGTE2	U93	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR

SMC Product Number (Customer Product Number, if Applicable)				
Device	**Reference**	**Volatility**	**User Data**	**Procedure to Clear for User Data**
PWS-1K60D-1R (PSSW162201E)				
AT24C02C-XHM-T	UM801	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR
C8051F312-GQR	UM703	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR
PIC24FJ64GA004	U1	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR

SMC Product Number (Customer Product Number, if Applicable)				
Device	**Reference**	**Volatility**	**User Data**	**Procedure to Clear for User Data**
PWS-1K63A-1R				
UCD3138064RGCR	U601	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR
UCD3138RHAR	U13	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR
78M6610+PSD	U202	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR

SMC Product Number (Customer Product Number, if Applicable)				
Device	**Reference**	**Volatility**	**User Data**	**Procedure to Clear for User Data**
AS-1126HS-TN				
UCD3138RHAR	U402	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR
UCD3138064RGCR	U408	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR

SMC Product Number (Customer Product Number, if Applicable)				
Device	**Reference**	**Volatility**	**User Data**	**Procedure to Clear for User Data**
PWS-2K07A-1R				
UCD3138064RGCR	U601	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR
UCD3138RHAR	U13	NON-VOLATILE	NO	USE PROGRAMMER TO CLEAR