FatTwin®
AS -F2014S-RNTR

USER'S MANUAL

Revision 1.0a

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 FatTwin AS -F2014S-RNTR. Installation and maintenance should be performed by experienced technicians only.

Please refer to the AS -F2014S-RNTR server specifications page on our website for updates on supported memory, processors and operating systems (http://www.supermicro.com).

Notes

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

- Supermicro product manuals: http://www.supermicro.com/support/manuals/

- Product drivers and utilities: https://www.supermicro.com/wdl/

- Product safety info: http://www.supermicro.com/about/policies/safety_information.cfm

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

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

Secure Data Deletion

A secure data deletion tool designed to fully erase all data from storage devices can be found on our website: https://www.supermicro.com/about/policies/disclaimer.cfm?url=/wdl/utility/Log9_Secure_Data_Deletion_Utility/

Warnings

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

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

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

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Chapter 1

Introduction

1.1 Overview

This chapter provides a brief outline of the functions and features of the AS -F2014S-RNTR. The AS -F2014S-RNTR is based on the H12SSFR-AN6 motherboard and the CSE-F424AS3-R2K20BP chassis. This FatTwin system features four motherboard tray nodes in the chassis.

In addition to the motherboard and chassis, several important parts that are included with the system are listed below (quantity shown is for one system).

Main Parts List		
Description	**Part Number**	**Quantity**
2U passive CPU heatsink for AMD SP3 socket processors	SNK-P0063PB	4
CSE-F418IF3 mylar air shroud set	MCP-310-442411-0N	4
2200W redundant power supply	PWS-2K20A-1R	4
Hybrid backplane for storage devices, 2-port	BPN-SAS3-F424-A2N2A	4
Hybrid backplane for storage devices, 6-port	BPN-SAS3-F424-A6N6	4
FatTwin static rail set supports 28-33.5 inch depth rail	MCP-290-41803-0N	1

Note: the following safety models associated with the AS -F2014S-RNTR have been certified as compliant with UL or CSA: F424-FT, F424-22, and F424R-Q22H12.

1.2 Unpacking the System

Inspect the box the SuperServer AS -F2014S-RNTR was shipped in and note if it was damaged in any way. If any equipment appears damaged, please file a damage claim with the carrier who delivered it.

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

1.3 FatTwin: System Notes

As a FatTwin configuration, the AS -F2014S-RNTR is a unique server system. With four system boards incorporated into a single chassis acting as four separate nodes, there are several points you should keep in mind.

Nodes

Each of the four motherboards act as a separate node in the system. As independent nodes, each may be powered off and on without affecting the others. In addition, each node is a hot-swappable unit that may be removed from the chassis. The nodes are connected to the server backplane by means of an adapter card.

Note: A guide pin is located between the upper and lower nodes on the inner chassis wall. This guide pin also acts as a "stop" when a node is fully installed. If too much force is used when inserting a node this pin may break off. Take care to slowly slide a node in until you hear the "click" of the locking tab seating itself.

System Power

Four 2200W power supplies are used to provide the power for all motherboards. Each motherboard however, can be shut down independently of the others with the power button on its own control panel.

1.4 System Features

The following table provides you with an overview of the main features of the AS -F2014S-RNTR. Please refer to Appendix B for additional specifications.

System Features
Motherboard
H12SSFR-AN6
Chassis
CSE-F424AS3-R2K20BP
CPU
AMD EPYC™ 7003/7002 Series processors
Socket Type
Socket SP3
Memory (per node)
Support for up to 2TB Registered ECC DDR4 3200MHz SDRAM in 8 slots
Chipset
System on Chip
Expansion Slots (per node)

1x PCIe 4.0 x16 slot (low-profile riser)
1x PCIe 4.0 x8 (internal RAID AOC)
1x AIOM networking slot (PCIe 4.0 x16)
M.2 Interface: 4x PCIe 4.0 x4
    • M.2 Form Factor: 2260, 2280, 22110
    • M.2 Key: M Key

Hard Drives (per node)
Two SATA/NVMe + six SATA 3.5" or 2.5" drives per node
Power
Four 2200W (redundant) power supplies
Cooling (per node)
Two 8-cm PWM fans
Dimensions
(WxHxD) 17.63 x 6.96 x 29 in. (448 x 177 x 737 mm)

1.5 Server Features

Front Features

The CSE-F424AS3-R2K20BP is a 4U chassis with four hot-swap server nodes. See the illustration below for features and logical node locations.

Control panels   **Control panels**
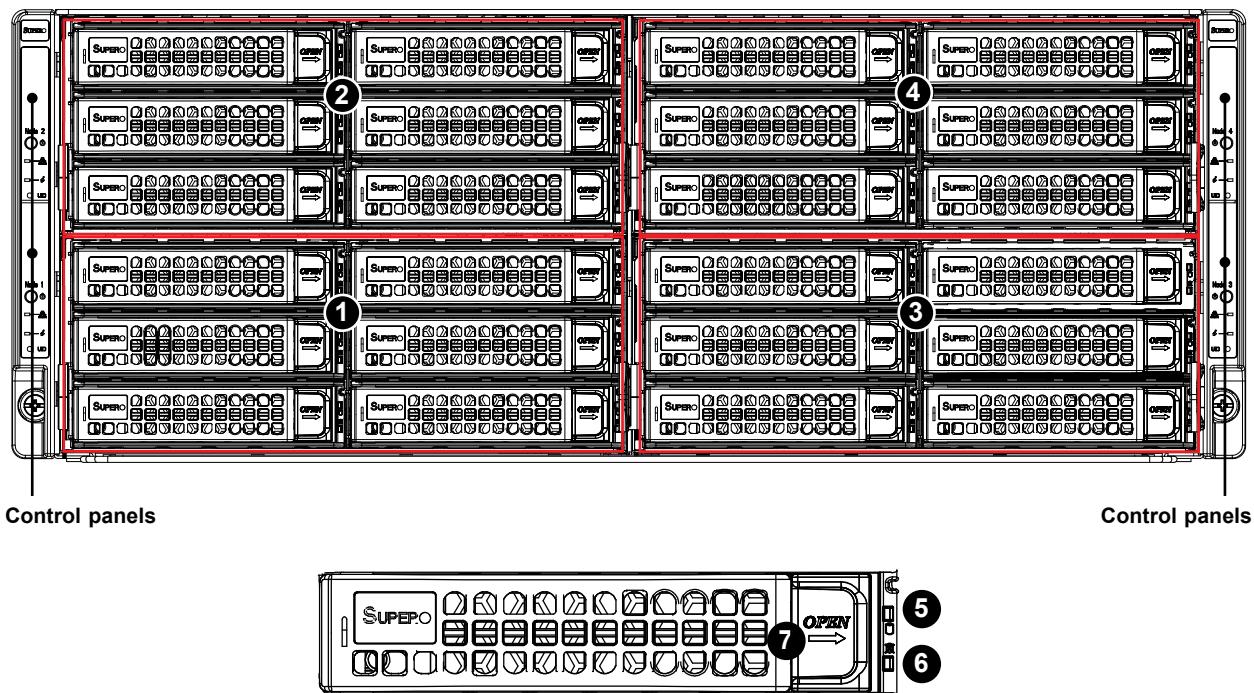
Figure 1-1. System Front View

Front System Features		
Item	**Feature**	**Description**
1-4	Nodes	Numbers correspond to the logical node location
5	HDD Activity LED	Indicates drive activity when flashing.
6	HDD Fail LED	Indicates a failed hard drive
7	Release Latch	Drive carrier release latch (to remove from drive bay)

Node Control Panels

Each node has its own control panel, with the functions described below.
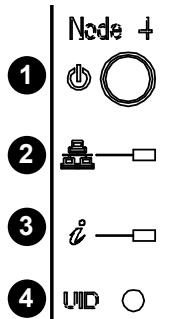
Figure 1-2. Node Control Panel

Control Panel Features		
Item	**Features**	**Description**
1	Power Button	Applies or removes power from the power supply to the node with standby power maintained
2	NIC LED	Indicates network activity on node when flashing
3	Information LED	Alerts operator to several states, as noted in the table below
4	UID Button	The Unit ID (UID) button is used to turn on or off the UID LED to more easily locate the server in racks and server banks

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

Rear Features

The illustration below shows the features included on the rear of the chassis.
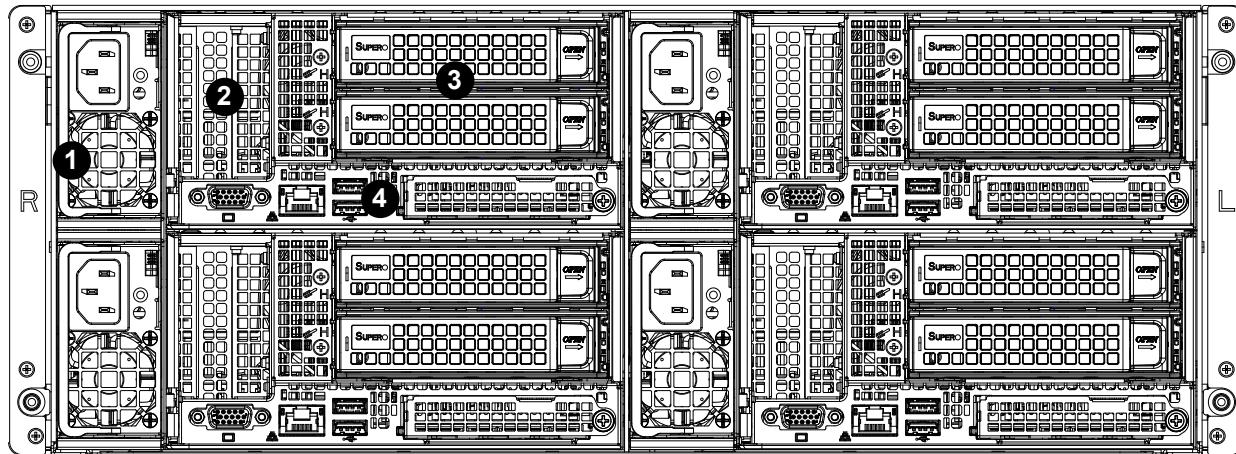
Figure 1-3. System Rear View

	Rear System Features	
Item	**Feature**	**Description**
1	Power Supply*	Redundant 2200W power supply (four total)
2	Expansion Slot	One PCIe 4.0 x16 expansion card slot
3	Rear Drive Bays	Two 3.5" rear drive bays (may be configured for 2.5" drives as option)
4	I/O Panel	I/O ports, see Section 4.3 for details.

*Power supplies are independent and electrically isolated from the opposite-side nodes.
Note: Items are shown only once but apply to all four nodes.

Power supplied from Power Grid A   **Power supplied from Power Grid A**

Right-side nodes   Left-side nodes

Power supplied from Power Grid B   **Power supplied from Power Grid B**
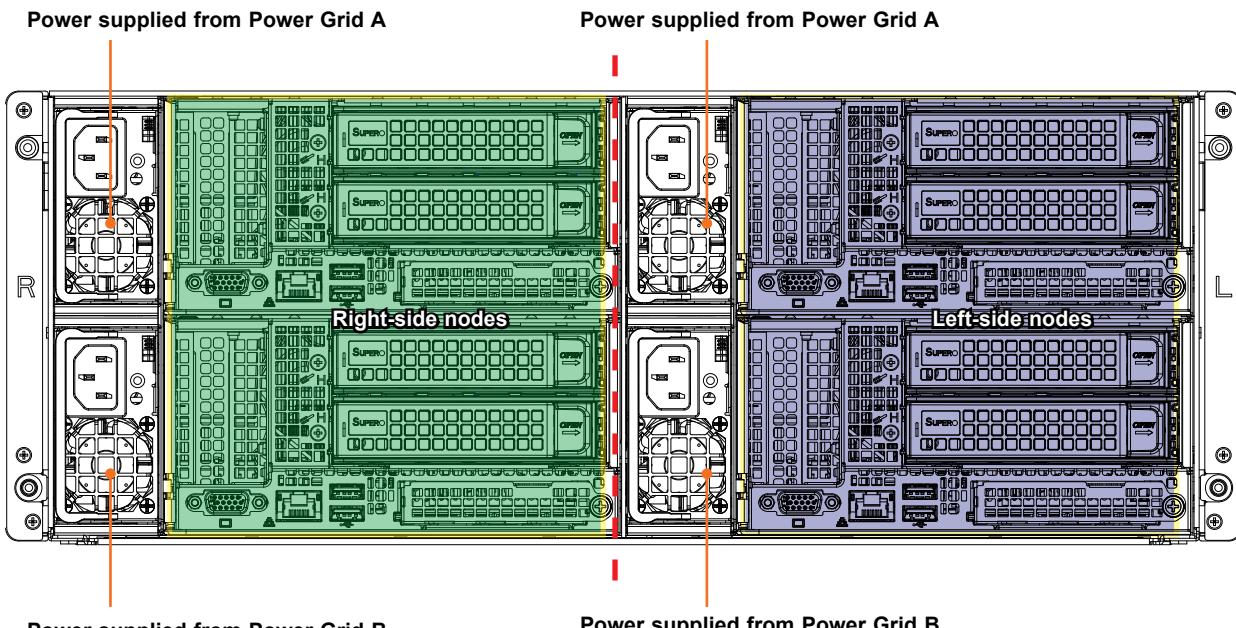
Figure 1-4. System Power Configuration

1.6 Motherboard Layout

Below is a layout of the H12SSFR-AN6 with jumper, connector and LED locations shown.
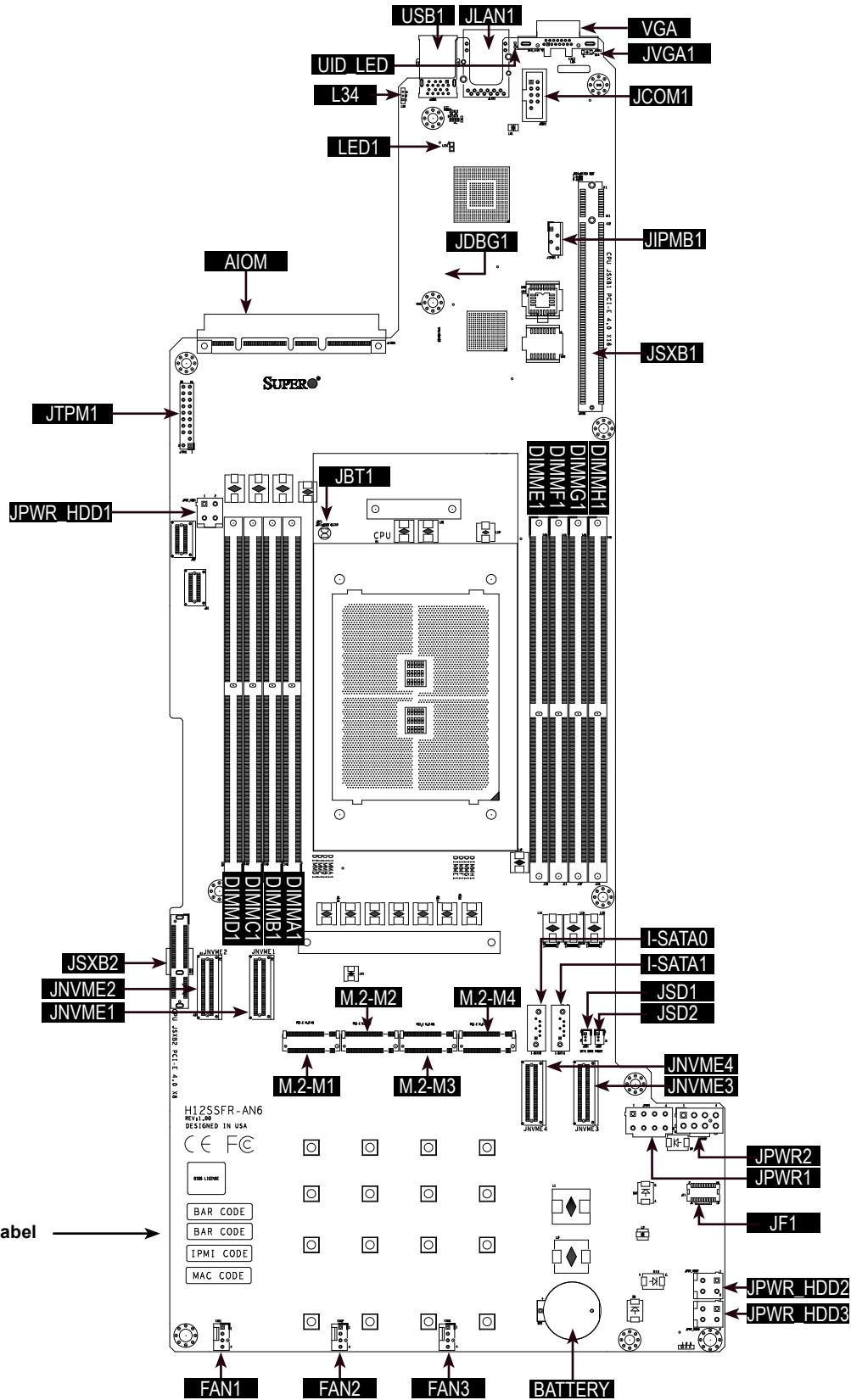
Figure 1-5. H12SSFR-AN6 Layout

Quick Reference Table

Jumper	Description	Default Setting
JBT1	Clear CMOS	Open (Normal)
JVGA1	VGA Enable/Disable	Pins 1-2 (Enabled)
JWD1	Watch Dog control	Pins 1-2 (Reset)

LED	Description	Status
UID LED	Rear unit ID LED	Solid blue: UID switched to ON, unit identified
LED1	BMC heartbeat LED	Green: Blinking (BMC normal), Green: Fast blinking (BMC initializing)

Connector	Description
AIOM	AIOM slot for networking card
Battery	Onboard CMOS battery
FAN 1~3	System cooling fan headers
I-SATA0~I-SATA1	Internal SATA ports
JCOM1	Onboard COM port header
JF1	Front control panel
JIPMB1	4-pin BMC external IC header
JLAN1	Rear LAN1 port
JNVME1~JNVME4	Internal NVMe ports
JPWR1	12V 8-pin CPU core power supply connector
JPWR2	0V ground connector
JPWR_HDD1~3	HDD/SSD power supply connectors
JSD1, JSD2	SATA DOM power connector
JSXB1	PCI 4.0 x16 (for right hand riser card)
JSXB2	PCI 4.0 x16 (for left hand riser card)
JTPM1	Trusted Platform Module (TPM)/Port 80 connector
M.2-M1~M.2-M4	M.2 PCIe interfaces
USB1	Rear USB 3.0 ports: USB0/USB1
VGA	Rear VGA port

Notes: Jumpers, connectors, switches, and LED indicators that are not described in the preceding table are for manufacturing testing purposes only and not covered in this manual. See Chapter 4 for detailed information on jumpers, I/O ports, and JF1 front panel connections.
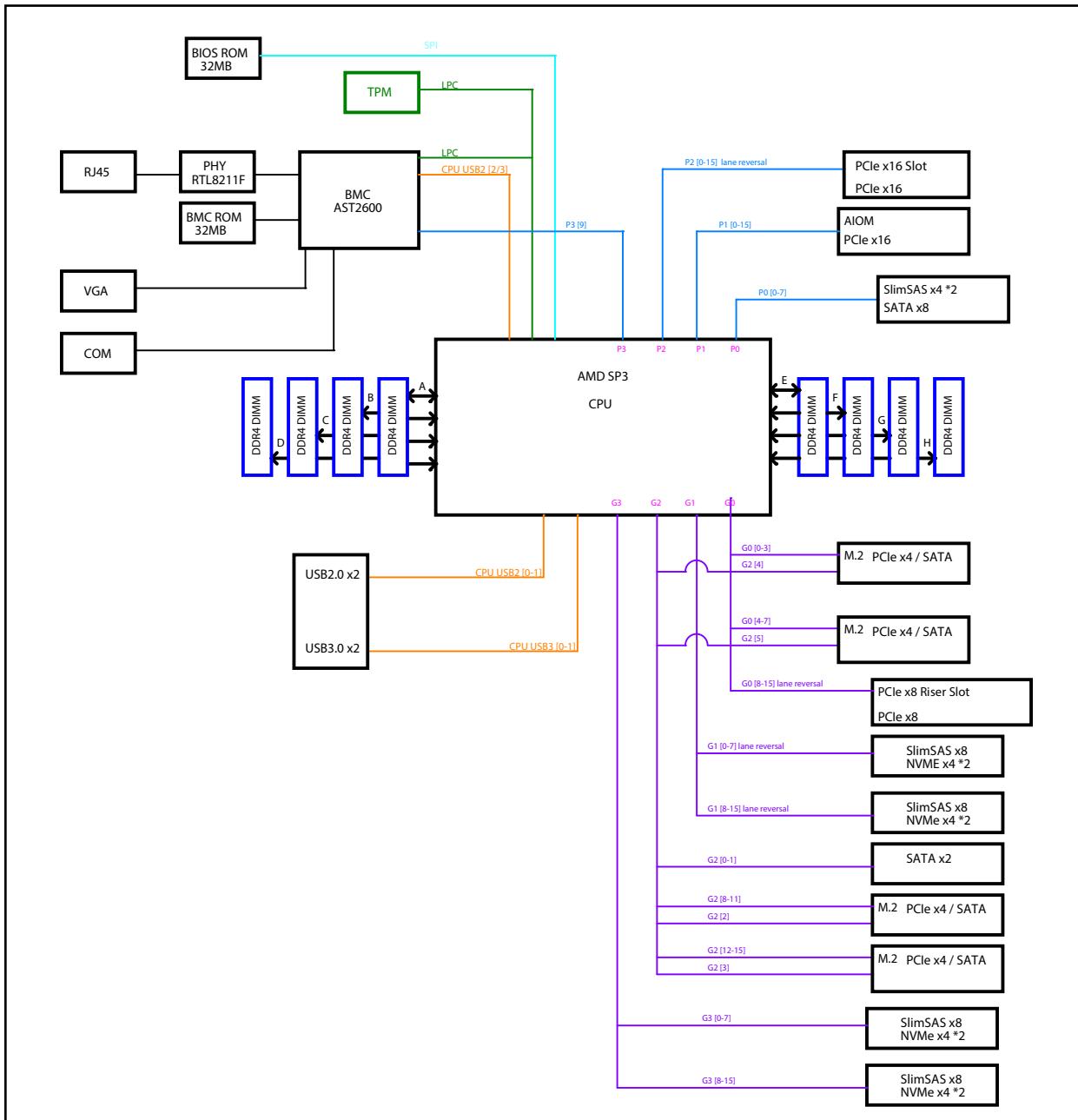
Figure 1-6. System Block Diagram

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

Chapter 2

Server Installation

2.1 Overview

This chapter provides advice and instructions for mounting your system in a server rack. If your system is not already fully integrated with processors, system memory etc., refer to Chapter 4 for details on installing those specific components.

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

2.2 Preparing for Setup

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

Choosing a Setup Location

- The system should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.

- Leave enough clearance in front of the rack so that you can open the front door completely (~25 inches) and approximately 30 inches of clearance in the back of the rack to allow sufficient space for airflow and access when servicing.

- This product should be installed only in a Restricted Access Location (dedicated equipment rooms, service closets, etc.).

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

Rack Precautions

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

- In single rack installations, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.

- Always make sure the rack is stable before extending a server or other component from the rack.

- You should extend only one server or component at a time - extending two or more simultaneously may cause the rack to become unstable.

Server Precautions

- Review the electrical and general safety precautions in Appendix B.

- Determine the placement of each component in the rack *before* you install the rails.

- Install the heaviest server components at the bottom of the rack first and then work your way up.

- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges and voltage spikes and to keep your system operating in case of a power failure.

- Allow any drives and power supply modules to cool before touching them.

- When not servicing, always keep the front door of the rack and all covers/panels on the servers closed to maintain proper cooling.

Rack Mounting Considerations

Ambient Operating Temperature

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

Airflow

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

Mechanical Loading

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

Note: Insert the nodes into the chassis from the bottom left to bottom right and then up all the way to the top (left first, then right). Do not insert the nodes on one side fully (leaving one side empty) and then the other side or it will be very hard to insert the last node.

Circuit Overloading

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

Reliable Ground

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

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

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.

- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

2.3 Installing the Rails

There are a variety of rack units on the market, which may require a slightly different assembly procedure.

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

Identifying the Rails

The rack rails and the related hardware should have been included with the system. Refer to Figure 2-1 to identify the rail sections. Note that these rails are left/right specific

Left Rail   Right Rail
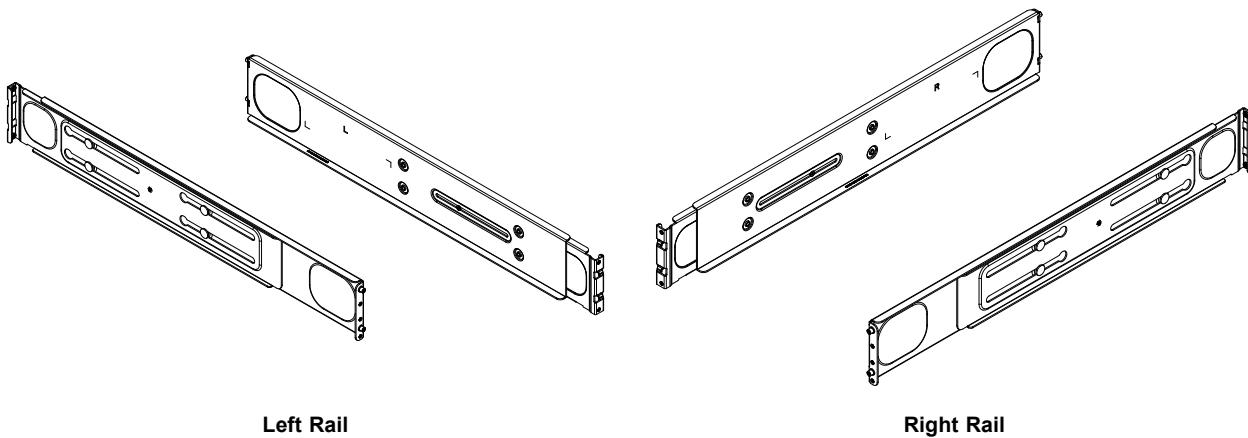
Figure 2-1. Identifying the Rail Sections

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

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

Installing the Chassis Rails

Begin the rack mounting procedure by installing the inner rails to the server chassis.

1. Position the front and rear chassis rail sections along the side of the server making sure the screw holes line up. Note that these two rails are left/right specific.

2. Screw the front chassis rail (the long piece) securely to the side of the chassis (see Figure 2-2). There should be two screws for each side. Repeat this procedure for the other rail on the opposite side of the chassis.

3. Attach the two rear chassis rails to the chassis in the same manner, again keeping in mind that the rails are left/right specific. (You will also need to attach the rail brackets when installng into a telco rack.)

FRONT   BACK
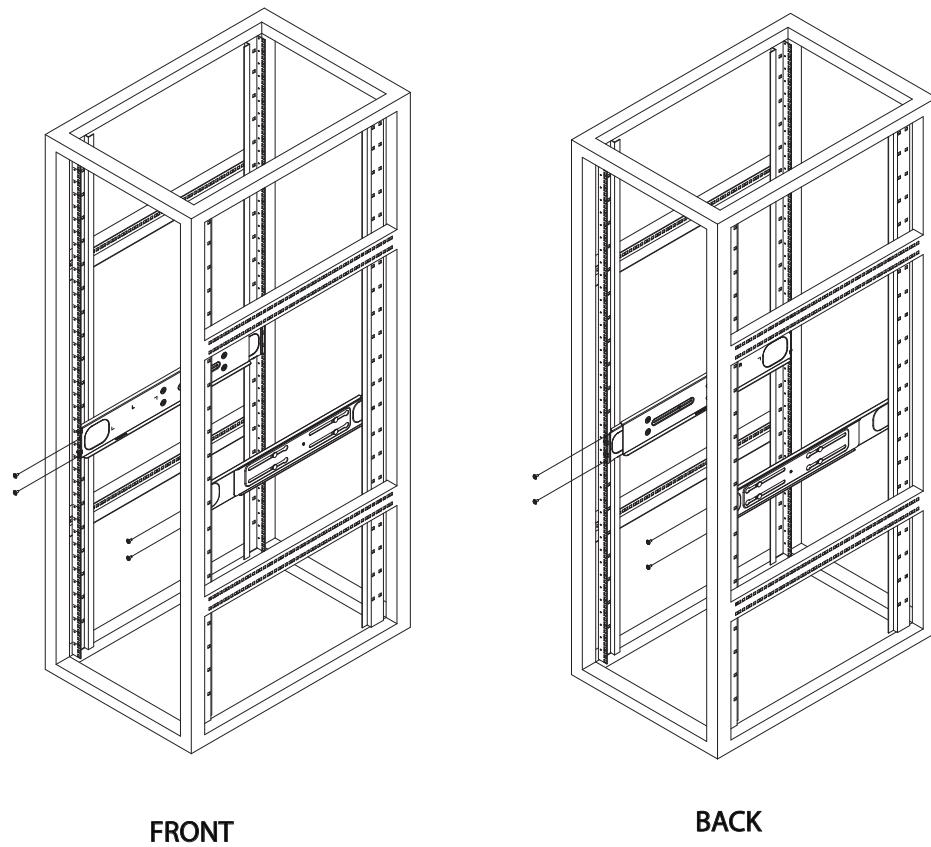
Figure 2-2. Installing the Rails

Note: Both front chassis rails and the rack rails have a locking tab, which serves two functions. First, it locks the server into place when installed and pushed fully into the rack (its normal operating position. In addition, these tabs lock the server in place when fully extended from the rack. This prevents the server from coming completely out of the rack when pulled out for servicing.

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

Installing the Rack Rails

Determine where you want to place the server in the rack (see the Rack and Server Precautions in Section 2.2). Note that servers should always be installed to the bottom of a rack first for stability reasons.

1. Position the fixed rack rail/sliding rail guide assemblies (made up of two inter-locking sections) at the desired location in the rack, keeping the sliding rail guide facing the inside of the rack and the rollers toward the front of the rack.

2. Screw the assembly securely to the rack.

3. Attach the other assembly to the other side of the rack, making sure that both are at the exact same height and with the rail guides facing inward.

2.4 Installing the Server into a Rack

You should now have rails attached to both the chassis and the rack. The next step is to install the server into the rack.

1. Line up the rear of the chassis rails with the front of the rack rails.

2. Slide the chassis rails into the rack rails, keeping the pressure even on both sides (you may have to press the locking tabs when inserting). See Figure 2-3.

3. When the server has been pushed completely into the rack, you should hear the locking tabs "click".
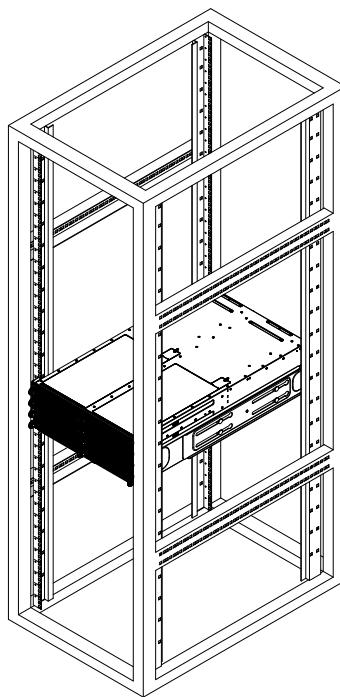
Figure 2-3. Installing the Server into a Rack

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

Removing the Chassis from the Rack

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

1. If necessary, loosen the thumb screws on the front of the chassis that hold it in the rack.

2. Pull the chassis forward out the front of the rack until it stops.

3. Press the release latches on each of the inner rails downward simultaneously and continue to pull the chassis forward and out of the rack.

Chapter 3

Maintenance and Component Installation

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

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

3.1 Removing Power

Removing System Power

Use the following procedure to ensure that power has been removed from the entire system.

1. Use the operating system to power down all nodes.

2. After all nodes have powered down, disconnect the AC power cords from the power strips or outlets, then disconnect them from the system power supply units.

Removing Power from a Node

Use the following procedure to remove power from a single node. This step is necessary when removing or installing non hot-swap components to a node or when replacing a node.

1. Use the operating system to power down the node.

2. After the node has completely shut-down, access the node tray as described in the next section.

3.2 Accessing a Node

Removing Nodes from the Chassis

Each of the four individual nodes may be removed from the chassis. Note that when a node is removed from the chassis, the hard drives located in the node will shut-down.

Removing a Node

1. Power down the node with the operating system. If you shut down a node with the control panel you risk losing data.

2. Grasp the node by the handles on both sides of the front of the node.

3. Press down on the left handle to disengage the latch.

4. While holding down the left handle, carefully pull the node forward and out of the chassis.

Handle
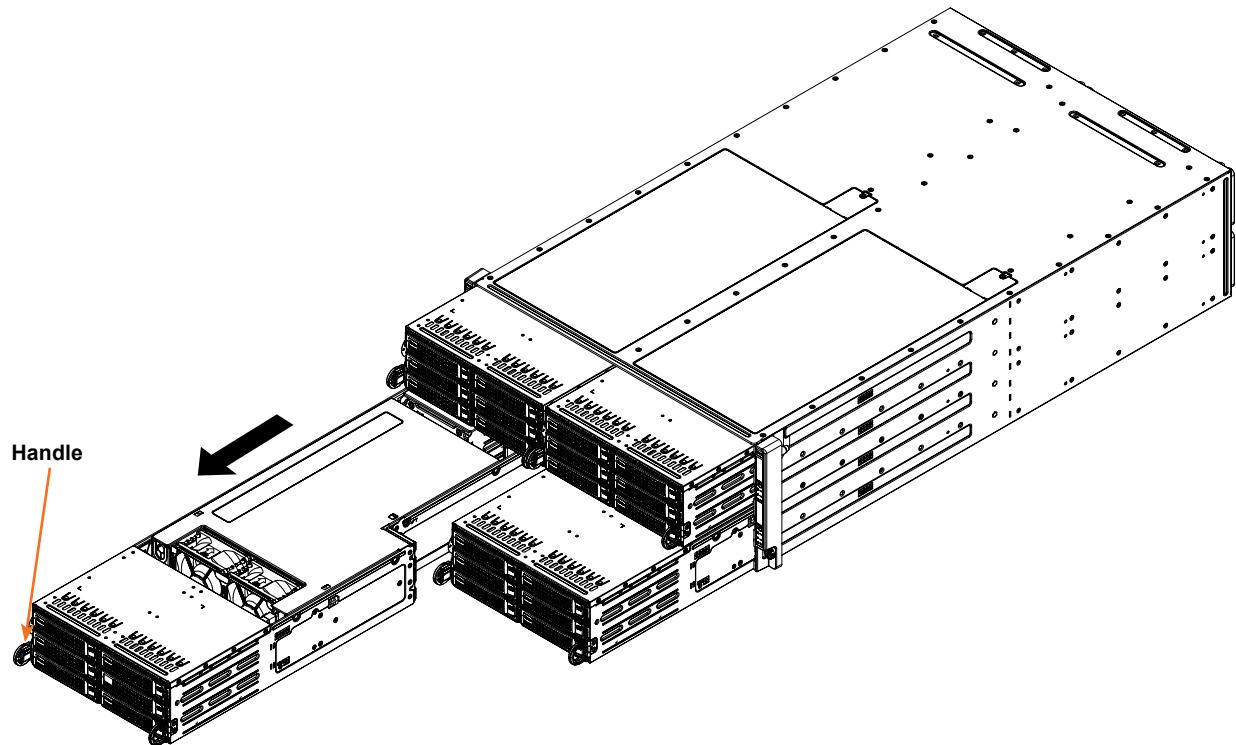
Figure 3-1. Removing a Node from the Chassis

Each node in the AS -F2014S-RNTR has a removable top cover, which allows easy access to the inside.

Removing a Node Cover

1. Remove the screw shown below.

2. Slide the cover toward the rear of the node until it reaches the unlocked position.

3. Lift the top cover up and off the node.

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

Caution: Except for short periods of time, do not operate the server without the cover in place. The cover allows for proper airflow to prevent overheating.
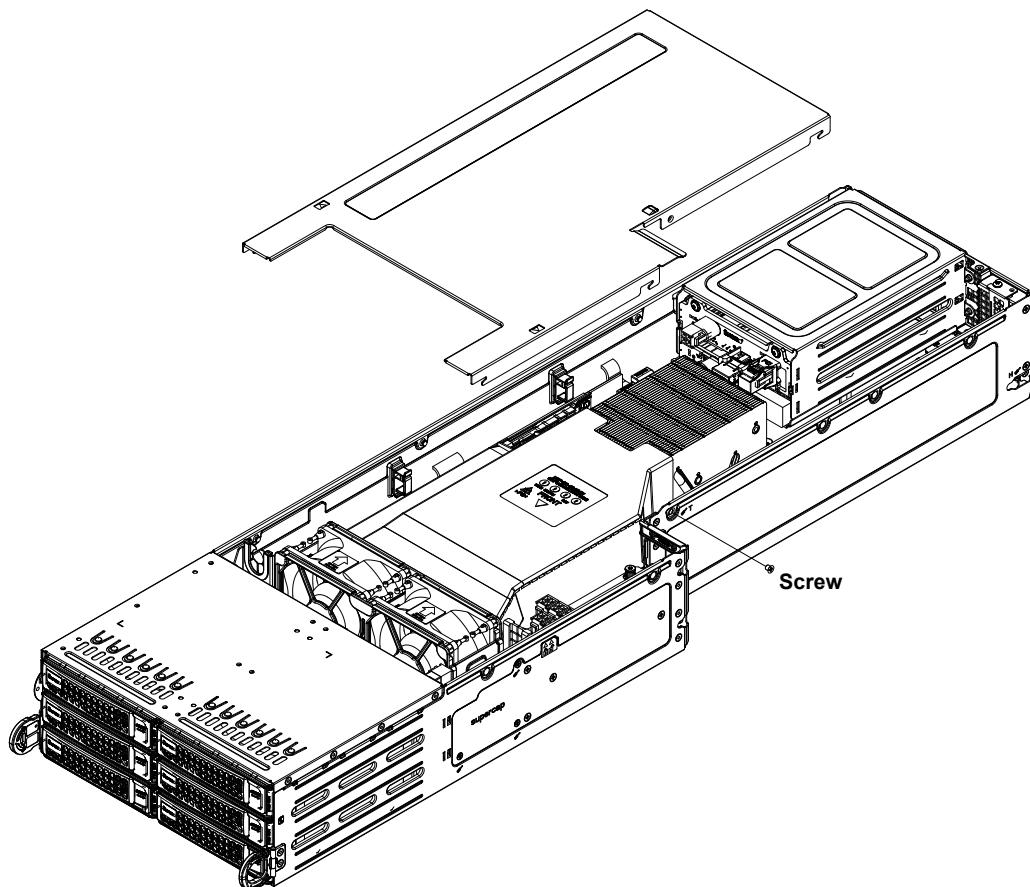
Figure 3-2. Removing the Node Cover

3.3 Motherboard Components

Processor and Heatsink Installation

Warning: When handling the processor package, avoid placing direct pressure on the label area of the fan. Also, improper CPU installation or socket misalignment can cause serious damage to the CPU or the motherboard that will require RMA repairs. Please read and follow all instructions thoroughly before installing your CPU and heatsink.

Important:

- For the Processor/Heatsink installation you need to use a T20 screwdriver when opening/ closing the CPU socket.

- Always connect the power cord last, and always remove it before adding, removing or changing any hardware components. Make sure that you install the processor into the CPU socket before you install the CPU heatsink.

- If you buy a CPU separately, make sure that you use an AMD-certified multi-directional heatsink only.

- Make sure to install the motherboard into the chassis before you install the CPU heatsink.

- When receiving a motherboard without a processor pre-installed, make sure that the plastic CPU socket cap is in place and none of the socket pins are bent; otherwise, contact your retailer immediately.

- Refer to the Supermicro website for updates on CPU support.

Installing the Processor and Heatsink

1. Unscrew the screws holding down Force Frame in the sequence of 3-2-1. The screws are numbered on the Force Frame next to each screw hole.

Screw #3

Screw #1
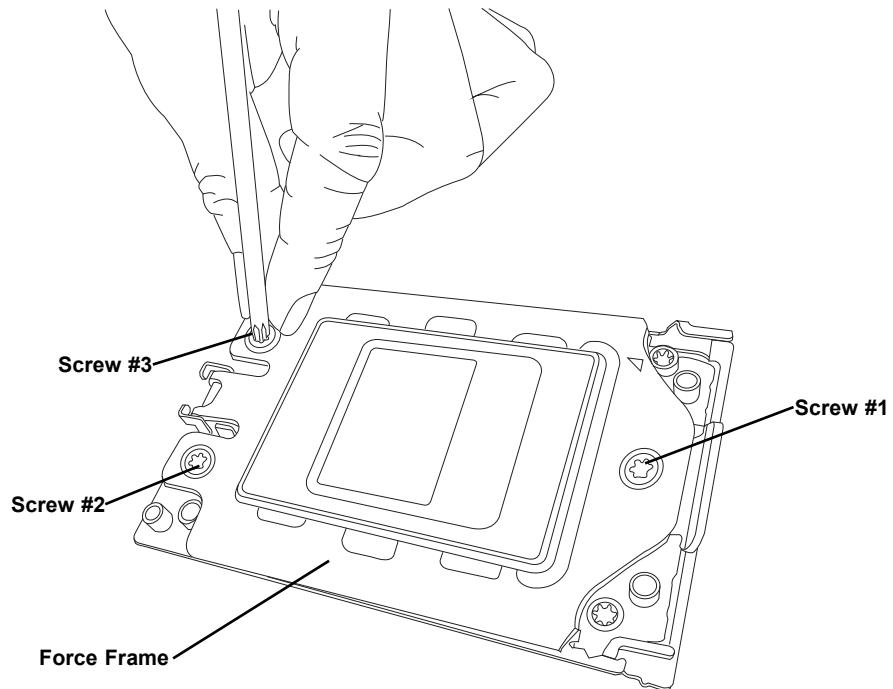
Screw #2

Force Frame

2. The spring-loaded Force Frame will raise up after the last screw securing it (#1) is removed. Gently allow it to lift up to its stopping position.
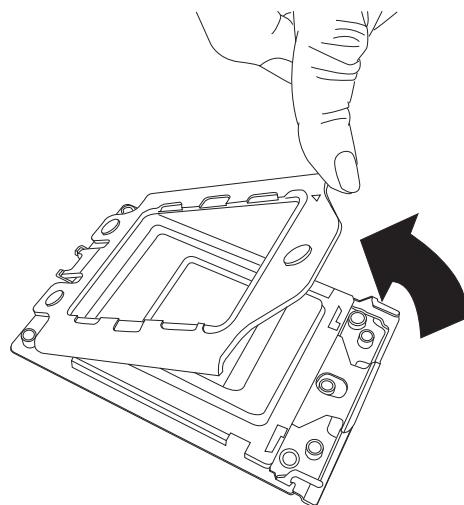
3. Lift the Rail Frame up by gripping the lift tabs near the front end of the rail frame. While keeping a secure grip of the Rail Frame, lift it to a position so you can do the next step of removing the External Cap.

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

PnP Cover Cap
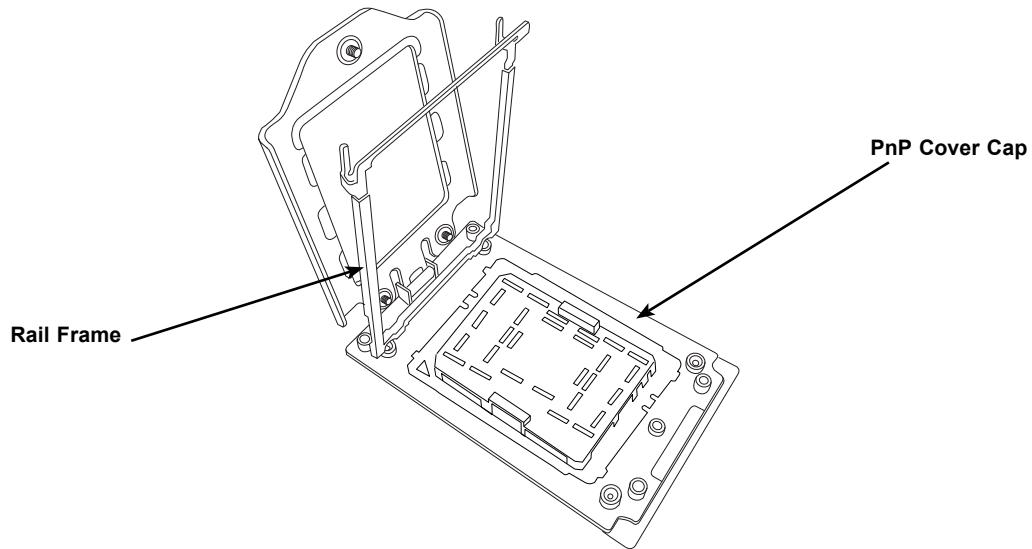
Rail Frame

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

External Cap

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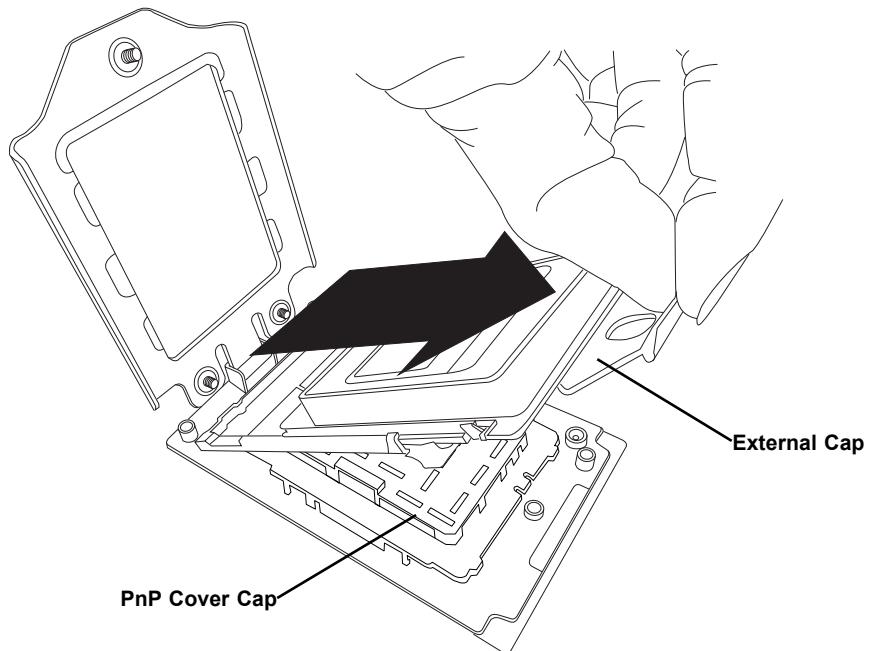
5. The CPU Package is shipped from the factory with the Carrier Frame pre-assembled. Grip the handle of the Carrier Frame/CPU Package assembly from its shipping tray, and while gripping the handle, align the flanges of the Carrier Frame onto the rails of the Rail Frame so its pins will be at the bottom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

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

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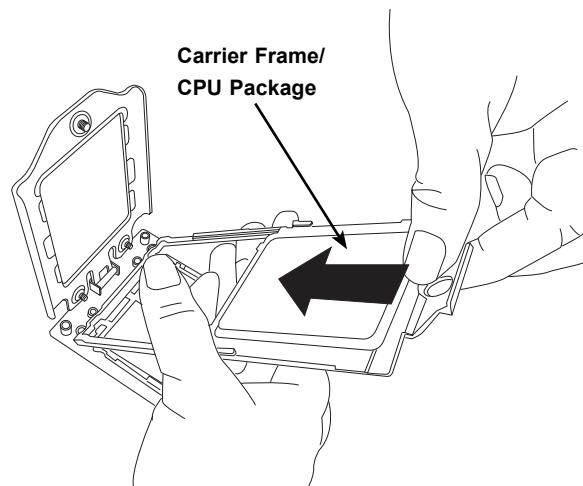
Note: You can only install the CPU inside the socket in one direction with the handle at the top. Make sure that it is properly inserted into the CPU socket before closing the Rail Frame plate. If it doesn't close properly, do not force it as it may damage your CPU. Instead, open the Rail Frame plate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

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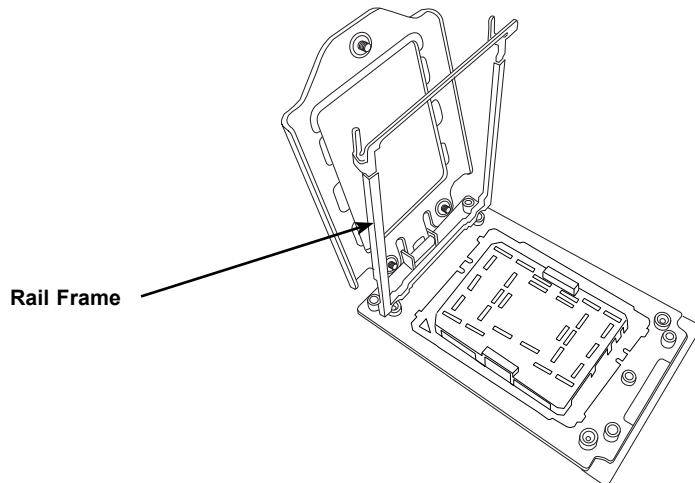
Rail Frame

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

8. Gently lower the Rail Frame down onto the socket until the latches on the Rail Frame engage with the Socket housing. and it rests in place. DO NOT force it into place!
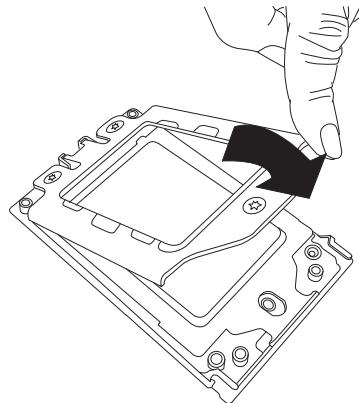
9. Gently lower the Force Frame down onto the Rail Frame and hold it in place until it is seated in the Socket housing. Note that the Force Frame is spring loaded and has to be held in place before it is secured. **Important: Use a torque screwdriver, set it at 16.1 kgf-cm (14.0 lbf-in) with a Torx T20 screw head bit, to prevent damage to the CPU.**
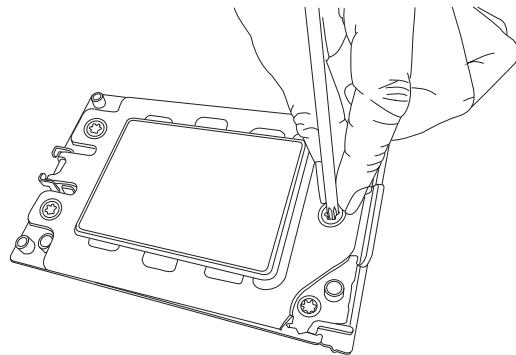
10. Place and re-screw the screws in the reverse order to the way you removed them (holes 1-2-3 in order). When finished, the Force Frame will be secure over both the Rail Frame and CPU Package.
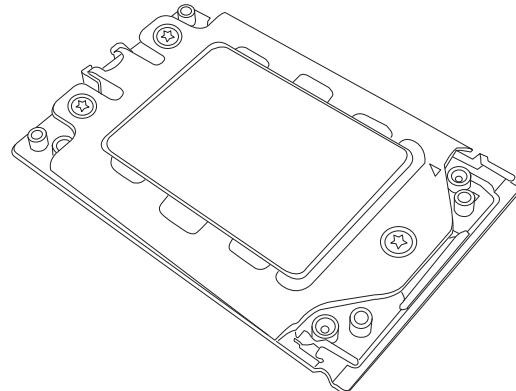
1. After the Force Frame is secured and the CPU package is in place, now you must install the heatsink to the frame. Lower the heatsink down till it rests securely over the four screw holes on CPU Package on the socket frame.
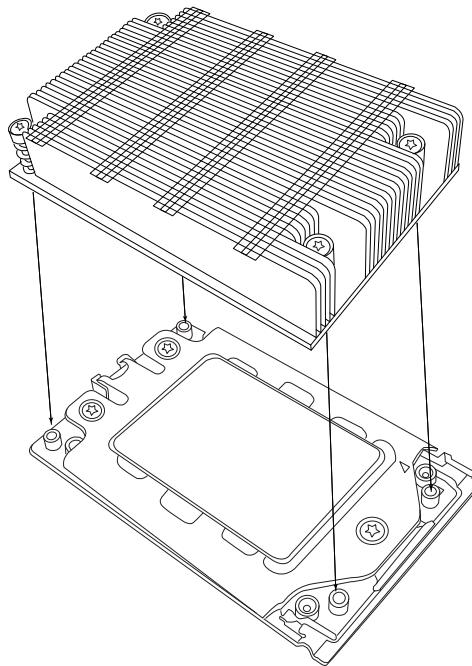
2. Using a diagonal pattern, tighten the four screws down on the heatsink in a clockwise fashion till it is secure. The heatsink will now be secured and you have finished installing the processor and heatsink onto the motherboard. Repeat this procedure for any remaining CPU sockets on the Motherboard.

#1 Screw

#4 Screw

#3 Screw

#2 Screw
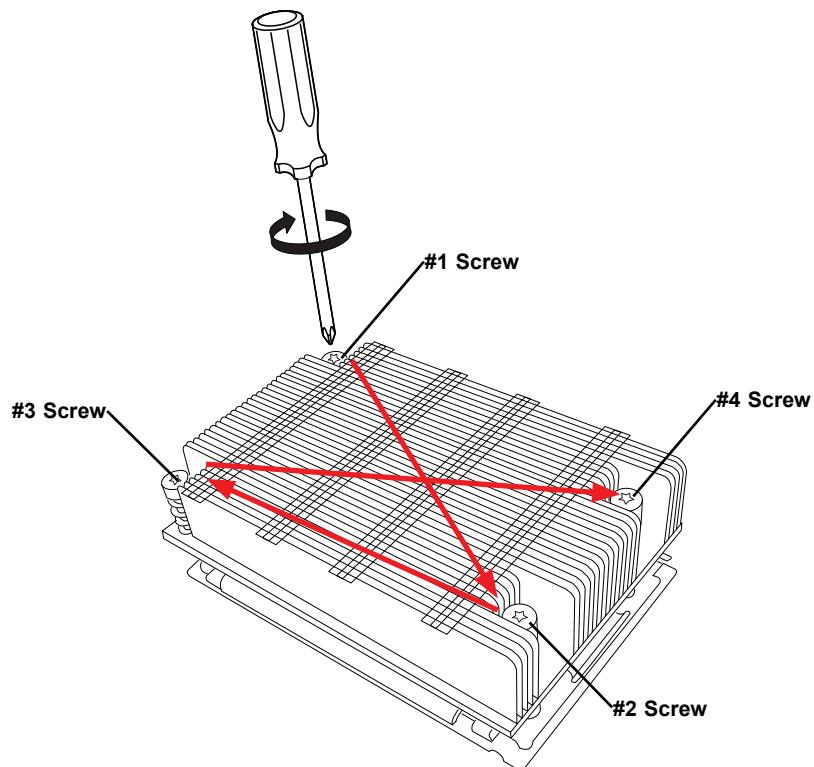
Un-installing the Processor and Heatsink

1. Remove the heatsink attached to the top of the CPU Package by reversing the installation procedure.

2. Clean the Thermal grease left by the heatsink on the CPU package lid to limit the risk of it contaminating the CPU package land pads or contacts in the socket housing.

3. Reverse the procedure for installing the Force Frame onto the socket, unscrewing the plate in the 3-2-1 screw order 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 Carrier Frame/CPU Package to its original shipping container.

6. Grip the handle on the External Cap and return it to the Rail Frame sliding it downwards 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. Note that without a CPU Package in place, it is not necessary to tighten down screws 2 and 3 at this time.

3.4 Memory Support and Installation

Note: Check the Supermicro website for recommended memory modules.

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

Memory Support

The H12SSFR-AN6 supports up to 2TB Registered ECC DDR4 3200MHz SDRAM memory in 8 DIMM slots. Refer to the tables below for additional memory information.

Populating RDIMM/RDIMM 3DS/LRDIMM/LRDIMM 3DS DDR4 Memory Modules with 7003/7002 Processor				
Type	DIMM Population	Maximum DIMM Capacity (GB)		Maximum Frequency (MHz)
	DIMM1	1 Channel	8 Channel	
RDIMM	1R	32GB	256GB	3200
	2R or 2DR	64GB	512GB	3200
LRDIMM 3DS	2S2R	128GB	1TB	3200
	2S4R	256GB	2TB	3200
3DS RDIMM	2S2R	128GB	1TB	3200
	2S4R	256GB	2TB	3200

1R: 1 package rank of SDP DRAMs

2R: 2 package rank of SDP DRAMs

2DR: 2 package rank of DDP DRAMs

4DR: 4 package rank of DDP DRAMs

2S2R/2S4R/2S8R: 2 package rank of 2/4/8 high 3DS DRAMs

DIMM Population Guide (with AMD 7003/7002 Processor)								
CPU#	Channel							
	D1	C1	B1	A1	E1	F1	G1	H1
1 DIMM (supported but not recommend)								
CPU1		X						
2 DIMMs (supported but not recommend)								
CPU1	X	X						
4 DIMMs (conditionally recommended if 32 cores or fewer)								
CPU1	X	X					X	X
8 DIMMs								
CPU1	X	X	X	X	X	X	X	X

Note: Most configurations populating fewer than eight channels are supported, but not recommended.

DIMM Module Population

There is no specific order or sequence required when installing memory modules. However do keep the following in mind:

* It is recommended that you use DDR4 DIMM modules of the same type, size and speed.

* Mixed DIMM speeds can be installed, however all memory will run at the speed of the slowest DIMM.

* The motherboard will support odd-numbered modules (1 or 3 modules installed). However, to achieve the best memory performance, a balanced memory population is recommended.
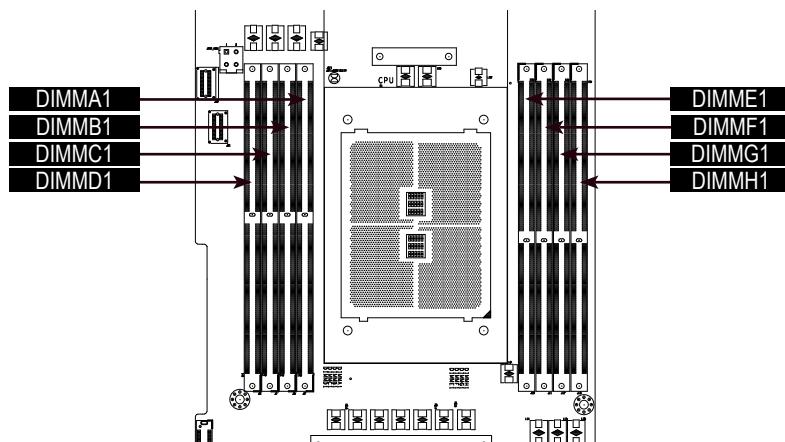
Figure 3-3. DIMM Slot Locations

DIMM Installation

1. Insert the desired number of DIMMs into the memory slots, there is no specific sequence or order required.

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

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

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

5. 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 module into the slot.
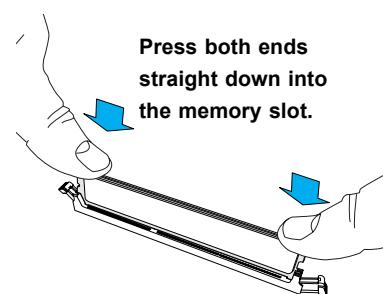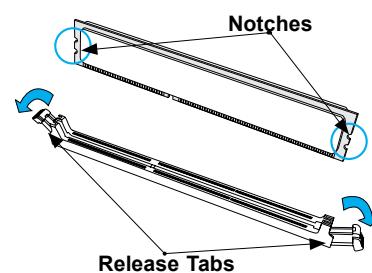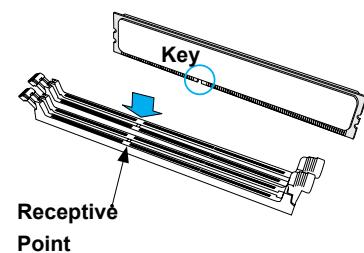
DIMM Removal

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

Key

Receptive Point

Notches

Release Tabs

Press both ends straight down into the memory slot.

Motherboard Battery

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

Replacing the Battery

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

1. Push aside the small clamp that covers the edge of the battery. When the battery is released, lift it out of the holder.

2. To insert a new battery, slide one edge under the lip of the holder with the positive (+) side facing up. Then push the other side down until the clamp snaps over it.

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

LITHIUM BATTERY

BATTERY HOLDER
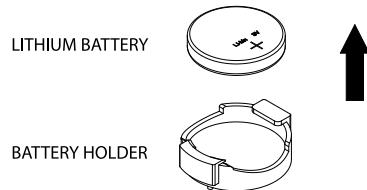
Figure 3-4. Installing the Onboard Battery

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

3.5 System Nodes

Installing and Removing Hard Drives

Removing Hard Drive Carriers from the Node

1. Press the release button on the drive carrier. This extends the drive bay handle.

2. Use the handle to pull the drive carrier out of the chassis.

Release button
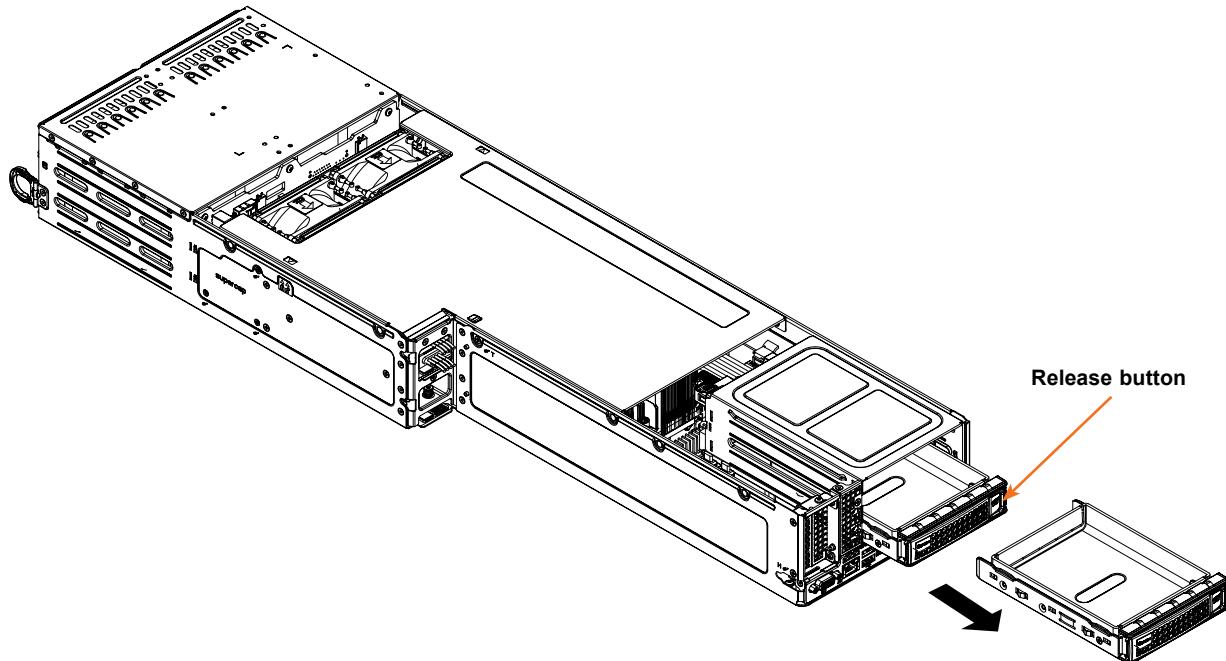
Figure 3-5. Removing a Hard Drive Carrier (rear drives shown)

Installing a Hard Drive into a Drive Carrier

1. Insert a drive into the carrier with the PCB side facing down and the connector end toward the rear of the carrier.

2. Align the drive in the carrier so that the screw holes of both line up. Note that there are holes in the carrier marked "SATA" to aid in correct installation.

3. Secure the drive to the carrier with four screws.

4. Insert the drive carrier into its bay, keeping the carrier oriented so that the hard 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.

5. Push the handle in until it clicks into its locked position.

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

Note: Enterprise level hard disk drives are recommended for use in Supermicro chassis and servers. For information on recommended HDDs, visit the H12SSFR-AN6 web page at http://www.supermicro.com/products/nfo/files/storage/SBB-HDDCompList.pdf
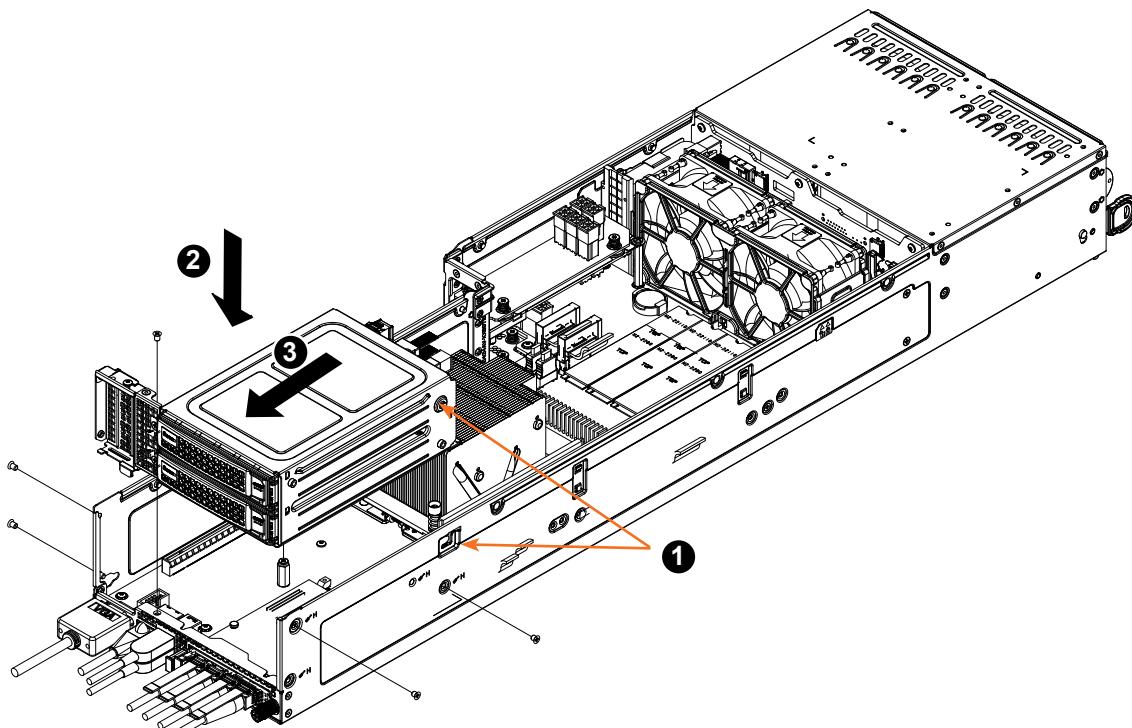
Figure 3-6. Installing Rear 3.5" Hard Drive Cage
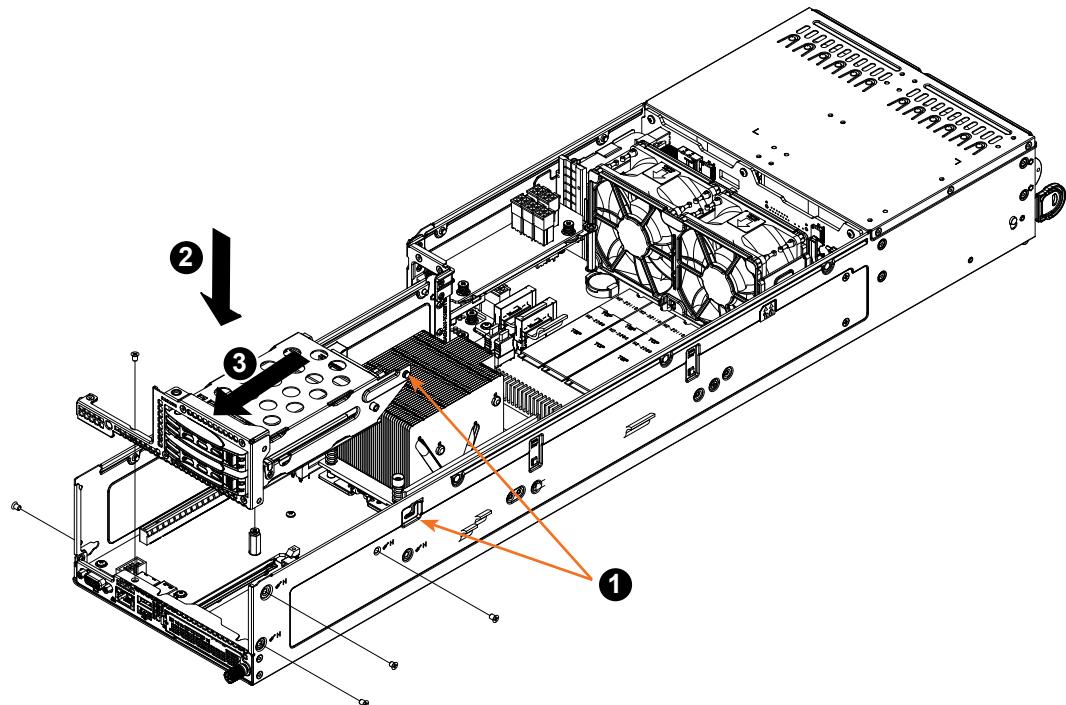
Figure 3-7. Installing Rear 2.5" Hard Drive Cage

Removing and Installing the Backplane

The CSE-F424AS3 chassis backplane is located behind the hard drives and in front of the front system fans in each node. Although backplane failure rarely occurs, in the event of a backplane failure, follow the instructions below.

Removing the Backplane
Removing the Backplane from the Chassis

1. Remove the node from the chassis and remove the cover from the node.

2. Remove the air shroud.

3. Ensure that all of the hard drive carriers have been removed from the front of the node.

4. Disconnect all cables to the hard drive backplane.

5. Remove the three screws securing the backplane to the node and lift the bqackplane from the chassis.
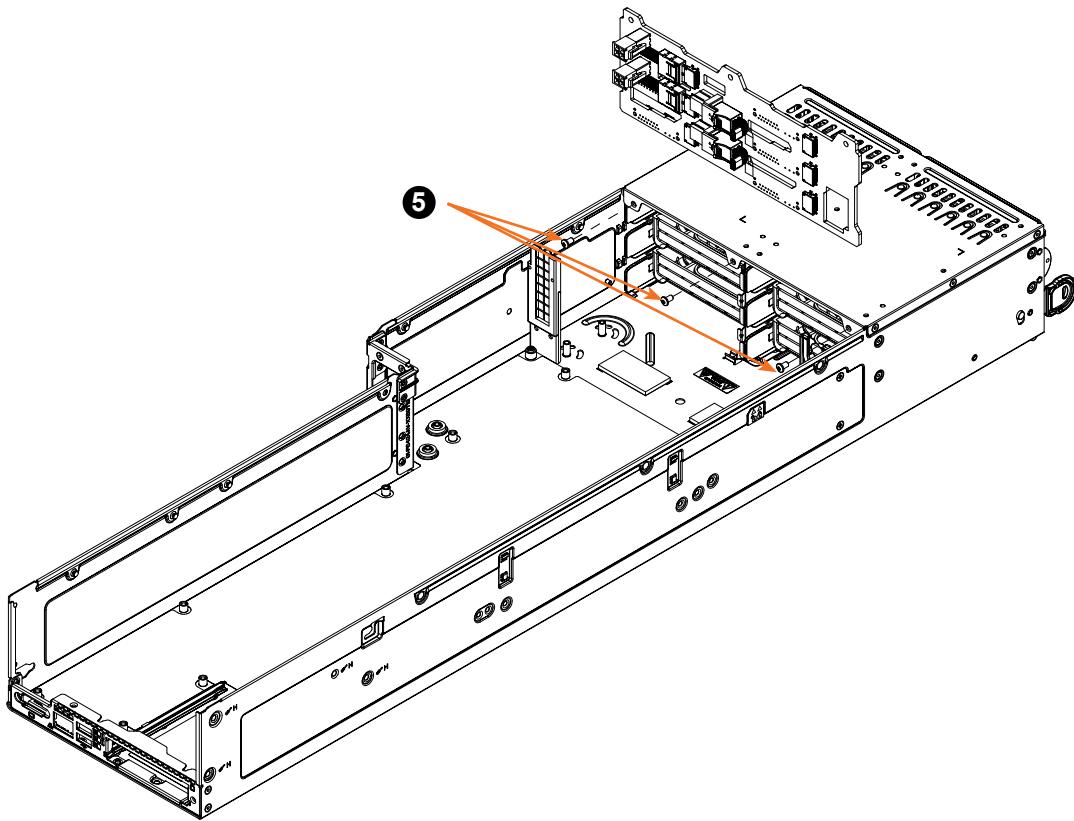
Figure 3-8. Removing the Screws at the Top of the Backplane

Installing the Backplane
Installing the Backplane into the Chassis

1. Ensure that all of the hard drive carriers have been removed from the bays in the front of the node.

2. Ease the backplane forward, against the front of the chassis.

3. Align the mounting holes in the backplane with the holes in the chassis. Replace the four screws at the top of the backplane

4. Reconnect all cables and return the hard drive trays to their bays in the front of the node.

Installing M.2 Solid State Drives

The H12SSFR-AN6 supports M.2 SSDs with a PCIe 4.0 x8 slot (JSXB2), which supports two PCIe 4.0 x4 NVMe SSDs. M.2 form factors 2242/2260/2280 are supported via AOC-SMG4-2M2-F. M.2 allows for a variety of card sizes with increased functionality and storage efficiency.

Installing M.2 Drives

1. Remove power from the system and then remove the top cover as described in Sections 3.1 and 3.2.

2. Insert the M.2 sideways into the connector so that it lays flat, then secure it to the bracket with the plastic clip.

3. Repeat as necessary for more M.2 drives.

4. With the drives installed, secure the M.2 to the chassis with the screws.

5. Finish by replacing the cover and restoring power to the system.
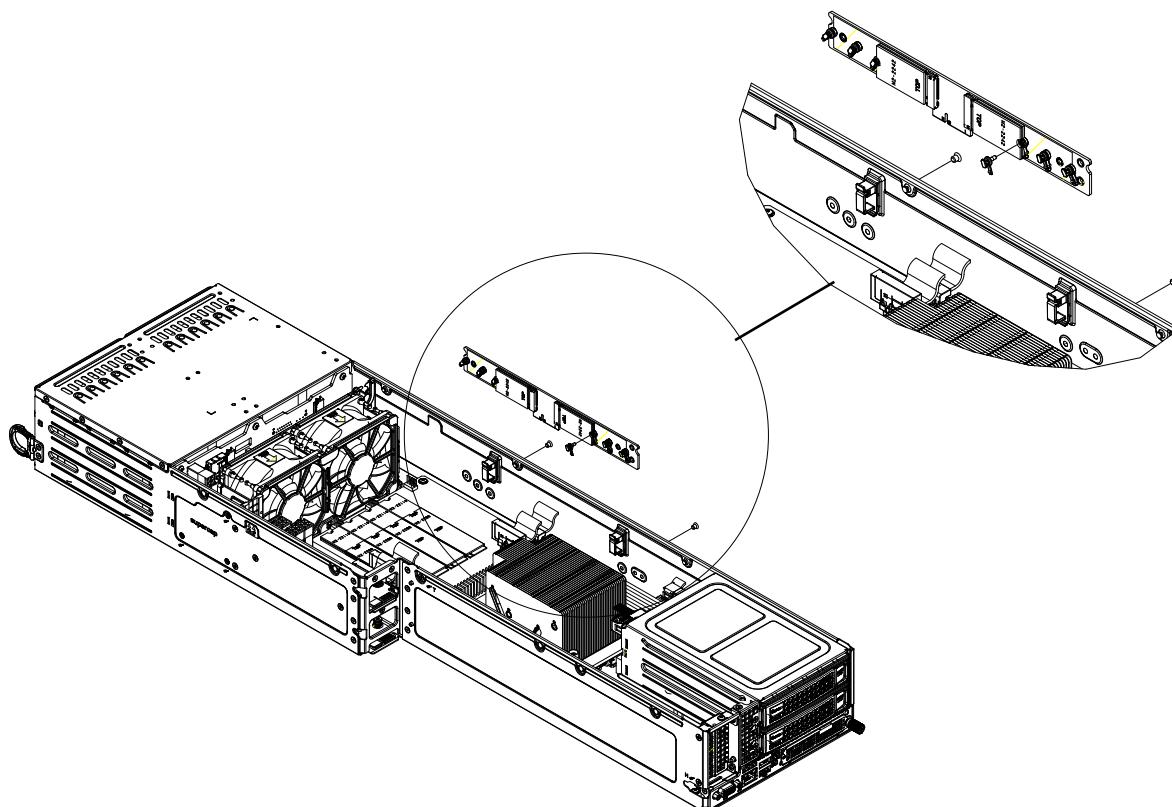
Figure 3-9. Installing an M.2 SSD

Expansion Cards

Each node of the AS -F2014S-RNTR supports expansion (add-on) cards as follows:

With rear 3.5" drives: supports one PCIe x16 card (installed directly into the JSXB1 slot).

With rear 2.5" drives: includes one riser card (RSC-F2B-88G4 in JSXB1) to support two PCIe x8 expansion cards (as shown in figure below)

Before following the procedure below to install expansion cards, first turn off and remove power from the system as described in Section 3.1 then remove the top cover.

Expansion Card Installation

Each node supports one expansion card. This expansion card must be plugged into a riser card, which in turn plugs into the motherboard.

Adding an Expansion Card (3.5" drives)

1. Remove the mounting screw that holds the expansion slot shield in place.

2. Lift the shield out.

3. Secure the expansion card to the shield using the same screw just removed.

4. Install the expansion card into the slot and the shield back into place.

Assembling the PCIe Slot Bracket (2.5" drives)

1. Remove the mounting screws securing the PCIe bracket to the node.

2. Lift the PCIe bracket out of the node.

3. Remove one screw securing the I/O shield to the bracket and remove the shield. (Keep the screw, it will be used in step 5.)

4. Insert the expansion card(s) into the riser card.

5. Secure the expansion card by using the same screw removed in step 3.

6. Install the PCIe bracket back into the node while simultaneously plugging the riser card into the motherboard. A tab on the bottom of the bracket should insert into the opening sown in the figure.

7. Secure the PCIe bracket with the three screws used in step 1.
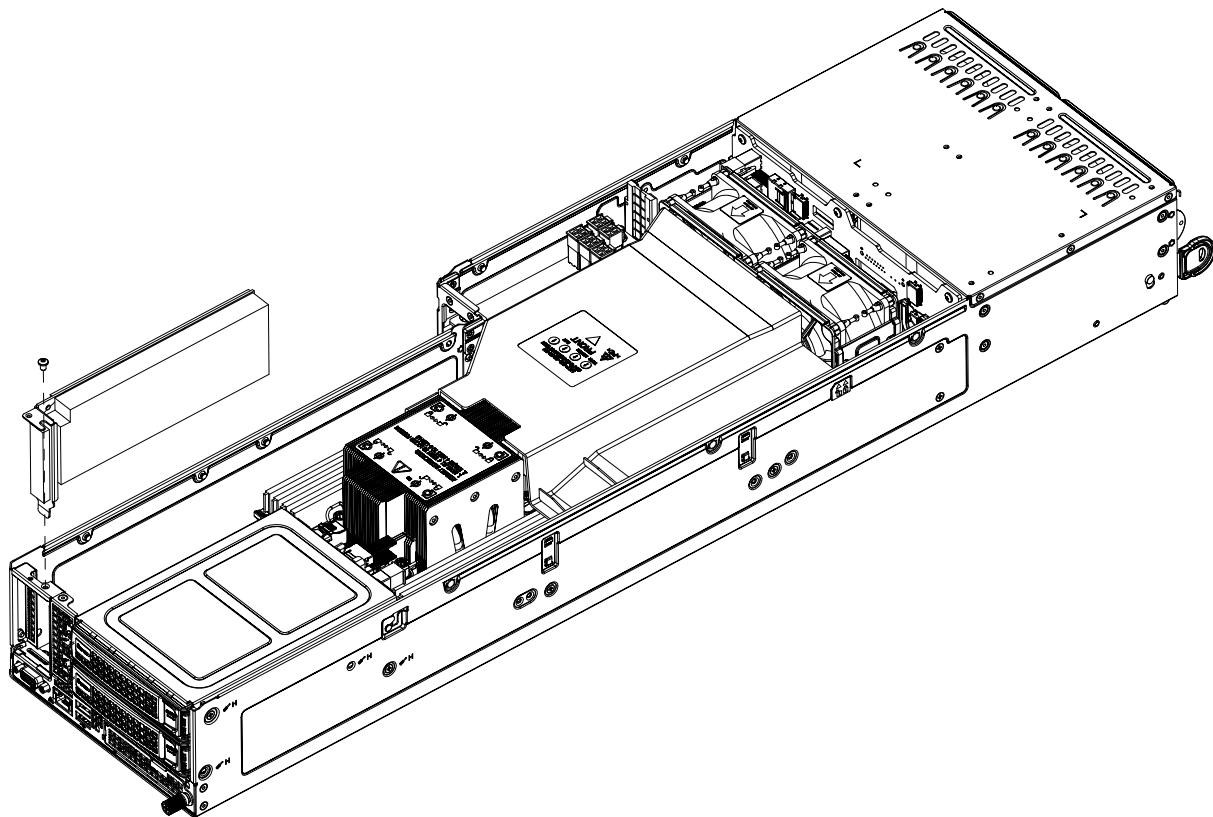
Figure 3-10. Installing an Expansion Card (w/ 3.5" rear drive bays)

Tab

Opening
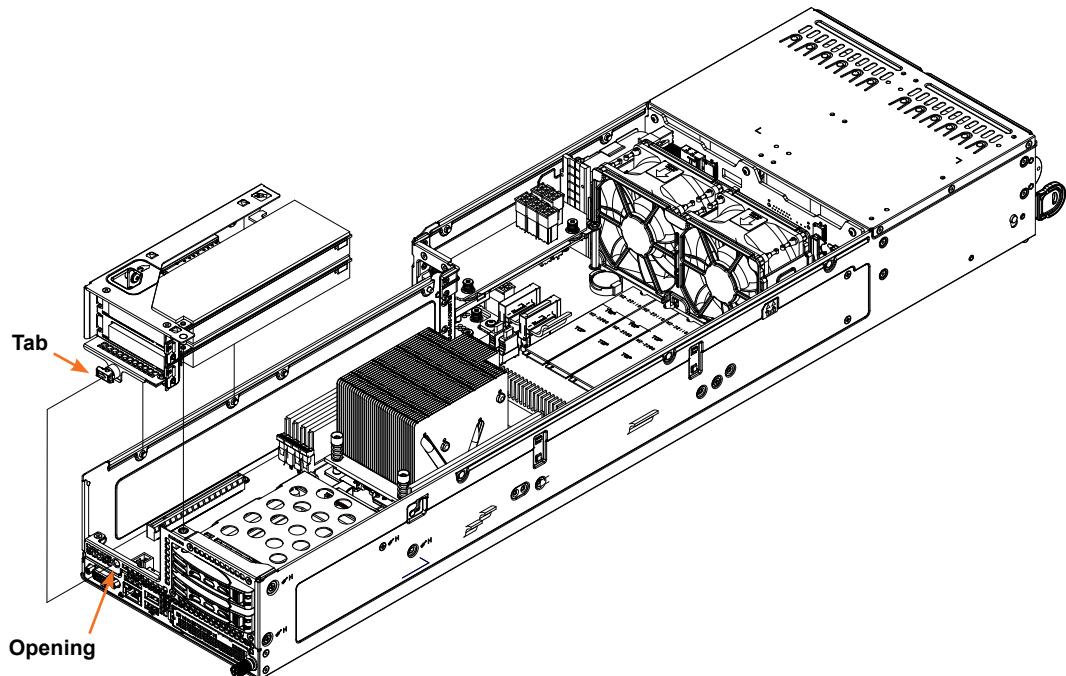
Figure 3-11. Installing the PCIe Slot Bracket Assembly (w/ 2.5" rear drive bays)

Installing an AIOM Module

Each node in the system has one front mounted AIOM module, which adds various I/O ports to the node depending upon the module selected. To install a module, use the procedure below.

Installing an AIOM module

1. Remove the AIOM bracket by unscrewing two screws, one on the side of the node tray, one underneath.

2. Remove one screw securing the AIOM I/O shield.

3. Install any AIOM into the bracket, and securing the AIOM by tightening the two built-in screws on the AIOM.

4. Install the assembled AIOM bracket into the node tray, and tightening the two screws used in step 1.
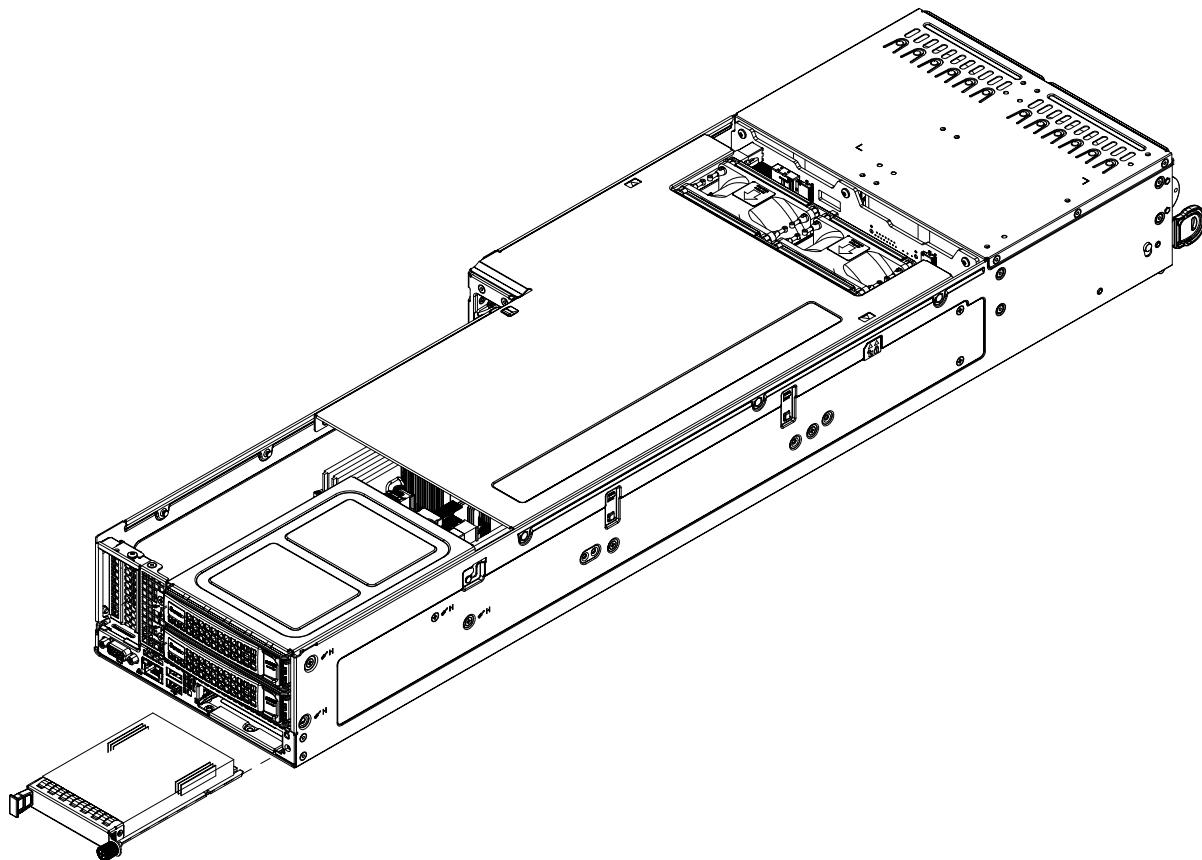
Figure 3-12. Installing the AIOM Module

3.6 System Cooling

The AS -F2014S-RNTR includes two 8-cm 13.5K RPM, PWM mid-chassis cooling fans per node for a total of eight in the system. These fans are NOT hot-plug and must be replaced when they fail.

Removing Internal System Fans

1. Remove the node from the chassis and remove the cover from the node.

2. Disconnect the wiring to all three fans.

3. Lift the fan tray up and out of the node.

4. Push upward on the underside of the failed fan to remove it from the fan tray.

Installing Internal System Fans

1. Insert the replacement fan into the fan tray, making certain that the fan is facing in the same direction as the other fans in the fan tray.

2. Place the fan tray in the node.

3. Secure the fan tray to the floor of the node.

4. Reconnect the wiring to the fans.
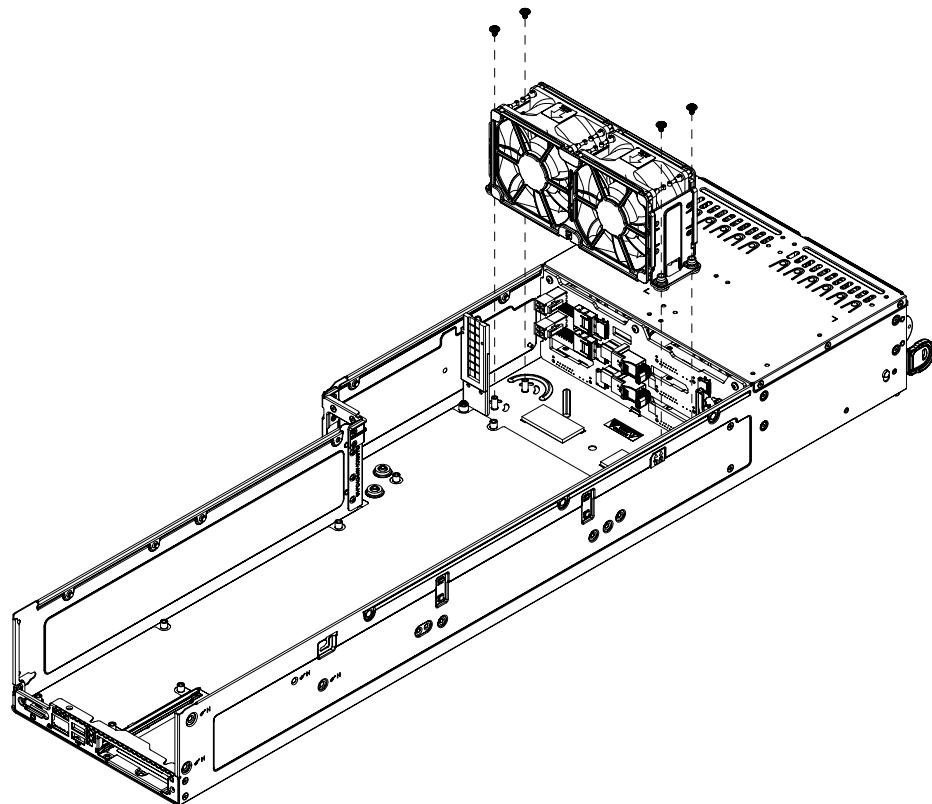
Figure 3-13. Removing the Fan Tray

Installing Air Shrouds

Air shrouds concentrate airflow to maximize fan efficiency. The CSE-F424AS3 chassis requires an air shroud in each node.

Installing an Air Shroud

1. Make sure that the motherboard and all components are properly installed in each node.

2. Place the air shroud over the motherboard, as illustrated below. The air shroud sits behind the system fans and goes over the top of the motherboard and its components.

3. Secure each air shroud (three pieces per node) with two screws.

4. Repeat the procedure for the remaining nodes as necessary.
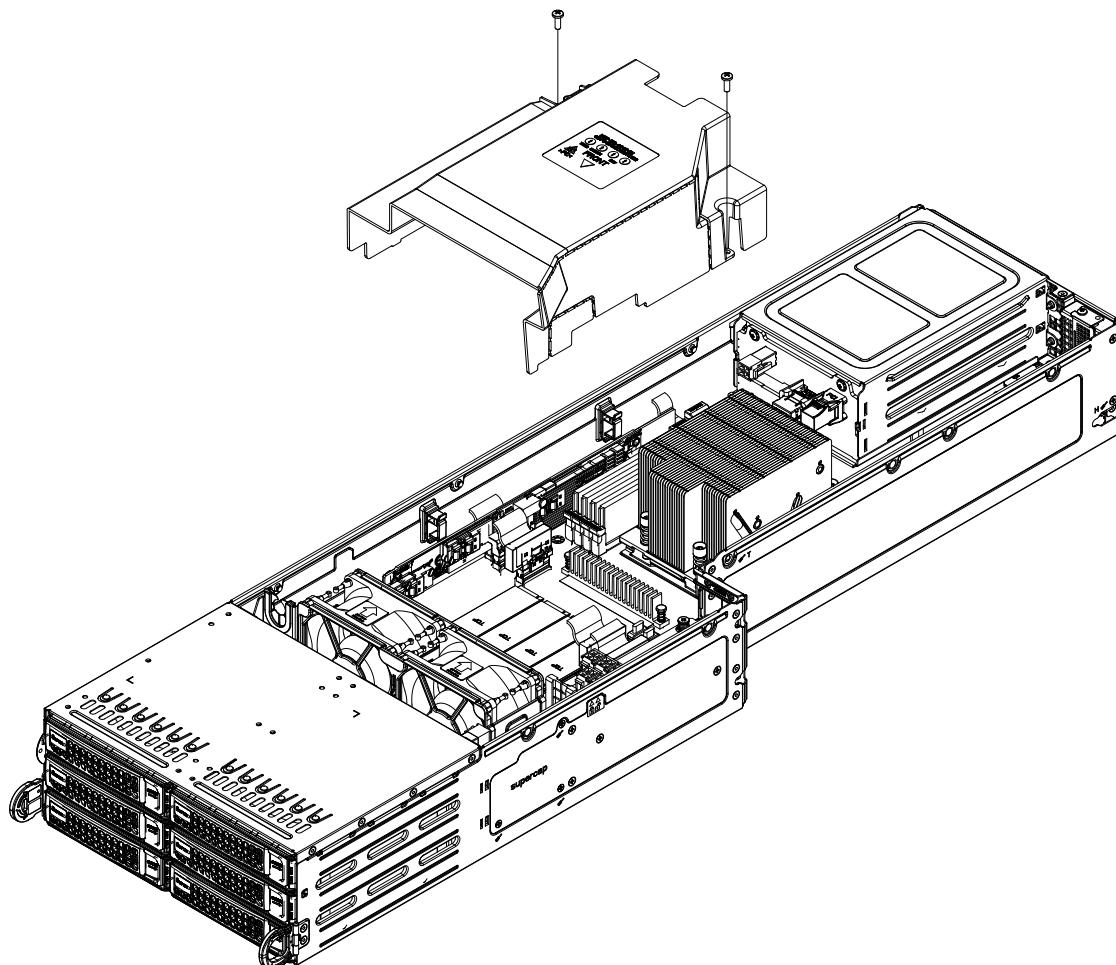
Figure 3-14. Installing the Air Shroud

3.7 Power Supplies

The system includes four hot-plug, 2200W power supply modules. These modules will automatically sense and operate at an input voltage between 100v to 240v. 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. Push the new power supply module into the power bay until it clicks into the locked position.

5. Plug the AC power cord back into the power supply module.
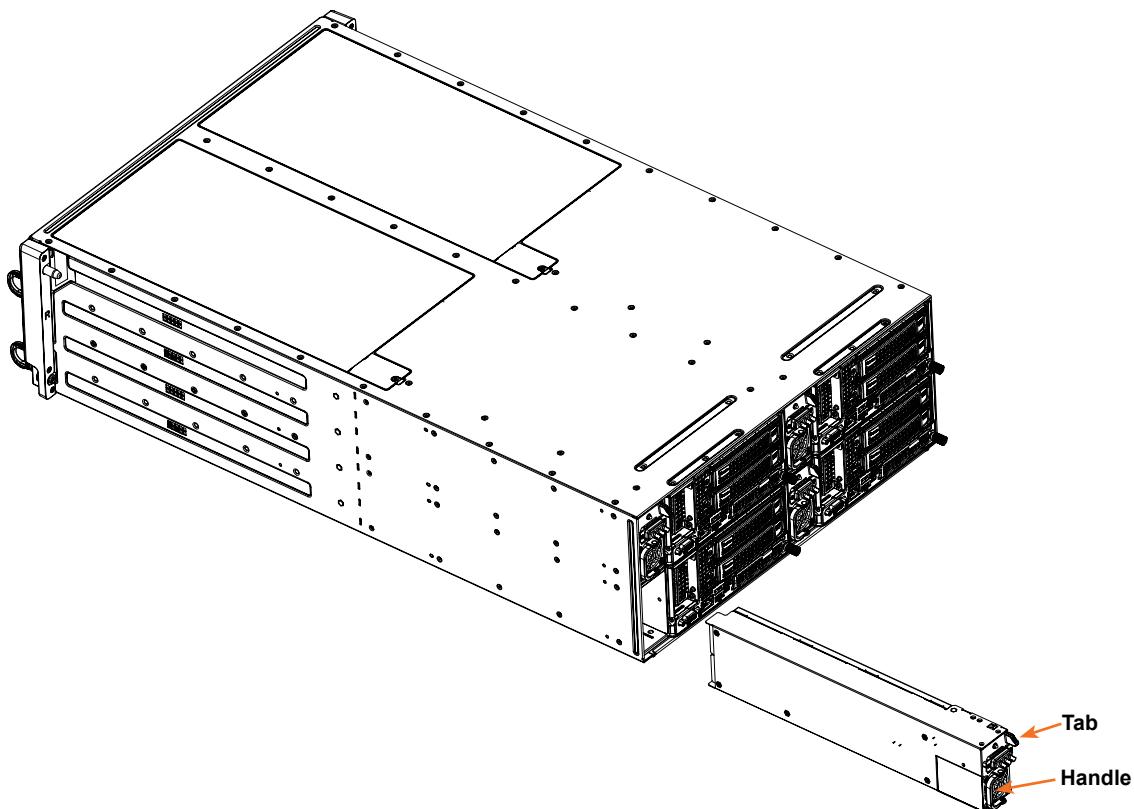
Figure 3-15. Installing a Power Supply Module

Chapter 4

Motherboard Connections

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

Please review the Safety Precautions in Chapter 3 before installing or removing components.

4.1 Power Connections

12V 8-pin Auxiliary Power Connector

JPWR1 is an 8-pin ATX power input to provide core power to the processor. Refer to the table below for pin definitions.

12V 8-pin Power Connector Pin Definitions	
Pins	**Definition**
1 through 4	Ground
5 through 8	+12V

12V 8-pin Auxiliary Power Connector

JPWR2 is an 8-pin ATX power input to provide core power to the processor. Refer to the table below for pin definitions.

12V 8-pin Power Connector Pin Definitions	
Pins	**Definition**
1 through 4	Ground
5 through 8	+12V

HDD/SSD Power Connectors

JPWR_HDD1 ~ JPWR_HDD3 are used to provide power to the onboard HDD/SSD ports. Refer to the table below for pin definitions.

HDD/SSD Power Connector Pin Definitions	
Pins	**Definition**
1	Ground
2	Ground
3	**+5V**
4	+12V

4.2 Headers and Connectors

Onboard Fan Headers

There are three fan headers on the motherboard. These are 4-pin fan headers; pins 1-3 are backward compatible with traditional 3-pin fans. The onboard fan speeds are controlled by Thermal Management (via Hardware Monitoring) in the BMC. When using Thermal Management setting, please use all 4-pin fans.

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

Disk-On-Module Power Connector

The Disk-On-Module (DOM) power connectors at JSD1 and JSD2 provide 5V power to a solid-state DOM storage device connected to one of the SATA ports. See the table below for pin definitions.

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

SATA Ports

The H12SSFR-AN6 has two standard onboard SATA3 ports (I-SATA0~1). I-SATA0 and I-SATA1 are standard SATA 3.0 ports.

NVMe Ports

The JNVME1 ~ JNVME4 connections are NVMe ports, which provide high-speed, low-latency PCIe 4.0 x8 connections directly from the CPU to NVMe SSDs (Solid State Drives). This greatly increases SSD data-throughput performance and significantly reduces PCIe latency by simplifying driver/software requirements resulting from the direct PCIe interface from the CPU.

TPM Header/Port 80 Connector (TPM Port)

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

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

Trusted Platform Module Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	LCLK	2	GND
3	LFRAME#	4	Key
5	LRESET#	6	N/C
7	LAD3	8	LAD2
9	3.3V	10	LAD1
11	LAD0	12	GND
13	SMB_CLK (optional)	14	SMB_DAT (optional)
15	P3V3_STBY	16	SERIRQ
17	GND	18	LP_CLKRUN (optional)
19	LPC_PD (optional)	20	LPC_DRQ (optional)

M.2 Connectors

The M.2 (M.2-M1 ~ M.2-M4) connectors support M-Key (PCIe x4) storage cards. Form factors 2280, 22110 are supported.

Expansion Slots

The motherboard features two expansion slots (JSXB1 and JSXB2). These are both PCIe 4.0 x16 slots (JSXB1 is for a right hand riser card, JSXB2 is for a left hand riser card).

Onboard Battery (BT1)

The onboard back up battery is located at BT1. The onboard battery provides backup power to the on chip CMOS, which stores the BIOS' setup information. It also provides power to the Real Time Clock (RTC) to keep it running.

IPMB System Management Bus Header

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

IPMB Header Pin Definitions	
Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

Front Control Panel

JF1 contains header pins for various buttons and indicators that are normally located on a control panel at the front of the chassis. This connector is designed specifically for use with Supermicro chassis and connects to the motherboard with Supermicro cable p/n CBL-OTHR-0022L. See the figure below for the pin definitions of JF1.

	1	2	
Power Button (Signal)	o	o	Ground
UID Switch (Signal)	o	o	Power Supply On (Signal)
LAN Link Activity LED	o	o	Power LED On
UID LED On (Signal)	o	o	Red LED On
(Vcc)	o	o	Ground
(Vcc)	o	o	Ground
(Vcc)	o	o	+12V Enable
5V Standby Power	o	o	Power Supply/PMBus Alert
Key	o	o	SCL Backplane Power
Key	o	o	SDA Backplane Power
	19	20	

Figure 4-1. JF1 Pin Definitions

4.3 Rear I/O Ports

See the figure below for the locations and descriptions of the various I/O ports on the rear of the motherboard.
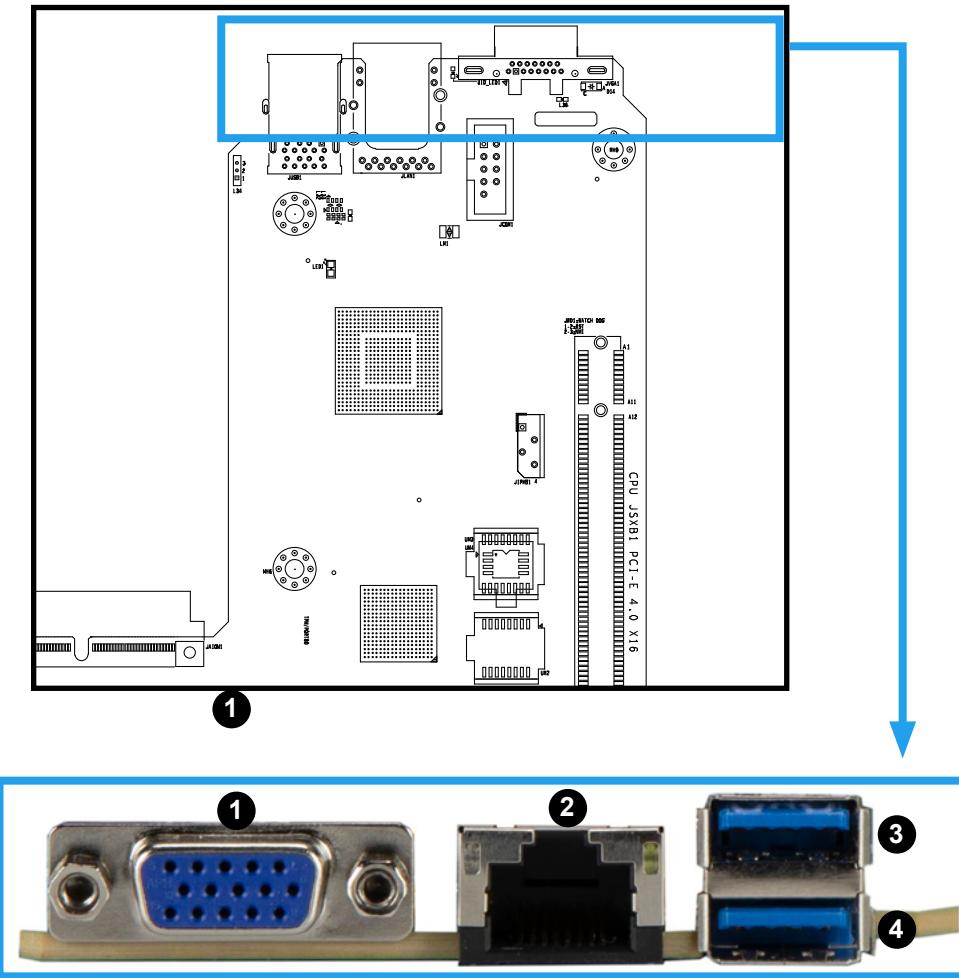
Figure 4-2. Rear I/O Port Locations

Rear I/O Ports			
#	**Description**	**#**	**Description**
1	VGA Port	3	USB0 Port (USB 3.0)
2	LAN1 Port	4	USB1 Port (USB 3.0)

VGA Port

There is one VGA port on the rear I/O panel.

Universal Serial Bus (USB) Ports

There are two USB 3.0 ports (USB0/1) on the I/O back panel. These support the type A connector.

Gigabit LAN Port

There is one gigabit LAN port located on the I/O back panel (LAN1). This port accepts an RJ45 type cable.

UID LED Indicator

A UID LED is provided on the I/O backpanel. The UID Indicator provides easy identification of a system that may be in need of service.

Note: UID can be triggered with the onboard UID switch or via IPMI. For more information on IPMI, please refer to the IPMI User's Guide posted on our website at http://www.supermicro.com

4.4 Jumpers

Explanation of Jumpers

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

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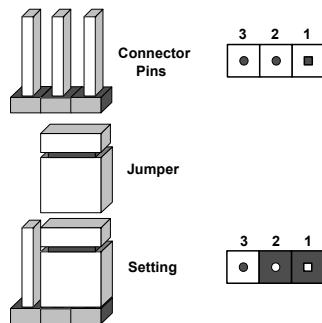
CMOS Clear

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

To Clear CMOS

1. First power down the system and unplug the power cord(s).

2. Remove the cover of the chassis to access the motherboard.

3. Remove the onboard battery from the motherboard.

4. Short the CMOS pads with a metal object such as a small screwdriver for at least four seconds.

5. Remove the screwdriver (or shorting device).

6. Replace the cover, reconnect the power cord(s) and power on the system.

Notes: Clearing CMOS will also clear all passwords.

Do not use the PW_ON connector to clear CMOS.

JBT1 contact pads

VGA Enable/Disable (JVGA1)

JVGA1 allows you to enable or disable the VGA port. The default position is on pins 1 and 2 to enable VGA. See the table below for jumper settings.

VGA Enable/Disable Jumper Settings (JVGA1)	
Jumper Setting	**Definition**
Pins 1-2	Enabled (default)
Pins 2-3	Disabled

Watch Dog (JWD1)

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

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

Watch Dog Jumper Settings	
Jumper Setting	**Definition**
Pins 1-2	Reset (Default)
Pins 2-3	NMI
Open	Disabled

4.5 LED Indicators

LAN Port LEDs

The motherboard's Ethernet port has two LED indicators. The Activity LED is yellow and indicates connection and activity. The Link LED may be green, amber, or off to indicate the speed of the connection. Refer to the tables below for more information.

Link LED	
Connection Link Speed Indicator	
LED Color	**Definition**
Orange	1 Gb/s
Green	10 Gb/s
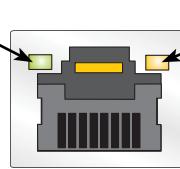
Activity LED		
Color	**State**	**Definition**
None	No Connection	
None	Off	Link
Green	Flashing	Active

Link LED   **Activity LED**

BMC Heartbeat LED (LED)

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

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

Chapter 5

Software

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

5.1 Microsoft Windows OS Installation

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

Installing the OS

1. Create a method to access the MS Windows installation ISO file. That might be a DVD, perhaps using an external USB/SATA DVD drive, or a USB flash drive, or the IPMI KVM console.

2. Go to the Supermicro web page for your motherboard and click on "Download the Latest Drivers and Utilities", select the proper driver, and copy it to a USB flash drive.

3. Boot from a bootable device with Windows OS installation. You can see a bootable device list by pressing **F11** during the system startup.
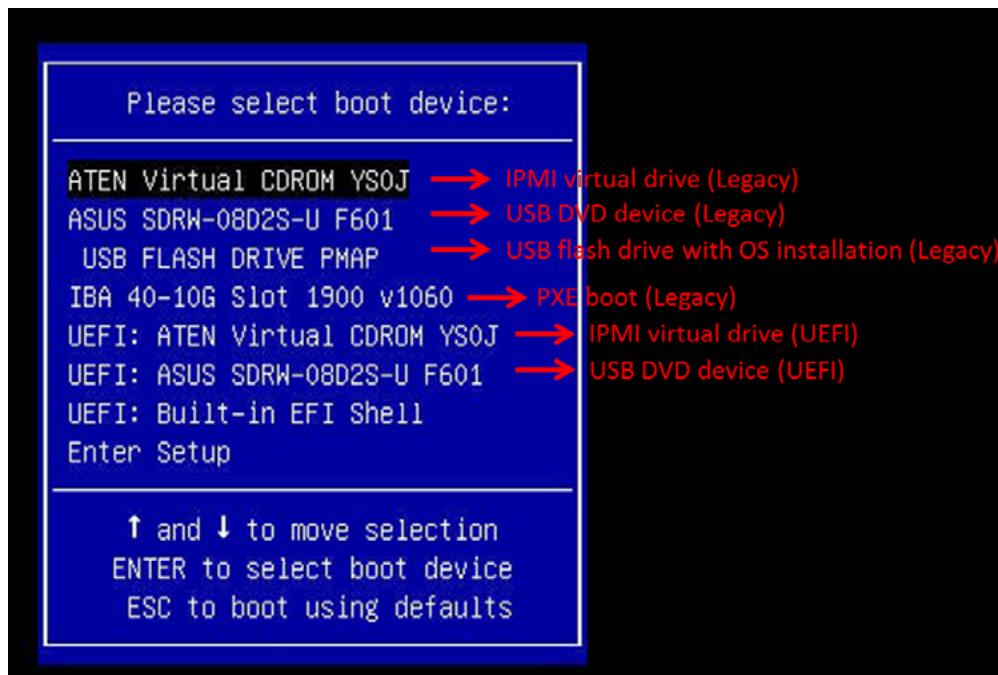
Figure 5-1. Select Boot Device

4. During Windows Setup, continue to the dialog where you select the drives on which to install Windows. If the disk you want to use is not listed, click on "Load driver" link at the bottom left corner.
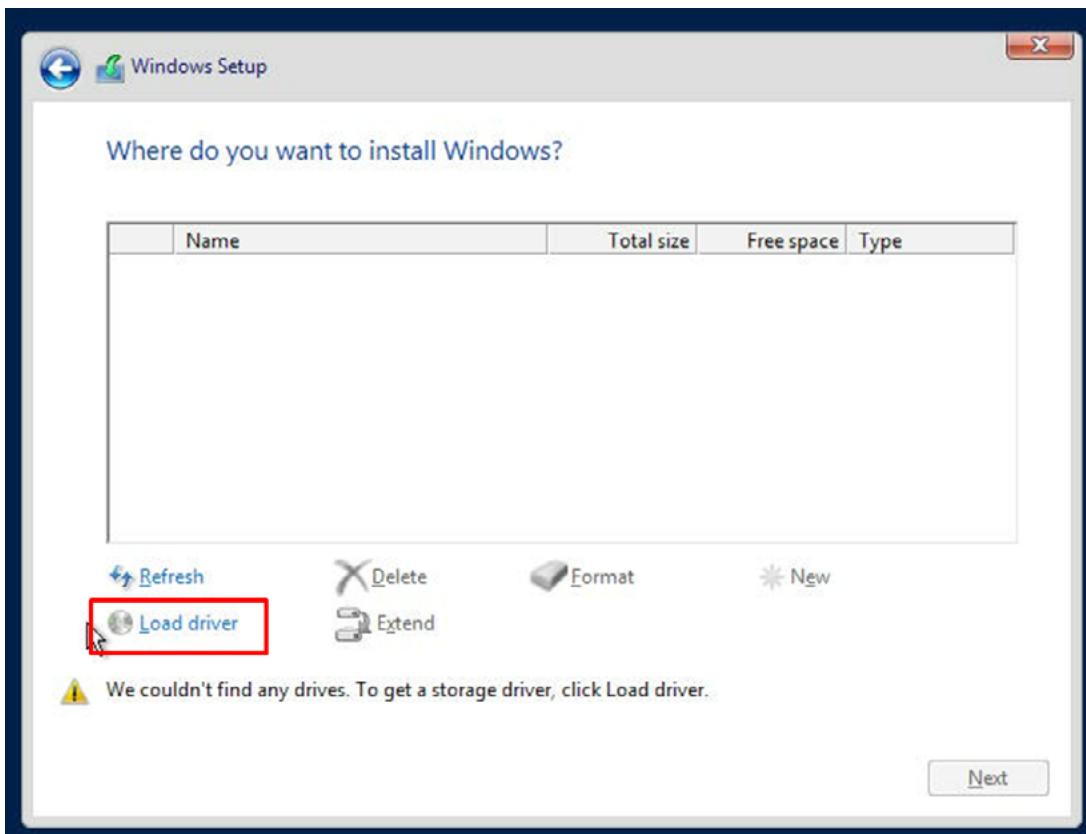
Figure 5-2. Load Driver Link

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

- For RAID, choose the SATA/sSATA RAID driver indicated then choose the storage drive on which you want to install it.

- For non-RAID, choose the SATA/sSATA AHCI driver indicated then choose the storage drive on which you want to install it.

5. Once all devices are specified, continue with the installation.

6. After the Windows OS installation has completed, the system will automatically reboot multiple times.

5.2 Driver Installation

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

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

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

Insert the flash drive or disk and the screenshot shown below should appear.
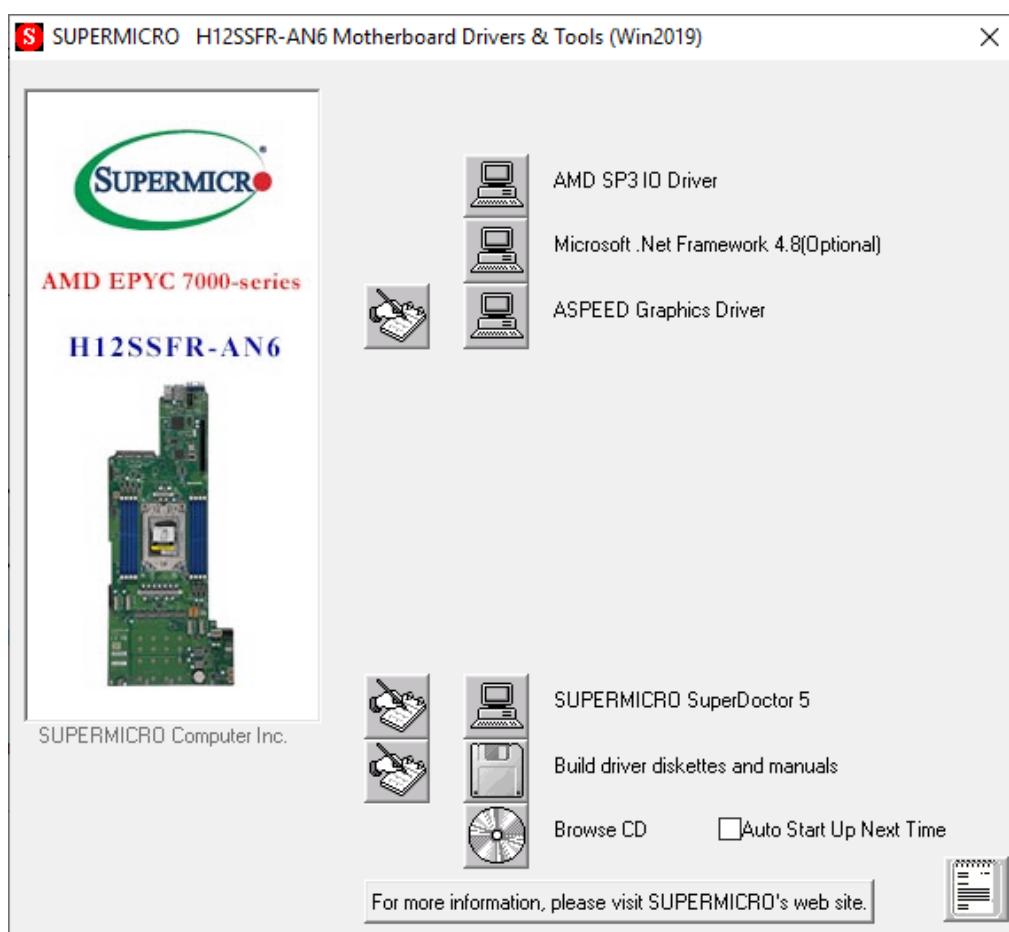
Figure 5-1. Driver & Tool Installation Screen

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

5.3 SuperDoctor® 5

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

SuperDoctor 5 comes in local and remote management versions and can be used with Nagios to maximize your system monitoring needs. With SuperDoctor 5 Management Server (SSM Server), you can remotely control power on/off and reset chassis intrusion for multiple systems with SuperDoctor 5 or IPMI. SuperDoctor 5 Management Server monitors HTTP, FTP, and SMTP services to optimize the efficiency of your operation.
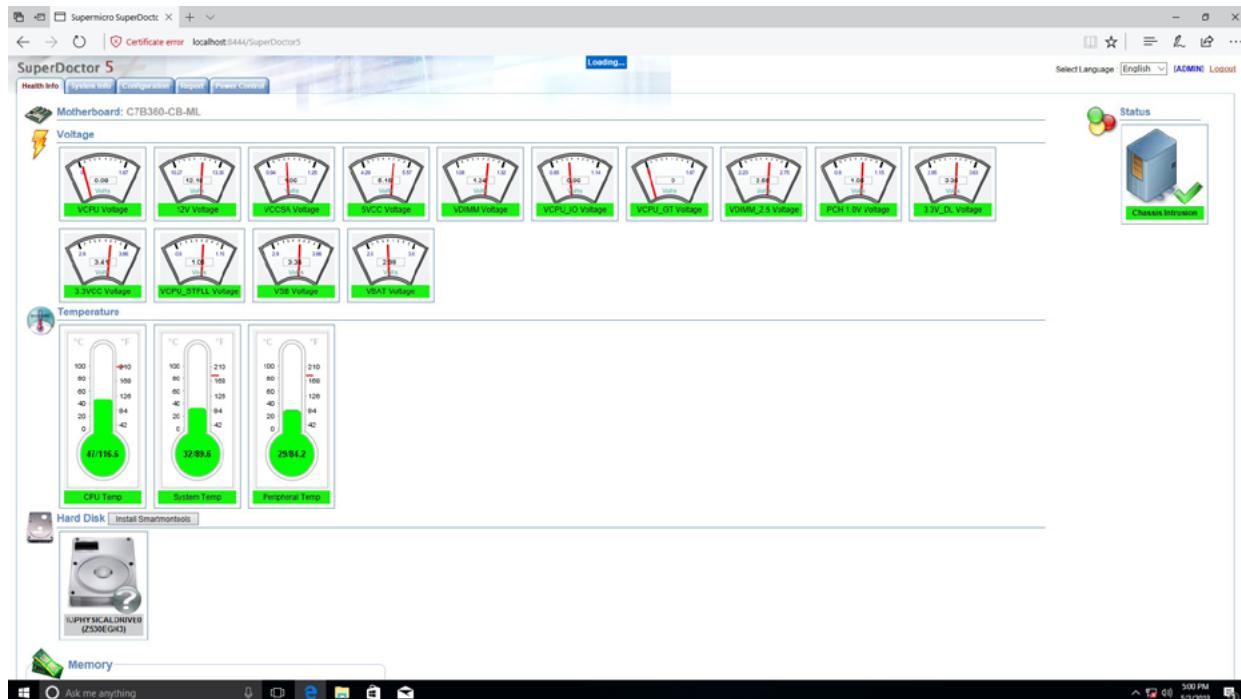
Figure 5-2. SuperDoctor 5 Interface Display Screen (Health Information)

5.4 IPMI

The H12SSFR-AN6 supports the Intelligent Platform Management Interface (IPMI). IPMI provides remote access, monitoring and management through the baseboard management controller (BMC) and other management controllers distributed among different system modules.There are several BIOS settings that are related to IPMI. For general documentation and information on IPMI, visit our website at: 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. This can be found on a sticker on the chassis and a sticker on the motherboard. The sticker also displays the BMC MAC address.

Figure 5-5. BMC Password Label

See motherboard layout in Chapter 1 for label location.

Chapter 6

UEFI BIOS

6.1 Introduction

This chapter describes the AMIBIOS™ Setup utility for H12SSFR-AN6 motherboards that are equipped with the EPYC 7003/7002 Series Processor. The BIOS is stored on a chip and can be easily upgraded using a flash program.

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

Starting the Setup Utility

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

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

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

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

6.2 Main Setup

When you first enter the AMI BIOS setup utility, you will 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. The following Main menu items will be displayed:

```
          Aptio Setup Utility - Copyright (C) 2020 American Megatrends, Inc.
      Main  Advanced  IPMI  Event Logs  Security  Boot  Save & Exit

                                                          Set the Date. Use Tab to
      System Date                    [Tue 10/13/2020]     switch between Date
      System Time                    [22:39:01]           elements.
                                                          Default Ranges:
      Supermicro H12SSFR-AN6                              Year: 2005-2099
      BIOS Version                   T20201012154858      Months: 1-12
      Build Date                     10/12/2020           Days: dependent on month
      CPLD Version                   F1.A1.05

      Memory Information
      Total Memory                   256 GB


                                                          ↔: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit

          Version 2.20.1275. Copyright (C) 2020 American Megatrends, Inc.
```

System Date/System Time

Use this option 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. The date's default value is 01/01/2015 after RTC reset.

Supermicro H12SSFR-AN6

BIOS Version

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

Build Date

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

CPLD Version

This item displays the CPLD version of the BIOS ROM used in the system.

Memory Information

Total Memory

This feature displays the total system memory detected.

6.3 Advanced

Use the arrow keys to select a top item and press <Enter> to access the submenu items.
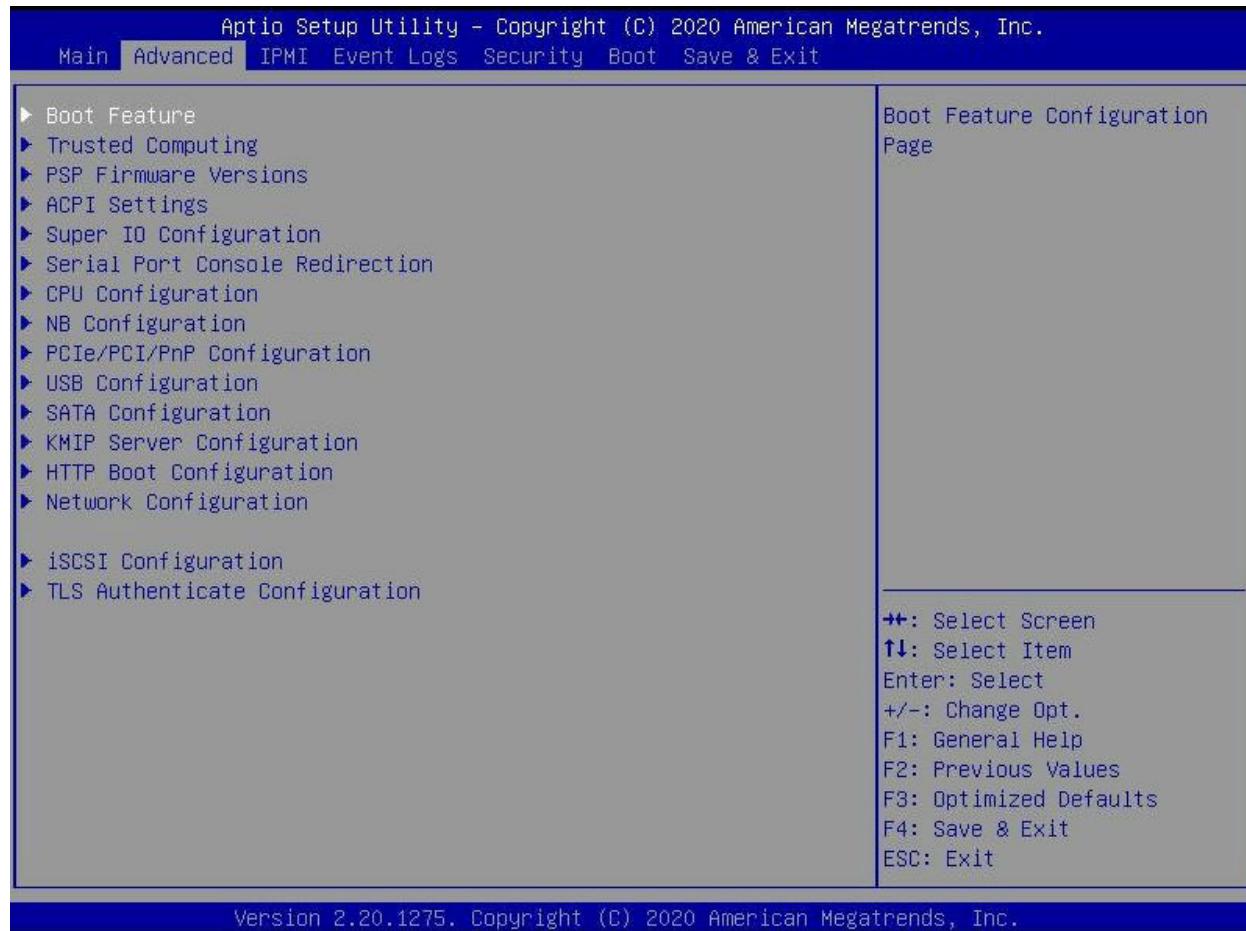
Warning: Take caution when changing the Advanced settings. An incorrect value, a very high DRAM frequency, or an incorrect DRAM timing setting may make the system unstable. When this occurs, revert to the default to the manufacture default settings.

▶Boot Feature

Quiet Boot

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

Option ROM Messages

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

Bootup NumLock State

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

Wait For "F1" If Error

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

INT19 (Interrupt 19) Trap Response

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

Re-try Boot

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

Power Configuration

Watch Dog Function

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

Restore on AC Power Loss

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

Power Button Function

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

▶Trusted Computing

Security Device Support

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

▶PSP Firmware Versions

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

PSP Directory Level 1 (Fixed)

- PSP Recovery BL Ver

- SMU FW Version

- ABL Version

PSP Directory Level 2 (Updateable)

- PSP Bootloader Version

- SMU FW Version

- ABL Version

▶ACPI Settings

PCI AER Support

The options are **Disabled** and Enabled.

High Precision Event Timer

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

NUMA Nodes Per Socket

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

ACPI SRAT L3 Cache As NUMA Domain

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

▶Super IO Configuration

The following Super IO information will display:

- Super IO Chip AST2600

▶Serial Port 1 Configuration

Serial Port

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

Device Settings

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

Change Settings

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

▶SOL Configuration

Serial Port

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

Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of a serial port specified by the user. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address. The options are **Auto**, (IO=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 Console Redirection

COM1

Console Redirection

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

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

▶Console Redirection Settings

Terminal Type

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

Bits per second

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

Data Bits

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

Parity

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

Stop Bits

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

Flow Control

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

VT-UTF8 Combo Key Support

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

Recorder Mode

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

Resolution 100x31

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

Legacy OS Console Redirection

Use this feature to select the number of rows and columns used in Console Redirection for legacy OS support. The options are 80x24 and **80x25**.

Putty KeyPad

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

Redirection After BIOS POST

Use this feature to enable or disable legacy console redirection after BIOS POST. When set to Bootloader, legacy console redirection is disabled before booting the OS. When set to Always Enable, legacy console redirection remains enabled when booting the OS. The options are **Always Enable** and BootLoader.

SOL

Console Redirection

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

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

▶Console Redirection Settings

Terminal Type

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

Bits per second

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

Data Bits

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

Parity

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

Stop Bits

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

Flow Control

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

VT-UTF8 Combo Key Support

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

Recorder Mode

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

Resolution 100x31

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

Legacy OS Redirection Resolution

Use this feature to select the number of rows and columns used in Console Redirection for legacy OS support. The options are 80x24 and **80x25**.

Putty KeyPad

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

Redirection After BIOS POST

Use this feature to enable or disable legacy Console Redirection after BIOS POST. When set to Bootloader, legacy Console Redirection is disabled before booting the OS. When set to Always Enable, legacy Console Redirection remains enabled when booting the OS. The options are **Always Enable** and BootLoader.

Legacy Console Redirection

Legacy Serial Redirection Port

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

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

Console Redirection

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

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

▶Console Redirection Settings

Out-of-Band Mgmt Port

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

Terminal Type

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

Bits per second

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

Flow Control

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

Data Bits

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

▶CPU Configuration

SMT Control

Use this setting to specify Simultaneous Multithreading. The options are Disabled and **Auto**.

Core Performance Boost

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

Global C-state Control

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

Local APIC Mode

This setting is used for Local APIC Mode. The options include xAPIC, x2APIC, and **Auto**.

CCD Control

This setting sets the number of CCDs to be used. The options include **Auto,** 2 CCDs, 3 CCDs, 4 CCDs, and 6 CCDs.

Core Control

This sets the number of cores to be used by your system. Once this option has been used to remove any cores, a power cycle is required in order for the future selections to take effect. Options include **Auto**, TWO (1+1), Four (2 + 2), Four (4+0), and Six (3 + 3). If unsure, leave this to Auto.

L1 Stream HW Prefetcher / L2 Stream HW Prefetcher

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

SVM Mode

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

SMEE

This feature sets the option to enable or disable Secure Memory Encryption. The options are **Disabled** and Enabled.

▶CPU Configuration

SMT Control

Used to enable or disable symmetric multithreading. To re-enable SMT, a power cycle is needed after selecting the Auto option. Warning - S3 is not supported on systems where SMT is disabled. The options include **Auto** and Disabled.

Core Performance Boost

Use to enable a core performance boost. The options include **Auto** and Disabled.

Global C-state Control

Controls I/O based C-state generation and DF C-states. The options include **Auto**, 2 CCDs, 3 CCDs, 4 CCDs, and 6 CCDs.

CCD Control

Sets the number of CCDs to be used. Once this option has been used to remove any CCDs, a power cycle is required in order for future selections to take effect. The options include xAPIC, x2APIC and **Auto**.

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 in order for future selections to take effect. The options include **Auto,** TWO (1+1), FOUR (2+2), and SIX (3+3).

L1 Stream HW Prefetcher

Allows you to enable or disable the L1 Stream HW Prefetcher. The options include Disabled, Enabled, and **Auto**.

L2 Stream HW Prefetcher

Allows you to enable or disable the L2 Stream HW Prefetcher. The options include Disabled, Enabled, and **Auto**.

SEV ASID Count

Secure Encrypted Virtualization (SEV) Address Space IS (ASID) Count: This field specifies the maximum valid ASID, which affects the maximum system physical address space. 16TB of physical address space is available for systems that support 253 ASIDs, while 8TB of physical address space is available for systems that support 509 ASIDs. The options include 253 ASIDs, 509 ASIDs and **Auto**.

SEV-ES ASID Space Limit Control

Controls the SEV-ES Space Limit. The options include **Auto** and Manual.

SVM Mode

Enables or disables CPU virtualization. The options are **Enabled** and Disabled.

▶CPU Information

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

- CPU Version
- Number of Cores Running
- Processor Family
- Processor Model
- Microcode Patch Level
- L1 Instruction Cache (Size/Method)
- L1 Data Cache (Size/Method)
- L2 Data Cache (Size/Method)
- L3 Cache per Socket (Size/Method)

▶NB Configuration

Determinism Control

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

cTDP Control

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

IOMMU

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

ACS Enable

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

Package Power Limit Control

Options include Manual and **Auto**.

APBDIS

Options include 0, 1, and **Auto**.

DF Cstates

Options include Disabled, Enabled and **Auto**.

Preferred IO

Options include Manual and **Auto**.

▶Memory Configuration

Memory Clock

This setting allows you to select different memory clock speed. Options include **Auto** and supported frequencies.

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 and **Auto.**

Memory Interleaving Size

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

Chipset Interleaving

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

BankGroupSwap

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

DRAM Scrub Time

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

▶CPU1 Memory Information

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

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

▶PCIe/PCI/PnP Configuration

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

PCI Bus Driver Version

PCI Devices Common Settings:

Above 4G Decoding

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

SR-IOV Support

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

BME DMA Mitigation

Use this setting to re-enable the Bus Master Attribute that was disabled during PCI enumeration for PCI bridges after SMM is locked. The options are **Disabled** and Enabled.

PCIe ARI Support

The options are Disabled, Enabled, and **Auto**.

PCIe Ten Bit Tag Support

Enables PCIe ten bit tags for supported devices. The options are Disabled, Enabled, and **Auto**.

PCIe Spread Spectrum

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

Relaxed Ordering

Enables or disables PCIe device relaxed ordering. The options are Disabled and **Enabled**.

VGA Priority

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

NVMe Firmware Source

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

M.2 (AHCI) Firmware Source

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

CPU JSXB1 PCI-E 4.0 x16

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

PCI-E M.2-M1 OPROM

This setting enables or disables the PCIe M.2-M1 OPROM option. The options include Disabled or **Legacy**.

PCI-E M.2-M2 OPROM

This setting enables or disables the PCIe M.2-M2 OPROM option. The options include Disabled or **Legacy**.

PCI-E M.2-M3 OPROM

This setting enables or disables the PCIe M.2-M3 OPROM option. The options include Disabled or **Legacy**.

PCI-E M.2-M4 OPROM

This setting enables or disables the PCIe M.2-M4 OPROM option. The options include Disabled or **Legacy**.

AIOM OPROM

This setting enables or disables the listed AIOM OPROM option. The options are Disabled and **Legacy**.

Onboard LAN1 Option ROM

Use this setting to select which option ROM is to be loaded for onboard LAN1 on the system. The options include Disabled, **PXE**, and iSCSI.

Onboard NVMe1 Option ROM

Select which firmware function is to be loaded for onboard NVMe1. The options include Disabled and **Legacy**.

Onboard NVMe2 Option ROM

Select which firmware function is to be loaded for onboard NVMe2. The options include Disabled and **Legacy**.

Onboard NVMe3 Option ROM

Select which firmware function is to be loaded for onboard NVMe3. The options include Disabled and **Legacy**.

Onboard NVMe4 Option ROM

Select which firmware function is to be loaded for onboard NVMe4. The options include Disabled and **Legacy**.

Onboard NVMe5 Option ROM

Select which firmware function is to be loaded for onboard NVMe5. The options include Disabled and **Legacy**.

Onboard NVMe6 Option ROM

Select which firmware function is to be loaded for onboard NVMe6. The options include Disabled and **Legacy**.

Onboard NVMe7 Option ROM

Select which firmware function is to be loaded for onboard NVMe7. The options include Disabled and **Legacy**.

Onboard NVMe8 Option ROM

Select which firmware function is to be loaded for onboard NVMe8. The options include Disabled and **Legacy**.

Onboard Video Option ROM

Select Legacy to boot the system using a legacy video device installed on the motherboard. The options include Disabled and **Legacy**.

▶Network Stack Configuration

Network Stack

This setting allows you to Disable or **Enable** the UEFI Network Stack.

IPv4 PXE Support

This setting allows you to Disable or **Enable** IPv4 PXE boot support. If disabled, IPv4 PXE boot support will not be available.

IPv4 HTTP Support

This setting allows you to **Disable** or Enable IPv4 HTTP boot support. If disabled, IPv4 HTTP boot support will not be available.

IPv6 PXE Support

This setting allows you to Disable or **Enable** IPv6 PXE boot support. If disabled, IPv6 PXE boot support will not be available.

IPv6 HTTP Support

This setting allows you to **Disable** or Enable IPv6 HTTP boot support. If disabled, IPv6 HTTP boot support will not be available.

PXE Boot Wait Time

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

Media Detect Count

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

▶USB Configuration

Legacy USB Support

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

XHCI Hand-Off

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

Port 60/64 Emulation

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

▶SATA Configuration

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

SATA Information

SATA Enable

This item enables or disables the onboard SATA controller supported by the Intel PCH chip. The options are Disabled, Enabled, and **Auto**.

SATA Hotplug

This item enables or disables the onboard SATA controller's hot plug feature (PCH). The options are Disabled and **Enabled**.

▶SATA Information

This section displays information on the detected SATA devices:

- I-SATA0~1

- SATA0~13

▶KMIP Server Configuration

This feature allows the user to adjust KMIP Server network parameters.

KMIP Server IP address

KMIP TCP Port number

TimeZone

Client UserName

Client Password

KMS TLS Certifiicate

▶**CA Certificate**

▶**Client Certificate**

▶**Client Private Key**

The options are **Update**, Delete and Export.

▶HTTP Boot Configuration

HTTP Boot Policy

Sets the HTTP boot policy to Apply to all LANs, **Apply to each LAN**, or Boot Priority #1 instantly.

Instance of Priority 1

Default to 1.

Select IPv4 or IPv6

Choose to set the targeted LAN port to boot from **IPv4** or IPv4.

Boot Description

Must be filled out, otherwise the boot option for the URI will not be created. Length of description cannot exceed 75 characters.

Boot URI

This option is an input field used to enter a web or network address to point to the HTTP boot files. This supports the HTTP or HTTPS protocols only.

Instance of Priority 2

Default to 0.

▶Network Configuration

Configured

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

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

Enable DHCP

This feature allows the user to select the source of the IP address for this computer. If Disabled is selected, you will need to know the local IP address of this computer and enter it to the system manually in the field. If Enabled is selected, the system will search for a DHCP

(Dynamic Host Configuration Protocol) server in the network that it is attached to and request the next available IP address for this computer. The options are **Enabled** and Disabled.

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

Local IP Address

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

Local Net Mask

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

Local Gateway

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

Local DNS Servers

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

Save Changes and Exit

Click this to save the changes above.

▶iSCSI Configuration

iSCSI Initiator Name

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

▶Add an Attempt

▶Delete Attempts

▶Change Attempt Order

▶TLS Authenticate Configuration

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

▶Server CA Configuration

▶Enroll Certification

▶Enroll Certification using File

Use this feature to enroll certification from a file.

Certification GUID

Use this feature to input the certification GUID.

▶**Commit Changes and Exit**

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

▶**Discard Changes and Exit**

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

▶**Delete Certification**

Use this feature to delete certification. The options include **Disabled** and Enabled.

6.4 IPMI

This tab allows you to configure the following IPMI settings for the system.

```
            Aptio Setup Utility - Copyright (C) 2020 American Megatrends, Inc.
    Main  Advanced  IPMI  Event Logs  Security  Boot  Save & Exit

    BMC Firmware Revision                    9.00.05          │ Press <Enter> to change the
    IPMI STATUS                              Working          │ SEL event log configuration.


  ▶ System Event Log
  ▶ BMC Network Configuration








                                                              │ →←: Select Screen
                                                              │ ↑↓: Select Item
                                                              │ Enter: Select
                                                              │ +/-: Change Opt.
                                                              │ F1: General Help
                                                              │ F2: Previous Values
                                                              │ F3: Optimized Defaults
                                                              │ F4: Save & Exit
                                                              │ ESC: Exit

            Version 2.20.1275. Copyright (C) 2020 American Megatrends, Inc.
```

Use this feature to configure Intelligent Platform Management Interface (IPMI) settings.

BMC Firmware Revision

This item indicates the IPMI firmware revision used in your system.

IPMI STATUS

This item indicates the status of the IPMI firmware installed in your system.

▶System Event Log

Enabling/Disabling Options

SEL Components

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

Erasing Settings

Erase SEL

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

When SEL is Full

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

Note: After making changes on a setting, be sure to reboot the system for the changes to take effect.

▶BMC Network Configuration

BMC Network Configuration

Update IPMI LAN Configuration

Select Yes to enable BMC Network Configuration.

IPMI LAN Selection

This item displays the IPMI LAN setting. The default setting is **Failover**.

IPMI Network Link Status

This item displays the IPMI Network Link status. The default setting is **Shared LAN**.

Configuration Address Source

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

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

Station IP Address

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

Subnet Mask

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

Station MAC Address

This item displays the Station MAC address for this computer. Mac addresses are 6 two-digit hexadecimal numbers.

Gateway IP Address

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

VLAN

This item displays the virtual LAN settings. The options are Disable and Enable.

Configure IPv6 Support

This section displays configuration features for IPv6 support.

IPv6 Support

Use this feature to enable IPV6 support. The options are **Enabled** and Disabled.

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

Configuration Address Source

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

If the item "Configuration Address Source" above is set to Static, the following items will become available for configuration:

- Station IPv6 Address

- Prefix Length

- IPv6 Router1 IP Address

6.5 Event Logs

This tab allows the user to configure the following event logs settings for the system.

```
            Aptio Setup Utility - Copyright (C) 2020 American Megatrends, Inc.
    Main  Advanced  IPMI  Event Logs  Security  Boot  Save & Exit

▶ Change SMBIOS Event Log Settings                        Press <Enter> to change the
▶ View SMBIOS Event Log                                   SMBIOS Event Log
                                                          configuration.




                                                          ↔: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit

            Version 2.20.1275. Copyright (C) 2020 American Megatrends, Inc.
```

Enabling/Disabling Options

SMBIOS Event Log

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

Erasing Settings

Erase Event Log

Select Yes to erase all error events in the SMBIOS (System Management BIOS) log before an event logging is initialized at bootup. The options are **No,** Yes, Next reset, and Yes, Every reset.

When Log is Full

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

SMBIOS Event Log Standard Settings

Log System Boot Event

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

MECI (Multiple Event Count Increment)

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

METW (Multiple Event Count Time Window)

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

Note: Please reboot the system for these changes to take effect.

▶View SMBIOS Event Log

When Event Logging is on, this item allows the user to view the entries in the SMBIOS event log. The following categories are displayed:

Date/Time/Error Code/Severity

6.6 Security

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

```
            Aptio Setup Utility - Copyright (C) 2020 American Megatrends, Inc.
     Main  Advanced  IPMI  Event Logs  Security  Boot  Save & Exit

     Administrator Password                    Not Installed          Set Administrator Password
     User Password                             Not Installed

     Password Description

     If the Administrator's / User's password is set,
     then this only limits access to Setup and is
     asked for when entering Setup.
     Please set Administrator's password first in order
     to set User's password, if clear Administrator's
     password, the User's password will be cleared as well.

     The password length must be
     in the following range:
     Minimum length                            8
     Maximum length                            20

     Administrator Password                                           ++: Select Screen
     Password Check                            [Setup]                ↑↓: Select Item
                                                                      Enter: Select
                                                                      +/-: Change Opt.
   ▶ Secure Boot                                                      F1: General Help
                                                                      F2: Previous Values
                                                                      F3: Optimized Defaults
                                                                      F4: Save & Exit
                                                                      ESC: Exit

            Version 2.20.1275. Copyright (C) 2020 American Megatrends, Inc.
```

Administrator Password

Press Enter to create a new, or change an existing Administrator password. Note that if the Administrator Password is erased, the User Password will be cleared as well.

Password Check

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

▶Secure Boot

The Secure Boot function is active if Secure Boot is enabled. Platform K (PK) is enrolled and the system is in user mode. The mode change requires a platform reset. Options are Enabled and **Disabled**.

Secure Boot Mode

In Custom Mode, secure boot policy variables can be configured by a physically present user without full authentication. Options include Standard and **Custom**.

CSM Support

Options are **Enabled** and Disabled.

Key Management

Options are **Enabled** and Disabled.

Provision Factory Defaults

When Enabled, installs factory default secure boot keys after the platform reset and while the system is in setup mode. Options are Enabled and **Disabled**.

Restore Factory Keys

When Yes is selected, the system is forced to user mode and installs factory default secure boot key databases.

Enroll EFI Image

This allows the system to run in secure boot mode.

Restore DB Defaults

Restores DB variable to factory defaults.

6.7 Boot

Use this tab to configure Boot Settings:

```
         Aptio Setup Utility - Copyright (C) 2020 American Megatrends, Inc.
    Main  Advanced  IPMI  Event Logs  Security  Boot  Save & Exit

  Boot Configuration                                        Select boot mode Legacy/UEFI

  Boot Mode Select                     [Legacy]
  LEGACY to EFI Support                [Disabled]

  FIXED BOOT ORDER Priorities
  Boot Option #1                       [Hard Disk:WDC
                                       WUS721010ALE6L4]
  Boot Option #2                       [CD/DVD]
  Boot Option #3                       [USB Hard Disk]
  Boot Option #4                       [USB CD/DVD]
  Boot Option #5                       [USB Key]
  Boot Option #6                       [USB Floppy]
  Boot Option #7                       [USB Lan]
  Boot Option #8                       [Network:IBA GE Slot
                                       8100 v1584]

  ▶ Delete Boot Option                                      ↔: Select Screen
                                                            ↑↓: Select Item
  ▶ Hard Disk Drive BBS Priorities                          Enter: Select
  ▶ NETWORK Drive BBS Priorities                            +/-: Change Opt.
                                                            F1: General Help
                                                            F2: Previous Values
                                                            F3: Optimized Defaults
                                                            F4: Save & Exit
                                                            ESC: Exit

         Version 2.20.1275. Copyright (C) 2020 American Megatrends, Inc.
```

Boot Mode Select

Use this item to select the type of device that the system is going to boot from. The options are Legacy, UEFI, and **Dual**.

LEGACY to EFI Support

This option **Disables** or Enables the system to boot to an EFI OS after the boot failed from the legacy boot order.

FIXED BOOT ORDER Priorities

This option prioritizes the order of bootable devices that the system to boot from. Press <Enter> on each entry from top to bottom to select devices.

▶Delete Boot Option

Use this feature to remove a pre-defined boot device from which the system will boot during startup. The settings are [any pre-defined boot device] and UEFI: Built-in EFI shell.

▶UEFI Application Boot Priorities

This feature allows the user to specify which UEFI devices are boot devices.

- UEFI Boot Order #1

▶NETWORK Drive BBS Priorities

This feature allows the user to specify which UEFI network drive devices are boot devices.

6.8 Save & Exit

Select the Save & Exit tab to enter the Save & Exit BIOS Setup screen.

```
                Aptio Setup Utility - Copyright (C) 2020 American Megatrends, Inc.
       Main   Advanced   IPMI   Event Logs   Security   Boot   Save & Exit

       Save Options                                            Exit system setup without
       Discard Changes and Exit                                saving any changes.
       Save Changes and Reset
       Save Changes
       Discard Changes

       Default Options
       Restore Optimized Defaults
       Save as User Defaults
       Restore User Defaults

       Boot Override
       BRCM MBA Slot 4500 v214.0.233.0
       UEFI: Built-in EFI Shell
       Launch EFI Shell from filesystem device
                                                               ←→: Select Screen
                                                               ↑↓: Select Item
                                                               Enter: Select
                                                               +/-: Change Opt.
                                                               F1: General Help
                                                               F2: Previous Values
                                                               F3: Optimized Defaults
                                                               F4: Save & Exit
                                                               ESC: Exit

                Version 2.20.1275. Copyright (C) 2020 American Megatrends, Inc.
```

Save Options

Discard Changes and Exit

Select this option to quit the BIOS Setup without making any permanent changes to the system configuration, and reboot the computer. Select Discard Changes and Exit from the Exit menu and press <Enter>.

Save Changes and Reset

Select this option to reset the system after saving the changes.

Save Changes

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

Discard Changes

Select this option and press <Enter> to discard all the changes and return to the AMI BIOS utility Program.

Default Options

Restore Optimized Defaults

To set this feature, select Restore Optimized Defaults from the Save & Exit menu and press <Enter>. These are factory settings designed for maximum system stability, but not for maximum performance.

Save as User Defaults

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

Restore User Defaults

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

Boot Override Section

Listed on this section are other boot options for the system (i.e., Built-in EFI shell). Select an option and press <Enter>. Your system will boot to the selected boot option.

Appendix A

Standardized Warning Statements for AC Systems

About Standardized Warning Statements

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

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

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

Warning Definition

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

警告の定義

この警告サインは危険を意味します。

人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、

電気回路に含まれる危険性に注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危险。

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

此警告符號代表危險。

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

Warnung

WICHTIGE SICHERHEITSHINWEISE

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

BEWAHREN SIE DIESE HINWEISE GUT AUF.

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

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

GUARDE ESTAS INSTRUCCIONES.

IMPORTANTES INFORMATIONS DE SÉCURITÉ

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

CONSERVEZ CES INFORMATIONS.

תקנון הצהרות אזהרה

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

ا كَ ف حالة وُيِ أى تتسبب ف اصابة جسذ ةٌ هذا الزهز عٌ خطز !تحذ زٌ .

قبل أى تعول على أي هعذات،كِ على علن بالوخاطز ال اُجوة عي الذوائز

الكهزبائ ةٍ

وكِ على درا ةٌ بالووارسات النقائ ةٍ لو عٌ وقع أي حادث

استخذم رقن الب إى الو صُص ف هًا ةٌ كل تحذ زٌ للعثر 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 המוגן מפני הקצר החשמלי הוא לא יותר מ-250VDC, 20A

هذا المنتج يعتمد على معدات الحمايت مه الدوائرالقصيرة التي تم تثبيتها في المبنى

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

경고!

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

Waarschuwing

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

Power Disconnection Warning

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

電源切断の警告

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

警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

警告

在您打開機殼安裝或移除內部元件前,必須將系統完全斷電,並移除電源線。

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה מפני ניתוק חשמלי

אזהרה!

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

يجب فصم اننظاو من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد
انطاقت قبم
انصل إن امناطق انداخهيت نههيكم نتثبيج أو إزانت مكناث الجهاز

경고!

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

Waarschuwing

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

Equipment Installation

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

機器の設置

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

警告
只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告
只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה!

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

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

경고!

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

Waarschuwing

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

Restricted Area

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

アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

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

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

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

Warnung

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

¡Advertencia!

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

Attention

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

אזור עם גישה מוגבלת

אזהרה!

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

כלי אבטחה בלבד)מפתח, מנעול וכד.('

تخصيص هذه انحذة نترك بُها ف مناطق محظورة تم .

،مَكن اننصبل إن منطقت محظورة فقط من خلال استخذاو أداة خاصت

أو أ وس هُت أخري نلالأمما قفم ومفتاح

경고!

이 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 특수도구, 잠금 장치 및 키,

또는 기타 보안 수단을 통해서만 접근 제한 구역에 들어갈 수 있습니다.

Waarschuwing

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

Battery Handling

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

電池の取り扱い

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

警告

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

警告

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

Warnung

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

Attention

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

¡Advertencia!

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

אזהרה!

קיימת סכנת פיצוץ של הסוללה במידה והוחלפה בדרך לא תקינה. יש להחליף

את הסוללה בסוג התואם מחברת יצרן מומלצת.

סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر من انفجار في حالة اسحبذال البطارية بطريقة غير صحيحة فعليل

اسحبذال البطارية

فقط بنفس النع أو ما يعادلها مما أوصث به الشرمة المصنعة

جخلص من البطاريات المسحعملة وفقا لحعليمات الشرمة الصانعة

경고!

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

Waarschuwing

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

Redundant Power Supplies

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

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

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

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

Warnung

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

¡Advertencia!

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

Attention

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

אם קיים יותר מספק אחד
אזהרה!
ליחדה יש יותר מחיבור אחד של ספק. יש להסיר את כל החיבורים על מנת לרוקן
את היחידה.

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة .
يجب إزالة كافة الاتصالات لعسل الوحدة عن الكهرباء

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

Waarschuwing

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

Backplane Voltage

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

バックプレーンの電圧

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

修理する際には注意ください。

警告
当系统正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告
當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

Warnung

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

¡Advertencia!

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

Attention

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

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

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

경고!

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

Waarschuwing

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

Comply with Local and National Electrical Codes

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

地方および国の電気規格に準拠

機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告

设备安装必须符合本地与本国电气法规。

警告

設備安裝必須符合本地與本國電氣法規。

Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

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

Attention

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

תיאום חוקי החשמל הארצי

אזהרה!

התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تركيب المعدات الكهربائية يجب أن يمتثل للقاويه المحلية والطبية المتعلقة بالكهرباء

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

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

Product Disposal

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

製品の廃棄

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

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

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

¡Advertencia!

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

Attention

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

סילוק המוצר

אזהרה!

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

التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القانين واللائح الطنية عند

경고!

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

Waarschuwing

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

Hot Swap Fan Warning

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

ファン・ホットスワップの警告

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

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

警告
危险的可移动性零件。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 והמאווררים עדיין עובדים. יש להרחיק למרחק בטוח את האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר

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

경고!

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

Waarschuwing

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

Power Cable and AC Adapter

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

電源コードとACアダプター

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

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

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

כבלים חשמליים ומתאמי AC

אזהרה!

כאשר מתקינים את המוצר, שי להשתמש בכבלים, ספקים ומתאמים אשר נרכשו או נקבעו AC לצורך התקנתו. אואמתוה לצורל הרחא חרא ומפקס בלבד Supermicro ."י עאתו מאשר רכבמ צראות וקר אלא, רחא ילמשח רצומ לכ רובע UL/CSA (UL/CSA).

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

전원 케이블 및 AC 어댑터

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

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

Stroomkabel en AC-Adapter

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

Appendix B

System Specifications

Processors (per node)

Single AMD EPYC™ 7003/7002 Series processors in Socket SP3 type sockets

Note: Please refer to the product page on our website for updates to supported processors.

Chipset

System on Chip

BIOS

32MB SPI AMI BIOS® SM Flash UEFI BIOS

Memory

Each node supports up to 2TB Registered ECC DDR4 3200MHz SDRAM

Note: See the memory section in Chapter 3 for details and our website for updates to supported memory.

SATA Controller

On-chip (System on Chip) controller

Drive Bays (per node)

Two SATA/NVMe + six SATA 3.5" or 2.5" drives per node

PCI Expansion Slots (per node)

1x PCIe 4.0 x16 slot
1x PCIe 4.0 x8
1x AIOM networking slot (PCIe 4.0 x16)
M.2 Interface: 4x PCIe 4.0 x4

Motherboard (per node)

One H12SSFR-AN6 motherboard, proprietary form factor (18.73" (L) x 8.54" (W) (475.74 mm x 216.92 mm))

Chassis

CSE-F424AS3-R2K20BP; 4U Rackmount,(WxHxD) 17.63 x 6.96 x 29 in. (448 x 177 x 737 mm)

System Cooling (per node)

Two 8-cm PWM fans

Power Supplies (four per system)

Model: PWS-2K20A-1R, 4x Titanium Level Power Supplies (80 Plus)
AC Input Voltages: 100-240 VAC
Rated Input Current: 4.2A (100V) to 1.8A (240V)
Rated Input Frequency: 50-60 Hz
Rated Output Power: 2200W
Rated Output Voltages: +5V (18A), +3.3V (15A), +12V (29A), +5Vsb (3A), -12V (0.5A)

Operating Environment

Operating Temperature: 0º to 35º C (50º to 95º F)
Non-operating Temperature: -40º to 60º C (-40º to 140º F)
Operating Relative Humidity: 8% to 90% (non-condensing)
Non-operating Relative Humidity: 5 to 95% (non-condensing)

Regulatory Compliance

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

Applied Directives, Standards

EMC/EMI: 2014/30/EU (EMC Directive)
FCC Part 15
ICES-003
VCCI-CISPR 32
AS/NZS CISPR 32
EN/BS EN55032
EN/BS EN55035
EN/BS 61000-3-2
EN/BS 61000-3-3
EN/BS 61000-4-2
EN/BS 61000-4-3
EN/BS 61000-4-4
EN/BS 61000-4-5
EN/BS 61000-4-6
EN/BS 61000-4-8
EN/BS 61000-4-11

Green Environment:
2011/65/EU (RoHS Directive)
EC 1907/2006 (REACH)
2012/19/EU (WEEE Directive)

Product Safety: 2014/35/EU (LVD Directive)
UL/CSA, 62368-1 (USA and Canada)
IEC/EN 62368-1

Perchlorate Warning

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

Appendix C

UEFI BIOS Recovery

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

C.1 Overview

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

C.2 Recovering the UEFI BIOS Image

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

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

Note 2: When the BIOS recovery block crashes, you will need to follow the procedures to make a Returned Merchandise Authorization (RMA) request. (For a RMA request, please see section 3.5 for more information). Also, you may use the Supermicro Update Manager (SUM) Out-of-Band (OOB) (https://www.supermicro.com.tw/products/nfo/SMS_SUM.cfm) to reflash the BIOS.

C.3 Recovering the Main BIOS Block with a USB Device

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

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

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

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

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

2. Insert the USB device that contains the new BIOS image ("Super.ROM") into your USB drive and reset the system when the following screen appears.

3. After locating the healthy BIOS binary image, the system will enter the BIOS Recovery menu as shown below.
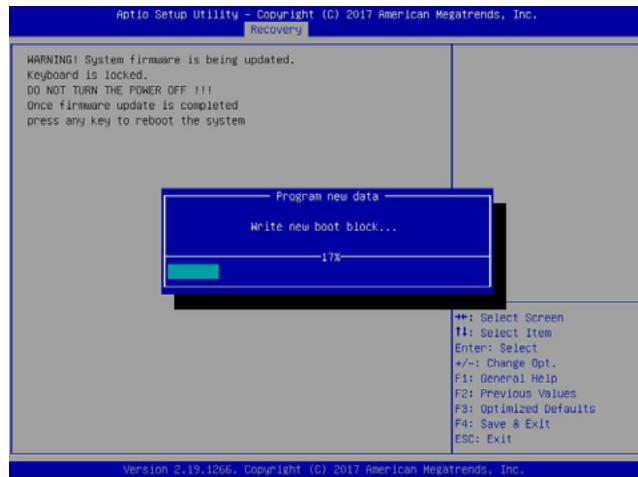
Note: At this point, you may decide if you want to start the BIOS recovery. If you decide to proceed with BIOS recovery, follow the procedures below.

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

Note: *Do not interrupt the BIOS flashing process until it has completed*.
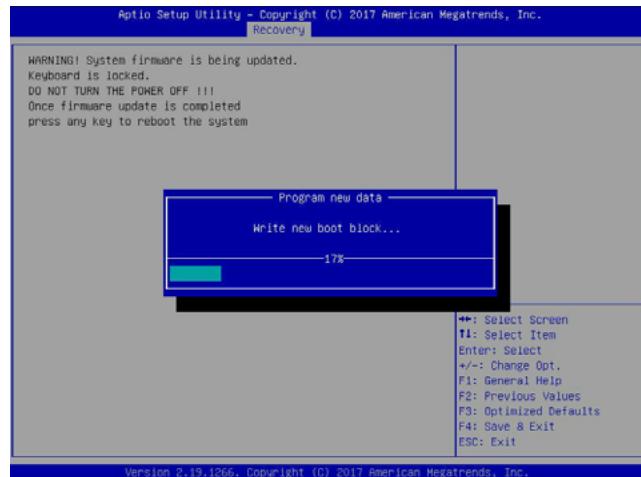
5. After the BIOS recovery process is complete, press any key to reboot the system.
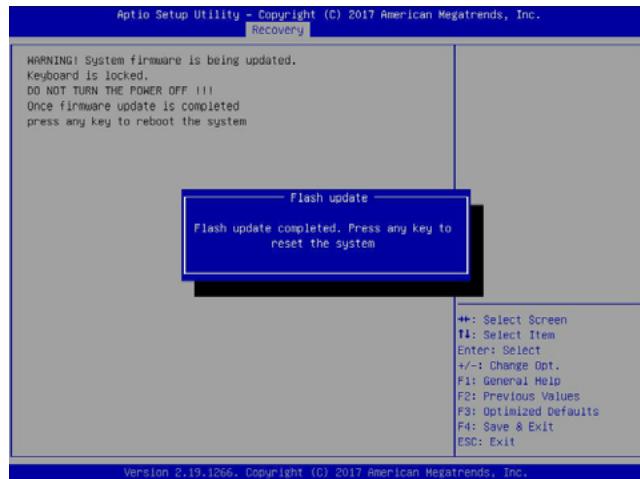
6. Using a different system, extract the BIOS package into a USB flash drive.

7. Press <Del> continuously during system boot to enter the BIOS Setup utility. From the top of the tool bar, select Boot to enter the submenu. From the submenu list, select Boot Option #1 as shown below. Then, set Boot Option #1 to [UEFI AP:UEFI: Built-in EFI Shell]. Press <F4> to save the settings and exit the BIOS Setup utility.
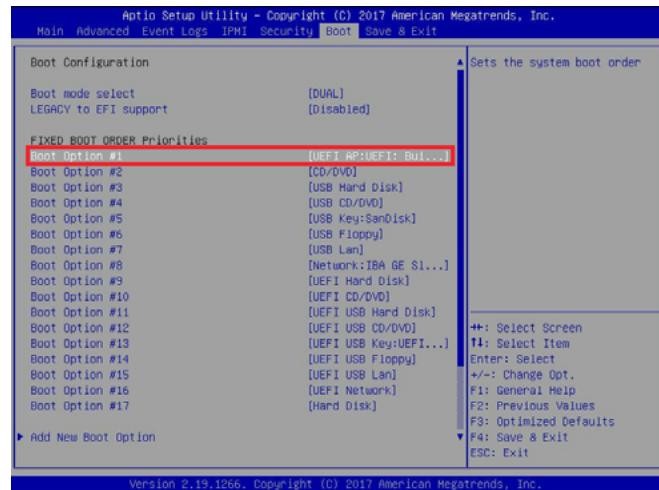
8. When the UEFI Shell prompt appears, type fs# to change the device directory path. Go to the directory that contains the BIOS package you extracted earlier from Step 6. Enter flash.nsh BIOSname.### at the prompt to start the BIOS update process.
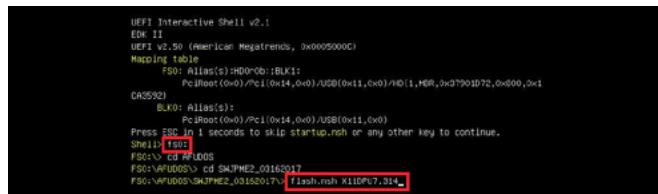
Note: *Do not interrupt this process* until the BIOS flashing is complete.
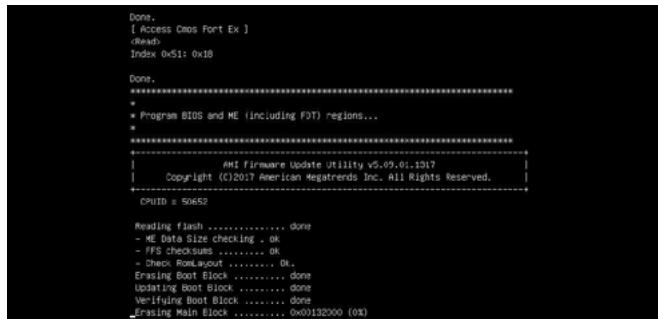
9. The screen above indicates that the BIOS update process is complete. When you see the screen above, unplug the AC power cable from the power supply, clear CMOS, and plug the AC power cable in the power supply again to power on the system.

10. Press <Del> continuously to enter the BIOS Setup utility.

11. Press <F3> to load the default settings.

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

Appendix C

BSMI Chinese Safety Warnings

限用物質含有情況標示聲明書
Declaration of the Presence Condition of the Restricted Substances Marking

設備名稱：伺服器/ Server
Equipment name

型號（型式）： F424R-Q22H12   （系列型號: F424-FT, F424-22 , AS -F2014S-RNTR ）

Type designation (Type)

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

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

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

備考2.〝○〞係指該項限用物質之百分比含量未超出百分比含量基準值。

Note 2："○" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考3.〝－〞係指該項限用物質為排除項目。

Note 3：The "−" indicates that the restricted substance corresponds to the exemption.

輸入額定:

100-127V ~, 60-50Hz, 12-11A (each input)

200-240V ~, 60-50Hz, 10-9.8A (each input)

*使用者不能任意拆除或替換內部配備

*報驗義務人之姓名或名稱: 美超微電腦股份有限公司

警告使用者：

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