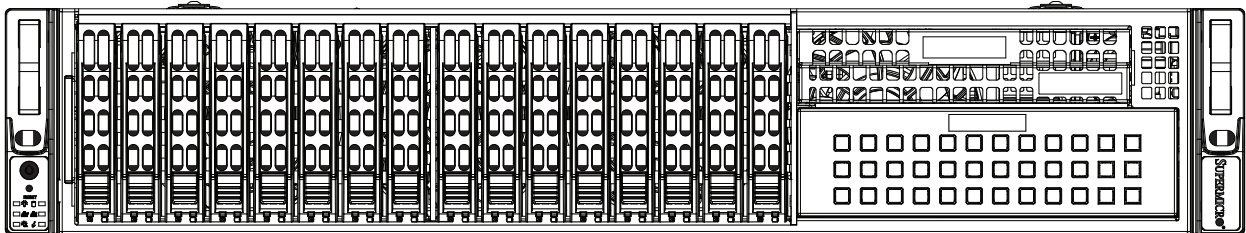




A+ Server

AS-2113S-WTRT



USER'S MANUAL

Revision 1.0b

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# Preface

## About this Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SuperServer AS-2113S-WTRT. Installation and maintenance should be performed by experienced technicians only.

Please refer to the AS-2113S-WTRT server specifications page on our website for updates on supported memory, processors and operating systems (<http://www.supermicro.com>).

## Notes

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

- Supermicro product manuals: <http://www.supermicro.com/support/manuals/>
- Product drivers and utilities: [www.supermicro.com/wftp/driver/AMD/SP3](http://www.supermicro.com/wftp/driver/AMD/SP3)
- Product safety info: [http://www.supermicro.com/about/policies/safety\\_information.cfm](http://www.supermicro.com/about/policies/safety_information.cfm)

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

## 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-2113S-WTRT. The AS-2113S-WTRT is based on the H11SSW-NT motherboard and the SC213TS-R1K23WBP chassis.

In addition to the motherboard and chassis, several important parts that are included with the system are listed below.

Main Parts List		
Description	Part Number	Quantity
Passive Heatsink for 2U System	SNK-P0063P	1
8-cm System Fans	FAN-0181L4	3
Backplane	BPN-SAS3-213A-N8	1
Hot-swap Hard Drive Trays	MCP-220-00047-0B	16
Air Shroud	MCP-310-21605-0B	1
Riser Card (right side WIO riser with two PCI-E x8 slots)	RSC-R2UW-2E8R	1
Riser Card (right side riser with two PCI-E x16 slots)	RSC-R2UW-2E8E16+	1
Rack Rail Mounting Kit	MCP-290-00053-0N	1

### 1.2 Unpacking the System

Inspect the box the SuperServer AS-2113S-WTRT was shipped in and note if it was damaged in any way. If any equipment appears damaged, please file a damage claim with the carrier who delivered it.

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

## 1.3 System Features

The following table provides you with an overview of the main features of the AS-2113S-WTRT. Please refer to Appendix B for additional specifications.

<b>System Features</b>
<b>Motherboard</b>
H11SSW-NT
<b>Chassis</b>
SC213TS-R1K23WBP
<b>CPU</b>
Single EPYC 7000 series processor
<b>Socket Type</b>
SP3 socket
<b>Memory</b>
Supports up to 2 TB of ECC DDR4-2666 RDIMM/LRDIMM/3DS/NVDIMM memory in 16 DIMM slots
<b>Chipset</b>
SoC chipset
<b>Expansion Slots</b>
One PCI-E 3.0 x16 (FHHL) slot Two PCI-E 3.0 x8 (FHHL) slots Two PCI-E 3.0 x8 (LP) slots M.2 Interface: 2 PCI-E 3.0 x2 M.2 Form Factor: 2280, 22110 M.2 Key: M-key
<b>Hard Drives</b>
Sixteen 2.5" hot-swap hard drive carriers for SATA drives (six drives may be NVMe with optional cables)
<b>Power</b>
1200W redundant power supplies, Titanium Level (96%) (Full redundancy based on configuration and application load)
<b>Form Factor</b>
2U rackmount
<b>Dimensions</b>
(WxHxD) 17.2 x 3.5 x 24.8 in. (437 x 89 x 630 mm)

## 1.4 Server Chassis Features

### Control Panel

There are two buttons located on the front of the chassis: a power on/off button and a UID button. In addition there are five LEDs. The locations of these buttons and LEDs on the control panel are described below. See Chapter 4 for details on the control panel connections.

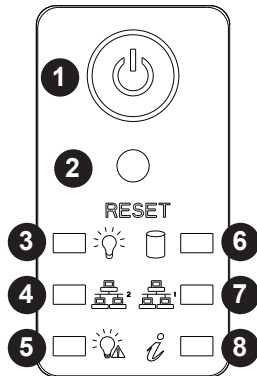


Figure 1-1. Control Panel View

Control Panel Features		
Item	Feature	Description
1	Power Button	The main power switch is used to apply or remove power to the server. Turning off system power with this button removes the main power but keeps standby power supplied to the system (you must unplug the AC power cord before servicing).
2	Reset Button	Resets (reboots) the system
3	Power LED	Indicates power is being supplied to the system's power supply units. This LED should normally be illuminated when the system is operating.
4	NIC2 LED	Indicates network activity on LAN2 when flashing.
5	Power Fail LED	Indicates a power supply fan failure. An alarm will also sound, which can be turned off with the reset switch on the back of the power supply.
6	HDD LED	Indicates hard drive activity when flashing.
7	NIC1 LED	Indicates network activity on LAN1 when flashing.
8	Universal Information LED	See the following table for the status shown by this LED.

Universal Information LED	
Status	Description
Continuously on and red	An overheat condition has occurred. (This may be caused by cable congestion.)
Blinking red (1 Hz)	Fan failure: check for an inoperative fan.
Blinking red (0.25 Hz)	Power failure: check for an inoperative power supply.
Solid blue	UID has been activated locally to locate the server in a rack environment.
Blinking blue (300 msec)	UID has been activated using IPMI to locate the server in a rack environment.

## Front Features

The SC213TS-R1K23WBP is a 2U chassis. See the illustration below for the features included on the front of the chassis.

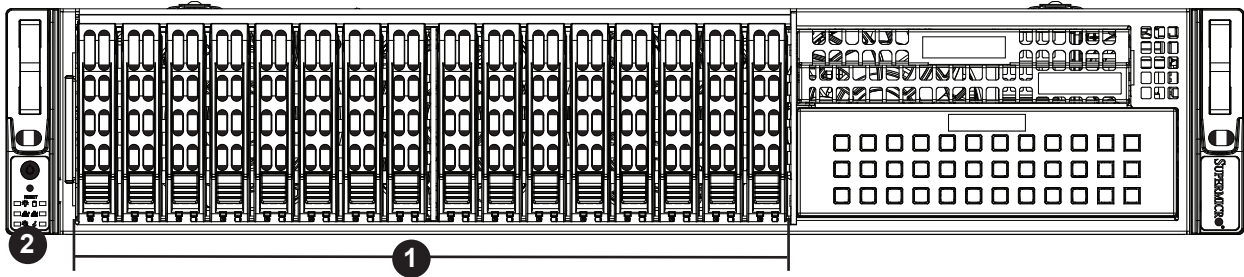


Figure 1-2. Chassis Front View

Front Chassis Features		
Item	Feature	Description
1	Drive Bays	Drive bays for 2.5" hot-swap drives
2	Control Panel	Server control panel. See the previous page for details.

## Rear Features

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

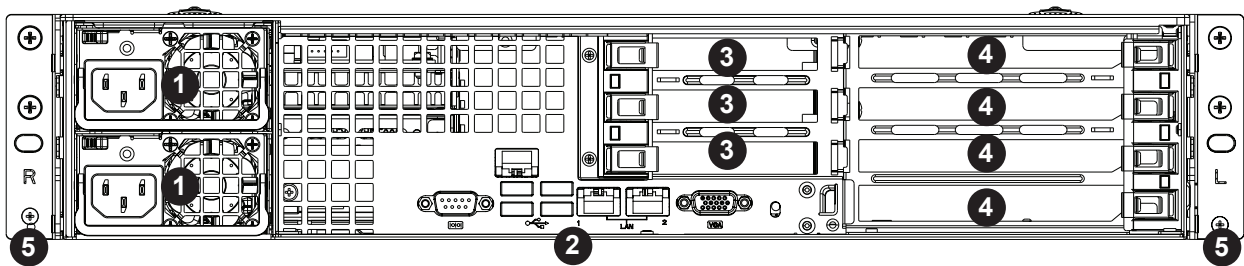


Figure 1-3. Chassis Rear View

Rear Chassis Features		
Item	Feature	Description
1	Power Supply	Redundant power supply modules
2	I/O Backpanel	Rear I/O ports (see Section 4.3)
3	Expansion Card Slot	Slot for low-profile expansion card (requires pre-installed riser card)
4	Expansion Card Slot	Slot for FHHL (full-height, half length) expansion card (requires pre-installed riser card)
5	Rack Ear Brackets	Secures the server chassis to the rack

## 1.5 Motherboard Layout

Below is a layout of the H11SSW-NT with jumper, connector and LED locations shown. See the table on the following page for descriptions. For detailed descriptions, pinout information and jumper settings, refer to Chapter 4.

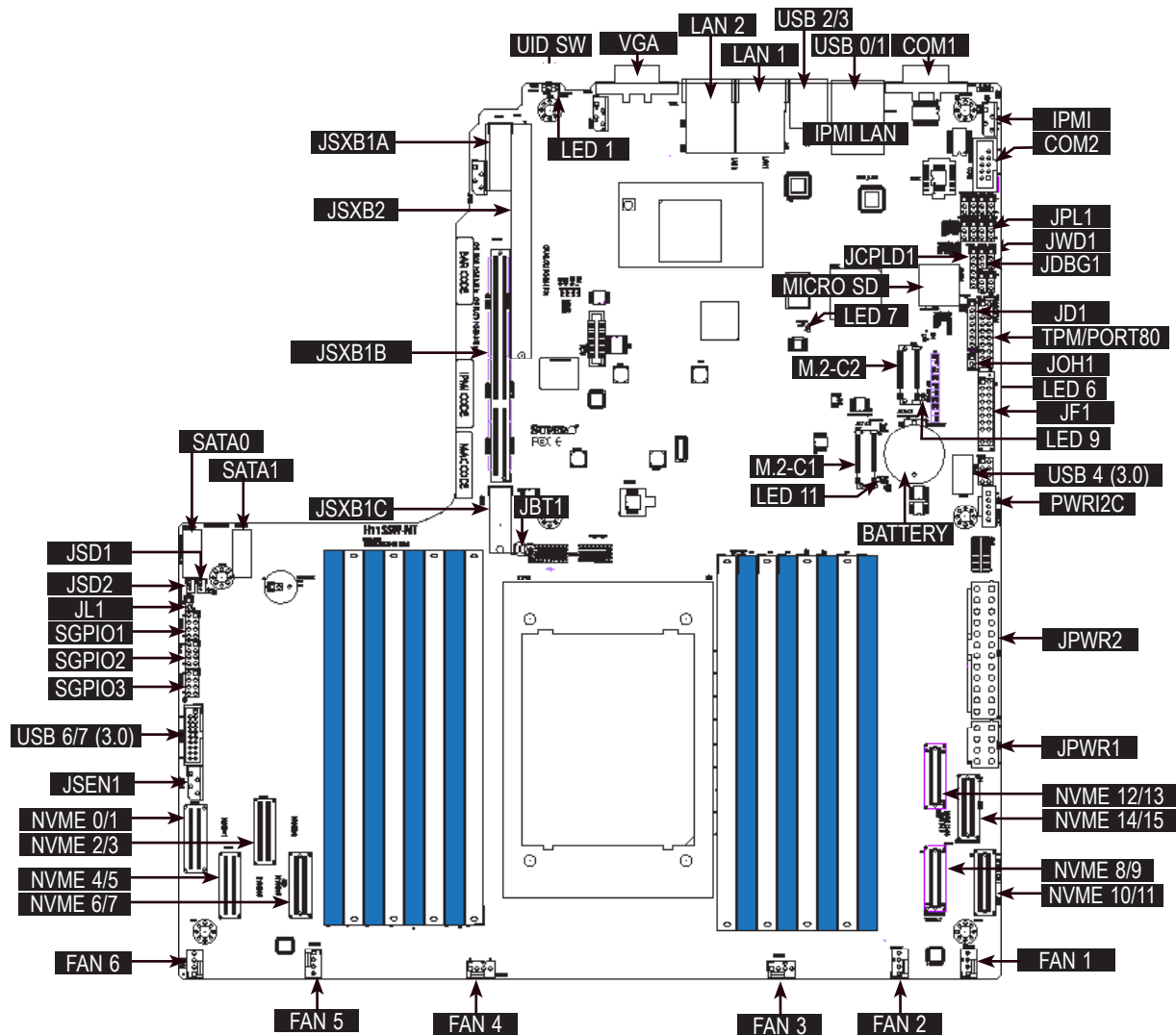


Figure 1-4. Motherboard Layout



## Quick Reference Table

Jumper	Description	Default Setting
UID SW	Unit ID switch (push-button toggle switch ON/OFF)	Off
JBT1	Clear CMOS	Open (Normal)
JWD1	Watch Dog control	Pins 1-2 (Reset)
JDBG1	Debug Mode	Pins 1-2 (Normal)
JPL1	LAN Enable/Disable	Pins 1-2 (Enabled)

LED	Description	Status
LED1	UID LED	Blue: UID Activated
LED6	Power LED	On: Power On
LED7	BMC Heartbeat	Blinking: BMC Normal/Working
LED9	M.2-C2 Error	On: Detected Error on M.2-C2
LED11	M.2-C1 Error	On: Detected Error on M.2-C1

Connector	Description
Battery (BT1)	Onboard CMOS battery
SGPIO1, SGPIO2, SGPIO3	General Purpose Serial I/O ports 1/2/3
COM 1, COM 2	Rear panel COM port #1, Header for COM port #2
JCPLD1	Complex-Programmable Logical Device (CPLD) header
FAN 1~6	System cooling fan headers
Micro SD	Micro SD Port
JF1	Front control panel
JSEN1	Intel sensor header
JSD1, JSD2	SATA DOM power connector
JTPM1	Trusted Platform Module (TPM)/Port 80 connector
SATA0, SATA1	Internal SATA Ports
JL1	Chassis intrusion header
JOH1	Chassis overheat header
USB 0/1 (3.0)	Back panel USB 3.0 ports (USB 0/1)
USB 2/3 (3.0)	Back panel USB 3.0 ports (USB 2/3)
USB 4 (3.0)	USB 3.0 type A port (USB 4)
USB 6/7 (3.0)	Internal USB 3.0 header (USB 6/7)
IPMI	IPMI Header
JSXB1A, JSXB2, JSXB1C	Riser slots
CPU SLOT1	Expansion SLOT1
JPWR2	24-pin ATX power supply connector
JPWR1	12V 8-pin ATX CPU power connector
M.2-C1, M.2-C2	M.2 Slots
PWR12C	Power supply SMBus I2C header

Connector	Description
LAN1, LAN2	Back panel LAN1, LAN2 connectors
VGA	Back panel VGA port
NVME 0~15	NVMe slots 1~15

**Note:** Jumpers, connectors, switches, and LED indicators that are not described in the preceding table are for manufacturing testing purposes only.

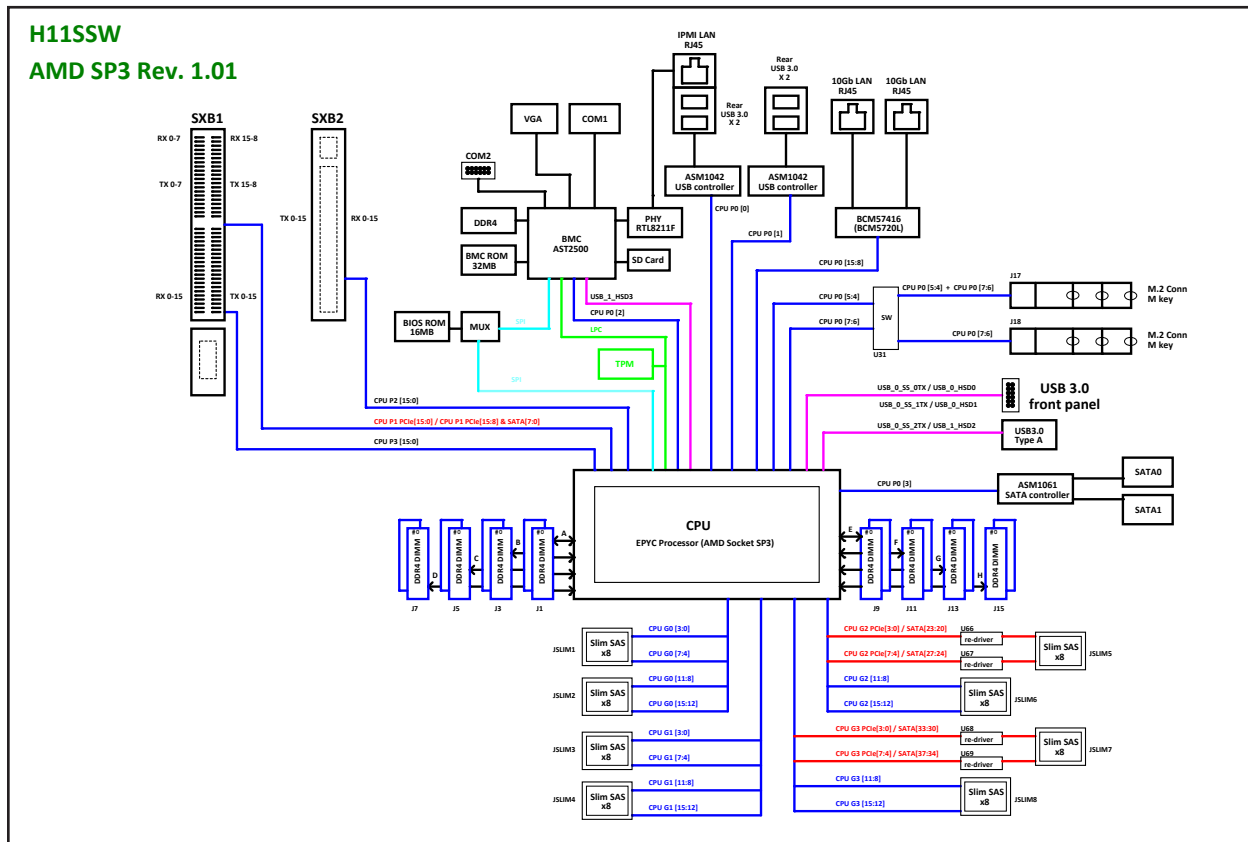


Figure 1-5. SoC Chipset: System Block Diagram

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

## **Rack Mounting Considerations**

### ***Ambient Operating Temperature***

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

### ***Airflow***

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

### ***Mechanical Loading***

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

### ***Circuit Overloading***

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

### ***Reliable Ground***

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



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

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

## 2.3 Installing the Rails

This section provides information on installing the SC213 chassis into a rack unit with the rails provided. There are a variety of rack units on the market, which may mean that the assembly procedure will differ slightly from the instructions provided. You should also refer to the installation instructions that came with the rack unit you are using.

**Note:** This rail will fit a rack between 26.5" and 59" deep.

### Identifying the Sections of the Rack Rails

The chassis package includes two rack rail assemblies in the rack mounting kit. Each assembly consists of two sections: a fixed inner chassis rail that secures directly to the chassis, and an outer rack rail that secures to the rack (Figure 2-1).

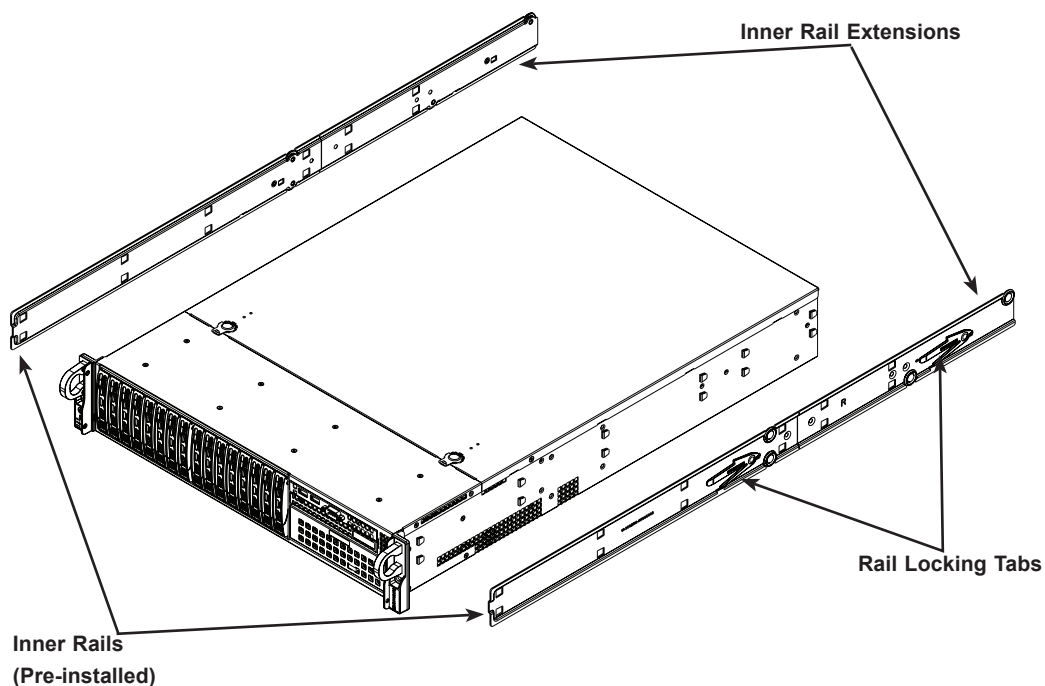


Figure 2-1. Identifying the Sections of the Rails



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



**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.

## Locking Tabs

Both inner chassis rails have a locking tab. The tabs lock the chassis into place when installed and pushed fully into the rack. These tabs also lock the server in place when fully extended from the rack. This prevents the server from coming completely out of the rack when you pull it out for servicing. See Figure 2-2 for details.

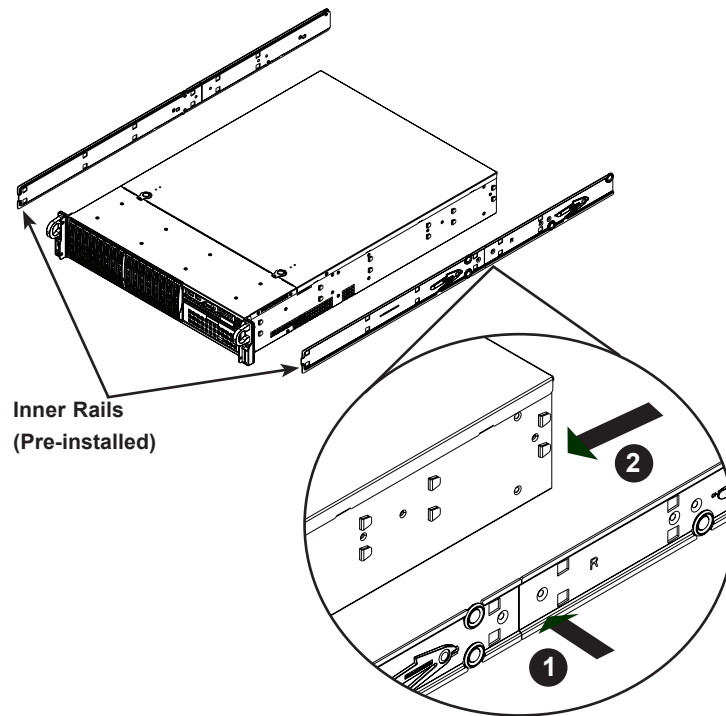


Figure 2-2. Inner Rail Locking Tabs



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

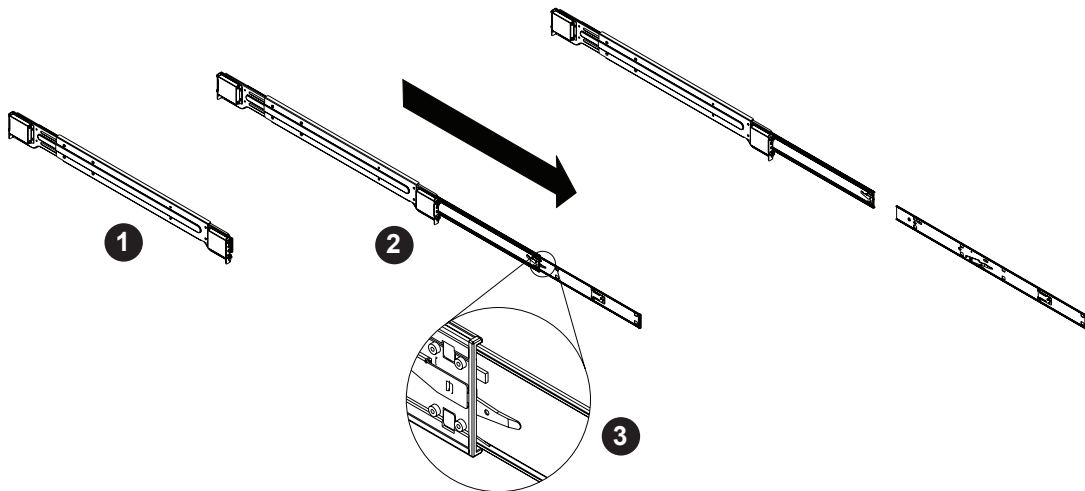


## The Inner Rail Extensions

The inner rails are pre-attached and do not interfere with normal use of the chassis if you decide not to use a server rack. When using a rack, attach the inner rail extension to the inner rail to stabilize the chassis within the rack. If you are not using a rack, you do not have to install the inner rail extensions.

### ***Installing the Inner Rail Extensions (Figure 2-3)***

1. Place the inner rail extensions on the side of the chassis aligning the hooks of the chassis with the rail extension holes. Make sure the extension faces "outward" just like the pre-attached inner rail.
2. Slide the extension toward the front of the chassis.
3. Secure the rail extension to the chassis with the screws provided. Repeat steps 1 through 3 above for the other inner rail extension.



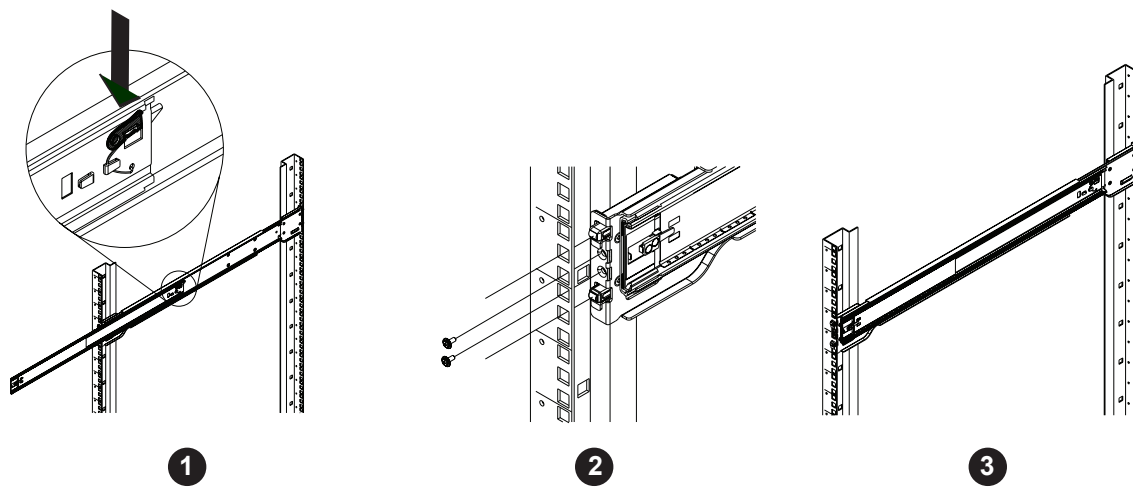
**Figure 2-3. Extending and Releasing the Inner Rails**

## Outer Rack Rails

Outer rails attach to the server rack and hold the chassis in place. The SC213 comes equipped with quick-release outer rails which allow the chassis to be easily extended or removed from the rack.

### *Identifying the Outer Rails (Figure 2-4)*

1. Identify the two outer rack rails.
2. Pull out the end of the outer rail until it is fully extended as illustrated above.
3. Note the location of the release tab which will allow the outer rail extension to be separated from the outer rail. Do not release it at this time. If released, simply depress the release tab and slide the outer rail extension back into the outer rail.
4. Repeat steps 1-3 for the second outer rail.



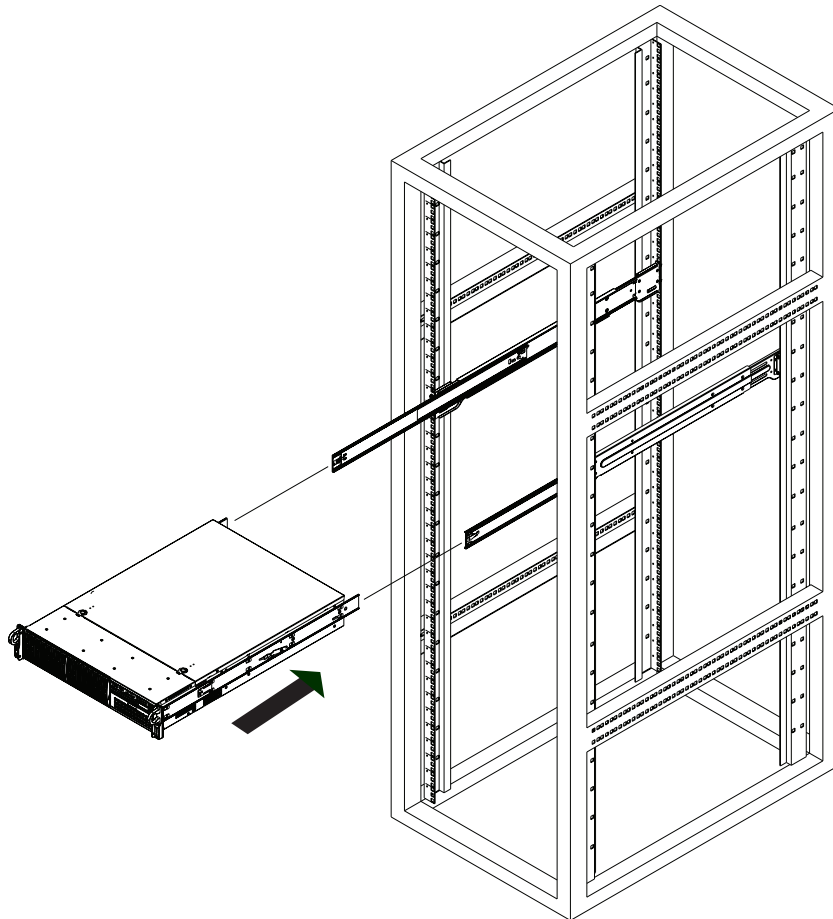
**Figure 2-4. Extending and Releasing the Outer Rails**

## Attaching the Outer Rack Rails to the Rack

The outer rails attach to the rack and allow easy access to the chassis.

### *Installing the Outer Rails to the Rack (Figures 2-5 and 2-6)*

1. Press the button to retract the outer rail extensions.
2. Hang the hooks of the front portion of the outer rail onto the slots of the rack.
3. Hang the hooks of the rear portion of the outer rail onto the slots of the rack.
4. Use the thumbscrews to secure the rear of the outer rail to the rear of the rack.
5. Repeat steps 1-3 for the remaining outer rail.



**Figure 2-5. Installing into a Rack**

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

## Chapter 3

# Maintenance and Component Installation

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

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

### 3.1 Removing Power

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

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

### 3.2 Accessing the System

The SC213TS-R1K23WBP features a removable top cover, which allows easy access to the inside of the chassis.

#### ***Removing the Top Cover***

1. Begin by removing power from the system as described in Section 3.1.
2. Simultaneously press down on the two release buttons on the chassis cover.
3. Slide the cover toward the rear of the chassis.
4. Lift the cover off the chassis.

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

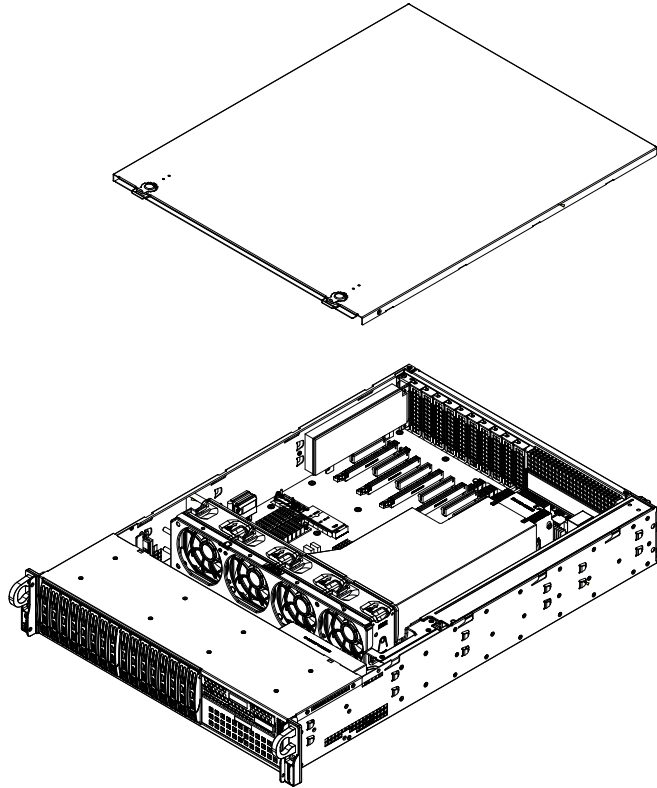


Figure 3-1. Accessing the System

## 3.3 Motherboard Components

### Processor Installation

The processor (CPU) and heatsink should be assembled together first to form the processor heatsink module (PHM), and then install the PHM into the CPU socket.

**Caution:** Use industry-standard anti-static equipment, such as gloves or wrist strap, and follow precautions to avoid damage caused by ESD. Do not touch the underside of the CPU. Improper installation or socket misalignment can cause serious damage to the CPU or socket which may require manufacturer repairs.

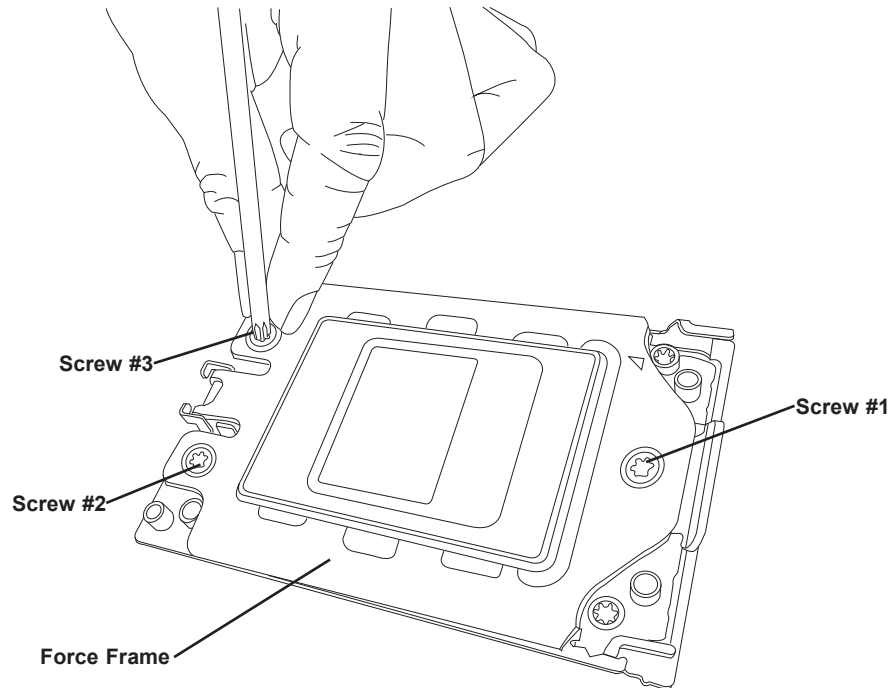
**Notes:**

- All power should be off, as described in Section 3.1, before installing the processors.
- When handling the processor package, avoid placing direct pressure on the label area of the CPU or socket.
- Check that the plastic socket dust cover is in place and none of the socket pins are bent—otherwise, contact your retailer.
- Refer to the Supermicro website for updates on CPU support.
- Graphics in this manual are for illustration. Your components may look slightly different.

### ***Installing the Processor***

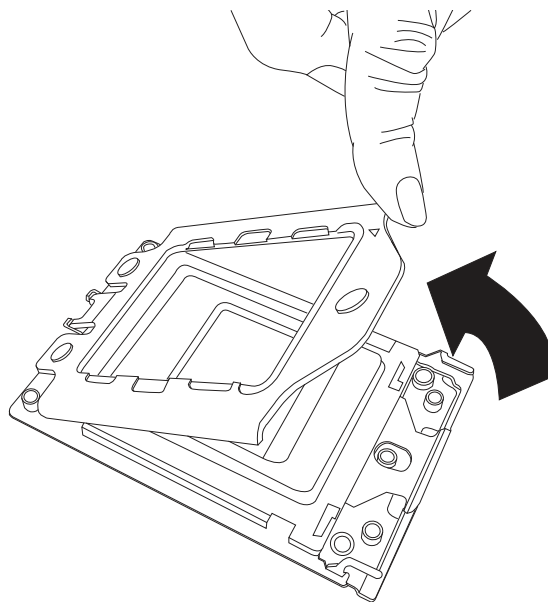
Begin by removing power from the system as described in Section 3.1.

1. Use a Torx T20 driver to loosen the screws holding down Force Frame in the sequence of 3-2-1. The screws are numbered on the Force Frame next to each screw hole.



**Figure 3-2. Removing the Processor Force Frame**

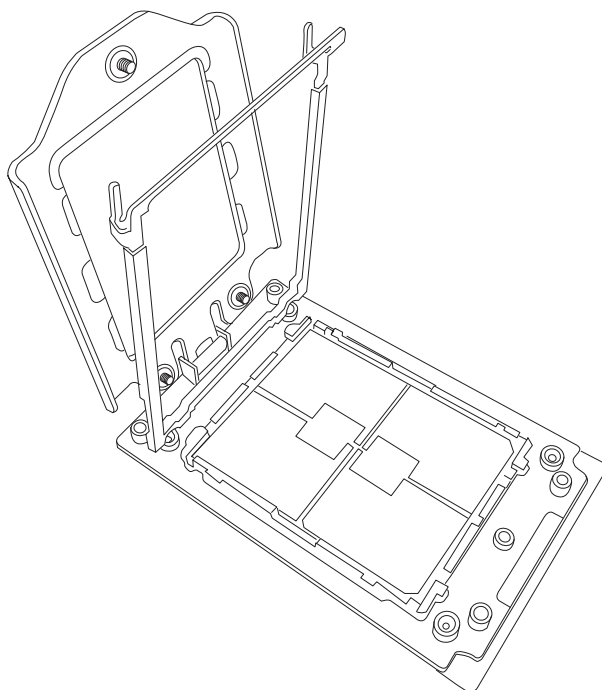
2. The spring-loaded Force Frame will raise up after the last screw (#1) is removed. Gently allow it to lift up to its stopping position.



**Figure 3-3. Raising the Force Frame**

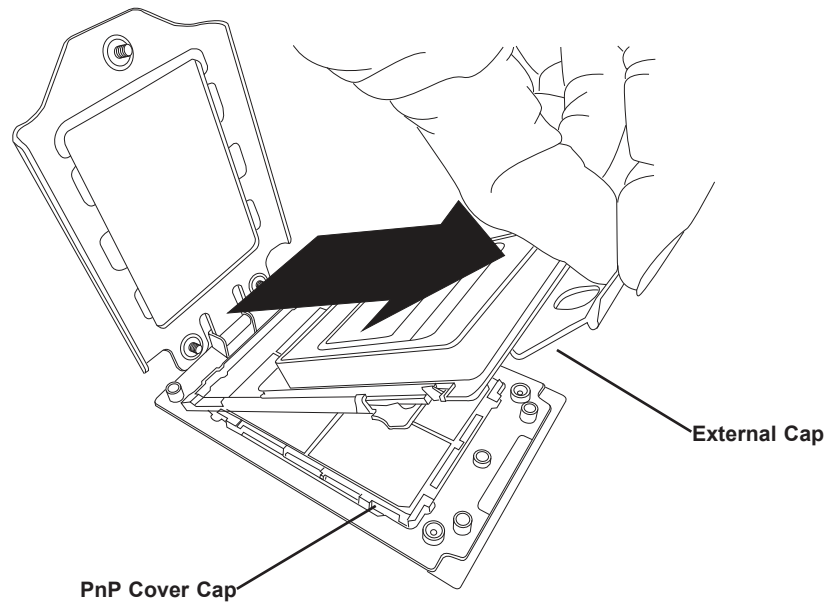
3. Lift the Rail Frame up by gripping the lift tabs near the front end of the rail frame. While keeping a secure grip of the Rail Frame, lift it to a position so you can do the next step of removing the External Cap.

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



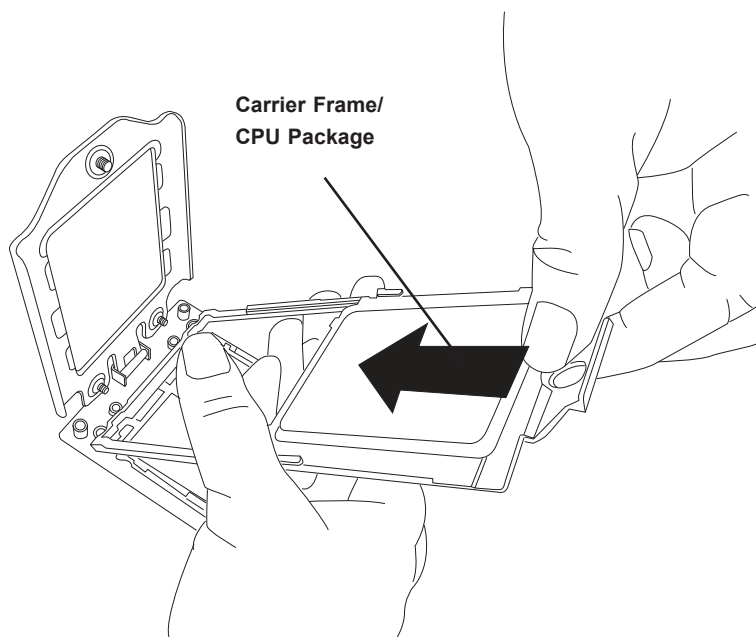
**Figure 3-4. Lifting the Rail Frame**

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



**Figure 3-5. Removing the External Cap**

5. The CPU Package is shipped from the factory with the blue Carrier Frame pre-assembled. Grip the handle of the Carrier Frame/CPU Package assembly from its shipping tray, and while gripping the handle, align the flanges of the Carrier Frame onto the rails of the Rail Frame so its pins will be at the bottom when the Rail Frame is lowered later.
6. Slide the Carrier Frame/CPU Package downwards to the bottom of the Rail Frame. Ensure the flanges are secure on the rails as you lower it downwards.



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

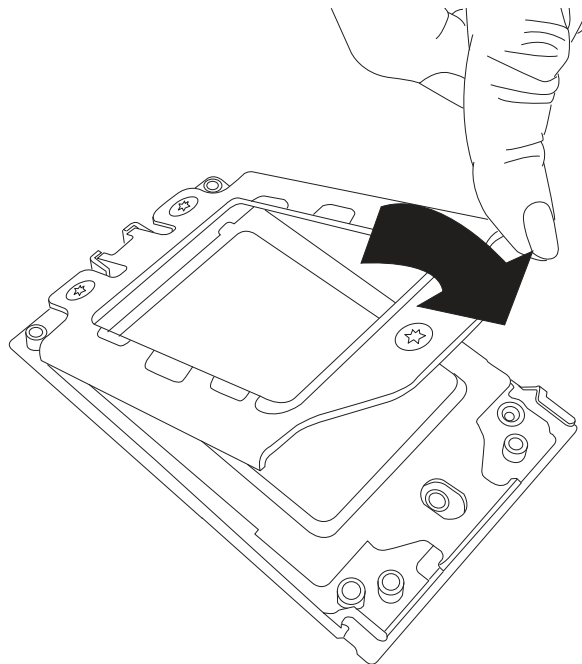


**Note:** You can only install the CPU inside the socket in one direction with the handle at the top. Make sure that it is properly inserted into the CPU socket before closing the Rail Frame plate. If it doesn't close properly, do not force it as it may damage your CPU. Instead, open the Rail Frame plate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

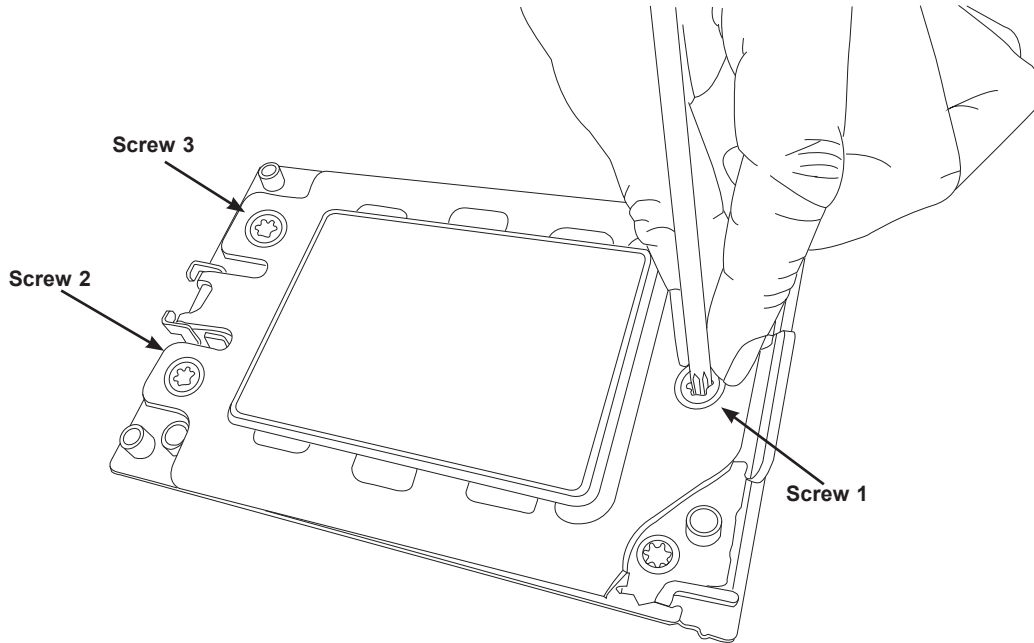
7. Lift up the Rail Frame till it securely rests in upright position. Then remove the PnP Cover Cap from the CPU socket below. Grip the two lift tabs marked "Remove" at the middle of the cap and pull vertically upwards to remove the PnP Cover Cap.

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

8. Gently lower the Rail Frame down onto the socket until the latches on the Rail Frame engage with the Socket housing. and it rests in place. Do not force it into place!
9. Gently lower the Force Frame down onto the Rail Frame and hold it in place until it is seated in the Socket housing. Note that the Force Frame is spring loaded and has to be held in place before it is secured.



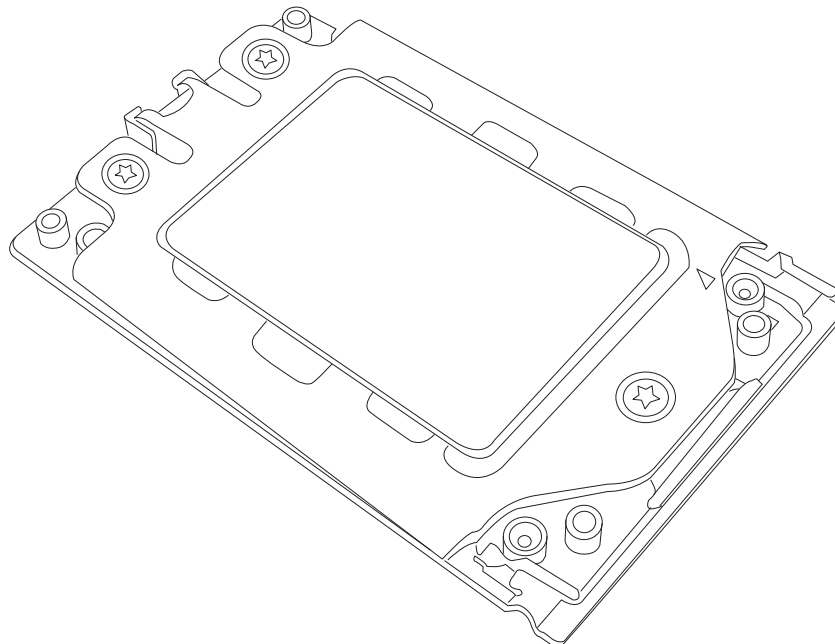
**Figure 3-7. Lowering the Force Frame**



**Figure 3-8. Securing the Force Frame**

10. Secure the screws in the order 1-2-3, tightening each to 16.1 kgf-cm (14 lbf-in) of torque using a Torx T20 driver. The Force Frame secures both the Rail Frame and CPU Package.

**Caution:** The screw tightening sequence of 1-2-3 must be executed in the proper sequence to avoid damage to the socket or CPU package.



**Figure 3-9. The Force Frame Secured**

### ***Un-installing the Processor and Heatsink***

1. Remove the heatsink.
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.

**Caution:** The screw tightening sequence of 1-2-3 must be executed in the proper sequence to avoid catastrophic damage to the socket or CPU package.

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 H11SSW-NT supports Up to 2 TB of ECC DDR4 2666 MHz speed, RDIMM/LRDIMM/3DS/NVDIMM memory in sixteen slots. Refer to the table below for additional memory information.

Populating RDIMM/RDIMM 3DS/LRDIMM/LRDIMM 3DS DDR4 Memory Modules					
Type	DIMM Population	Maximum DIMM Capacity (GB)			Maximum Frequency (MHz)
		1 Channel	4 Channels	8 Channels	
RDIMM	1R	32GB	128GB	256GB	2666
	2R	64GB	256GB	512GB	2400
LRDIMM	4R	128GB	512GB	1TB	2666
	8R	256GB	1TB	2TB	2666
LRDIMM 3DS	2R2H	64GB	512GB	1TB	2400
	2R4H	128GB	1TB	2TB	2400

## DIMM Module Population

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

- Always use DDR4 DIMM modules of the same type, size and speed.
- Mixed DIMM speeds can be installed. However, all DIMMs will run at the speed of the slowest DIMM.
- The motherboard will support odd-numbered modules (1 or 3 modules installed). However, to achieve the best memory performance, a balanced memory population is recommended.

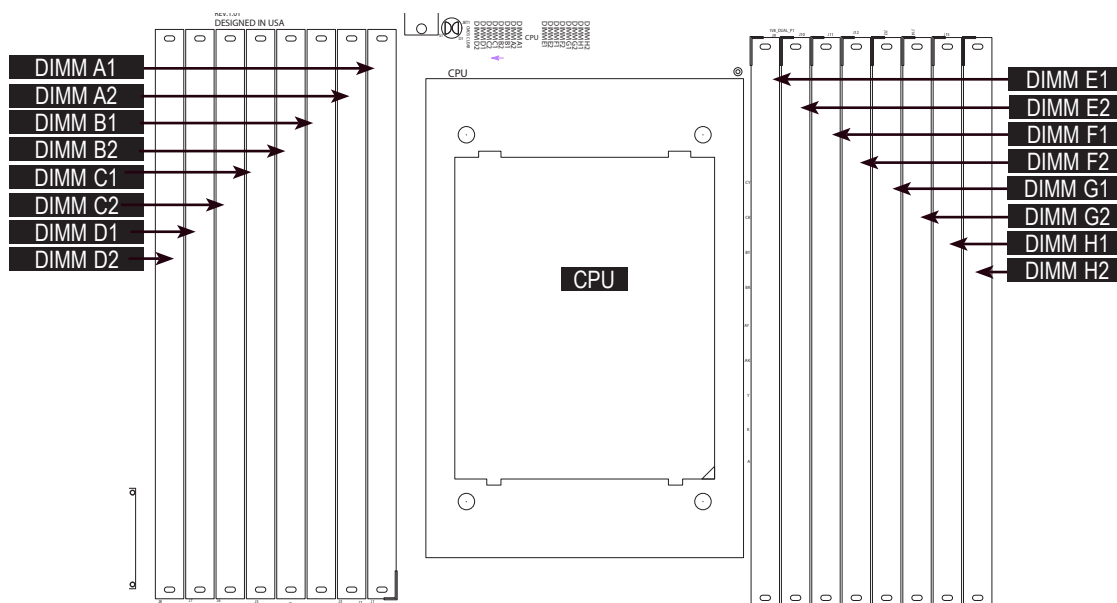


Figure 3-10. DIMM Numbering

DIMM Population Guide															
Channel															
1		2		3		4		5		6		7		8	
DIMM	DIMM	DIMM	DIMM	DIMM	DIMM	DIMM	DIMM	DIMM	DIMM	DIMM	DIMM	DIMM	DIMM	DIMM	DIMM
A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	F1	F2	G1	G2	H1	H2
<b>4 DIMMS*</b>															
	✓				✓				✓				✓		
<b>6 DIMMS</b>															
Unbalanced, not recommended															
<b>8 DIMMS</b>															
	✓		✓		✓		✓		✓		✓		✓		✓
<b>16 DIMMS</b>															
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

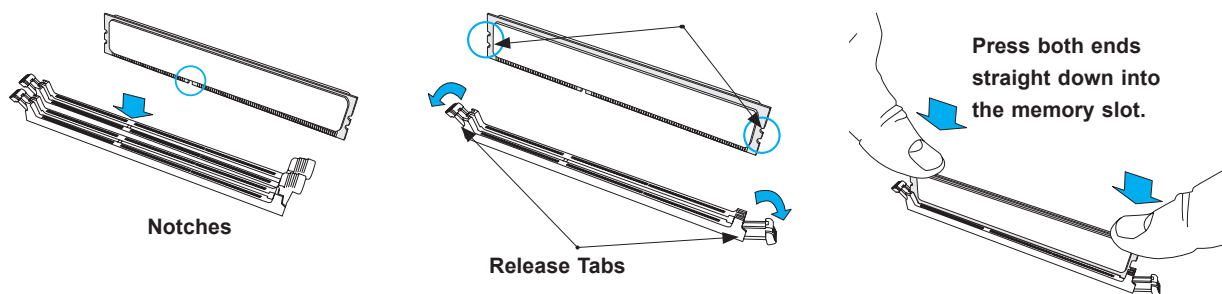
**\*Note:** To achieve optimal memory performance, a minimum of at least one DIMM for each channel pair in the system (e.g., A, C, E, G) is recommended.

## DIMM Installation

1. Push the release tabs outwards on both ends of the DIMM slot to unlock it.
2. Align the key of the DIMM module with the receptive point on the memory slot.
3. Align the notches on both ends of the module against the receptive points on the ends of the slot.
4. Use two thumbs together to press both ends of the module straight down into the slot until the module snaps into place.
5. Press the release tabs to the lock positions to secure the DIMM module into the slot.

## DIMM Removal

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



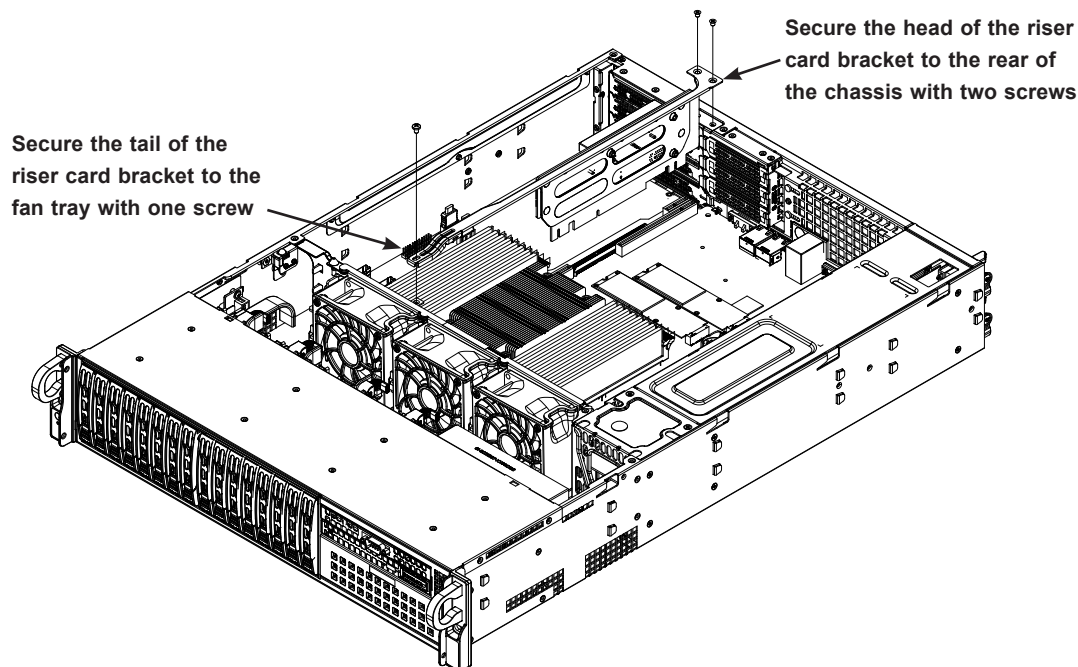
**Figure 3-11. Installing DIMMs**

## PCI Expansion Card Installation

Add-on card installation in the SC213TS chassis requires the use of a riser card. These have been pre installed in the AS-2113S-WTRT

### *Installing the Riser Card*

1. Remove the chassis cover.
2. Remove the riser bracket.
3. Install the riser card onto the riser bracket. Note that there are different cards for the right and left side of the bracket.
4. Gently slide the riser card bracket with the riser card installed into the chassis and simultaneously plug the riser card into the slot on the motherboard.
5. Locate the three screws on your riser card bracket and secure it to the chassis as illustrated above.

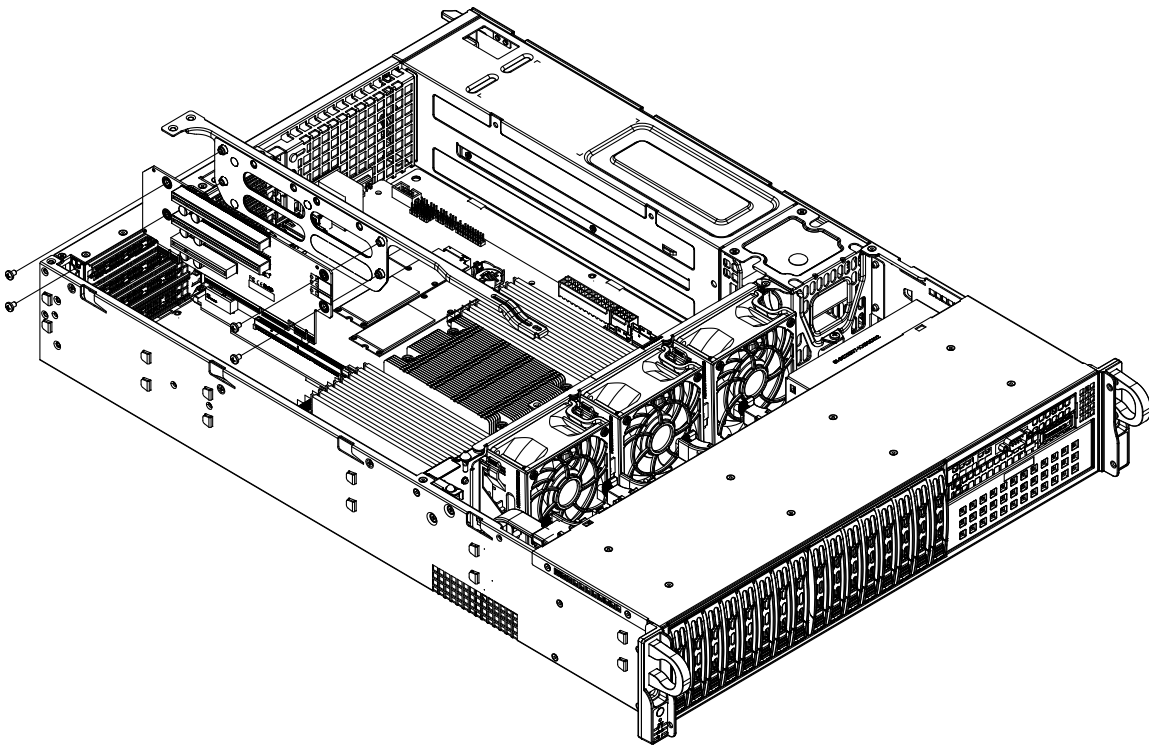


**Figure 3-12. Installing the Riser Card Bracket**

**Note:** Graphics in this manual are for illustration purposes only. Your components may look slightly different.

### ***Installing the Add-on Cards in a Riser Card***

1. Ensure that the riser card and riser card bracket have been correctly installed in the chassis.
2. Remove the blank bracket from the rear slot in the chassis.
3. Slide the add-on card horizontally into the slot on the riser card.
4. Secure the add-on-card with its clip into the rear slot of the chassis.



**Figure 3-13. Installing Riser Card to Bracket**



## Motherboard Battery

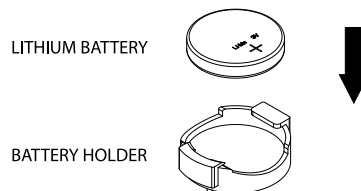
The motherboard uses non-volatile memory to retain system information when system power is removed. This memory is powered by a lithium battery residing on the motherboard.

### *Replacing the Battery*

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

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

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



**Figure 3-14. 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 Chassis Components

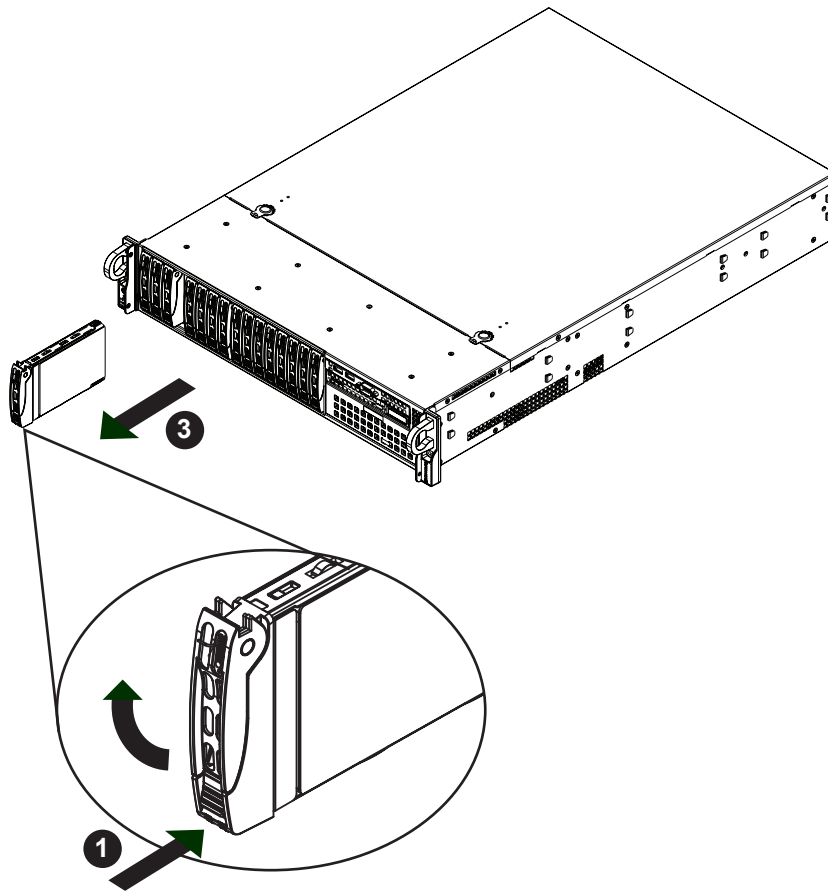
### Hard Drives

Your server may or may not have come with hard drives installed. Up to six 2.5" NVMe hard drives are supported by the chassis. Six of the drive carriers may be configured to accommodate NVMe drives with the use of a special cable (optional).

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

#### ***Removing a Hot-Swap Drive Carrier***

1. Push the release button on the carrier to extend the drive carrier handle.
2. Swing the handle fully out.
3. Grasp the handle and use it to pull the drive carrier out of its bay.

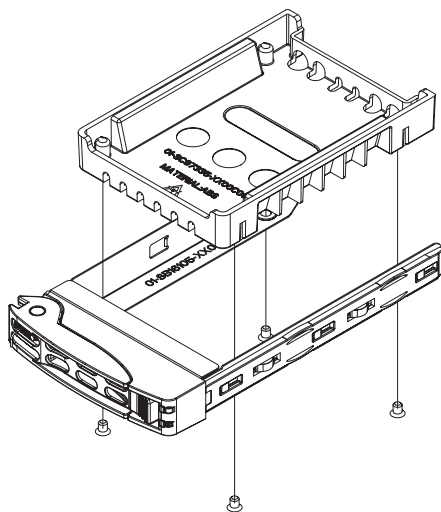


**Figure 3-15. Removing a Drive Carrier**

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

***Mounting a Drive in 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 as illustrated below.
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



**Figure 3-16. Installing a Hard Drive into a Carrier**

***Removing a Drive from a Drive Carrier***

1. After removing a carrier from the server, remove the screws that secure the hard drive to the carrier and separate the hard drive from the carrier.
2. Replace the carrier back into the drive bay.

## Installing an M.2 Solid State Drive

**Note:** There are some thermal limitations with M.2 drives. Please contact Supermicro Support before installing an M.2 device.

The motherboard can accommodate an M.2 solid state drive (SSD). The M.2 socket supports NVMe PCI-E 3.0 x2 (32 Gb/s) SSD cards in the 2280 or 22110 form factors. The 22110 form factor is recommended because the appropriate standoff comes pre-installed on the motherboard. To install a 2280 device, the motherboard must be removed to move the standoff, which incurs accompanying risks.

**Caution:** Use industry-standard anti-static equipment, such as gloves or wrist strap, and follow precautions to avoid damage caused by ESD.

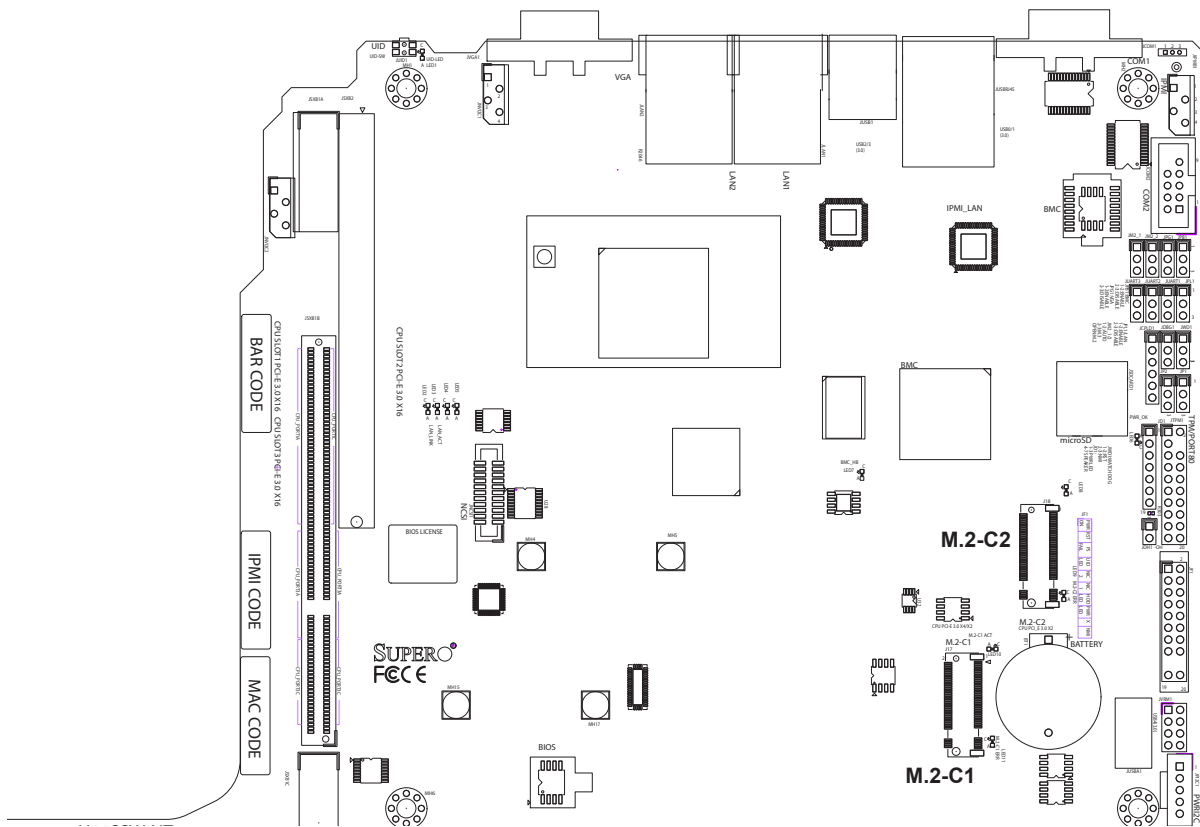


Figure 3-17. M.2 Slot Locations

### Installing the M.2 SSD

1. Power down the system as described in Section 3.1 then remove the top chassis cover as described in Section 3.2.
2. Insert the SSD into the socket (J2) on the motherboard, then push it flat against the standoff.
3. Secure the SSD by firmly inserting the standoff plug.
4. Replace the node into the chassis.

## Air Shroud

Air shrouds concentrate airflow to maximize fan efficiency. The SC213TS chassis air shroud does not require screws to set up.

### ***Air Shroud Installation***

1. Begin by removing power from the system as described in Section 3.1. Remove the chassis cover as described in Section 3.2.
2. Remove the left side break-away piece of the main air shroud.
3. Slide the additional air shroud into the chassis before installing the main air shroud.
4. Install the main air shroud in the chassis. The air shroud fits just behind the three fans in the fan rack. Slide the air shroud into the grooves just behind the fan rack (Figure 6-4).
5. Replace the chassis cover, plug the power cords into the power supplies and power up the system.

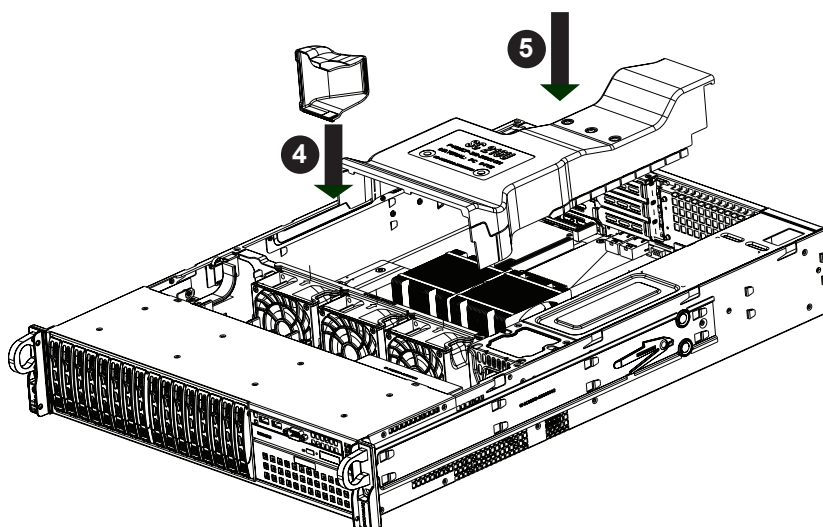


Figure 3-18. Installing the Air Shroud

## Checking the Airflow

### ***Check the Airflow***

1. Make sure there are no objects obstructing the airflow in and out of the server.
2. Do not operate the server without hard drives or drive carriers in the drive bays. Use only recommended server parts.
3. Make sure no wires or foreign objects obstruct airflow through the chassis. Pull all excess cabling out of the airflow path or use shorter cables.
4. The control panel LEDs inform you of system status. See the Control Panel in Section 1.4 for details on the LEDs and the control panel buttons.

## System Cooling

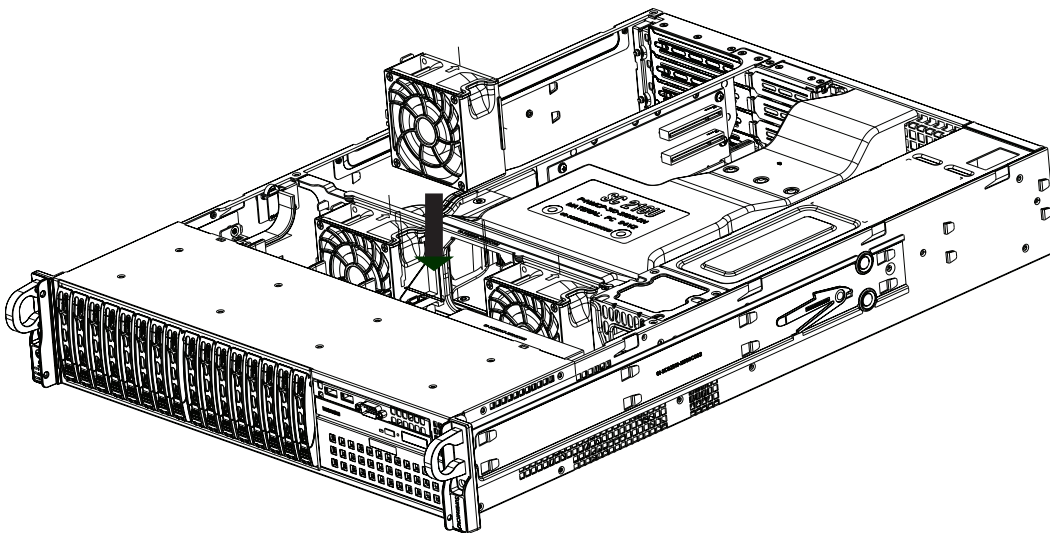
Three 8-cm PWM fans provide the cooling for the system. These are not hot-plug fans, so power must be removed from the system when replacing a failed fan. Note it is important that the chassis top cover is installed for the cooling air to circulate properly through the chassis.

### *Installing Fans*

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

### *Replacing a System Fan*

1. With the server powered on, remove the chassis cover as described in section 3.2 and inspect the fans to see which one has failed.
2. Power down the server as described in Section 3.1.
3. Remove the failed fan's wiring from the fan header on the motherboard.
4. Press the fan release tab to lift the failed fan from the chassis and pull it completely out of the chassis.
5. Place the new fan into the vacant space in the housing while making sure the arrows on the top of the fan (indicating air direction) point in the same direction as the arrows on the other fans.
6. Reconnect the fan wires to the same chassis fan header as the previous fan.
7. Power up the system and check that the fan is working properly before replacing the chassis cover.



**Figure 3-19. Installing a Fan**

## Power Supply

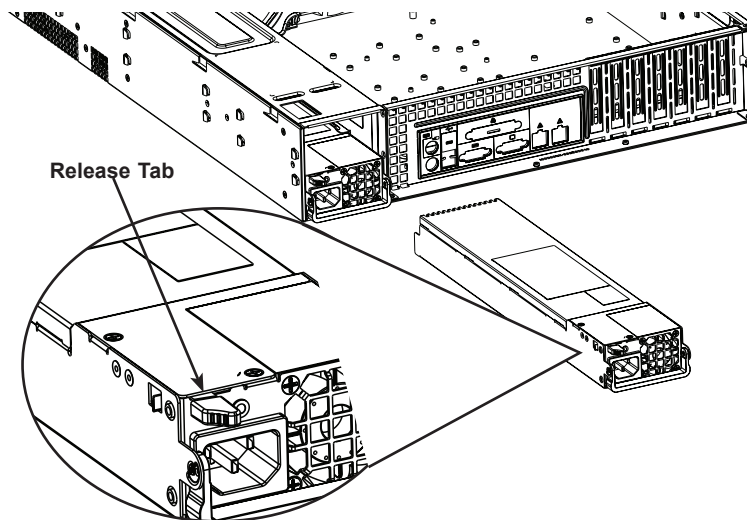
The AS-2113S-WTRT has a redundant, hot-plug 1200W power supply consisting of two power modules. Each power supply module has an auto-switching capability, which enables it to automatically sense and operate at a 100V - 240V input voltage.

### *Power Supply Failure*

If either of the two power supply modules fail, the other module will take the full load and allow the system to continue operation without interruption. The Power Fail LED will illuminate and remain on until the failed unit has been replaced. Replacement units can be ordered directly from Supermicro. The hot-swap capability of the power supply modules allows you to replace the failed module without powering down the system..

### *Replacing the Power Supply*

1. Determine which power supply needs to be replaced and unplug the power cord to that module.
2. Push the release tab (on the back of the power supply) as illustrated, then pull the power supply out using the handle provided.
3. Push the new power supply module into the power bay until you hear a click (replace with the same model).
4. Reconnect the power cord to the new module.



**Figure 3-20. Replacing 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 serverboard 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

Two power connections on the H11SSW-NT must be connected to the power supply. The wiring is included with the power supply.

- 24-pin Primary ATX Power (JPWR3)
- 8-pin Processor Power (JPWR1R2)

#### Main ATX Power Connector

JPWR2 is the 24-pin ATX main power supply connector. This primary power supply connector meets the ATX SSI EPS 24-pin specification. You must also connect the 8-pin (JPWR1) CPU power connector to your power supply.

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

#### Required Connection

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



### 12V 8-pin CPU Power Connector

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

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

Required Connection

## 4.2 Headers and Connectors

### Fan Headers

The six fan headers on the motherboard are 4-pin headers; pins 1-3 are backward compatible with traditional 3-pin fans. The onboard fan speeds are controlled by Thermal Management via BIOS. When using the Thermal Management setting, use all 3-pin fans or all 4-pin fans.

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

### 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)

**Disk-On-Module Power Connector (JSD1 & JSD2)**

The Disk-On-Module (DOM) power connector at JSD1 provides 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 (SATA0, SATA1)**

The H11SSW-NT has two available SATA 3.0 ports (SATA0 and SATA1). These are standard SATA 3.0 ports.

SATA Connectors Pin Definitions	
Pin#	Signal
1	Ground
2	SATA_TXP
3	SATA_TXN
4	Ground
5	SATA_RXN
6	SATA_RXP
7	Ground

**NVMe ports ( NVMe 0~7, 10, 11, 14, 15)**

The H11SSW-iN/NT has twelve NVMe ports (2 ports per 1 Slim SAS connector). These ports provide high-speed, low-latency PCI-E 3.0 x4 connections directly from the CPU to NVMe Solid State (SSD) drives. This greatly increases SSD data-throughput performance and significantly reduces PCI-E latency by simplifying driver/software requirements resulting from direct PCI-E interface from the CPU to the NVMe SSD drives.

**SATA/NVMe hybrid ports (SATA 0-7/NVMe 8-9; SATA 8-15/NVMe 12-13)**

Each SATA/NVMe hybrid port can support up to eight SATA 3.0 ports or two NVMe ports (PCI-E x4), for a total of sixteen SATA ports or four NVMe ports.

**PCI-E M.2 Connector (M.2-C1, M.2-C2)**

The PCI-E M.2 connectors are for devices such as memory cards, wireless adapters, etc. These devices must conform to the PCI-E M.2 specifications (formerly known as NGFF). These particular PCI-E M.2 supports M-Key (PCI-E x2) storage cards. M.2-C1 can support a speed of PCI-E x4, when one M.2 device is installed.

### USB Ports (USB0~USB4, USB 6/7)

A total of seven USB ports are supported on the motherboard. Four are located on the back panel, USB 0/1, and USB 2/3 (both are USB 3.0 compliant). There are also three ports located on the motherboard, two are on one header, USB 6/7 (3.0) and the remaining one is on a 3.0 "Type A" connector (USB 4).

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

### Expansion Slots

The motherboard features several expansion slots. The table below describes each slot's type and speed.

Expansion Slots	
Name	Description
<b>JSXB1A</b>	Riser Slot
<b>JSXB1B</b>	Riser Slot (for CPU Slot1 PCI-E 3.0 x16, Slot3, PCI-E 3.0 x16)
<b>JSXB1C</b>	Riser Slot
<b>JSXB2</b>	Riser Slot (for CPU Slot2, PCI-E 3.0 x16)

### 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.

### Sensor Header (JSEN1)

This header (JSEN1) allows BMC to monitor thermal inlet temperature. A special module is required. Please contact Supermicro to purchase the module for this header. Refer to the table below for pin definitions

Intel Sensor Header Pin Definitions	
Pin#	Definition
1	SMBDAT
2	Ground
3	SMBCLK
4	3.3V STBY

### Chassis Intrusion (JL1)

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

Chassis Intrusion Pin Definitions	
Pins	Definition
1	Ground
2	Intrusion Input

### Overheat LED/Fan Fail (JOH1)

The JOH1 header is used to connect an LED indicator to provide warnings of chassis overheating or fan failure. This LED will blink when a fan failure occurs. Refer to the table on the left for pin definitions.

Overheat / Fan Fail Pin Definitions	
Pins	Definition
1	5vDC
2	OH Active

Overheat / Fan Fail LED Status	
Status	Definition
Off	Normal
On, Solid	Overheat
On, Blinking	Fan Failure

### IPMB System Management Bus Header (JIPMB1)

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

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

**Power SMB Header (PWRI2C)**

The Power System Management Bus (I2C) header monitors power supply, fan and system temperatures. See the table below for pin definitions.

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

**SGPIO Headers (SGPIO1, SGPIO2, SGPIO3)**

Serial General Purpose Input/Output (SGPIO) headers are used to communicate with the enclosure management chip on the motherboard.

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

**Serial Port (COM2)**

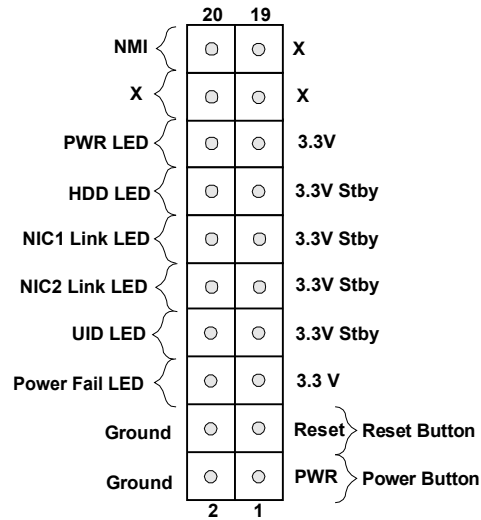
There is one serial (COM) port header on the motherboard. COM2 is located next to the IPMI header.

**Micro SD Port (Micro SD)**

The motherboard supports one Micro SD port for Micro SD compliant memory cards. The port is located next to the JD1 header.

**IPMI Header (IPMI)**

The IPMI Header is used for the Intelligent Platform Management Interface of the motherboard. This feature enables the user or admin to perform maintenance/setup remotely. This header provides a direct connection to the motherboard via an IPMI cable.



**Figure 4-1. JF1: Control Panel Pins**

### Power Button

The Power Button connection is located on pins 1 and 2 of JF1. Momentarily contacting both pins will power on/off the system. This button can also be configured to function as a suspend button (with a setting in the BIOS - see Chapter 4). To turn off the power when the system is in suspend mode, press the button for 4 seconds or longer. Refer to the table below for pin definitions.

Power Button Pin Definitions (JF1)	
Pins	Definition
1	Signal
2	+3V Standby

### Reset Button

The Reset Button connection is located on pins 3 and 4 of JF1. Attach the hardware reset switch from the computer case to this header to reset the system. . Refer to the table below for pin definitions.

Reset Button Pin Definitions (JF1)	
Pins	Definition
3	Reset
4	Ground

### Power Fail LED

The Power Fail LED connection is located on pins 5 and 6 of JF1. Refer to the table below for pin definitions.

Power Fail LED Pin Definitions (JF1)	
Pins	Definition
5	3.3V
6	PWR Supply Fail

### UID LED

The UID LED is on pins 7 and 8 of JF1. Connect the front panel UID LED to this header to indicate when the rear UID switch is turned on. Refer to the below for pin definitions.

UID LED Pin Definitions (JF1)	
Pins	Definition
7	Vcc
8	Ground

### NIC1/NIC2 (LAN1/LAN2)

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

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

### HDD LED

The HDD LED connection is located on pins 13 and 14 of JF1. Attach a hard drive LED cable here to display disk activity detected on the motherboard's built-in disk controllers. See the table below for pin definitions.

HDD LED Pin Definitions (JF1)	
Pins	Definition
13	+5V
14	HDD Active

### NMI Button

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

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

### Power LED

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

Power LED Pin Definitions (JF1)	
Pins	Definition
15	+5V
16	Ground



## 4.3 Ports

### 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.

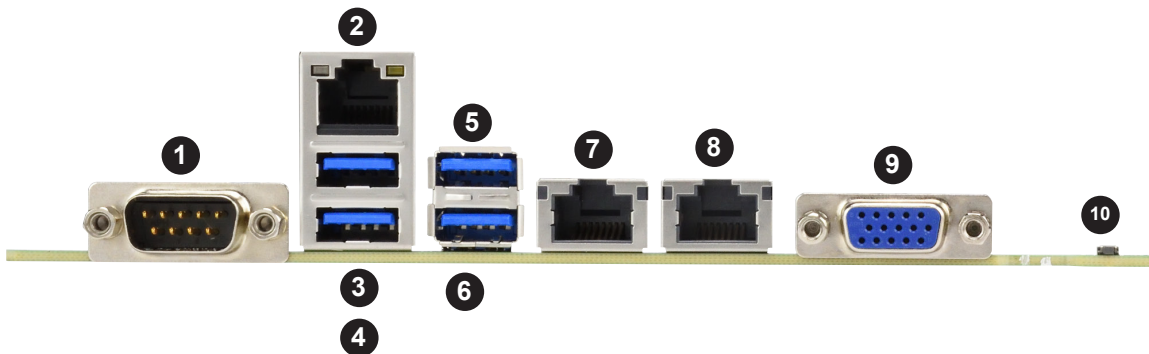


Figure 2-1. I/O Port Locations and Definitions

Rear I/O Ports					
#	Description	#	Description	#	Description
1	COM Port	5	USB 2 (3.0)	9	VGA Port
2	IPMI LAN Port	6	USB 3 (3.0)	10	UID Switch & UID LED
3	USB 0 (3,0)	7	LAN Port #1		
4	USB 1 (3.0)	8	LAN Port #2		

### COM Port

There is one serial communications port (COM1) on the rear I/O panel.

### IPMI LAN Port

One IPMI LAN port is located on the I/O back panel. This port accepts an RJ45 type cable.

### Gigabit LAN Ports

There are two 10 gigabit LAN ports located on the I/O back panel (LAN1 & LAN2). These ports accept an RJ45 type cable.

### VGA Port

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

## Universal Serial Bus (USB) Ports

There are four USB 3.0 ports (USB 0/1, 2/3) on the I/O back panel..

Back Panel USB 3.0 Port Pin Definitions			
Pin#	Definition	Pin#	Definition
1	VBUS	10	Power
2	D-	11	USB 2.0 Differential Pair
3	D+	12	
4	Ground	13	Ground of PWR Return
5	StdA_SSRX-	14	SuperSpeed Receiver
6	StdA_SSRX+	15	Differential Pair
7	GND_DRAIN	16	Ground for Signal Return
8	StdA_SSTX-	17	SuperSpeed Transmitter
9	StdA_SSTX+	18	Differential Pair

## UID Switch and UID LED Indicator

A Unit Identifier (UID SW) switch and UID LED (LED1) are located on the I/O back panel. The rear UID LED (LED1) is located next to the UID switch. When you press the UID switch, both rear and front UID LED indicators will turn on. Press the UID switch again to turn off the LED indicators. The UID Indicator provides easy identification of a system that may be in need of service.

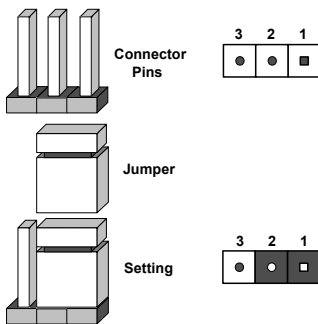
**Note:** UID can also be triggered via IPMI on the serverboard. For more information on IPMI, please refer to the IPMI User's Guide posted on our website at <http://www.supermicro.com>

## 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.*



### LAN1/2 Enable/Disable

Change the setting of jumper JPL1 to enable or disable the LAN1 and LAN2 Ethernet ports.. The default setting is Enabled.

LAN1/2 Enable/Disable Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enabled
Pins 2-3	Disabled

### Watch Dog

JWD 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
Pins 2-3	NMI
Open	Disabled

### Debug Mode Enable/Disable (JDBG1)

Jumper JDBG1 will enable or disable Debug Mode on the motherboard. The default is Normal Mode.

Debug Mode Enable/Disable Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Normal Mode
Pins 2-3	Debug Mode

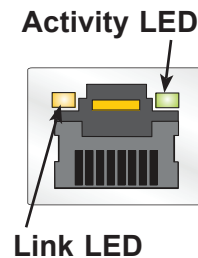
## 4.5 LED Indicators

### LAN Port LEDs

The motherboard's Ethernet ports has two LED indicators. The Activity LED is green and indicates connection and activity. The Link LED may be green, orange/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	100 Mb/s
Orange	1 Gb/s
Green	10 Gb/s

Activity LED		
Color	State	Definition
None	No Connection	
None	Off	Link
Green	Flashing	Active



### UID LED Indicator (LED1)

The rear LED1 is located next to the UID switch. The front UID LED is located on the front panel. When you press the UID switch, both rear LED1 and front UID LED indicators will turn on. Press the UID switch again to turn off the LED indicators. Use this UID Indicator to 'mark' the system, so the system can be easily identified whether on the front or back (e.g., a system rack with multiple units installed).

UID LED LED Indicator		
Color	State	Definition
Blue	Solid On	Unit Identified
None	Off	UID Off

### BMC Heartbeat LED (LED7)

A BMC Heartbeat LED is located at LED7 on the motherboard. When LED7 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

**Onboard Power OK LED (LED6)**

LED6 is an onboard power OK LED. When this LED6 is lit, it means the system is turned on and all the system power rails are ready. When the system is turned off or any one of the system power rails fail, this LED will turn off. Turn off the system, and unplug the power cable before removing or installing any component(s).

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

**M.2 Error LED (LED9 and LED11)**

The M.2 Error LED indicates an error was detected on the device installed on either M.2-C1 (LED9) or M.2-C2 (LED11).

M.2 Active LED Indicator	
LED Color	Definition
Off	Off (Normal)
Green	On (Device error detected)

**UID LED (LED1)**

See page 50.

# Chapter 5

## Software

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

### 5.1 Microsoft Windows OS Installation

#### *Installing the OS*

1. Create a method to access the MS Windows installation ISO file. That might be a DVD, perhaps using an external USB/SATA DVD drive, or a USB flash drive, or the IPMI KVM console.
2. Go to the Supermicro web page for your motherboard and click on "Download the Latest Drivers and Utilities", select the proper driver, and copy it to a USB flash drive.
3. Boot from a bootable device with Windows OS installation. You can see a bootable device list by pressing **F11** during the system startup.

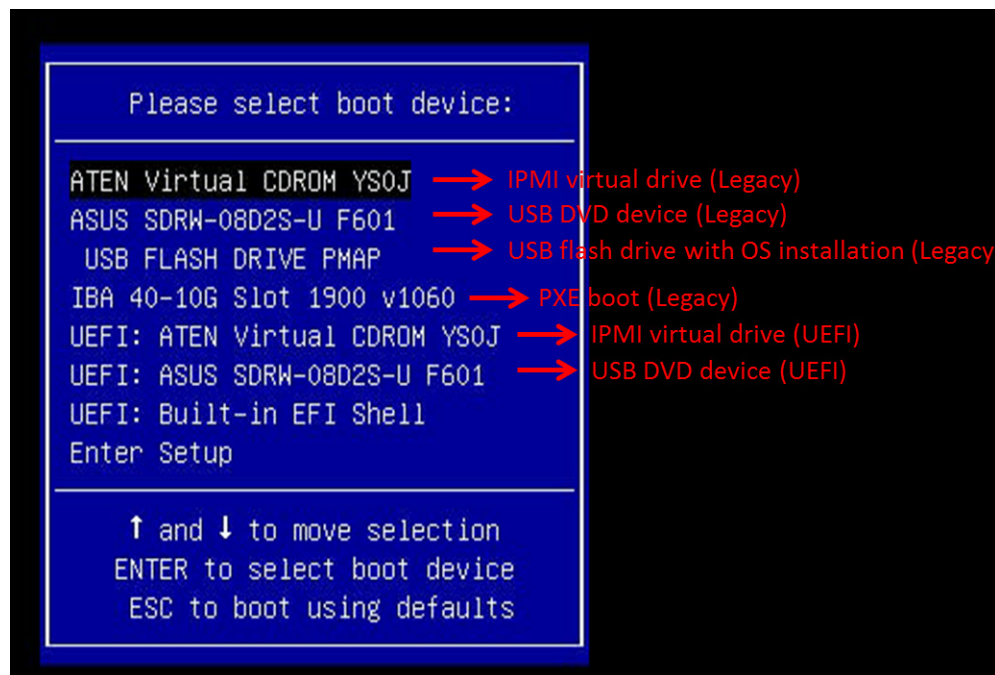
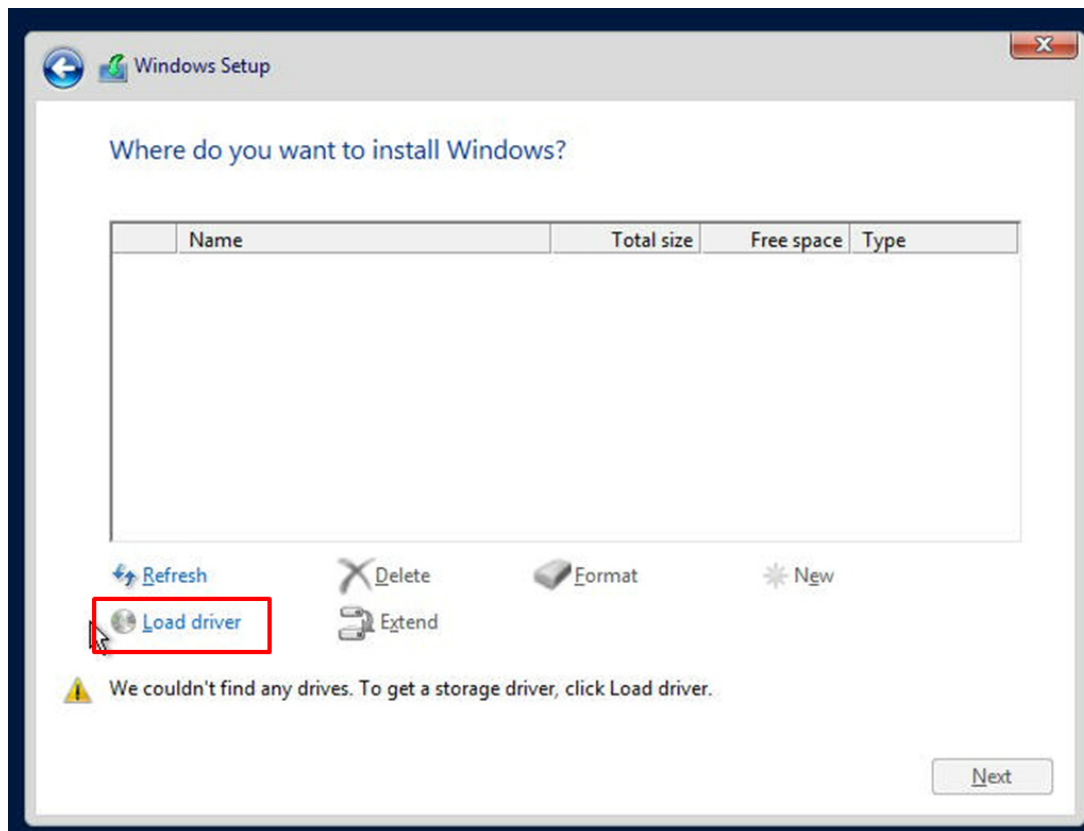


Figure 5-1. Select Boot Device

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



**Figure 5-2. Load Driver Link**

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

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



## 5.2 Driver Installation

The Supermicro website contains drivers and utilities for your system at [www.supermicro.com/wftp/driver/AMD/SP3](http://www.supermicro.com/wftp/driver/AMD/SP3). Some of these must be installed, such as the chipset driver.

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

Another option is to go to the Supermicro website at <http://www.supermicro.com/products/>. Find the product page for your motherboard, and "Download the Latest Drivers and Utilities". Insert the flash drive or disk and the screenshot shown below should appear.

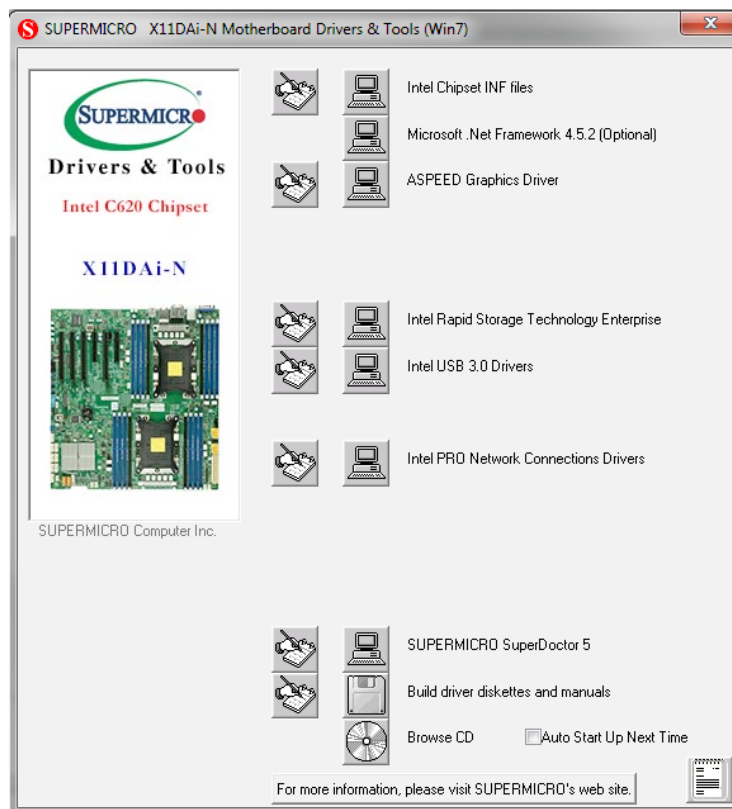


Figure 5-3. Driver & Tool Installation Screen

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

## 5.3 SuperDoctor® 5

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

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

**Note:** The default User Name and Password for SuperDoctor 5 is ADMIN / ADMIN.

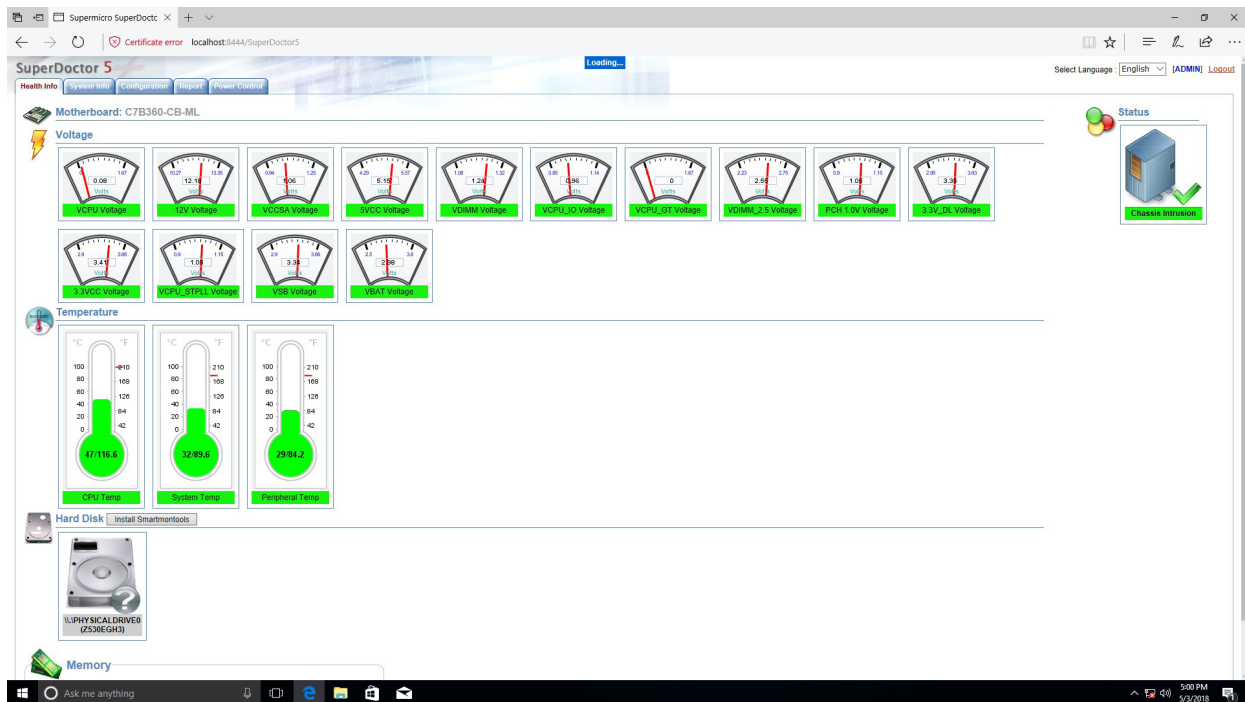


Figure 5-4. SuperDoctor 5 Interface Display Screen (Health Information)

## 5.4 IPMI

The H11SSW-NT supports the Intelligent Platform Management Interface (IPMI). IPMI is used to provide remote access, monitoring and management. There are several BIOS settings that are related to IPMI.

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

# Chapter 6

## UEFI BIOS

### 6.1 Introduction

This chapter describes the AMIBIOS™ Setup utility for the H11SSW-NT motherboard. The BIOS is stored on a chip and can be easily upgraded using a flash program.

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

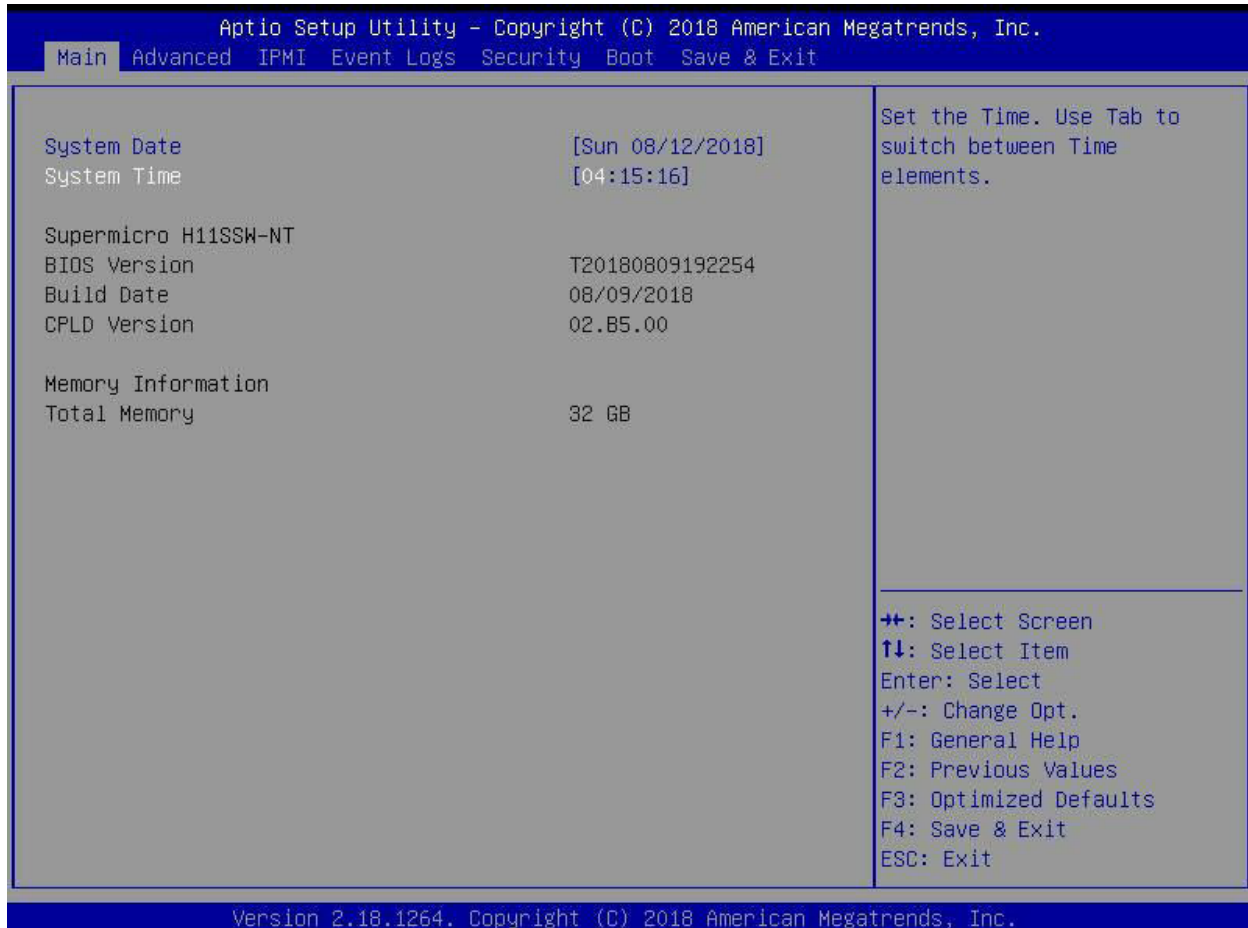
The Main BIOS screen has two main frames. The left frame displays all the options that can be configured. "Grayed-out" options cannot be configured. The right frame displays the key legend. Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is 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:



### 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 H11SSW-NT

#### 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.

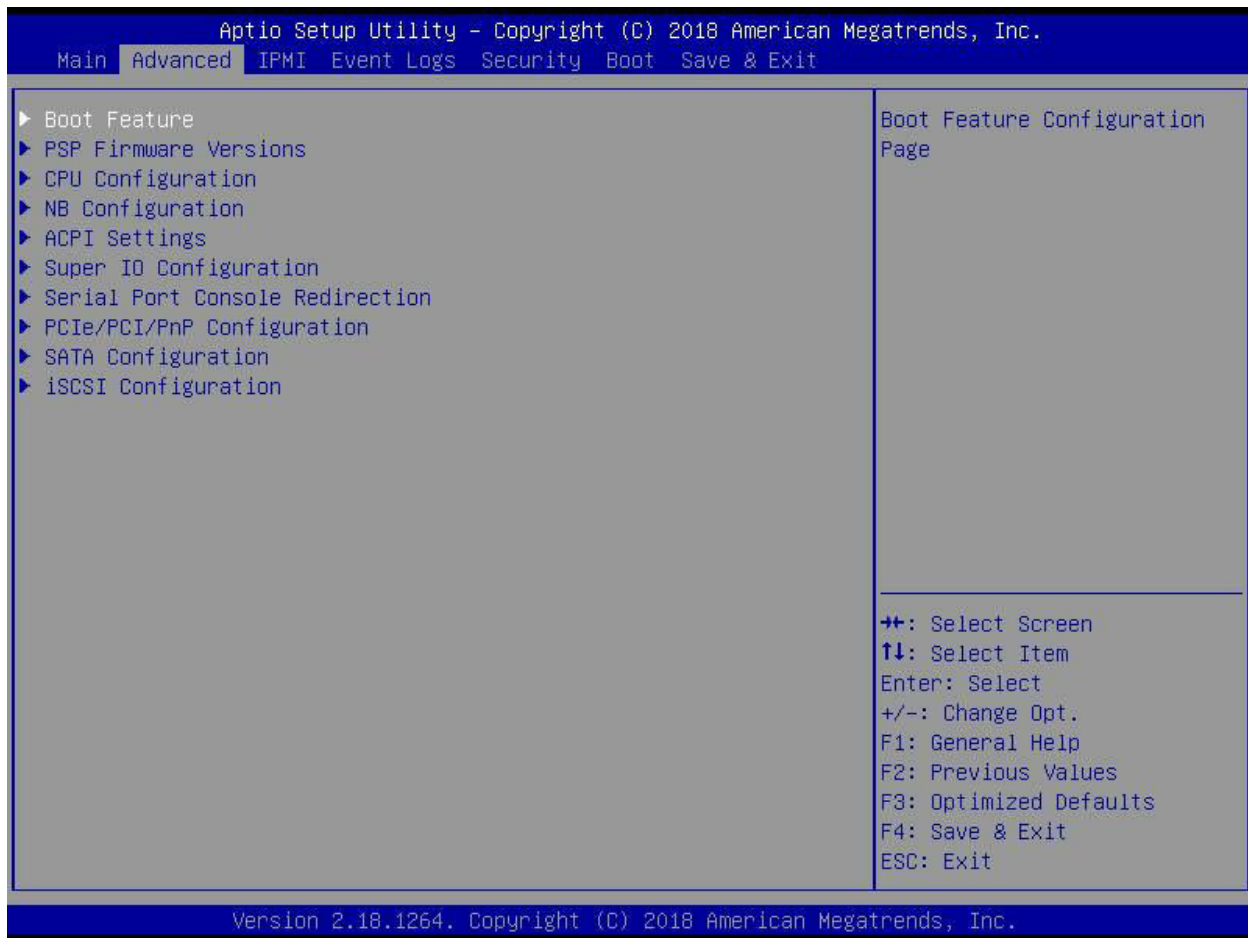
**Memory Information**

**Total Memory**

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

## 6.3 Advanced

Use the arrow keys to select Boot Setup 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 **Enabled** and Disabled.

#### 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 Off and **On**.

**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.



## ►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
- APCB Version
- APOB Version
- APPB Version

### PSP Directory Level 2 (Updateable)

- PSP Bootloader Version
- SMU FW Version
- ABL Version
- APCB Version
- APOB Version
- APPB Version

## ►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 Disable and **Enable**.

### TPM State

This software switch will enable or disable the installed security device. The options are Disable and **Enable**.

### Pending Operation

This feature will schedule an operation for the the security device, select TPM Clear to clear any pending operation. The options are **None** and TPM Clear

### Device Select

Selecting TPM 1.2 will restrict support to TPM 1.2 devices, TPM 2.0 to TPM 2.0 devices and Auto will auto-select according to the version of the device installed, with the default set to TPM 2.0. The options are TPM 1.2, TPM 2.0 and **Auto**.

## ►CPU Configuration

### SMT Mode

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

### Core Performance Boost

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

### Global C-state Control

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

### Downcore 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 TWO (1+1), Two (2 + 0), Three (3 + 0), Four (2 + 2), Four (4+0), Six (3 + 3) and **Auto**. 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 **Auto**, Disabled and Enabled.

### SVM Mode

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

## ►CPU1 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 Slider

Use this setting to configure the Determinism Slider. Options include **Auto**, Power and Performance.

### cTDP Control

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

### IOMMU

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

### ACS Enable

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

## ►Memory Configuration

### Memory Clock

This setting allows you to select different memory clock speed. Options include **Auto** and speed settings from 1333Mhz to 2666Mhz.

### 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. Options include None, Channel, Die, Socket 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). Options include 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**.

## ▶ CPU1 Memory Information

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

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

## ▶ ACPI Settings

### 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 **Enabled** and Disabled.

## ▶ Super IO Configuration

The following Super IO information will display:

- Super IO Chip AST2500

### ▶ 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 port 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;).

### ▶ Serial Port 2 Configuration

#### Serial Port

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

### Change SOL Settings

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

### Serial Port 2 Attribute

This feature specifies the mode in which Serial Port 2 operates under. The options are COM and **SOL**.

## ► 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 Enabled and **Disabled**.

*\*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**.

### 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.

## SOL/COM2

### Console Redirection

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

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

## ► Console Redirection Settings

### 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**.

**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.

**Legacy Console Redirection****► Legacy Console Redirection Settings****Redirection COM Port**

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

**Resolution**

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

**Redirect After Post**

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

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

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

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



## ► Console Redirection Settings

### Out-of-Band Mgmt Port

The feature selects a serial port in a client server to be used by the Microsoft Windows Emergency Management Services (EMS) to communicate with a remote host server. The options are **COM1**, COM2 (Disabled), and AMT 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

### Parity

### Stop Bits

## ► PCIe/PCI/PnP Configuration

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

### PCI Bus Driver Version

### Above 4G Decoding

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

**SR-IOV Support**

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

**PCIe Spread Spectrum**

Use this setting to Enable or **Disable** PCI-E Spread Spectrum for your system.

**Target Link Speed**

If supported by hardware and set to Force to x.S GT/S (x being a value of 2.5, 5.0 or 8.0) for Downstream Ports, this sets an upper limit on Link Operational Speed by restricting the values advertised by the UPstream component in its training sequences. When **Auto** is selected, the HW initialized data will be used.

**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 AMI Native Support and **Vendor Defined Firmware**.

**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 AMI Native Support and **Vendor Defined Firmware**.

**NVMe or SATA Engine Switch**

Use this setting to select between the NVMe or SATA engine. NVMe 8/9, SATA 0~7, NVMe 12/13 or SATA 8~15. The options are SATA and **NVMe**.

**M.2 C1 PCI-E OPROM**

This setting enables or disables the listed PCI-E Slot OPROM option. The options are Disabled, **Legacy** or EFI.

**Onboard LAN Option ROM Type**

Use this setting to select which firmware type to be loaded for onboard LAN on the system. Options include **Legacy** and EFI.

**Onboard LAN1 Option ROM**

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

### **Onboard LAN2 Option ROM**

Use this setting to select which firmware function is to be loaded for onboard LAN2 on the system. Options include **Disabled** and Legacy.

### **NVMe0~NVMe23 OPROM**

Use this setting to select which firmware is to be loaded for the specified NVMe OpROM on the system. The options are Disabled, Legacy and **EFI**.

### **Onboard Video Option ROM**

This setting selects which onboard video firmware type to be selected. Options include Disabled, **Legacy** and EFI.

## **► Network Stack Configuration**

### **Network Stack**

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

### **Ipv4 PXE Support**

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

### **Ipv4 HTTP Support**

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

### **Ipv6 PXE Support**

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

### **Ipv6 HTTP Support**

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

### **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. Default is **0**.

### **Media Detect Count**

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

## ► **SATA Configuration**

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

### **ASMedia SATA Controller**

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

#### **Hot Plug**

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

#### **ASPM**

This setting enables or disables the ASPM (Active State Power Management) feature. The options are Enabled, **Disabled**.

## ► **SATA Controller**

This section displays information on the detected SATA devices:

- SATA Mode

## ► **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**

## 6.4 IPMI

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



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 (Baseboard Management Controller)

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 **Enabled** and Disabled.

## 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

#### Configure IPV4 Support

This section displays static configuration features for IPV4 support.

#### 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**.

#### Update IPMI LAN Configuration

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

***\*If the item above is set to Yes, the following item 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 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.

**Configuration Address Source**

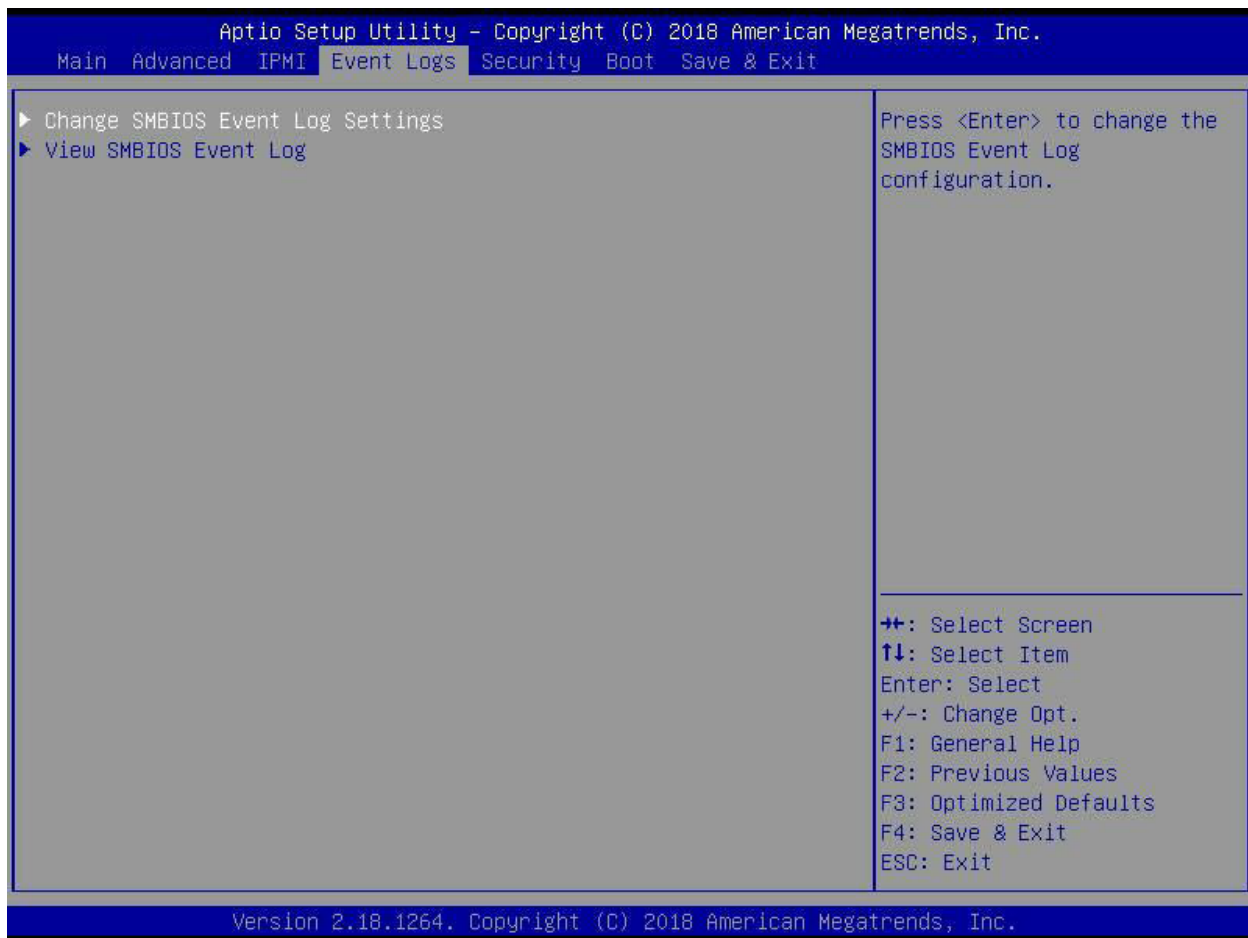
This feature allows the user to select the source of the IP address for this computer. If Static is selected, you will need to know the IP address of this computer and enter it to the system manually in the field. If DHCP is selected, the BIOS will search for a DHCP (Dynamic Host Configuration Protocol)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

***\*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.



### ▶ Change SMBIOS Event Log Settings

This feature allows the user to configure SMBIOS Event settings.

#### Enabling/Disabling Options

##### SMBIOS Event Log

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

#### 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 **Disabled** and Enabled.

**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.

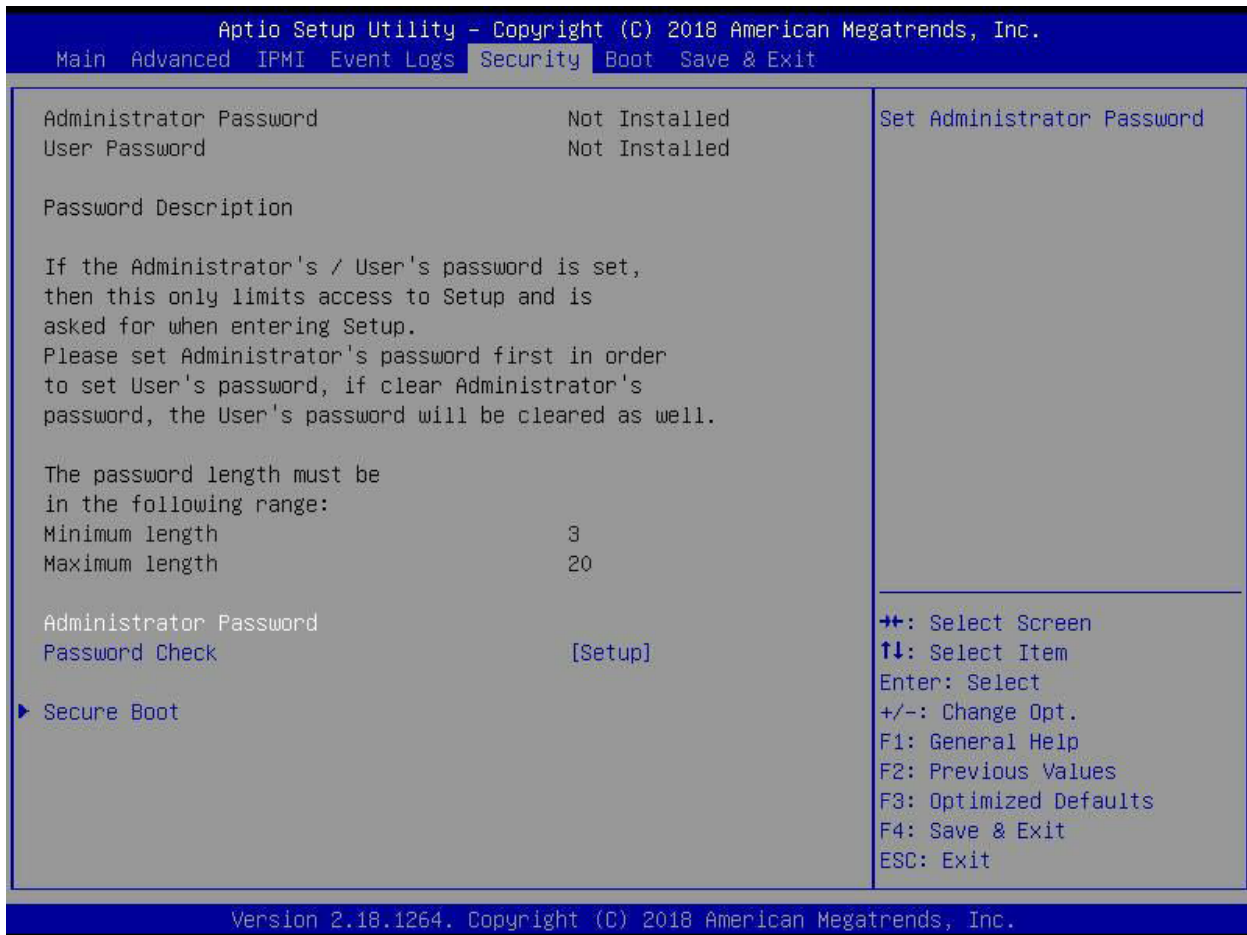
**►View SMBIOS Event Log**

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) 2018 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	3
Maximum length	20

Administrator Password Password Check [Setup]

► Secure Boot

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

Version 2.18.1264. Copyright (C) 2018 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.

### User Password

Press Enter to create a new, or change an existing User password.

### 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

This section contains options and menus for securing your boot mode and for key management.

## Secure Boot

This option allows you specify when the Platform Key (PK) is enrolled. When enabled, the System Mode is user deployed, and the CSM function is disabled. Options include Enabled and **Disabled**.

## Secure Boot Mode

Use this item to select the secure boot mode. The options are Standard and **Custom**.

## CSM Support

Select Enabled to support the EFI Compatibility Support Module (CSM), which provides compatibility support for traditional legacy BIOS for system boot. The options are Disabled and **Enabled**.

### ▶ Key Management

This submenu allows the user to configure the following Key Management settings.

#### ▶ Install Factory Default Keys

Select Yes to install all default secure keys set by the manufacturer. The options are **Yes** and No.

#### ▶ Enroll EFI Image

This allows the image to run in Secure Boot Mode, and enroll SHA256 hash of the binary into an Authorized Signature Database (db).

#### ▶ Save All Secure Boot Variables

This feature allows the user to decide if all secure boot variables should be saved.

#### ▶ Platform Key (PK)

This feature allows the user to configure the settings of the platform keys.

#### Set New Key

Select Yes to load the new platform keys (PK) from the manufacturer's defaults. Select No to load the platform keys from a file. The options are **Yes** and No.

#### Provision Factory Default Keys

Select Enabled to install the default Secure-Boot keys set by the manufacturer. The options are **Disabled** and Enabled.

#### ▶ Key Exchange Keys

##### Set New Key

Select Yes to load the KEK from the manufacturer's defaults. Select No to load the KEK from a file. The options are Yes and No.

### **Append Key**

Select Yes to add the KEK from the manufacturer's defaults list to the existing KEK. Select No to load the KEK from a file. The options are Yes and No.

### **► Authorized Signatures**

#### **Set New Key**

Select Yes to load the database from the manufacturer's defaults. Select No to load the DB from a file. The options are Yes and No.

#### **Append Key**

Select Yes to add the database from the manufacturer's defaults to the existing DB. Select No to load the DB from a file. The options are Yes and No.

### **► Forbidden Signatures**

#### **Set New Key**

Select Yes to load the DBX from the manufacturer's defaults. Select No to load the DBX from a file. The options are Yes and No.

#### **Append Key**

Select Yes to add the DBX from the manufacturer's defaults to the existing DBX. Select No to load the DBX from a file. The options are Yes and No.

### **► Authorized TimeStamps**

#### **Set New Key**

Select Yes to load the DBT from the manufacturer's defaults. Select No to load the DBT from a file. The options are Yes and No.

#### **Append Key**

Select Yes to add the DBT from the manufacturer's defaults list to the existing DBT. Select No to load the DBT from a file. The options are Yes and No.

### **► OsRecovery Signature**

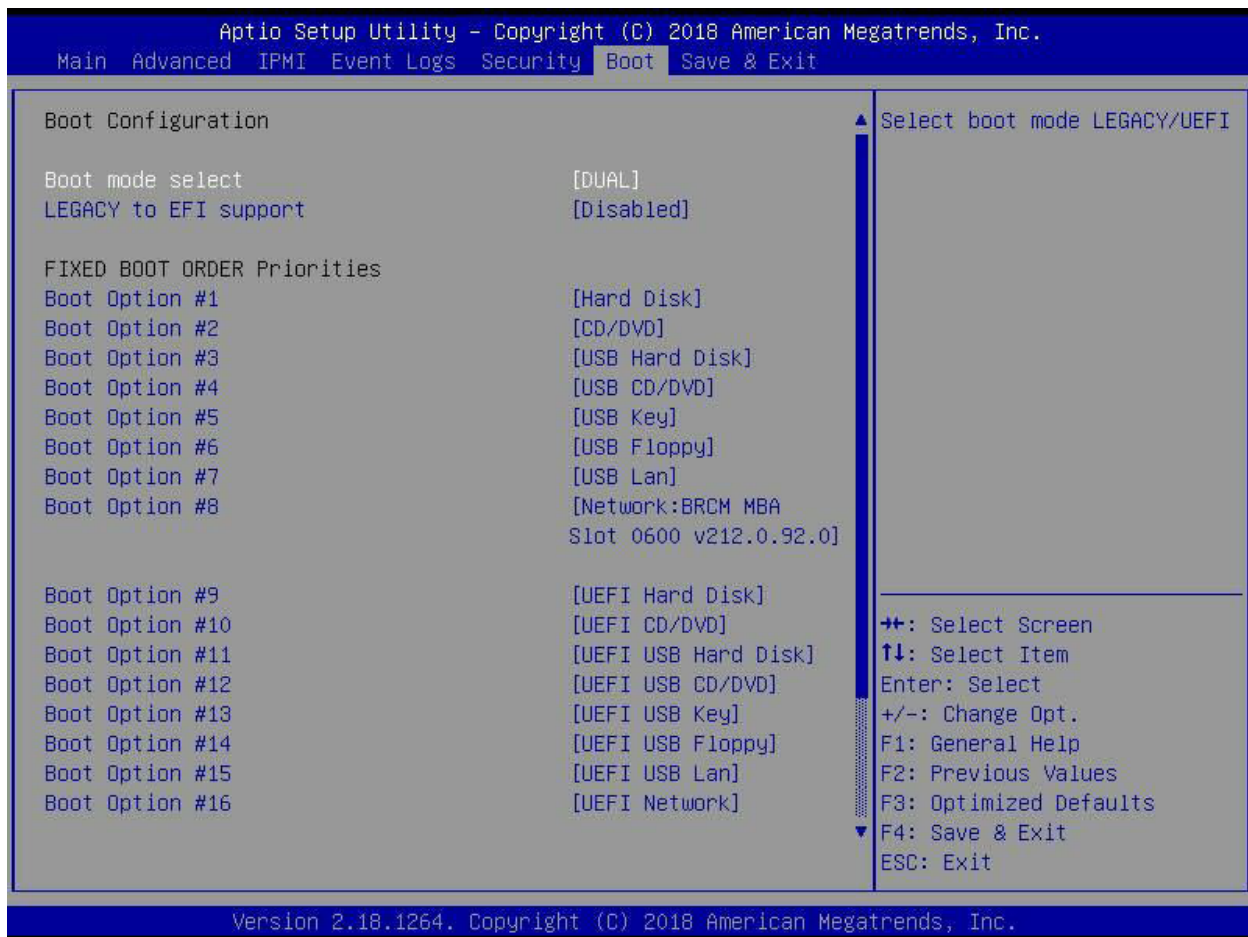
This item uploads and installs an OSRecovery Signature. You may select options for Set New for a factory default key, or select Append to get it from a file. The file formats accepted are:

- 1) Public Key Certificate
  - a. EFI Signature List
  - b. EFI CERT X509 (DER Encoded)
  - c. EFI CERT RSA2048 (bin)
  - d. EFI SERT SHA256 (bin)
- 2) EFI Time Based Authenticated Variable

When prompted, select "Yes" to load Factory Defaults or "No" to load from a file.

## 6.7 Boot

Use this tab to configure Boot Settings:



### 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**. The default setting is DUAL.

### Legacy to EFI Support

This option Enables or **Disables** 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].

▶ **UEFI Application Boot Priorities**

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

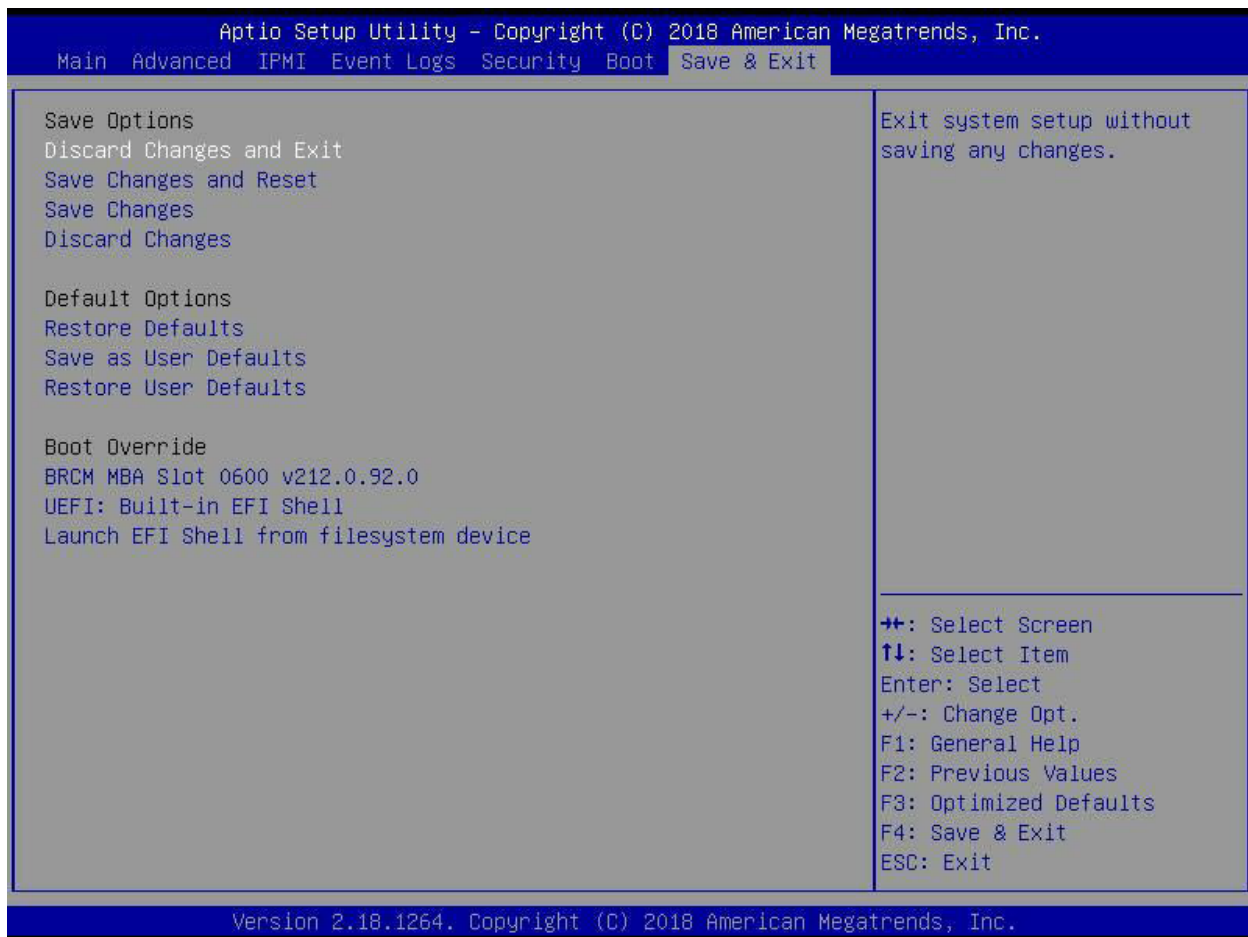
- UEFI Boot Order #1

▶ **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.



### 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 Defaults**

To set this feature, select Restore 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.



## 6.9 BIOS Update Using IPMI

If necessary, the system BIOS can be updated using IPMI. Documentation on IPMI is available at <http://www.supermicro.com/products/nfo/IPMI.cfm>.

1. Download the BIOS file using the link on the server web page. Unzip and save it.
2. Access the IPMI web interface. Enter the IP address and log in. The default username and password are ADMIN/ADMIN. (For details on IPMI, use the link above.)
3. Click the Maintenance tab, then BIOS Update.

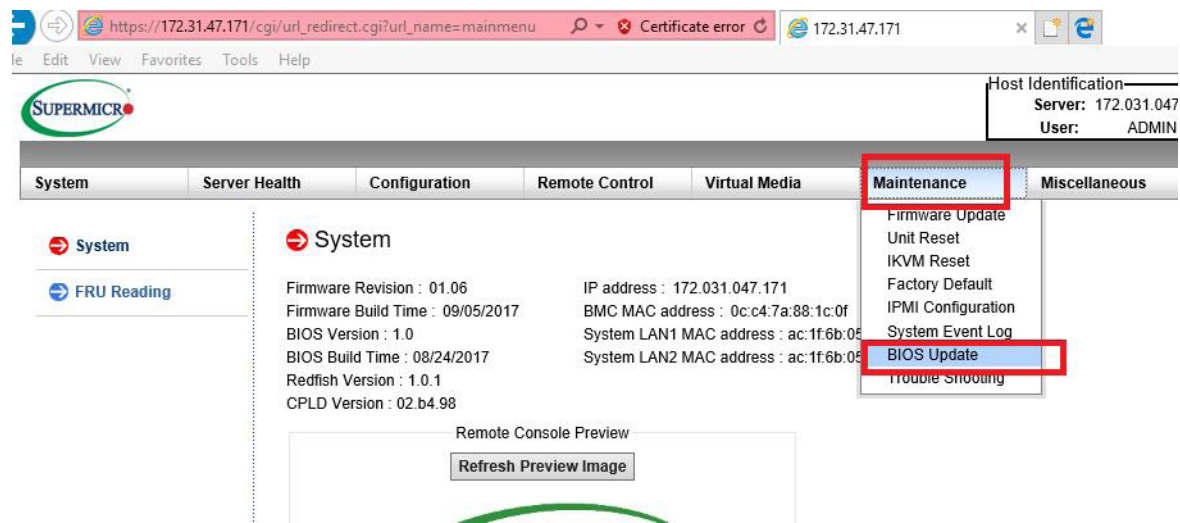


Figure 6-1. IPMI Maintenance Tab

4. Browse to select the saved BIOS file and click Open.

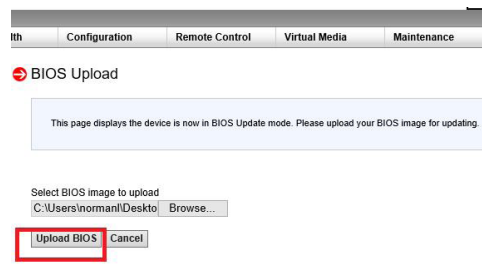


Figure 6-2. Browse and Upload Dialog

5. Click the Upload BIOS button. The message appears, "Uploading image & checking BIOS information... Please wait. This may take a while."



**Figure 6-3. Start Upgrade Dialog**

6. In the Start Upgrade dialog, make sure the three checkboxes are not checked, and verify the date of the BIOS file you uploaded before proceeding.
7. Click the Start Upgrade button.

## Appendix A

# Standardized Warning Statements for AC Systems

### A.1 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](http://www.supermicro.com/about/policies/safety_information.cfm).

#### Warning Definition



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

#### 警告の定義

この警告サインは危険を意味します。

人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、電気回路に含まれる危険性に注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危險。

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

此警告符號代表危險。

您目前所處的工作環境可能讓您受傷。在您使用任何設備之前，請注意觸電的危險，並且要熟悉預防事故發生的標準工作程序。請依照每一注意事項後的號碼找到相關的翻譯說明內容。

## Warnung

## WICHTIGE SICHERHEITSHINWEISE

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

BEWAHREN SIE DIESE HINWEISE GUT AUF.

## INSTRUCCIONES IMPORTANTES DE SEGURIDAD

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

GUARDE ESTAS INSTRUCCIONES.

## IMPORTANTES INFORMATIONS DE SÉCURITÉ

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

CONSERVEZ CES INFORMATIONS.

תקנון הזהרות אזהרה

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

اَكْ ف حالة وُكي اَي تتسبب ف اصابة جسدهُ هذا الزهز عُ خطر! تحذُرُ .  
قبل اَي تعول على اَي هعدات، كي على علن بالوخاطز ال اُجوة عي الذوائر  
الكهزبائِة  
وكي على دراةُ بالووارسات النقااِة لو عُ وقع اَي حادث  
استخدم رقن الب اِ الو صُص ف هاةُ كل تحذُر للعشر تزجوتها

안전을 위한 주의사항

경고!

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

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

## BELANGRIJKE VEILIGHEIDSINSTRUCTIES

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

BEWAAR DEZE INSTRUCTIES

## Installation Instructions



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

設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

警告

将此系统连接电源前,请先阅读安装说明。

警告

將系統與電源連接前，請先閱讀安裝說明。

Warnung

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

¡Advertencia!

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

Attention

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

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقرأ إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

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

## Circuit Breaker



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

サーキット・ブレーカー

この製品は、短絡(過電流)保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告

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

警告

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

### Warnung

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

### ¡Advertencia!

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

### Attention

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

מוצר זה מסתמך על הגנה המותקנת במבנים למניעת קצר חשמלי. יש לוודא כי המכשיר המגן מפני הקצר החשמלי הוא לא יותר מ-60VDC, 20A

هذا المنتج يعتمد على معدات الحماية مه الدوائر القصيرة التي تم تثبيتها في المبنى  
تأكد من أن تقييم الجهاز الوقائي ليس أكثر من : 20A, 250V

### 경고!

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

### Waarschuwing

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

## Power Disconnection Warning



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

### 電源切斷の警告

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

### 警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

### 警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

### Warnung

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

### ¡Advertencia!

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

### Attention

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

אזהרה מפני ניתוק חשמלי

אזהרה!

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



يجب فصل انظاؤ من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد  
انطاقت قيم  
انصل إني امنطاق انداخهيت نههيكم نتشيج أو إزانت مكناث الجهاز

경고!

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

Waarschuwing

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

## Equipment Installation



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

機器の設置

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

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

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

¡Advertencia!

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

**Attention**

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

אזהרה!

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

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

경고!

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

**Waarschuwing**

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

**Restricted Area**

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

**アクセス制限区域**

このユニットは、アクセス制限区域に設置されることを想定しています。

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

**警告**

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

**警告**

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

### Warnung

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

### ¡Advertencia!

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

### Attention

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

אזור עם גישה מוגבלת

אזהרה!

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

تخصيص هذه انحدة نترك بها ف مناطق محظورة تم .  
ممكن اننصل إن منطقت محظورة فقط من خلال استخذاو أداة خاصت  
أو أ وس هت أكري نلالأمما ققم ومفتاح

### 경고!

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

### Waarschuwing

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

## Battery Handling



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

### 電池の取り扱い

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

### 警告

電池更換不當會有爆炸危險。請只使用同類電池或制造商推薦的功能相當的電池更換原有電池。請按製造商的說明處理廢舊電池。

### 警告

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

### Warnung

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

### Attention

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

### ¡Advertencia!

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

### אזהרה!

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

هناك خطر من انفجار في حالة اسبدال البطارية بطريقة غير صحيحة فعلى  
اسبدال البطارية  
فقط بنفس النوع أو ما يعادلها مما أوصت به الشركة المصنعة  
جخلص من البطاريات المسحومة وفقا لعمليات الشركة الصانعة

경고!

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

Waarschuwing

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

## Redundant Power Supplies



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

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告

此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告

此装置连接的电源可能不只一个，必须切断所有电源才能停止对该装置的供电。

Warnung

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

¡Advertencia!

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

Attention

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

אם קיים יותר מספק אחד

אזהרה!

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

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة .

يجب إزالة كافة الاتصالات لعسل الوحدة عن الكهرباء

경고!

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

Waarschuwing

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

## Backplane Voltage



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

### バックプレーンの電圧

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

修理する際には注意ください。

### 警告

当システム正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

### 警告

當系統正在進行時，背板上危險的電壓或能量，進行維修時務必小心。

### Warnung

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

### ¡Advertencia!

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

### Attention

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

מתח בפנל האחורי

אזהרה!

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

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

경고!

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

Waarschuwing

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

## Comply with Local and National Electrical Codes



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

地方および国の電気規格に準拠

機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告

设备安装必须符合本地与本国电气法规。

警告

設備安裝必須符合本地與本國電氣法規。

Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

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

Attention

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



תיאום חוקי החשמל הארצי

אזהרה!

התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تركيب المعدات الكهربائية يجب أن يمتثل للقوايه المحلية والبطية المتعلقة  
بالكهرباء

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

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

## Product Disposal



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

製品の廃棄

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

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

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

¡Advertencia!

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

## Attention

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

סילוק המוצר

אזהרה!

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

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

## 경고!

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

## Waarschuwing

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

## Hot Swap Fan Warning



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

## ファン・ホットスワップの警告

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

## 警告!

警告! 危險的可移動性零件。請務必與轉動的风扇叶片保持距離。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

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**Warnung**

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

**¡Advertencia!**

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

**Attention**

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

**אזהרה!**

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

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

**경고!**

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

**Waarschuwing**

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

## Power Cable and AC Adapter



**Warning!** When installing the product, use the provided or designated connection cables, power cables and AC adapters. Using any other cables and adapters 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 code) 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/CSEマークがコードに表記)を Supermicro が指定する製品以外に使用することを禁止しています。

### 警告

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

### 警告

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

### Warnung

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

### ¡Advertencia!

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

### Attention

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

AC ימאתמו מיילמשח מילבכ

!הרהזא

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

תאלבאלא אארשב מץ וא אדדחמלא וא ארפוטמלא תאלויסוטלא מאדחטסאב מץ, אגתנמלא בייקרת דנע לכלז יפ אב אילחמלא אלאסלא תאבלטתמו נינאוץב מאזתלאל אע דדרתמלא ראיטלא תאלוחמו אילברמלא אילי. וא לטע יפ בבסטטי דץ אירחא תאלוחמו תאלבאלא יא מאדחטסא. מילסלא סבאלאו לטווא מץ א. CSA וא UL לביק נמ אדמאמלא תאלבאלא מאדחטסא תאדעמלא אילברמלא אזהאלל אלאסלא נונאץ רזחיי Supermicro לביק נמ אדדחמלא אילינעמלא תאגתנמלא רייג אירחא תאדעמ יא אע (UL/CSA) אלאע למחתי אילאו

### 전원 케이블 및 AC 어댑터

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

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

### Stroomkabel en AC-Adapter

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

# Appendix B

## System Specifications

### Processors

Single EPYC 7000 series processor in an SP3 socket

**Note:** Please refer to the motherboard specifications pages on our website for updates to supported processors.

### Chipset

SoC chipset

### BIOS

128 Mb SPI AMI® BIOS Flash EEPROM

### Memory

Supports up to 2 TB of ECC DDR4-2666 RDIMM/LRDIMM/3DS/NVDIMM memory in 16 DIMM slots

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

### SATA Controller

On-chip (SoC) controller

### Drive Bays

Sixteen 2.5" hot-swap hard drive carriers for SATA drives (six drives may be NVMe with optional cables)

### PCI Expansion Slots

One PCI-E 3.0 x16 (FHHL) slot

Two PCI-E 3.0 x8 (FHHL) slots

Two PCI-E 3.0 x8 (LP) slots

M.2 Interface: 2 PCI-E 3.0 x2

M.2 Form Factor: 2280, 22110

M.2 Key: M-key"

### Motherboard

H11SSW-NT; Proprietary form factor (13.4 x 12.29 in. / 340 x 312 mm.)

### Chassis

SC213TS-R1K23WBP; 2U Rackmount, (WxHxD) 17.2 x 3.5 x 24.8 in. (437 x 89 x 630 mm)

### System Cooling

Three 8-cm PWM fans

### Power Supply

Model: PWS-1K23A-1R (two power modules for redundancy)

AC Input Voltages: 100-240 VAC

Rated Input Current: 15-12A (100-120VAC) to 8.5-7A (240VAC)

Rated Input Frequency: 50-60 Hz

Rated Output Power: 1200W

Rated Output Voltages: +12V (83A at 100-127VAC, 100A at 200-240VAC), +5Vsb (4A)

### Operating Environment

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

Non-operating Temperature: -40° to 70° C (-40° to 158° F)

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

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

### **Regulatory Compliance**

Electromagnetic Emissions: FCC Class A, EN 55032 Class A, EN 61000-3-2/3-3, CISPR 32 Class A

Electromagnetic Immunity: EN 55024/CISPR 24, (EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11)

Safety: CSA/EN/IEC/UL 60950-1 Compliant, UL or CSA Listed (USA and Canada), CE Marking (Europe)

Other: VCCI-CISPR 32 and AS/NZS CISPR 32

Environmental: Directive 2011/65/EU, Delegated Directive (EU) 2015/863 and Directive 2012/19/EU

### **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](http://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. Doing so may cause a 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 for add-on card initialization to allow the UEFI OS loader, which is stored in the add-on card, to boot the system. The UEFI offers clean, hands-off control to a computer system at bootup.

### 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 boot block contains critical BIOS codes, including memory detection and recovery codes for the user to flash a new BIOS image if the original main BIOS image is corrupted. When the system power is on, the boot block codes execute first. Once it is completed, the main BIOS code will continue with system initialization and bootup.

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

If the BIOS file is corrupted and the system is not able to boot up, this feature will allow you to recover the BIOS image using a USB-attached device. A USB flash drive or a USB CD/DVD ROM drive may be used for this purpose. Please note that a USB hard disk drive is NOT supported. Follow the procedures on the next page to recover the BIOS.

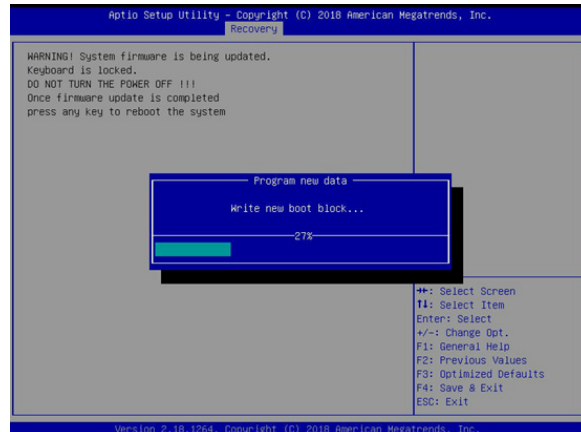
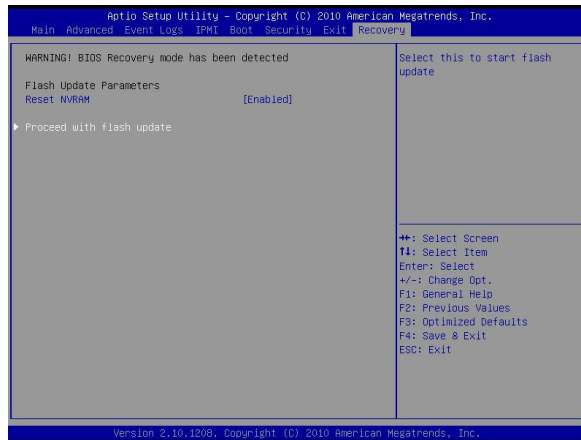
- Using a different system, copy the standard BIOS binary image file into the root directory of a USB flash drive with FAT16 or FAT32 format and rename the file to SUPER.ROM.

**Note:** If you cannot locate the "SUPER.ROM" file in your driver disk, visit our website at [www.supermicro.com](http://www.supermicro.com) to download the correct BIOS image into a USB flash device and rename it "SUPER.ROM".

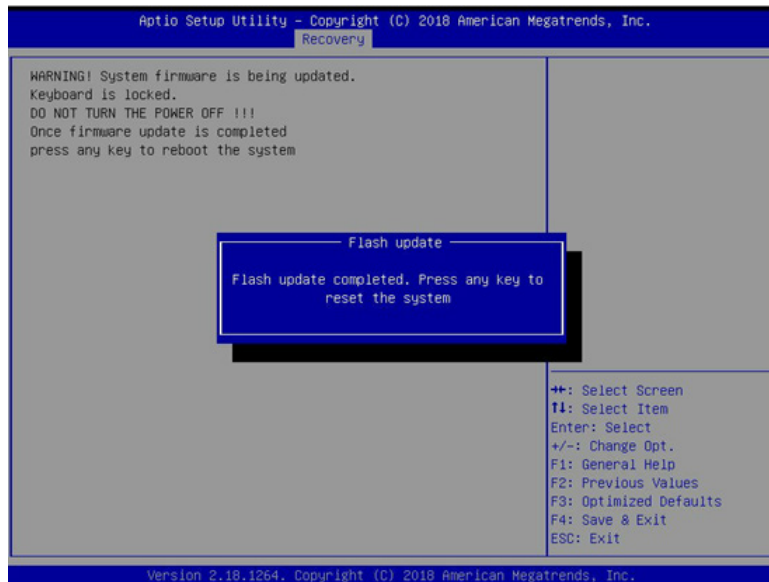
- While the system is turned off, insert the USB device that contains the new BIOS binary image (SUPER.ROM).
- Power on the system.



- After the system is turned on, the system will enter the BIOS Recovery menu. Select "Proceed with flash update" to start the BIOS recovery process. **DO NOT INTERRUPT THIS PROCESS UNTIL IT FINISHED!**



5. After the Boot Sector Recovery Process is complete, press any key to reboot the system.



**Notes:**

- \* The BIOS recovery (SUPER.ROM) will not work if BIOS has a multi-block crash.
- \* If you have purchased an OOB license, you can do a BIOS flash again through BMC WebGUI or SUM. Please refer to these SUPERMICRO software-related videos:  
Activate OOB license: [https://www.youtube.com/watch?v=V4spX\\_DOV7I](https://www.youtube.com/watch?v=V4spX_DOV7I)  
SUPERMICO BIOS Update: <https://www.youtube.com/watch?v=S8z6iOEHGwY>
- \* If the BIOS flash recovery fails, contact our RMA Department to have the BIOS chip reprogrammed. This will require shipping the board to Supermicro for repair.  
Submit your RMA request at <https://www.supermicro.com/support/rma>  
Please make sure to follow all instructions when returning the motherboard.