



H11DSU-IN

USER'S MANUAL

Revision 1.0

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Manual Revision 1.0

Release Date: July 17, 2017

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Preface

About This Manual

This manual is written for system integrators, IT technicians and knowledgeable end users. It provides information for the installation and use of the H11DSU-iN motherboard.

About This Motherboard

Built upon the functionality and capability of the EPYC 7000 series processor, the H11DSU-iN motherboard provides superior graphics capability and system performance while consuming little power. Please note that this motherboard is intended to be installed and serviced by professional technicians only. For processor/memory updates, please refer to our website at <http://www.supermicro.com/products/>.

Conventions Used in the Manual

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



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



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

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Chapter 1

Introduction

Congratulations on purchasing your computer motherboard from an industry leader. Supermicro boards are designed to provide you with the highest standards in quality and performance. In addition to the motherboard, several important parts that are included with the system are listed below. If anything listed is damaged or missing, please contact your retailer.

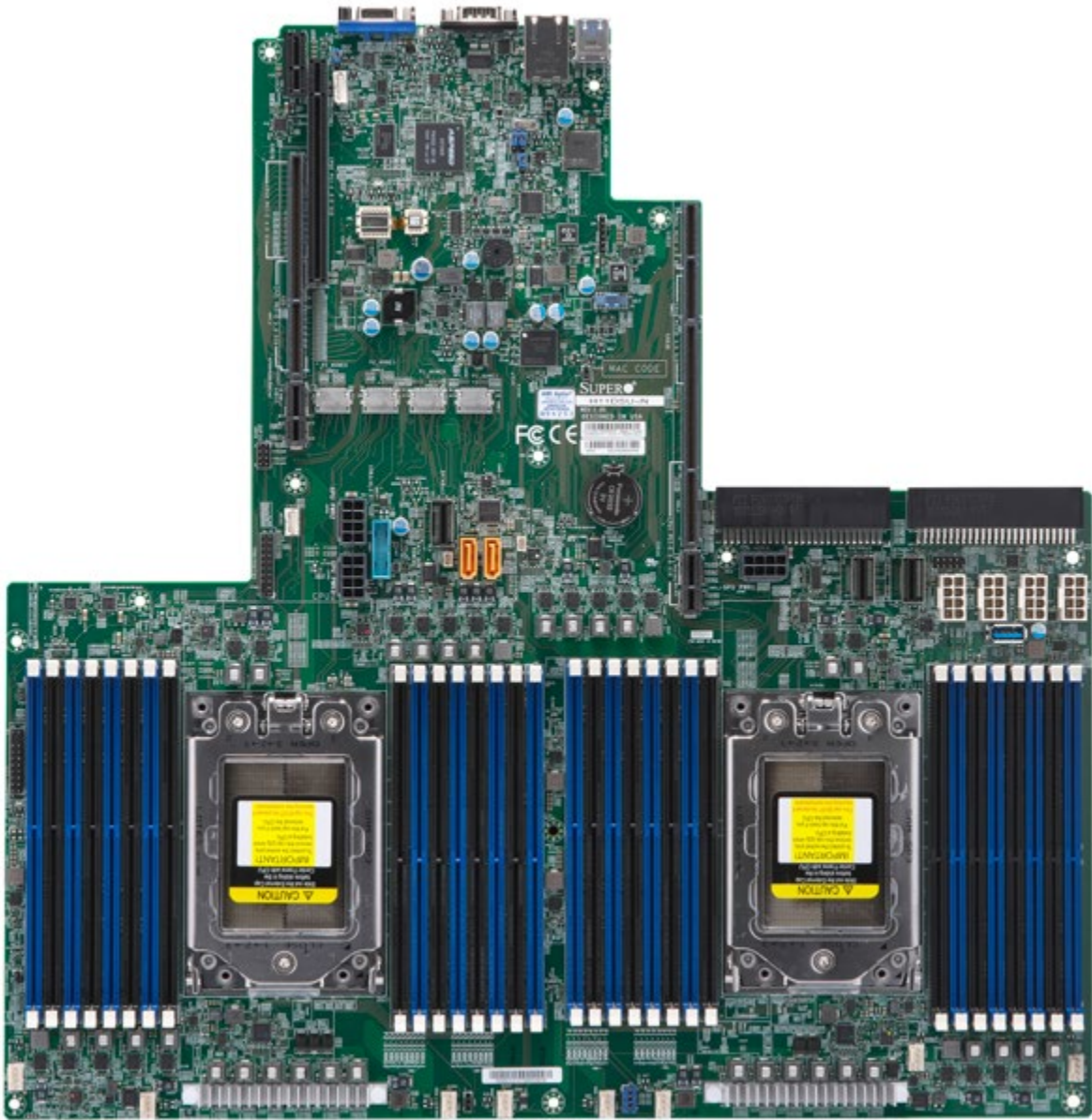
Important Links

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: <ftp://ftp.supermicro.com>
- Product safety info: http://www.supermicro.com/about/policies/safety_information.cfm
- If you have any questions, please contact our support team at: support@supermicro.com

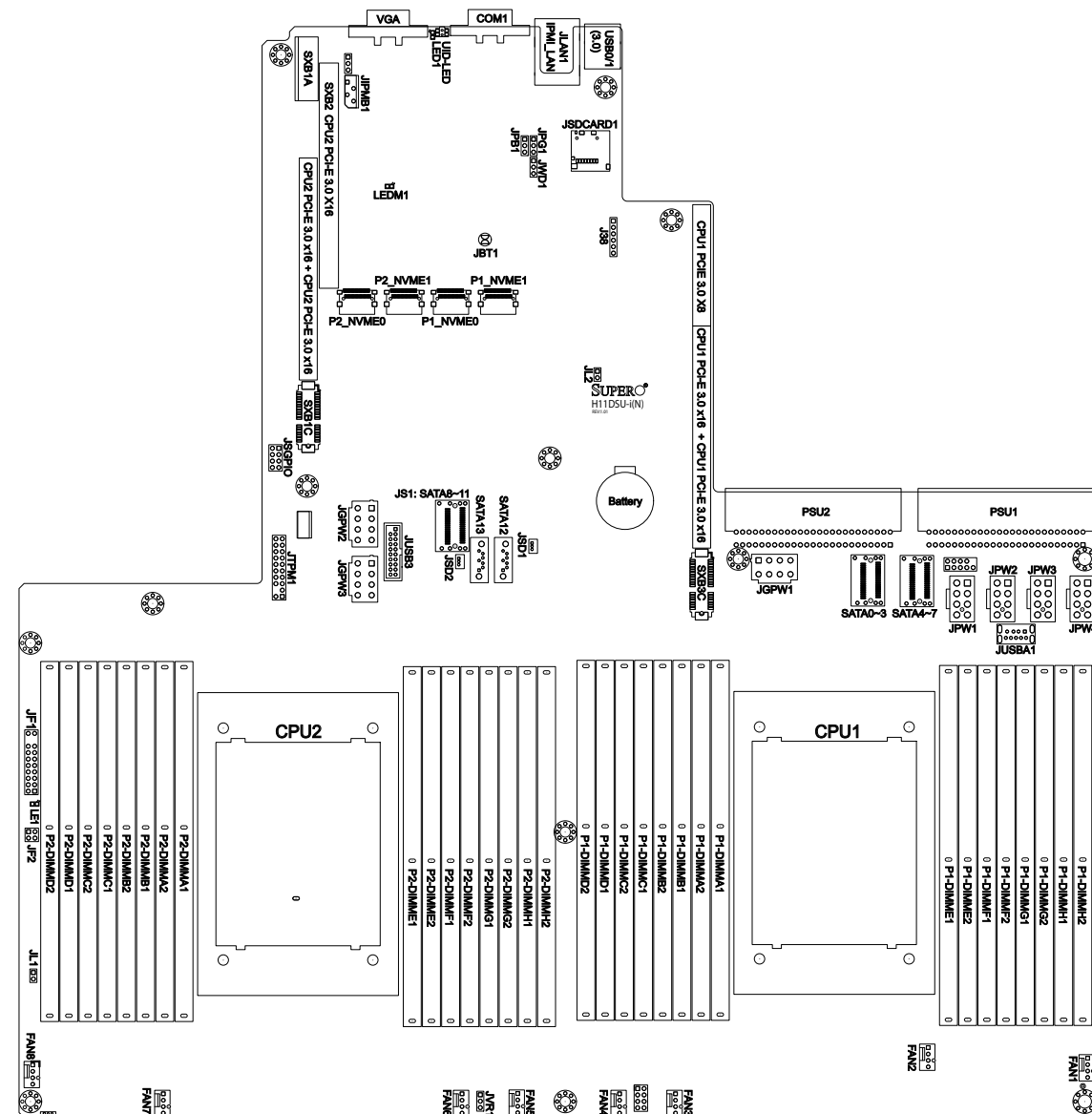
This manual may be periodically updated without notice. Please check the Supermicro website for possible updates to the manual revision level.

Figure 1-1. H11DSU-iN Motherboard Image

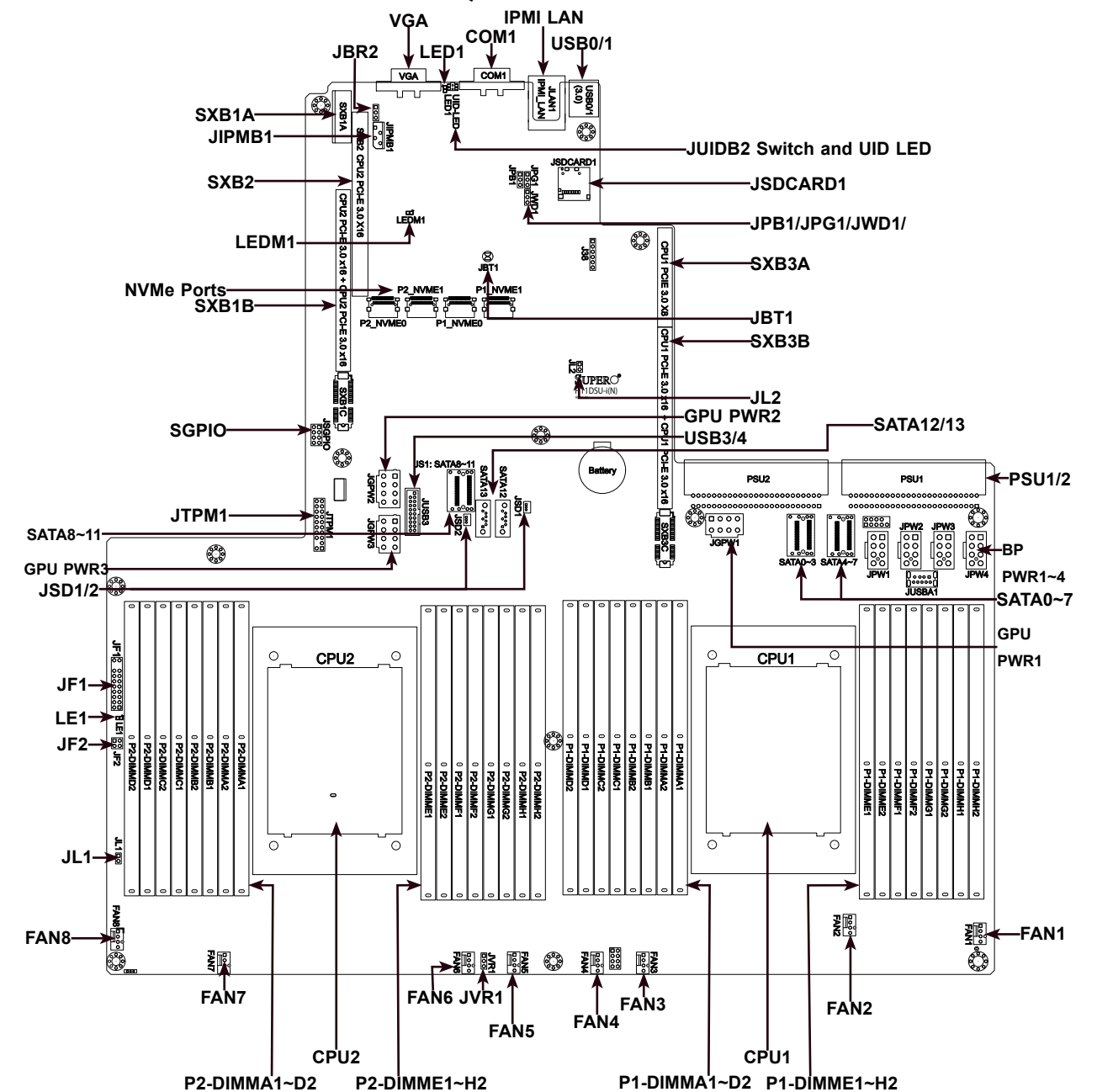


Note: All graphics shown in this manual were based upon the latest PCB revision available at the time of publication of the manual. The motherboard you received may or may not look exactly the same as the graphics shown in this manual.

Figure 1-2. H11DSU-iN Motherboard Layout



Quick Reference



Notes:

- See Chapter 2 for detailed information on jumpers, I/O ports, and JF1 front panel connections.
- Jumpers/LED indicators not indicated are used for testing only.
- Use only the correct type of onboard CMOS battery as specified by the manufacturer. Do not install the onboard battery upside down to avoid possible explosion.

Quick Reference Table

Jumper	Description	Default Setting
J38	CPLD Code Programming	NA
J39	Debug message through CPU UART0	NA
JBR2	Debug Mode for IPMI Use	Pins 1-2 (Normal)
JBT1	CMOS Clear	Open (Normal)
JPG1	VGA Enable/Disable	Pins 1-2 (Enabled)
JVR1	VRM Code Programming	Pin1: CLK, Pin2: DAT
JWD1	Watch Dog	Pins 1-2 (Reset)

LED	Description	Status
LE1	Power LED	Solid Green: Power On
LED1	UID LED	Solid Blue: UID Switch On
LEDM1	BMC Heartbeat LED	

Connector	Description
BT1	Onboard Battery
COM1	COM Port
FAN1~FAN8	4-pin System/CPU Fan Headers
SATA0~13	SATA 3.0 Ports
SGPIO	Serial Link General Purpose I/O Header
JF1	Front Control Panel Header 1
JF2	UltraIO Riser Card LAN LED Header
JIPMB1	System Management Bus Header
JL1	Chassis Intrusion Header
JLAN1	IPMI Gigabit LAN (RJ45) Port
GPU PWR1~3	12V 8-pin Power Connector for Riser Card GPU
BP PWR1~4	12V and 5V 8-pin Power Connector for Backplane
JSD1/JSD2	SATA DOM (Device on Module) power connectors 1/2
JSDCARD1	SD Card Port
JTPM1	Trusted Platform Module/Port 80 Connector
JUSBA1	USB 3.0 Type A Header
USB3	Front Panel USB3/4 3.0 ports
P1-NVME0/1	Processor 1 NVMe Ports
P2-NVME0/1	Processor 2 NVMe Ports
PSU1	Serverboard Main Power Supply Connector
PSU2	Serverboard Main Power Supply Connector
SXB1A/1B/1C	WIO-L Riser Card Support (CPU1 PCI-E 3.0 x16 and CPU2 PCI-E 3.0 x16)
SXB2	WIO-R Riser Card Support (CPU2 PCI-E 3.0 x16)
SXB3A/3B/3C	Ultra I/O Riser Card Support (CPU1 PCI-E 3.0 x 24, CPU2 PCI-E 3.0 x16)
USB0/1	Back panel Universal Serial Bus (USB) 3.0 Ports

Connector	Description
VGA	VGA Video Port

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

Motherboard Features

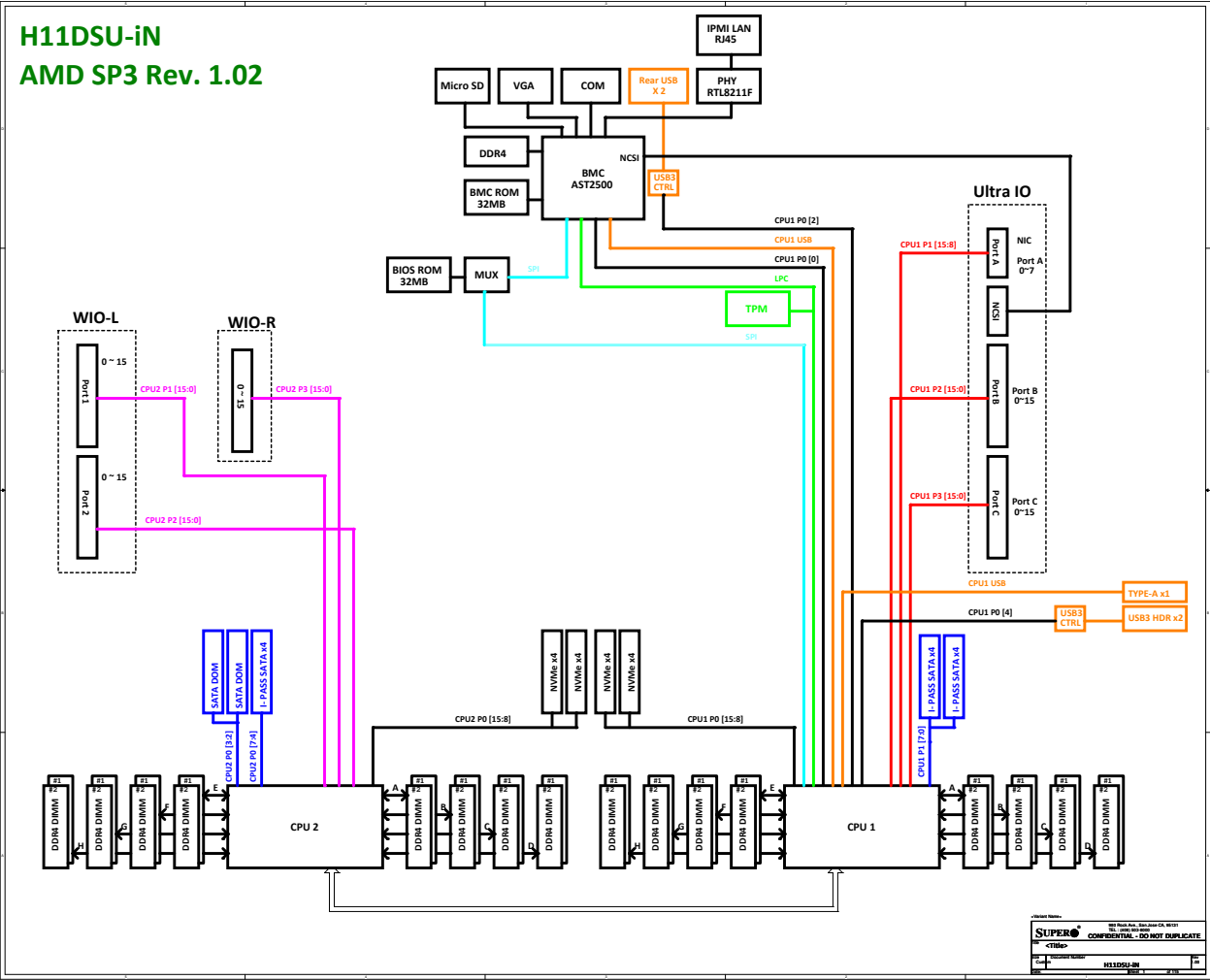
Motherboard Features	
CPU	
<ul style="list-style-type: none">Dual EPYC 7000 series, processor in Socket SP3 sockets	
Memory	
<ul style="list-style-type: none">Up to 4 TB of ECC DDR4 2400/2666 MHz speed, RDIMM/LRDIMM/3DS/NVDIMM memory in thirty-two (32) slots	
DIMM Size	
<ul style="list-style-type: none">Up to 128 GB size at 1.2V	
Chipset	
<ul style="list-style-type: none">System on Chip	
Expansion Slots	
WIO: <ul style="list-style-type: none">1 x PCI-E 3.0 x321 x PCI-E 3.0 x16 Ultra: <ul style="list-style-type: none">1 x PCI-E 3.0 x40	
Network	
<ul style="list-style-type: none">ATEN IPMI from ASPEED BMC for gigabit RJ45 port	
Graphics	
<ul style="list-style-type: none">ASPEED AST2500 BMC chip with one (1) VGA port	
I/O Devices	
<ul style="list-style-type: none">COM Port	<ul style="list-style-type: none">One (1) COM connector on rear I/O panel
<ul style="list-style-type: none">SATA/NVMe Ports	<ul style="list-style-type: none">Fourteen (14) SATA 3.0 ports (SATA0~13)Two (2) SATA-DOM portsFour (4) internal NVMe ports
Peripheral Devices	
<ul style="list-style-type: none">Two (2) USB 3.0 ports on the rear I/O panel (USB0/1)One (1) USB 3.0 Type A connector for front access (USB2)One (1) USB 3.0 header for front control panel (USB3/4)	
BIOS	
<ul style="list-style-type: none">128Mb SPI AMI BIOS® SM Flash UEFI BIOSACPI 5.1, SMBIOS 3.1.1, Plug-and-Play (PnP), BIOS rescue hot-key, RTC (Real Time Clock) wakeup, Riser Card Auto-Detection Support	

Note: The table above is continued on the next page.

Motherboard Features
Power Management
<ul style="list-style-type: none">ACPI power management (S5)Power button override mechanismPower-on mode for AC power recovery
System Health Monitoring
<ul style="list-style-type: none">Onboard voltage monitoring for +3.3V, +3.3V Standby, +5V, +5V Standby, +12V, VBAT, Memory, PCH Temp., System Temp., Memory Temp.CPU switching phase voltage regulatorCPU Thermal Trip supportCPU Thermal Design Power (TDP) support of up to 180W (See Note 1 at the bottom)
Fan Control
<ul style="list-style-type: none">Single cooling zoneLow-noise fan speed controlPulse Width Modulation (PWM) fan control
System Management
<ul style="list-style-type: none">Trusted Platform Module (TPM) supportSystem resource alert via SuperDoctor® 5Power Supply Monitoring (JP1²C1)SuperDoctor® 5, Watch DogChassis intrusion header and detection (JL1)QA2, SUM-InBand, SUM-OOB, IPMICFG, IPMIVlew, SMCIPMITOOL
LED Indicators
<ul style="list-style-type: none">CPU/OverheatingFan FailureHDD activityLAN activity
Dimensions
<ul style="list-style-type: none">17" (L) x 16.8" (W) (431.8 mm x 426.72 mm)

Note 1: The CPU maximum thermal design power (TDP) is subject to chassis and heatsink cooling restrictions. For proper thermal management, please check the chassis and heatsink specifications for proper CPU TDP sizing.

Figure 1-3.
System Block Diagram



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

1.2 Processor and Chipset Overview

Built upon the functionality and capability of the EPYC 7000 series processor in an Socket SP3 socket and a System on Chip chipset. The H11DSU-iN motherboard offers maximum I/O expendability, energy efficiency, and data reliability in a 14-nm process architecture, and is optimized for embedded storage solutions, networking applications, or cloud-computing platforms.

With support of the new microarchitecture 14 nm process technology, the H11DSU-iN drastically increases system performance for a multitude of server applications.

The EPYC 7000 series supports the following features:

- ACPI Power Management Logic Support Rev. 6.1
- Adaptive Thermal Management/Monitoring
- PCI-E 3.0, SATA 3.0 w/transfer rates of up to 6 Gb/s
- System Management Bus (SMBus) Specification Version 2.0

1.3 Special Features

This section describes the health monitoring features of the H11DSU-iN motherboard. The motherboard has an onboard System Hardware Monitor chip that supports system health monitoring.

Recovery from AC Power Loss

The Basic I/O System (BIOS) provides a setting that determines how the system will respond when AC power is lost and then restored to the system. You can choose for the system to remain powered off (in which case you must press the power switch to turn it back on), or for it to automatically return to the power-on state. See the Advanced BIOS Setup section for this setting. The default setting is Last State.

1.4 System Health Monitoring

This section describes the health monitoring features of the H11DSU-iN motherboard. The motherboard has an onboard chip that supports system health monitoring. Once a voltage becomes unstable, a warning is given or an error message is sent to the screen. The user can adjust the voltage thresholds to define the sensitivity of the voltage monitor.

Onboard Voltage Monitors

The onboard voltage monitor will continuously scan crucial voltage levels. Once a voltage becomes unstable, it will give a warning or send an error message to the screen. Users can adjust the voltage thresholds to define the sensitivity of the voltage monitor. Real time readings of these voltage levels are all displayed in BMC.

Fan Status Monitor with Firmware Control

PC health monitoring in the BIOS can check the RPM status of the cooling fans. The onboard CPU and chassis fans are controlled by Thermal Management.

Environmental Temperature Control

The thermal control sensor monitors the CPU temperature in real time and will turn on the thermal control fan whenever the CPU temperature exceeds a user-defined threshold. The overheat circuitry runs independently from the CPU. Once the thermal sensor detects that the CPU temperature is too high, it will automatically turn on the thermal fans to prevent the CPU from overheating. The onboard chassis thermal circuitry can monitor the overall system temperature and alert the user when the chassis temperature is too high.

Note: To avoid possible system overheating, please be sure to provide adequate airflow to your system.

System Resource Alert

This feature is available when used with SuperDoctor 5®. SuperDoctor 5 is used to notify the user of certain system events. For example, you can configure SuperDoctor 5 to provide you with warnings when the system temperature, CPU temperatures, voltages and fan speeds go beyond a predefined range.

1.5 ACPI Features

ACPI stands for Advanced Configuration and Power Interface. The ACPI specification defines a flexible and abstract hardware interface that provides a standard way to integrate power management features throughout a computer system including its hardware, operating system and application software. This enables the system to automatically turn on and off peripherals such as network cards, hard disk drives and printers.

In addition to enabling operating system-directed power management, ACPI also provides a generic system event mechanism for Plug and Play and an operating system-independent interface for configuration control. ACPI leverages the Plug and Play BIOS data structures while providing a processor architecture-independent implementation that is compatible with Windows 8/R2 and Windows 2012/R2 operating systems.

1.6 Power Supply

As with all computer products, a stable power source is necessary for proper and reliable operation. It is even more important for processors that have high CPU clock rates. In areas where noisy power transmission is present, you may choose to install a line filter to shield the computer from noise. It is recommended that you also install a power surge protector to help avoid problems caused by power surges.

1.7 Super I/O

The Super I/O (Aspeed AST2500 chip) includes a data separator, write pre-compensation circuitry, decode logic, data rate selection, a clock generator, drive interface control logic and interrupt and DMA logic. The wide range of functions integrated onto the Super I/O greatly reduces the number of components required for interfacing with floppy disk drives.

The Super I/O provides one high-speed, 16550 compatible serial communication port (UART), which supports serial infrared communication. This UART includes a 16-byte send/receive FIFO, a programmable baud rate generator, complete modem control capability and a processor interrupt system. This UART provides legacy speed with baud rate of up to 115.2 Kbps as well as an advanced speed with baud rates of 250 K, 500 K, or 1 Mb/s, which support higher speed modems.

The Super I/O provides functions that comply with ACPI (Advanced Configuration and Power Interface), which includes support of legacy and ACPI power management through a SMI or SCI function pin. It also features auto power management to reduce power consumption.

The IRQs, DMAs and I/O space resources of the Super I/O can be flexibly adjusted to meet ISA PnP requirements, which support ACPI and APM (Advanced Power Management).

Chapter 2

Installation

2.1 Static-Sensitive Devices

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

Precautions

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

Unpacking

The motherboard is shipped in antistatic packaging to avoid static damage. When unpacking the motherboard, make sure that the person handling it is static protected.

2.2 Motherboard Installation

All motherboards have standard mounting holes to fit different types of chassis. Make sure that the locations of all the mounting holes for both the motherboard and the chassis match. Although a chassis may have both plastic and metal mounting fasteners, metal ones are highly recommended because they ground the motherboard to the chassis. Make sure that the metal standoffs click in or are screwed in tightly.



Tools Needed

Location of Mounting Holes

Notes:

1. To avoid damaging the motherboard and its components, please do not use a force greater than 8 lb/inch on each mounting screw during motherboard installation.
2. Some components are very close to the mounting holes. Please take precautionary measures to avoid damaging these components when installing the motherboard to the chassis.

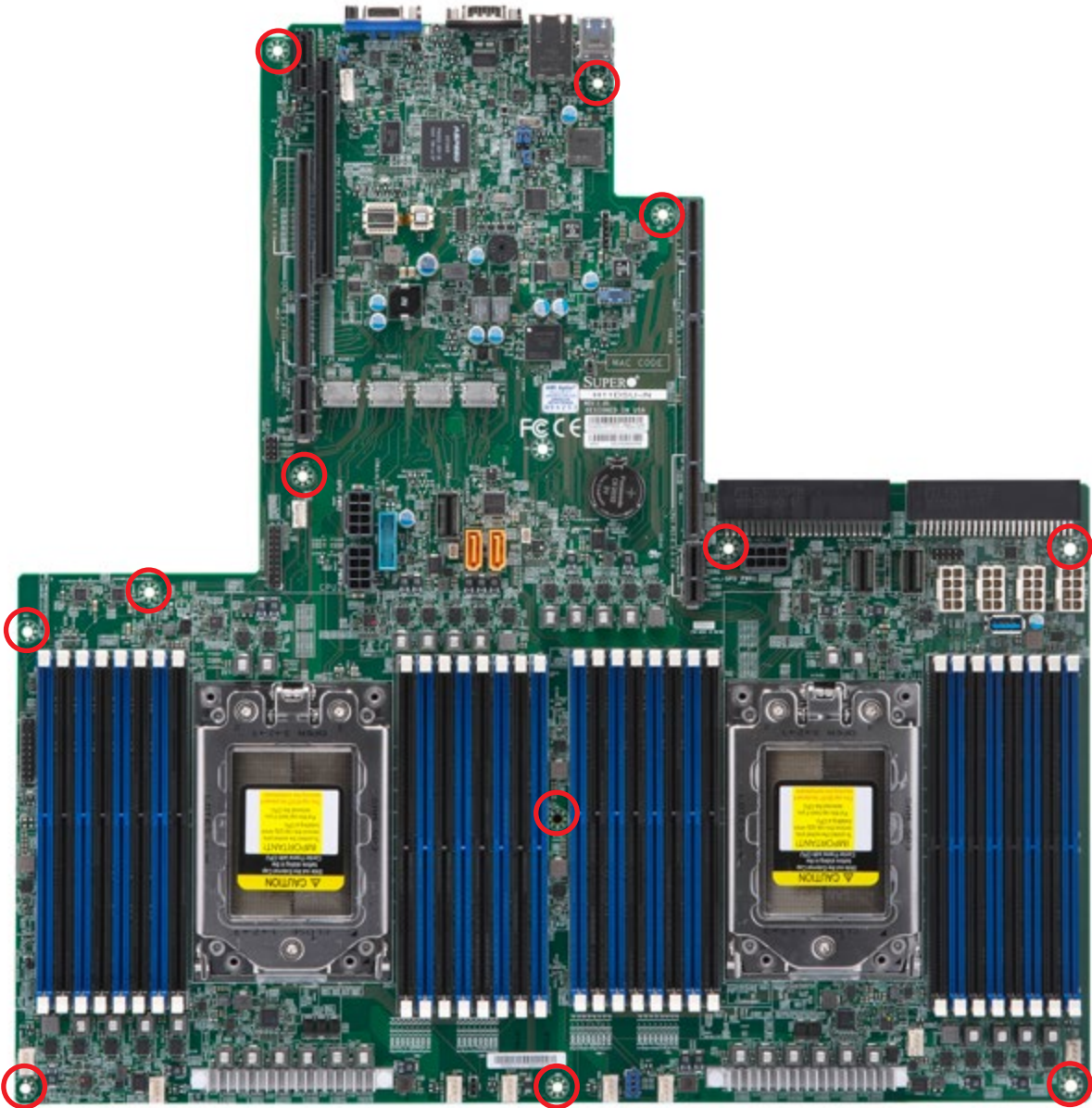
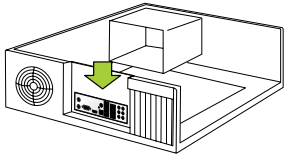


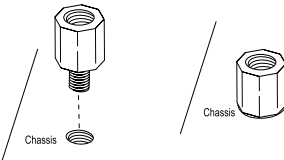
Figure 2-1. Motherboard Mounting Holes

Installing the Motherboard

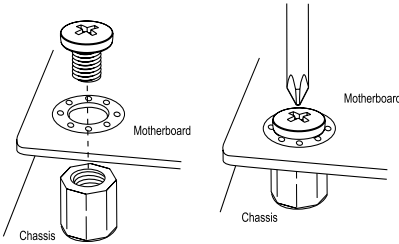
- 1. Install the I/O shield into the back of the chassis.



- 2. Locate the mounting holes on the motherboard. See the previous page for the location.



- 3. Locate the matching mounting holes on the chassis. Align the mounting holes on the motherboard against the mounting holes on the chassis.



- 4. Install standoffs in the chassis as needed.
- 5. Install the motherboard into the chassis carefully to avoid damaging other motherboard components.
- 6. Using the Phillips screwdriver, insert a Phillips head #6 screw into a mounting hole on the motherboard and its matching mounting hole on the chassis.
- 7. Repeat Step 5 to insert #6 screws into all mounting holes.
- 8. Make sure that the motherboard is securely placed in the chassis.

Note: Images displayed are for illustration only. Your chassis or components might look different from those shown in this manual.

2.3 Processor and Heatsink Installation

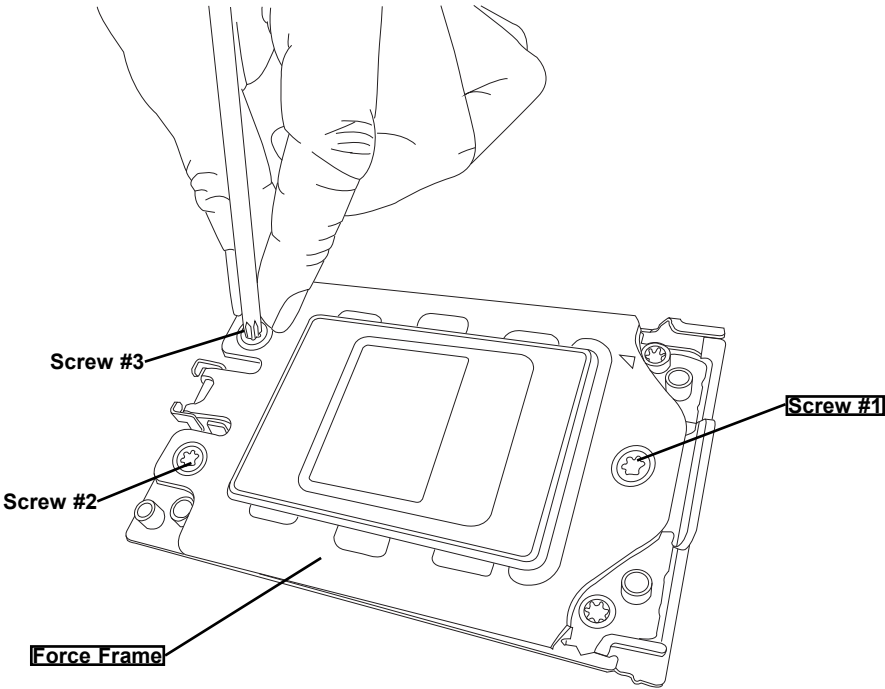
Warning: When handling the processor package, avoid placing direct pressure on the label area of the fan.

Important:

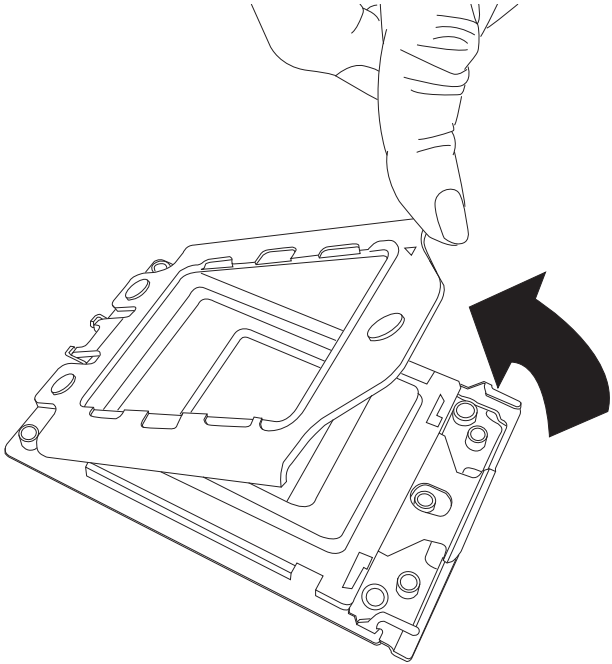
- For the Processor/Heatsink installation you need to use a T20 screwdriver when opening/closing the CPU socket.
- Always connect the power cord last, and always remove it before adding, removing or changing any hardware components. Make sure that you install the processor into the CPU socket before you install the CPU heatsink.
- If you buy a CPU separately, make sure that you use an Intel-certified multi-directional heatsink only.
- Make sure to install the motherboard into the chassis before you install the CPU heatsink.
- When receiving a motherboard without a processor pre-installed, make sure that the plastic CPU socket cap is in place and none of the socket pins are bent; otherwise, contact your retailer immediately.
- Refer to the Supermicro website for updates on CPU support.

Installing the Processor and Heatsink

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

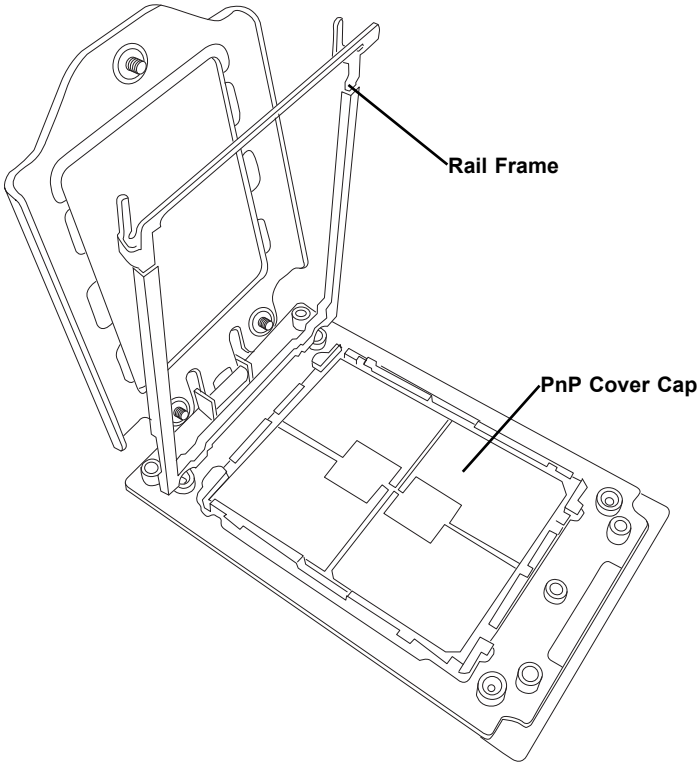


2. The spring-loaded Force Frame will raise up after the last screw securing it (#1) is removed. Gently allow it to lift up to its stopping position.

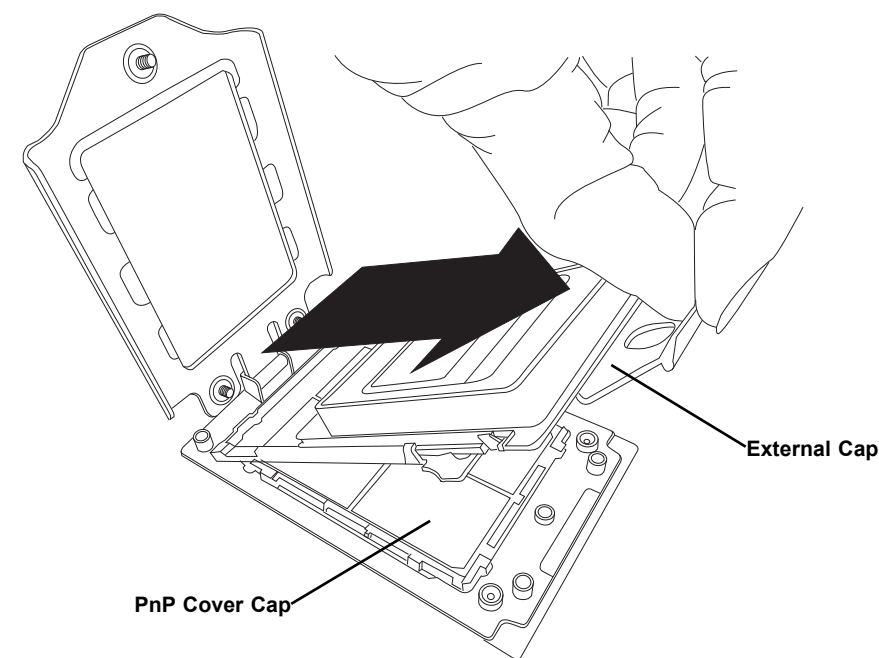


3. Lift the Rail Frame up by gripping the lift tabs near the front end of the rail frame. While keeping a secure grip of the Rail Frame, lift it to a position so you can do the next step of removing the External Cap.

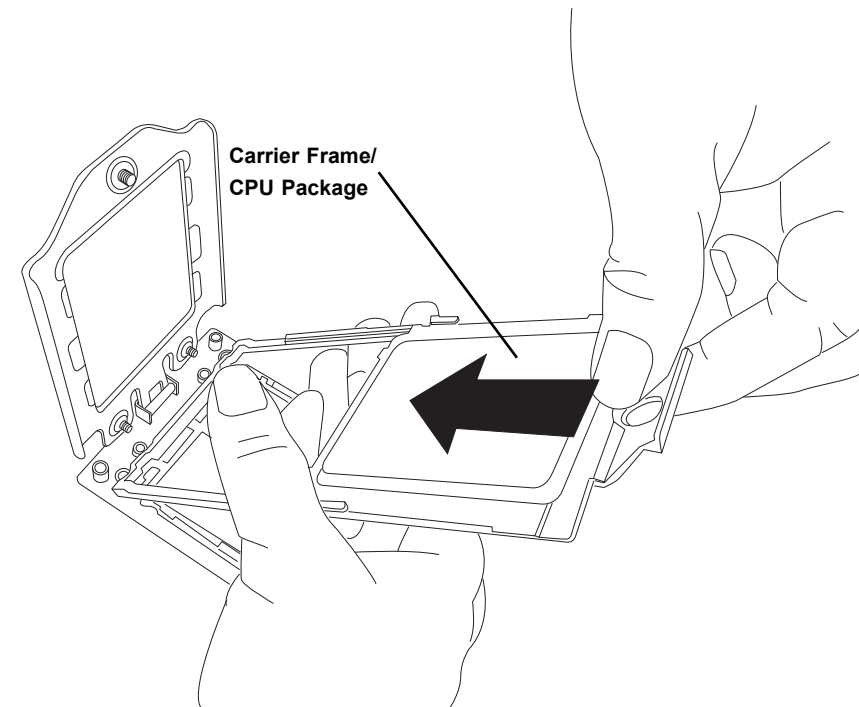
Note: The Rail Frame is spring loaded, so keep a secure grip on it as you lift it so it does not snap up.



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



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.

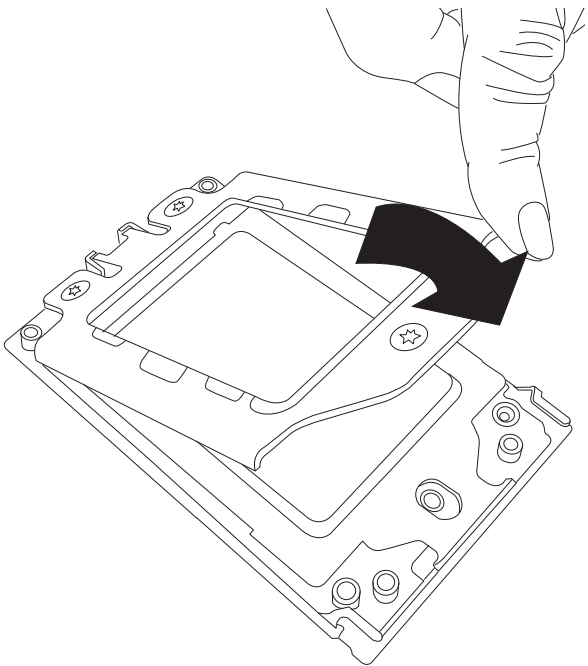


Note: You can only install the CPU inside the socket in one direction with the handle at the top. Make sure that it is properly inserted into the CPU socket before closing the Rail Frame plate. If it doesn't close properly, do not force it as it may damage your CPU. Instead, open the Rail Frame plate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

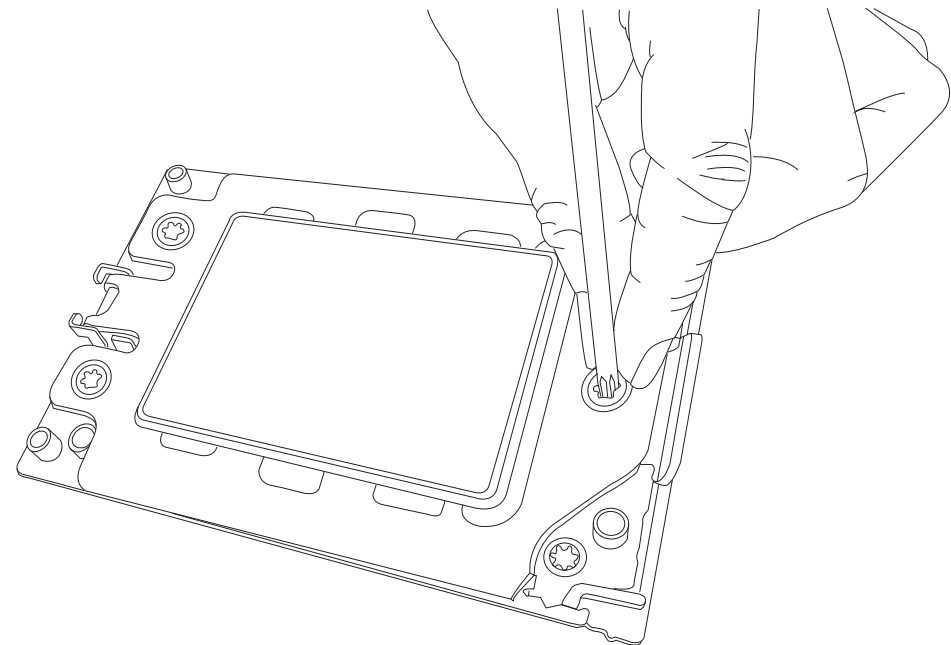
7. Lift up the Rail Frame till it securely rests in upright position. Then remove the PnP Cover Cap from the CPU socket below. Grip the two lift tabs marked "Remove" at the middle of the cap and pull vertically upwards to remove the PnP Cover Cap.

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

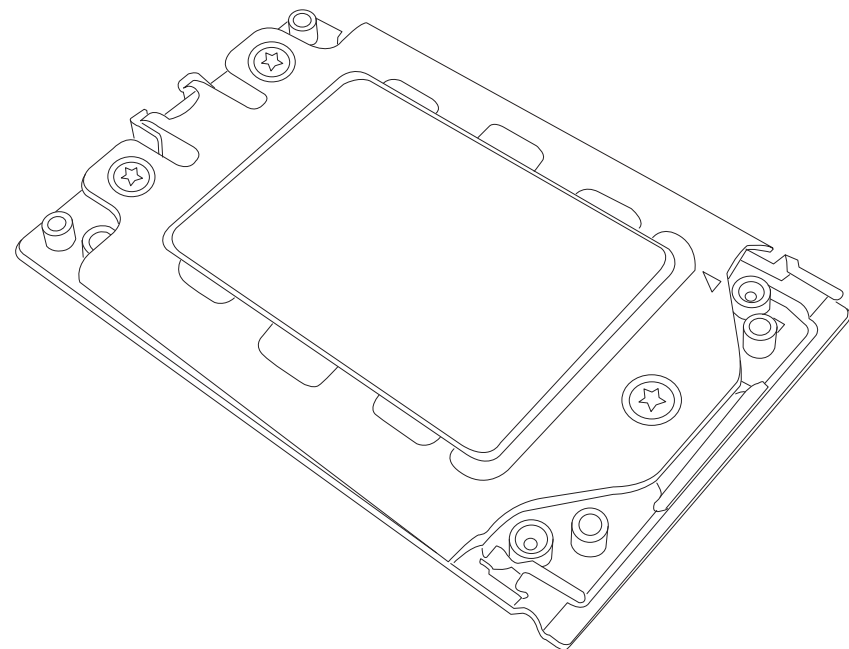
8. Gently lower the Rail Frame down onto the socket until the latches on the Rail Frame engage with the Socket housing. and it rests in place. DO NOT force it into place!



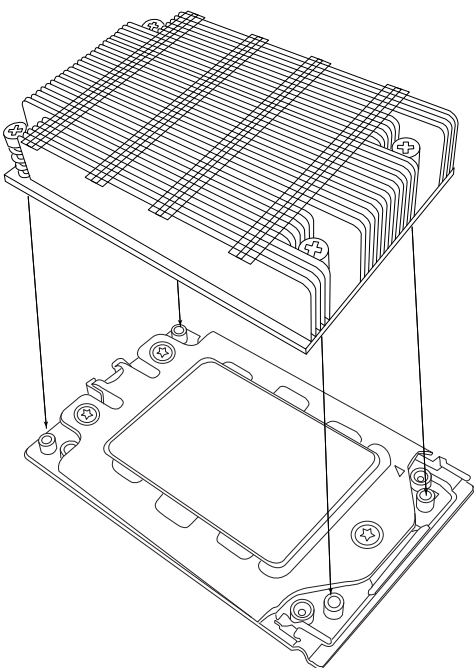
9. Gently lower the Force Frame down onto the Rail Frame and hold it in place until it is seated in the Socket housing. Note that the Force Frame is spring loaded and has to be held in place before it is secured.



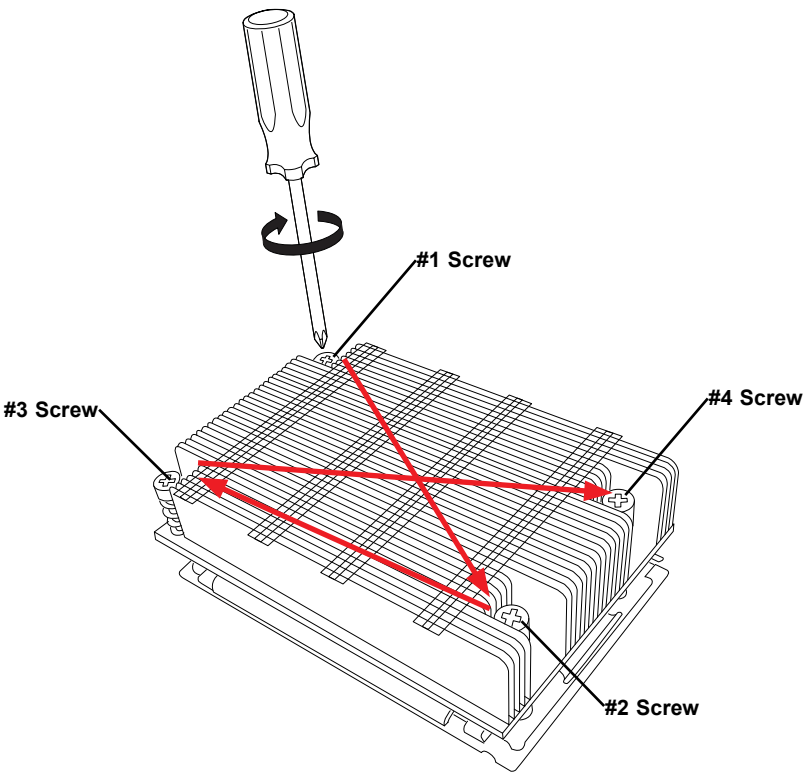
10. Place and re-screw the screws in the reverse order to the way you removed them (holes 1-2-3 in order). When finished, the Force Frame will be secure over both the Rail Frame and CPU Package.



11. After the Force Frame is secured and the CPU package is in place, now you must install the heatsink to the frame. Lower the heatsink down till it rests securely over the four screw holes on CPU Package on the socket frame.



12. Using a diagonal pattern, tighten the four screws down on the heatsink in a clockwise fashion till it is secure. The heatsink will now be secured and you have finished installing the processor and heatsink onto the motherboard. Repeat this procedure for any remaining CPU sockets on the Motherboard.



Un-installing the Processor and Heatsink

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

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 H11DSU-iN supports Up to 4 TB of ECC DDR4 2400/2666 MHz speed, RDIMM/LRDIMM/3DS/NVDIMM memory in thirty-two (32) slots. Refer to the table below for additional memory information.

Processors and their Corresponding Memory Modules																
CPU#	Channel 1		Channel 2		Channel 3		Channel 4		Channel 5		Channel 6		Channel 7		Channel 8	
8 DIMMS																
CPU1		A2		B2		C2		D2		E2		F2		G2		H2
16 DIMMS																
CPU1	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	F1	F2	G1	G2	H1	H2
16 DIMMS																
CPU1		A2		B2		C2		D2		E2		F2		G2		H2
CPU2		A2		B2		C2		D2		E2		F2		G2		H2
32 DIMMS																
CPU1	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	F1	F2	G1	G2	H1	H2
CPU2	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	F1	F2	G1	G2	H1	H2

Populating RDIMM/RDIMM 3DS/LRDIMM/LRDIMM 3DS DDR4 Memory Modules					
Type	DIMM Population		Maximum DIMM Capacity (GB)		Maximum Frequency (MHz)
	DIMM1	DIMM2	1 Channel	8 Channel	
RDIMM		1R	16GB	128GB	2666
	1R	1R	32GB	256GB	2133
		2R	32GB	256GB	2400
	1R	2R	48GB	384GB	1866
	2R	2R	64GB	512GB	2133
LRDIMM		4R	64GB	512GB	2666
	4R	4R	128GB	1TB	2133
		8R	128GB	1TB	2666
	4R	8R	192GB	1.5TB	2133
	8R	8R	256GB	2TB	2133
LRDIMM 3DS		2R2H	64GB	512GB	2400
	2R2H	2R2H	128GB	1TB	1866
		2R4H	128GB	1TB	2400
	2R2H	2R4H	192GB	1.5TB	1866
	2R4H	2R4H	256GB	2TB	1866

DIMM Module Population Sequence

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

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

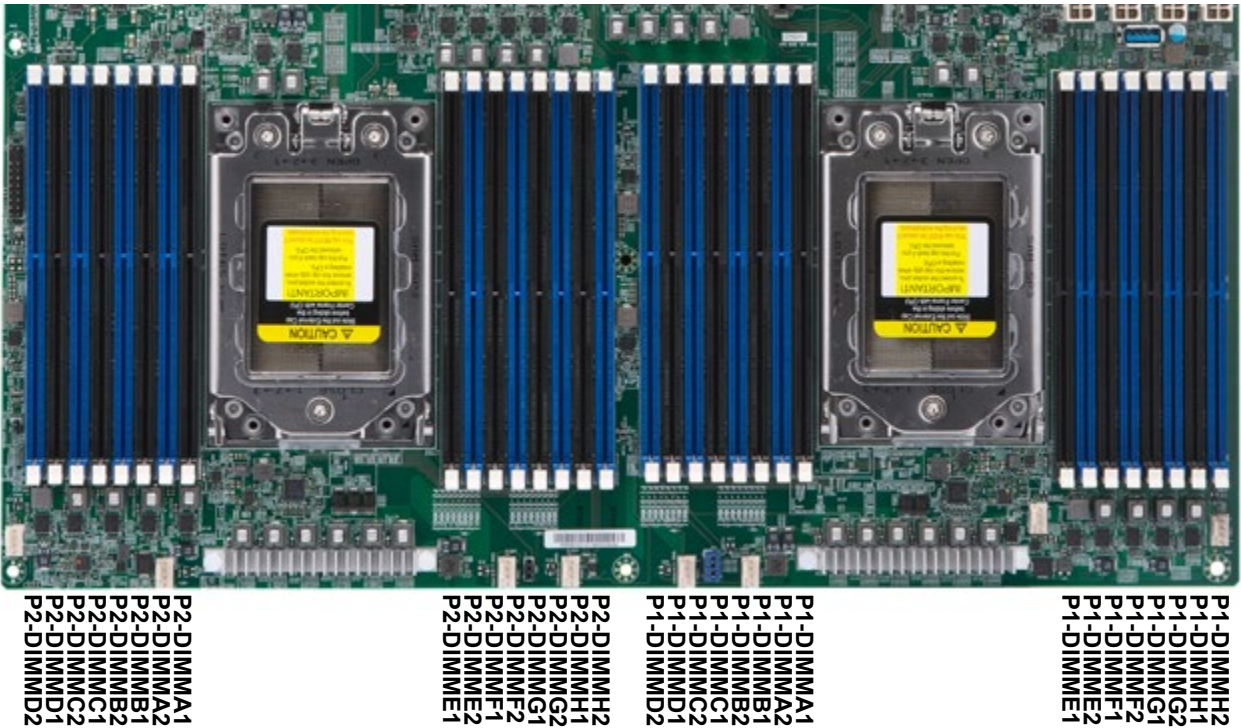
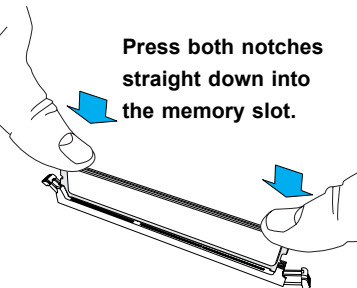
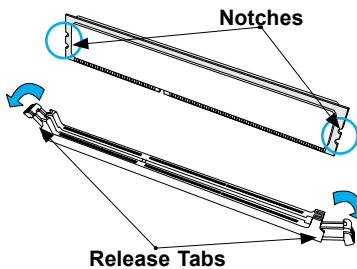
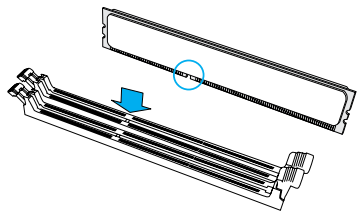


Figure 2-2. DIMM Numbering

DIMM Installation

1. Insert the desired number of DIMMs into the memory slots, starting with DIMMA2, DIMMB2, DIMMC2, DIMMD2, DIMME2, DIMMF2, DIMMG2, DIMMH2, then DIMMA1, DIMMB1, DIMMC1, DIMMD1, DIMME1, DIMMF1, DIMMG1, DIMMH1. For best performance, please use the memory modules of the same type and speed.
2. Push the release tabs outwards on both ends of the DIMM slot to unlock it.
3. Align the key of the DIMM module with the receptive point on the memory slot.
4. Align the notches on both ends of the module against the receptive points on the ends of the slot.
5. Press the notches on both ends of the module straight down into the slot until the module snaps into place.
6. Press the release tabs to the lock positions to secure the DIMM module into the slot.



DIMM Removal

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

2.5 Rear I/O Ports

See Figure 2-1 below for the locations and descriptions of the various I/O ports on the rear of the motherboard.

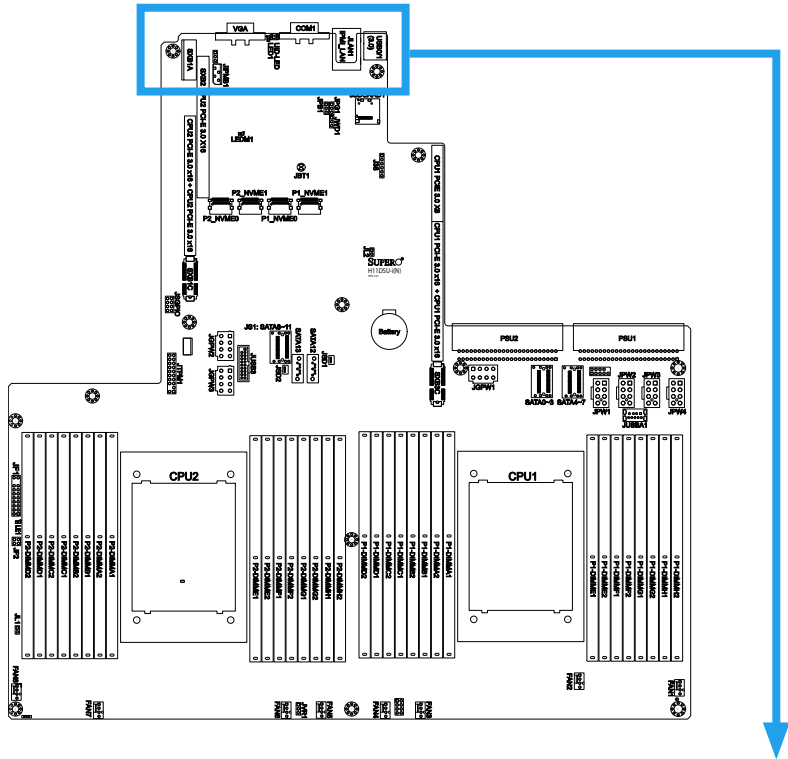
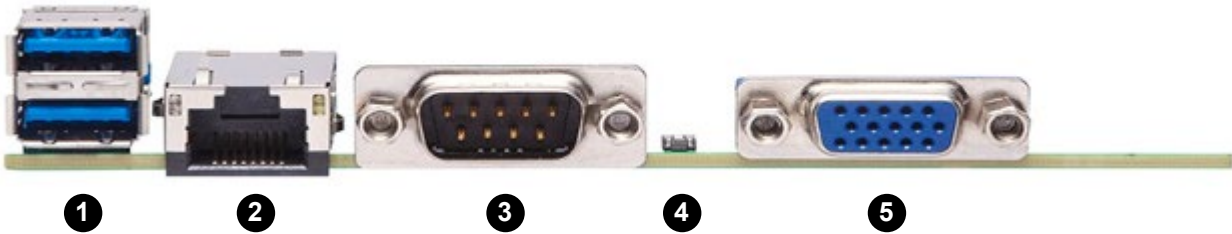


Figure 2-3. I/O Port Locations and Definitions



Rear I/O Ports			
#	Description	#	Description
1.	USB 0/1 Ports	4.	UID LED
2.	IPMI LAN Port	5.	VGA Port
3.	COM1 Port		

COM Ports

One COM 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.

Universal Serial Bus (USB) Ports

There are two USB 3.0 ports (USB0/1) on the I/O back panel. The motherboard also provides two USB 3.0 connections via USB headers (USB3/4). The JUSBA1 header is USB Type A. The onboard headers can be used to provide front side USB access with a cable (not included).

Back Panel USB 3.0 (USB0/1) 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

Back Panel USB 3.0 (USB3/4) Pin Definitions			
Pin#	Definition	Pin#	Definition
1	USB30_Front_VCC	19	USB30_Front_VCC
2	USB3_HDR0_SSRX_L_CHK	18	USB3_HDR1_SSRX_L_CHK
3	USB3_HDR0_SSRX_H_CHK	17	USB3_HDR1_SSRX_H_CHK
4	GND	16	GND
5	USB3_HDR0_SSTX_L_CHK	15	USB3_HDR1_SSTX_L_CHK
6	USB3_HDR0_SSTX_H_CHK	14	USB3_HDR1_SSTX_H_CHK
7	GND	13	GND
8	USB3_HDR0_D_L	12	USB3_HDR1_D_L
9	USB3_HDR0_D_H	11	USB3_HDR1_D_H
10	GND		

Front Panel USB 3.0 (JUSBA1) Header Pin Definitions			
Pin#	Definition	Pin#	Definition
12	CG	13	CG
1	VBUS	5	StdA_SSRX-N
2	D-N	6	StdA_SSRX-P
3	D-P	7	GND_DRAIN
4	GND	8	StdA_SSTX_N
		9	StdA_SSTX-P
10	CG	11	CG

VGA Port

A video (VGA) port is located next to JLAN1 on the I/O back panel. Refer to the board layout below for the location.

2.6 Front Control Panel

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

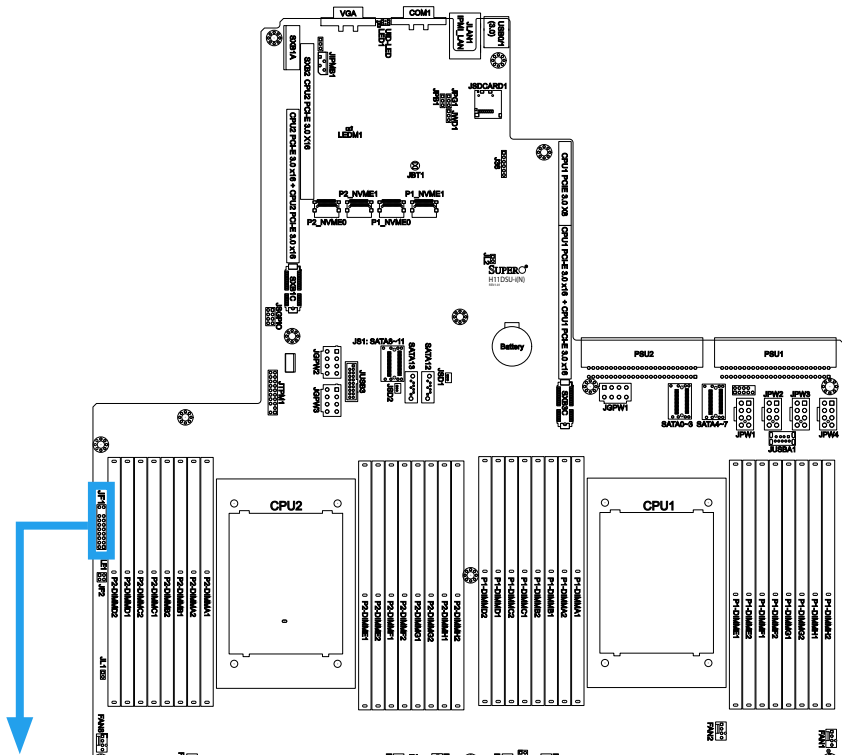


Figure 2-4. JF1 Header Pins

	20	19	
(Ground)	●	●	NMI (Control signal)
Key	●	●	Key
Power On LED (Control signal)	●	●	(5V standby)
HDD LED (Activity signal)	●	●	(Vcc)
NIC1 LED (Ground)	●	●	(Vcc)
NIC2 LED (Ground)	●	●	(Vcc)
UID LED (Ground)	●	●	(Vcc)
Power Fail LED (Ground)	●	●	(Vcc)
(Ground)	●	●	Reset Button (Data signal)
(Ground)	●	●	Power Button (Data signal)
	2	1	

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 in the suspend mode, press the button for at least 4 seconds. Refer to the table below for pin definitions.

Power Button Pin Definitions (JF1)	
Pin#	Definition
1	Signal
2	Ground

Reset Button

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

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

Power Fail LED

The Power Fail LED connection is located on pins 5 and 6 of JF1.

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

Unit Identifier Switch/UID LED Indicator

A Unit Identifier (UID) switch is located on the I/O backplane, and two UID LED indicators are located on the serverboard. The rear UID LED (LED1) is located next to the UID switch. The front UID LED is located on pins 7 & 8 on the front control panel (JF1). When you press the UID switch, both rear and front UID LED indicators will be turned on. Press the UID switch again to turn off the LED indicators. The UID Indicators provide easy identification of a system unit 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 @ <http://www.supermicro.com>.

UID Switch	
Pin#	Definition
1	Ground
2	Ground
3	Button In
4	Button Out

UID LED Status	
Color/State	Status
Blue: On	Unit Identified

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 the LED connection for LAN Port 2 is on Pins 9 and 10. Attach the NIC LED cables here to display network activity.

LAN1/LAN2 LED Pin Definitions (JF1)	
Pin#	Definition
9	NIC2 Activity LED
10	NIC2 Link LED
11	NIC1 Activity LED
12	NIC1 Link LED

HDD LED/UID Switch

The HDD LED/UID Switch connection is located on pins 13 and 14 of JF1. Attach a cable to Pin 14 to show hard drive activity status. Attach a cable to Pin 13 to use UID switch. Refer to the table below for pin definitions.

HDD LED Pin Definitions (JF1)	
Pin#	Definition
13	3.3V Standby/UID Switch
14	HDD Active

Power LED

The Power LED connection is located on pins 15 and 16 of JF1.

Power LED Pin Definitions (JF1)	
Pin#	Definition
15	3.3V
16	Power LED

NMI Button

The non-maskable interrupt button header is located on pins 19 and 20 of JF1.

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

2.7 Connectors

Power Connections

PSU1/PSU2 Main Power Supply Connectors

The primary power supply connectors (PSU1/PSU2) are proprietary power connectors that the power supply plugs into directly.

Backplane 12V and 5V 8-pin Power Connectors

BP PWR1/BP PWR2/BP PWR3/BP PWR4 are 8-pin 12V and 5V DC power inputs for the system's backplane. Refer to the table below for pin definitions.

Backplane 8-pin Power Pin Definitions	
Pin#	Definition
1 - 4	Ground
5 - 6	+12V
7 - 8	+5V

GPU 12V 8-pin Power Connectors

GPU PWR1/GPU PWR2/GPU PWR3 are 8-pin 12V DC power inputs for GPUs that are installed in the system's PCI-E slots. Refer to the table below for pin definitions.

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

Headers

Fan Headers

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

SGPIO Header

The SGPIO1 (Serial General Purpose Input/Output) header is used to communicate with the enclosure management chip on the backplane.

JSGPIO Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	Ground	2	DATA IN
3	Ground	4	DATA Out
5	Load	6	Ground
7	Clock	8	NC

NC = No Connection

Chassis Intrusion

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

Chassis Intrusion Pin Definitions	
Pins	Definition
1	Intrusion Input
2	Ground

Disk-On-Module Power Connector

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

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

TPM Header/Port 80 Connector

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

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	No Pin
5	LRESET#	6	NC
7	LAD3	8	LAD2
9	3.3V	10	LAD1
11	LAD0	12	GND
13	SMB_CLK4 (X)	14	SMB_DAT4 (X)
15	P3V3_STBY	16	SERIRQ
17	GND	18	LP_CLKRUN_L
19	P3V3_STBY	20	LDRQ0_L

IPMB System Management Bus Header

A System Management Bus header for IPMI 2.0 is located at JIPMB1. Connect the appropriate cable here to use the IPMB I²C connection on your system.

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

SD Card Port

The JSDCARD1 is the SD Card port for the system.

UltraO Riser Card LAN LED Header

JF2 is a header for the UltraO Riser Card LAN LED header.

SATA Ports

The H11DSU-iN has fourteen (14) SATA 3.0 ports (SATA0-13) that are supported by the System on Chip chipset.

NVM Express Connections

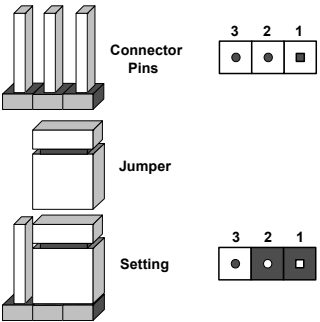
Four NVM Express ports are located on the serverboard (two for each processor). These ports provide high-speed, low-latency PCI-Exp. 3.0 x4 connections directly from the CPU to NVMe Solid State (SSD) drives. This greatly increases SSD data-throughput performance and significantly reduces PCI-E latency by simplifying driver/software requirements resulted from direct PCI-E interface from the CPU to the NVMe SSD drives.

2.8 Jumper Settings

How Jumpers Work

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

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



CMOS Clear

JBT1 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.

Note: Clearing CMOS will also clear all passwords.

Do not use the PW_ON connector to clear CMOS.



VGA Enable/Disable

JPG1 allows you to enable or disable the VGA port. The default position is on pins 1 and 2 to enable VGA. See the table below for jumper settings.

VGA Enable/Disable Jumper Settings (JPG1)	
Jumper Setting	Definition
Pins 1-2	Enabled
Pins 2-3	Disabled

Watch Dog

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

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

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

2.9 LED Indicators

LAN Port LEDs

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

LAN1/2 LED (Connection Speed Indicator)	
LED Color	Definition
Off	10 Mb/s
Green	100 Mb/s
Amber	1 Gb/s

Activity Indicator		
Color	Status	Definition
Off	No Connection	
Yellow	Flashing	Active

Onboard Power LED

LE1 is an onboard power LED. When this LED is lit, it means power is present on the motherboard. In suspend mode, this LED will blink on and off. Turn off the system and unplug the power cord before removing or installing components.

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

BMC Heartbeat LED

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

BMC Heartbeat LED States	
Color/State	Definition
Green: Blinking	BMC: Normal

Chapter 3

Troubleshooting

3.1 Troubleshooting Procedures

Use the following procedures to troubleshoot your system. If you have followed all of the procedures below and still need assistance, refer to the 'Technical Support Procedures' and/or 'Returning Merchandise for Service' section(s) in this chapter. Always disconnect the AC power cord before adding, changing or installing any non hot-swap hardware components.

Before Power On

1. Check that the power LED on the motherboard is on.
2. Make sure that the power connector is connected to your power supply.
3. Make sure that no short circuits exist between the motherboard and chassis.
4. Disconnect all cables from the motherboard, including those for the keyboard and mouse.
5. Remove all add-on cards.
6. Install a CPU, a heatsink*, and connect the internal speaker and the power LED to the motherboard. Check all jumper settings as well. (Make sure that the heatsink is fully seated.)
7. Use the correct type of onboard CMOS battery (CR2032) as recommended by the manufacturer. To avoid possible explosion, do not install the CMOS battery upside down.

No Power

1. Make sure that no short circuits exist between the motherboard and the chassis.
2. Verify that all jumpers are set to their default positions.
3. Check that the 115V/230V switch on the power supply is properly set.
4. Turn the power switch on and off to test the system.
5. The battery on your motherboard may be old. Check to verify that it still supplies ~3VDC. If it does not, replace it with a new one.

No Video

1. If the power is on but you have no video, remove all the add-on cards and cables.
2. Use the speaker to determine if any beep codes exist. Refer to Appendix A for details on beep codes.

Note: If you are a system integrator, VAR or OEM, a POST diagnostics card is recommended. For I/O port 80h codes, refer to Appendix B.

System Boot Failure

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

1. Check for any error beep from the motherboard speaker.
 - If there is no error beep, try to turn on the system without DIMM modules installed. If there is still no error beep, replace the motherboard.
 - If there are error beeps, clear the CMOS settings by unplugging the power cord and contacting both pads on the CMOS Clear Jumper (JBT1). Refer to chapter 2.
2. Remove all components from the motherboard, especially the DIMM modules. Make sure that system power is on and that memory error beeps are activated.
3. Turn on the system with only one DIMM module installed. If the system boots, check for bad DIMM modules or slots by following the Memory Errors Troubleshooting procedure in this Chapter.

Memory Errors

1. Make sure that the DIMM modules are properly and fully installed.
2. Confirm that you are using the correct memory. Also, it is recommended that you use the same memory type and speed for all DIMMs in the system. See Section 2.4 for memory details.
3. Check for bad DIMM modules or slots by swapping modules between slots and noting the results.
4. Check the power supply voltage 115V/230V switch.

Losing the System's Setup Configuration

1. Make sure that you are using a high quality power supply. A poor quality power supply may cause the system to lose the CMOS setup information. Refer to Section 1.5 for details on recommended power supplies.

- 2. The battery on your motherboard may be old. Check to verify that it still supplies ~3VDC. If it does not, replace it with a new one.
- 3. If the above steps do not fix the setup configuration problem, contact your vendor for repairs.

When the System Becomes Unstable

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

- 1. CPU/BIOS support: Make sure that your CPU is supported and that you have the latest BIOS installed in your system.
- 2. Memory support: Make sure that the memory modules are supported by testing the modules using memtest86 or a similar utility.

Note: Refer to the product page on our website at <http://www.supermicro.com> for memory and CPU support and updates.

- 3. HDD support: Make sure that all hard disk drives (HDDs) work properly. Replace the bad HDDs with good ones.
- 4. System cooling: Check the system cooling to make sure that all heatsink fans and CPU/system fans, etc., work properly. Check the hardware monitoring settings in the IPMI to make sure that the CPU and system temperatures are within the normal range. Also check the front panel Overheat LED and make sure that it is not on.
- 5. Adequate power supply: Make sure that the power supply provides adequate power to the system. Make sure that all power connectors are connected. Please refer to our website for more information on the minimum power requirements.
- 6. Proper software support: Make sure that the correct drivers are used.

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

- 1. Source of installation: Make sure that the devices used for installation are working properly, including boot devices such as CD/DVD and CD/DVD-ROM.
- 2. Cable connection: Check to make sure that all cables are connected and working properly.
- 3. Using the minimum configuration for troubleshooting: Remove all unnecessary components (starting with add-on cards first), and use the minimum configuration (but with a CPU and a memory module installed) to identify the trouble areas. Refer to the steps listed in Section A above for proper troubleshooting procedures.
- 4. Identifying bad components by isolating them: If necessary, remove a component in question from the chassis, and test it in isolation to make sure that it works properly. Replace a bad component with a good one.

- 5. Check and change one component at a time instead of changing several items at the same time. This will help isolate and identify the problem.
- 6. To find out if a component is good, swap this component with a new one to see if the system will work properly. If so, then the old component is bad. You can also install the component in question in another system. If the new system works, the component is good and the old system has problems.

3.2 Technical Support Procedures

Before contacting Technical Support, please take the following steps. Also, note that as a motherboard manufacturer, we do not sell directly to end-users, so it is best to first check with your distributor or reseller for troubleshooting services. They should know of any possible problem(s) with the specific system configuration that was sold to you.

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

An example of a Technical Support form is posted on our website.

Distributors: For immediate assistance, please have your account number ready when contacting our technical support department by e-mail.

3.3 Frequently Asked Questions

Question: What type of memory does my motherboard support?

Answer: The H11DSU-iN motherboard supports up to 4 TB of ECC DDR4 2400/2666 MHz speed, RDIMM/LRDIMM/3DS/NVDIMM memory in thirty-two (32) slots. See Section 2.4 for details on installing memory.

Question: How do I update my BIOS?

Answer: It is recommended that you **do not** upgrade your BIOS if you are not experiencing any problems with your system. Updated BIOS files are located on our website at <http://www.supermicro.com>. Please check our BIOS warning message and the information on how to update your BIOS on our website. Select your motherboard model and download the BIOS file to your computer. Also, check the current BIOS revision to make sure that it is newer than your BIOS before downloading. You can choose from the zip file and the .exe file. If you choose the zip BIOS file, please unzip the BIOS file onto a bootable USB device. Run the batch file using the format FLASH.BAT filename.rom from your bootable USB device to flash the BIOS. Then, your system will automatically reboot.

Question: Why can't I turn off the power using the momentary power on/off switch?

Answer: The instant power off function is controlled in BIOS by the Power Button Mode setting. When the On/Off feature is enabled, the motherboard will have instant off capabilities as long as the BIOS has control of the system. When the Standby or Suspend feature is enabled or when the BIOS is not in control such as during memory count (the first screen that appears when the system is turned on), the momentary on/off switch must be held for more than four seconds to shut down the system. This feature is required to implement the ACPI features on the motherboard.

3.4 Returning Merchandise for Service

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

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

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

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

3.5 Battery Removal and Installation

Battery Removal

To remove the onboard battery, follow the steps below:

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

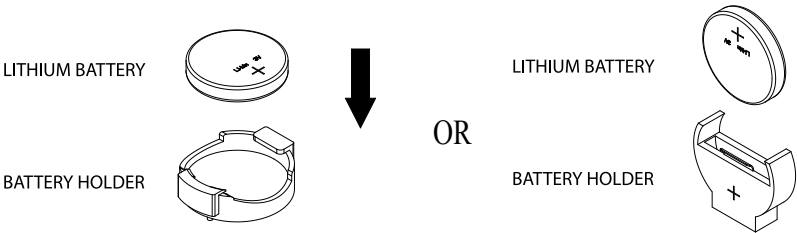
Proper Battery Disposal

Please 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.

Battery Installation

1. To install an onboard battery, follow the steps 1 & 2 above and continue below:
2. Identify the battery's polarity. The positive (+) side should be facing up.
3. Insert the battery into the battery holder and push it down until you hear a click to ensure that the battery is securely locked.

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



Chapter 4

BIOS

4.1 Introduction

This chapter describes the AMIBIOS™ Setup utility for the H11DSU-iN 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.

4.2 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 H11DSU-iN

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.

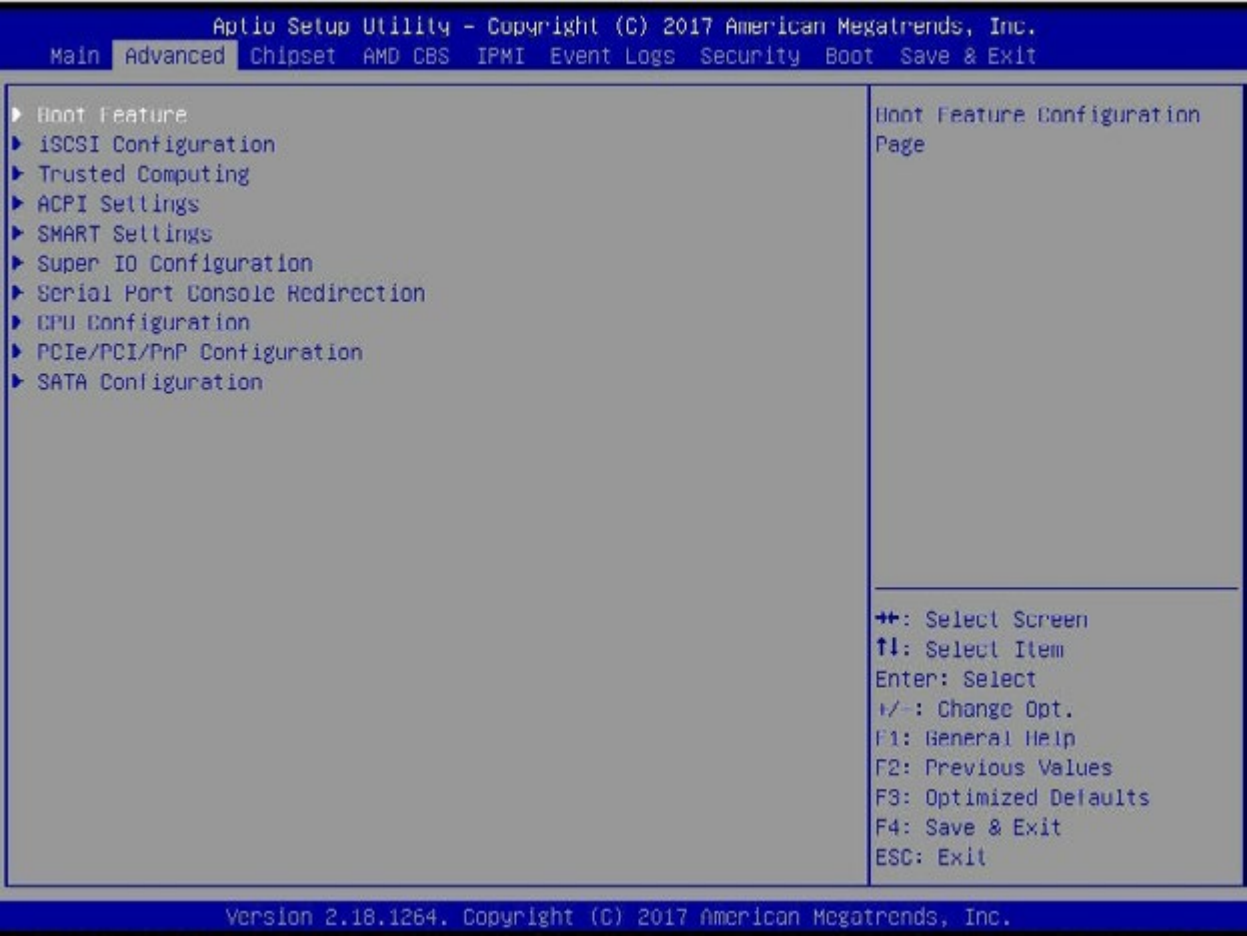
Memory Information

Total Memory

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

4.3 Advanced Setup Configurations

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.

AddOn ROM Display Mode

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.

Install Windows 7 USB Support

Enable this feature to use the USB keyboard and mouse during the Windows 7 installation, since the native XHCI driver support is unavailable. Use a SATA optical drive as a USB drive, and USB CD/DVD drives are not supported. Disable this feature after the XHCI driver has been installed in Windows. The options are **Disabled** and Enabled.

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.

►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

►Trusted Computing

Security Device Support

If this feature and the TPM jumper on the motherboard are both set to Enabled, onbaord 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**.

►ACPI Settings

Enable ACPI Auto Configuration

This setting Enables or **Disables** BIOS ACPI Auto Configuration.

Enable Hibernation

Use this setting to Enable or **Disable** the system's ability to hybernate (OS/S4 Sleep State). This option may not be effective with some operating systems.

Lock Legacy Resources

This setting Enables or **Disables** the ability to lock the legacy resources of the system.

►SMART Settings

►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 part specified by the user.

Change Settings

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

►Serial Port 2 Configuration

Serial Port

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

Change Settings

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

►Serial Port Console Redirection

COM1

Console Redirection

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

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:***

► **EMS 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

►**CPU Configuration**

NX Mode

This setting **Enables** or Disables the no-execute page protection function.

SVM Mode

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

CPB Mode

This sets the CPB mode to **Auto** or Disable.

C6 Mode

Use this setting to **Enable** or Disable the C6 Mode.

►**Node 0 Information**

Selecting this submenu displays static Node 0 information for you to view.

►**Note 1 Information**

Selecting this submenu displays static Node 1 information for you to view.

►**PCIe/PCI/PnP Configuration**

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

PCI Bus Driver Version

PCI Latency Timer

Use this value to be programmed into the PCI Latency Timer Registry. Options range from 32~248 PCI Bus Clocks. Default is **32**.

PCI-X Latency Timer

Use this value to be programmed into the PCI-X Latency Timer Registry. Options range from 32~248 PCI Bus Clocks. Default is **64**.

VGA Palette Snoop

Use this setting to Enable or **Disable** VGA Palette Registers Snooping.

PERR# Generation

Use this setting to Enable or **Disable** the PCI device to generate PERR#.

SERR# Generation

Use this setting to Enable or **Disable** the PCI device to generate SERR#.

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.

USB Compliance Mode

This setting Enables or **Disables** USB Compliance Mode for your system.

RSC-R1UW-2E16 Slot 1 PCI-E x16 OPROM

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

RSC-R1UW-2E16 Slot 2 PCI-E x16 OPROM

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

RSC-R1UW-E8R Slot 1 PCI-E x8 OPROM

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

AOC-UR-i4G Slot 1 PCI-E x8 OPROM

This setting enables or disables the listed PCI/PCIX/PCIe Slot OPROM option. Options include 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, **PXE** and iSCSI.

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**, PXE and iSCSI.

Onboard LAN3 Option ROM

Use this setting to select which firmware function is to be loaded for onboard LAN3 on the system. Options include **Disabled**, PXE and iSCSI.

Onboard LAN4 Option ROM

Use this setting to select which firmware function is to be loaded for onboard LAN4 on the system. Options include **Disabled**, PXE and iSCSI.

Onboard Video Option ROM

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

►PCI Express Settings

Relaxed Ordering

This setting **Enables** or Disables PCI Express device Relaxed Ordering.

Extended Tag

This setting Enables or **Disables** the Extended Tag. If enabled, it allows the device to use an 8-bit tag field as a requester.

No Snoop

This setting **Enables** or Disables the PCI Express No Snoop Option.

Maximum Payload

This setting sets the maximum payload of the PCI Express device or allows the system BIOS to select the value. Options include **Auto** or Byte values from 128 to 4096.

Maximum Read Support

This setting sets the maximum read request size of the PCI Express device or allows the system BIOS to select the value. Options include **Auto** or Byte values from 128 to 4096.

ASPM Support

Use this setting to set the ASPM level. Options include Auto (BIOS auto configure), **Disabled** (disables ASPM) or Force L0s (force all links to L0s state).

Extended Synch

This setting Enables or **Disables** the generation of extended synchronization patterns.

Link Training Retry

This setting defines the number of retry attempts the software will take to retrain the link if a previous training attempt was unsuccessful. Options include Disabled, 2, 3 or **5**.

Link Training Timeout (uS)

This setting defines the number of microseconds the software will wait before polling Link Training bit in the Link Status Register. Value is a field ranging between 10 to 10000 uS.

Unpopulated Links

In order to save power, the software will disable unpopulated PCI Express links if the option Disabled is chosen. Options include Disabled and **Keep Link ON**.

►PCI Express GEN 2 Settings

Completion Timeout

In device functions that support completion timeout programmability, this setting allows the system software to modify the completion timeout value. Options include **Default**, Shorter, Longer and Disabled.

Default is 50uS to 50ms. If Shorter is selected, the software will use shorter timeout ranges supported by the hardware. If Longer is selected, the software will use longer timeout ranges.

ARI Forwarding

If supported by hardware, and set to Enabled, the downstream port disables its traditional device number field (being 0 enforcement) when turning a Type1 Configuration Request into a Type0 Configuration Request, permitting access to extended functions in an ARI Device immediately below the port. Options include **Disabled** and Enabled.

AtomicOp Requestor Enable

If supported by hardware and set to Enabled, this function initiates AtomicOp requests only if the Bus Master Enable bit is in the Command Register set. Options include **Disabled** and Enabled.

AtomicOp Egress Blocking

If supported by hardware and set to Enabled, outbound AtomOp requests via Egress Ports will be blocked. Options include **Disabled** and Enabled.

IDO Request Enable

If supported by hardware and set to Enabled, this setting permits setting of the number of ID-based Ordering (IDO) bit (Attribute[2]) request to be initiated. Options include **Disabled** and Enabled.

IDO Completion Enable

If supported by hardware and set to Enabled, this setting permits setting of the completion number of ID-based Ordering (IDO) bit (Attribute[2]) request to be initiated. Options include **Disabled** and Enabled.

LTR Mechanism Enable

If supported by hardware and set to Enabled, this setting enables the Latency Tolerance Reporting (LTR) Mechanism. Options include **Disabled** and Enabled.

End-End TLP Prefix Blocking

If supported by hardware and set to Enabled, this function will block forwarding of TLPs containing End-End TLP prefixes. Options include **Disabled** and Enabled.

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.

Clock Power Management

If supported by hardware and set to Enabled, the device is permitted to use the CLKREQ# signal for power management of the link clock in accordance to protocol defined in the appropriate form factor specification. Options include **Disabled** and Enabled.

Compliance SOS

If supported by hardware and set to Enabled, this will force LTSSM to send SKP ordered sets between sequences when sending Compliance Pattern or Modified Compliance Pattern. Options include **Disabled** and Enabled.

Hardware Autonomous Width

If supported by hardware and set to Disabled, this will disable the hardware's ability to change link width except width size reduction for the purpose of correcting unstable link operation. Options include Disabled and **Enabled**.

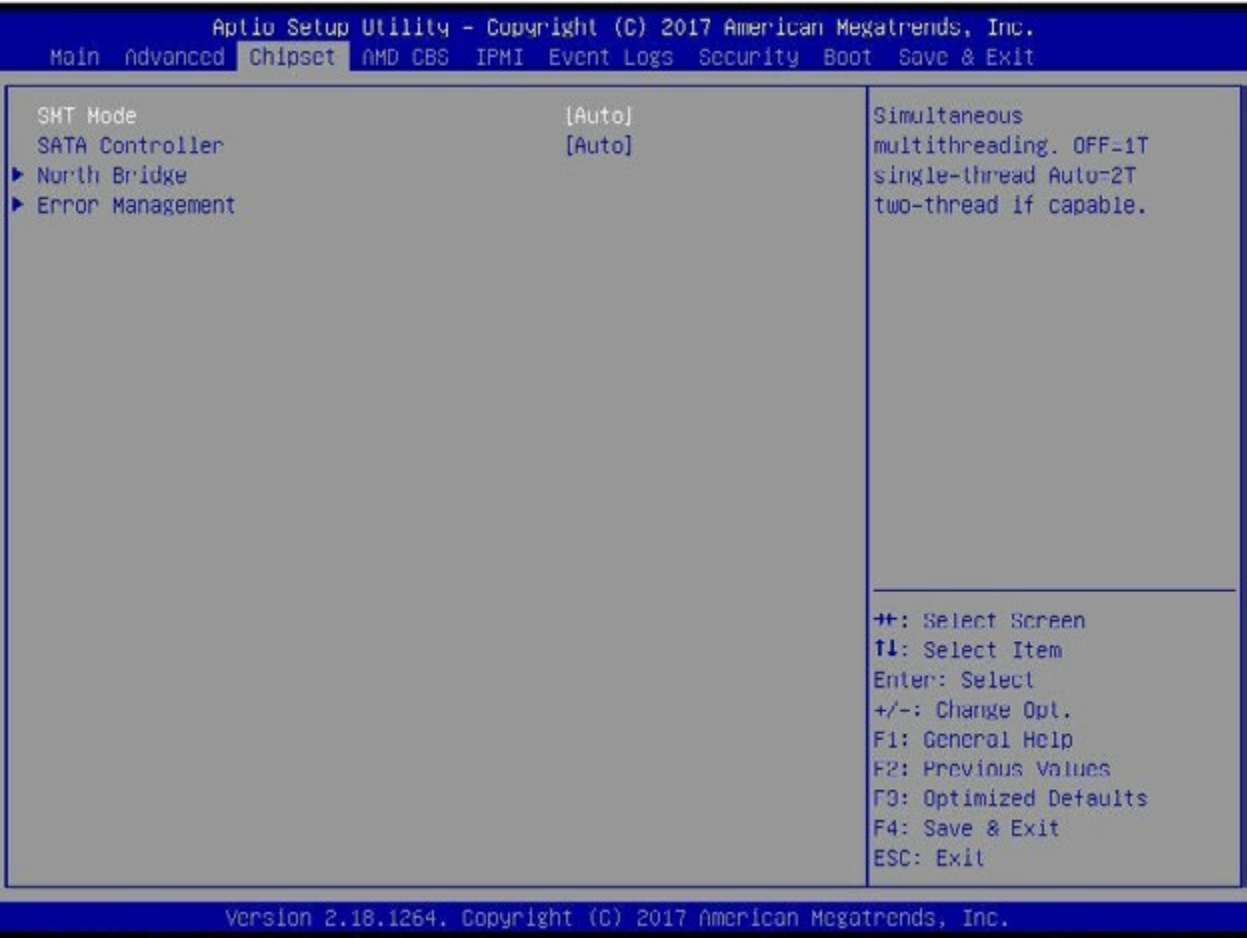
Hardware Autonomous Speed

If supported by hardware and set to Disabled, this will disable the hardware's ability to change link speed except speed rate reduction for the purpose of correcting unstable link operation. Options include Disabled and **Enabled**.

► **SATA Configuration**

4.4 Chipset

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



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.

►SATA Controller

Use this menu to configure SATA Controller parameter settings.

►North Bridge

Use this menu to configure North Bridge parameter settings. Memory information on the amount of RAM is on the top.

►Memory Configuration

Memory Clock

This setting allows you to select different memory clock speed. Options include Auto and speed settings from **800Mhz** (default to 2400Mhz).

Bank Interleaving

This setting allows you to **Enable** or Disable Bank Interleaving for your system.

Channel Interleaving

This setting allows you to **Enable** or Disable Channel Interleaving for your system.

Memory Clear

This setting allows you to Enable or **Disable** the Memory Clear function for your system.

►Socket 0 Information

This sub-menu displays static information related to Socket 0 on your system.

►Socket 1 Information

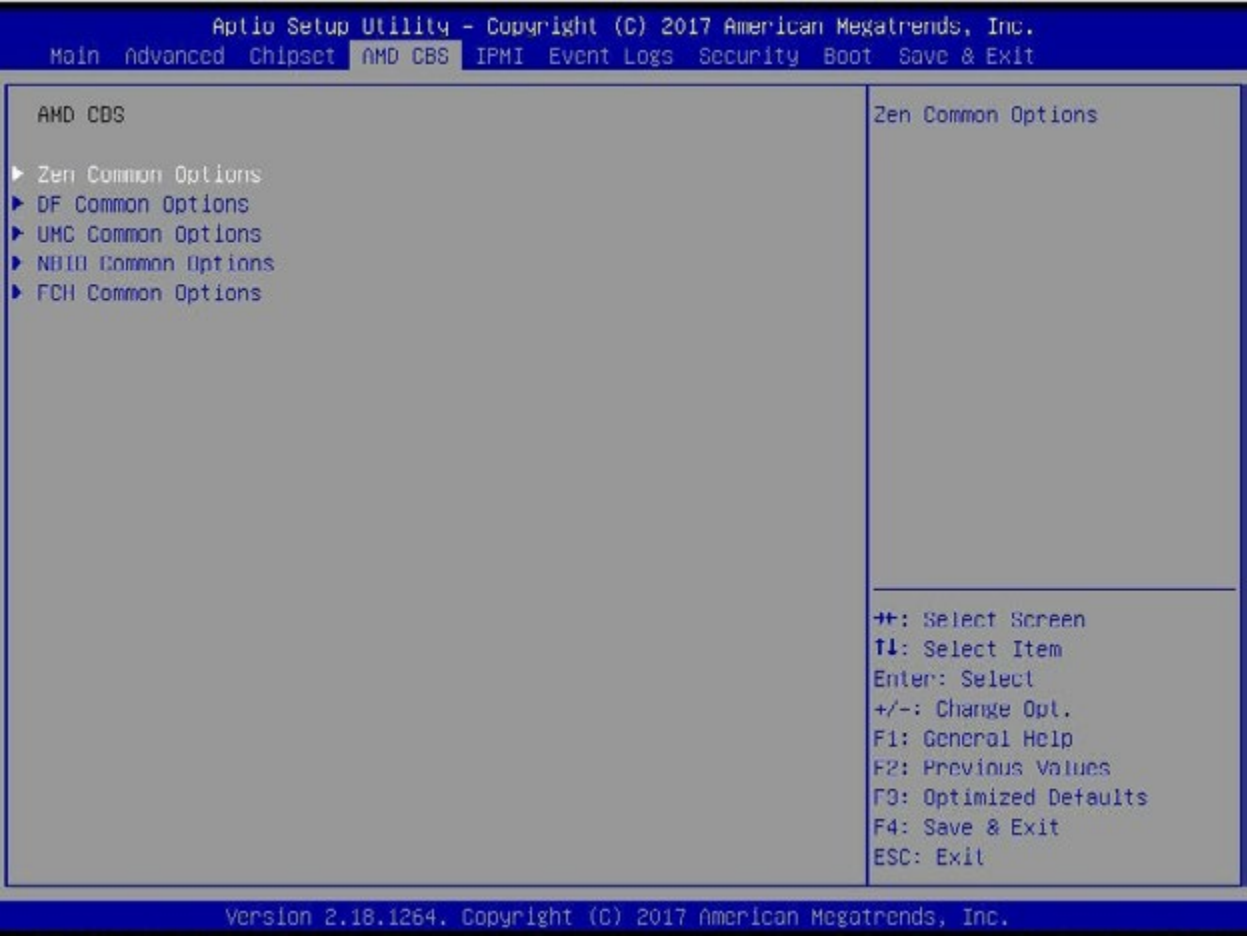
This sub-menu displays static information related to Socket 1 on your system.

►Error Management

Use this menu to configure Error Management parameter settings.

4.5 AMD CBS

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



►Zen Common Options

RedirectForReturnDis

This setting is used to configure for RedirectForReturnDis. Options include **Auto**, 1 and 0.

L2 TLB Associativity

This setting is used to configure for L2 TLB Associativity. Options include **Auto**, 1 and 0.

Platform First Error Handling

This setting is used to configure for Platform First Error Handling. Options include **Auto**, Disabled and Enabled.

Core Performance Boost

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

Enable IBS

This setting is used to configure for Enable IBS. Options include **Auto**, Disabled and Enabled.

Global C-state Control

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

Opcache Control

This setting is used to configure for Opcache Control. Options include **Auto**, Disabled and Enabled.

►Custom Core Pstates

►Accept Submenu

If you accept the set Core Pstates, then exit this menu. If you want to customize them then hit <Enter> to go to the menu.

Warning! Use of this menu and its options may damage your processor.

Custom Pstate0~7

For each custom Pstate choose between options for Disabled, Custom (to customize this Pstate) or **Auto**.

Sev-ES ASID Space Limit

The SEV VMs using ASIDs below the SEV-ES ASID Space Limit must enable the SEV-ES feature. The valid values for this field are from 0x1 (1) to 0x10 (16). Default is 1.

►Core/Thread Enablement

►Agree Submenu

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**.

►DF Common Options

DRAM Scrub Time

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

Redirect Scrubber Control

This setting enables Redirect Scrubber Control. Options include Disabled, Enabled and **Auto**.

Disable DF Sync Flood Propagation

This setting allows you to disable DF Sync Flood propagation. Options include Sync flood disabled, Sync flood enabled and **Auto**.

Freeze DF Mode Queues on Error

This setting enables Freeze DF Mode Queues on Error. Options include Disabled, Enabled and **Auto**.

GMI Encryption Control

This setting enables GMI Encryption Control. Options include Disabled, Enabled and **Auto**.

xGMI Encryption Control

This setting enables xGMI Encryption Control. Options include Disabled, Enabled and **Auto**.

CC6 Memory Region Encryption

This setting enables CC6 Memory Region Encryption. Options include Disabled, Enabled and **Auto**.

Location of Private Memory Regions

This setting controls whether or not the private memory regions (PSP, SMU, and CC6) are at the top of DRAM or distributed. Note that distributed requires memory on all dies. Note also that it will always be at the top of DRAM if some dies do not have memory, regardless of this setting. Options include Distributed, Consolidated and **Auto**.

System Probe Filter

This setting controls whether or not the probe filter is enabled. This setting has no effect on parts where the probe filter is fuse disabled. Options include Disabled, Enabled and **Auto**.

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**.

Channel Interleaving Hash

This setting controls whether or not the address bits are hashed during channel interleaving mode. This field should not be used unless the interleaving is set to channel and the interleaving size is 256 or 512 bytes. Options include Disabled, Enabled and **Auto**.

Memory Clear

When this setting is disabled, the BIOS does not implement MemClear after memory training (only if non-ECC DIMMs are used). Options include Enabled, Disabled and **Auto**.

► **UMC Common Options**

► **DDR4 Common Options**

► **DRAM Timing Configuration**

► **I Accept**

OverClock

Use this setting for Memory Overclock Settings. Options include **Auto** and Enabled.

► **Common RAS**

Data Poisoning

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

► **Security**

TSME

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

► **DRAM Memory Mapping**

Chipset Interleaving

When enabled, this setting will interleave memory blocks across the DRAM selects for Node 0. Options include Disabled and **Auto**.

BankGroupSwap

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

Address Hash Bank

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

Address Hash CS

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

► **NVDIMM**

► **Memory MBIST**

MBIST Enable

Use this setting to Enable or **Disable** memory MBIST.

MBIST SubType Test

If MBIST is enabled above, then this setting becomes active and allows you to select the MBIST Subtest. Options include **Single CS**, Multiple CS, Connectivity and All Tests.

► **NBIO Common Options**

► **NB Configuration**

IOMMU

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

NBIO Internal Poison Consumption

Use this setting to enable NBIO Internal Poison Consumption. Options include Enabled, Disabled and **Auto**.

NBIO RAS Control

Use this setting to enable NBIO RAS Control. Options include Enabled, Disabled and **Auto**.

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**.

PSI

Use this setting to disable PSI. Options include Disable and **Auto**.

ACS Enable

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

PCIe ARI Support

Use this setting to enable/disable Alternative Routing-ID Interpretation (ARI). Options include Enabled, Disabled and **Auto**.

► **FCH Common Options**

► **SATA Configuration Options**

SATA Controller

Use this setting to enable/disable the OnChip SATA controller. Options include Enabled, Disabled and **Auto**.

SATA RAS Support

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

SATA Disabled AHCI Prefetch Function

Use this setting to enable/disable the SATA Disabled AHCI Prefetch function. Options include Enabled, Disabled and **Auto**.

Aggressive SATA Device Sleep Port 0

Use this setting to enable/disable the Aggressive SATA Device Sleep Port 0. Options include Enabled, Disabled and **Auto**.

Aggressive SATA Device Sleep Port 1

Use this setting to enable/disable the Aggressive SATA Device Sleep Port 1. Options include Enabled, Disabled and **Auto**.

► **USB Configuration Options**

XHCI Controller Enable

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

►SD (Secure Digital) Options

SD Configuration Mode

Use this setting to configure the SD Configuration Mode. Options include Disabled, Ver2.0, SdDump and **Auto (Version 2.0 + Low Speed)**.

►AC Power Loss Options

AC Loss Control

Use this setting to configure AC Loss Control. Options include Always Off, Always On, Reserved and **Previous**.

►I2C Configuration Options

I2C 0~5 Enable

Use this setting to enable/disable I2C 0 through 5. Options include Enabled, Disabled and **Auto**.

►UART Configuration Options

Uart 0 Enable (no HW FC if Uart 2 is Enabled)

Use this setting to enable/disable UART 0. Options include Enabled, Disabled and **Auto**.

Uart 1 Enable (no HW FC if Uart 3 is Enabled)

Use this setting to enable/disable UART 1. Options include Enabled, Disabled and **Auto**.

Uart 2 Enable (no HW FC)

Use this setting to enable/disable UART 2. Options include Enabled, Disabled and **Auto**.

Uart 3 Enable (no HW FC)

Use this setting to enable/disable UART 3. Options include Enabled, Disabled and **Auto**.

►Legacy UART IO Enable

IO Enable Range 0 (2E8-2EF)

Use this setting to enable/disable IO Range 0. Options include Enabled, Disabled and **Auto**.

IO Enable Range 1 (2F8-2FF)

Use this setting to enable/disable IO Range 1. Options include Enabled, Disabled and **Auto**.

IO Enable Range 2 (3E8-3EF)

Use this setting to enable/disable IO Range 2. Options include Enabled, Disabled and **Auto**.

IO Enable Range 3 (3F8-3FF)

Use this setting to enable/disable IO Range 3. Options include Enabled, Disabled and **Auto**.

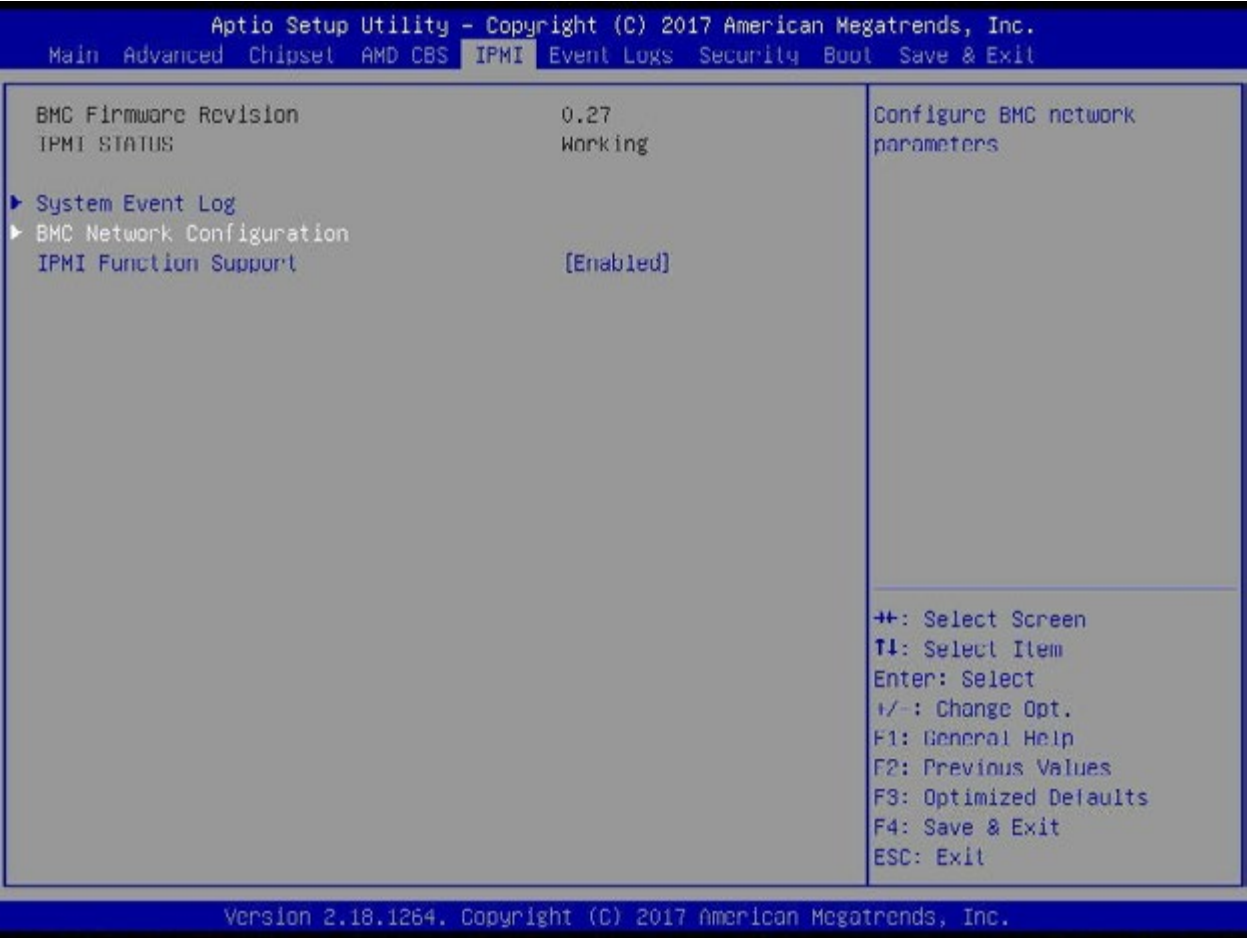
►ESPI Configuration Options

ESPI Enable

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

4.6 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

IPMI Function Support

Use this setting to **Enable** or Disable IPMI Function Support.

4.7 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.

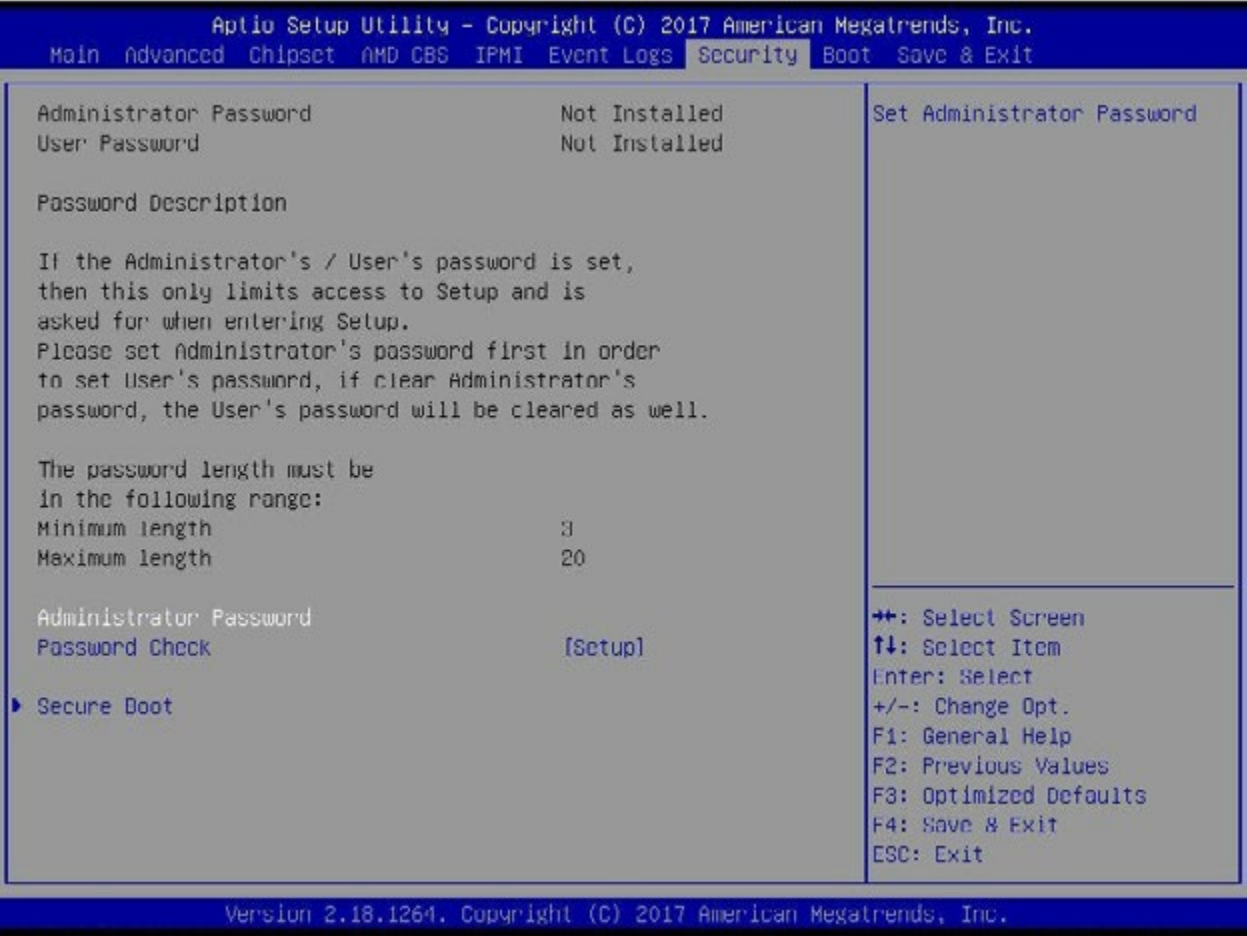
►View SMBIOS Event Log

This item allows the user to view the event in the SMBIOS event log. The following categories are displayed:

Date/Time/Error Code/Severity

4.8 Security

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



Administrator Password

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

Attempt 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

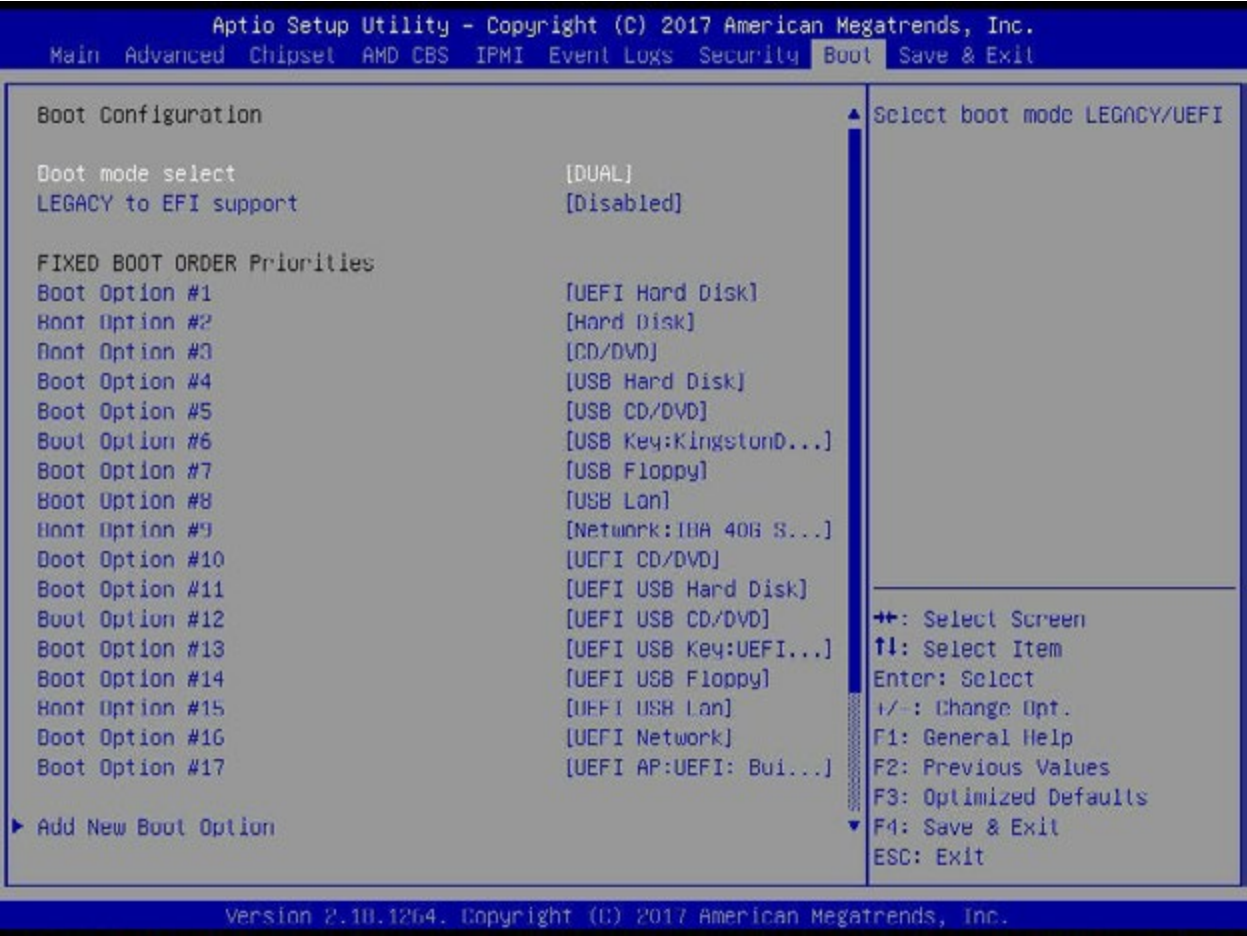
This item uploads and installs an OSRecovery Signature. You may select options for Set New for a factory default key, or select Append to get it from a file. The file formats accepted are:

- 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.

4.9 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 Section

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.

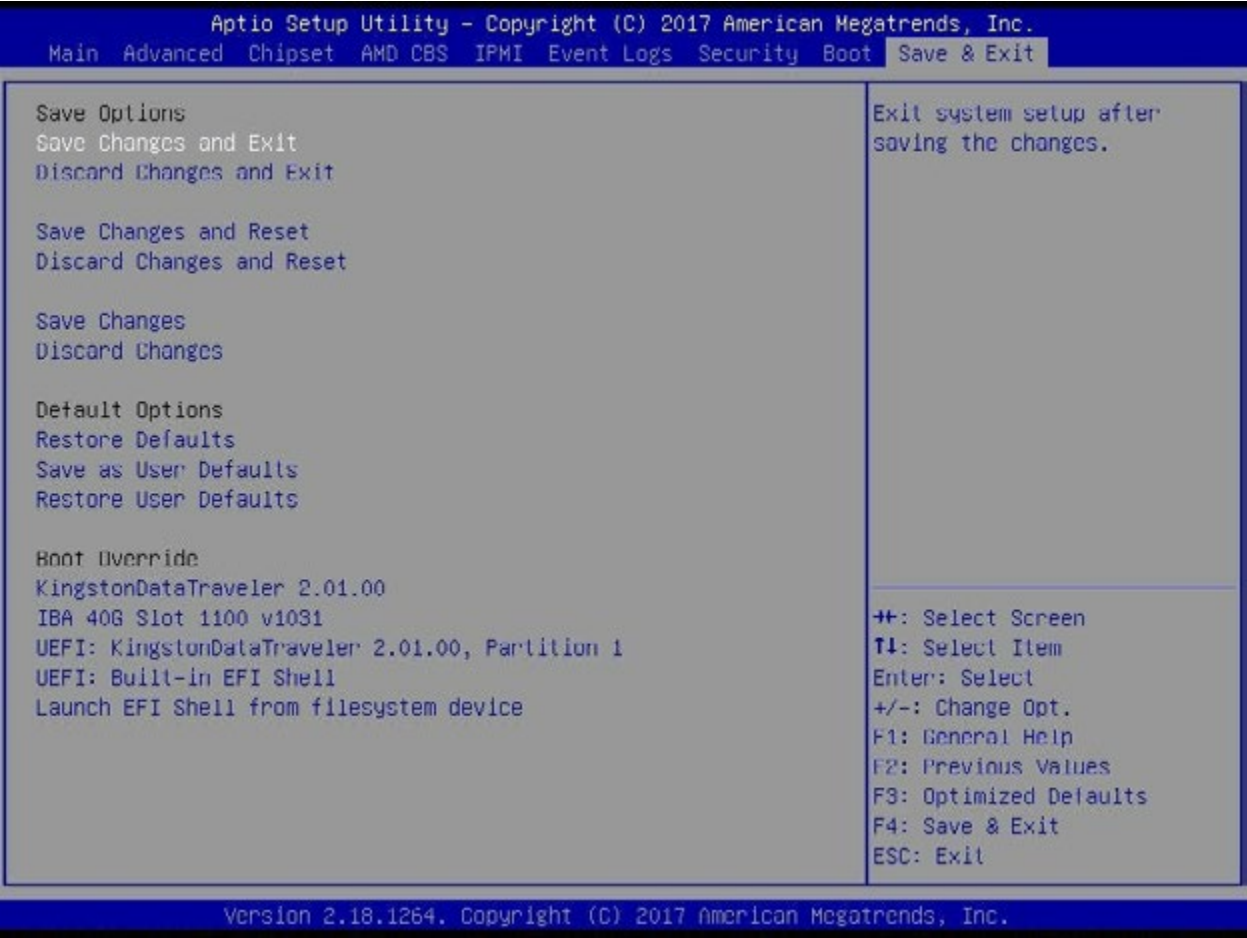
- UEFI Boot Order #1

►NETWORK Drive BBS Priorities

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

4.10 Save & Exit

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



Save Changes and Reset

When you have completed the system configuration changes, select this option to leave the BIOS setup utility and reboot the computer, so the new system configuration parameters can take effect. Select Save Changes and Exit from the Exit menu and press <Enter>.

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.

Discard Changes and Reset

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

Save Changes

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

Discard Changes

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

Default Options

Restore Optimized Defaults

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

Save as User Defaults

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

Restore User Defaults

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

Boot Override Section

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

Appendix A

Software Installation

A.1 Installing Software Programs

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

After accessing the FTP site, go into the CDR_Images directory and locate the ISO file for your motherboard. Download this file to create a CD/DVD of the drivers and utilities it contains. (You may also use a utility to extract the ISO file if preferred.)

After creating a CD/DVD with the ISO files, insert the disk into the CD/DVD drive on your system and the display shown in Figure B-1 should appear.

Another option is to go to the Supermicro website at <http://www.supermicro.com/products/>. Find the product page for your motherboard here, where you may download individual drivers and utilities to your hard drive or a USB flash drive and install from there.

Note: To install the Windows OS, please refer to the instructions posted on our website at <http://www.supermicro.com/support/manuals/>.

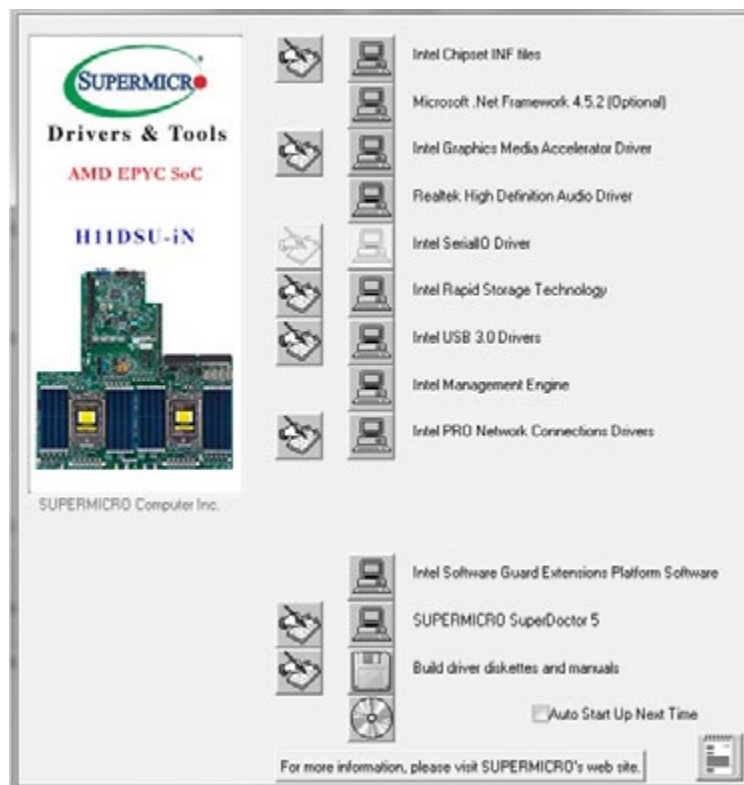


Figure A-1. Driver/Tool Installation Display Screen

Click the icons showing a hand writing on the paper to view the readme files for each item. Click a computer icon to the right of an item to install an item (from top to the bottom) one at a time. After installing each item, you must reboot the system before proceeding with the next item on the list. The bottom icon with a CD on it allows you to view the entire contents of the CD.

When making a storage driver diskette by booting into a driver CD, please set the SATA Configuration to "Compatible Mode" and configure SATA as IDE in the BIOS Setup. After making the driver diskette, be sure to change the SATA settings back to your original settings.

A.2 SuperDoctor® 5

The Supermicro SuperDoctor 5 is a hardware monitoring program that functions in a command-line or web-based interface in Windows and Linux operating systems. The program monitors system health information such 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. SD5 Management Server monitors HTTP, FTP, and SMTP services to optimize the efficiency of your operation.

Note: The default Username and Password for SuperDoctor 5 is admin / admin.



Figure A-2. SuperDoctor 5 Interface Display Screen (Health Information)

Note: The SuperDoctor 5 program and user's manual can be downloaded from the Supermicro website at http://www.supermicro.com/products/nfo/sms_sd5.cfm.

Appendix B

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 section in its entirety before installing or configuring components.

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

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 استبدال البطارية بطريقة غير صحيحة فعليك استبدال البطارية فقط بنفس النوع أو ما يعادلها كما أوصت به الشركة المصنعة تخلص من البطاريات المستعملة وفقا لتعليمات 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.

Product Disposal



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

製品の廃棄

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

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

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

¡Advertencia!

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

Attention

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

סילוק המוצר

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

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

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.

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.

Note: Follow the BIOS recovery instructions below for BIOS recovery when the main BIOS boot crashes. However, if the BIOS boot block crashes, you will need to follow the procedures below for BIOS recovery.

C.3 Recovering the BIOS Block with a USB Device

This feature allows the user to recover a BIOS image using a USB-attached device without the need for additional utilities. A USB flash device such as a USB flash drive or a USB CD/DVD device can be used for this purpose. A USB hard disk drive cannot be used for BIOS recovery at this time.

The file system supported by UEFI is FAT (including FAT12, FAT16, and FAT32) installed on a bootable or non-bootable USB-attached device. Note that the BIOS might need several minutes to locate the SUPER.ROM file if the media size becomes too large because it contains too many folders and files.

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

1. Using a different system, copy the "Super.ROM" binary image file into the disc Root "\\" Directory of a USB device or a writeable CD/DVD.
- Note:** If you cannot locate the "Super.ROM" file in your driver disk, visit our website at www.supermicro.com to download the BIOS image into a USB flash device and rename it "Super.ROM".
2. Insert the USB device that contains the new BIOS image ("Super.ROM") into your USB drive and power on the system.

Warning: Please **stop** pressing the <Ctrl> and <Home> keys immediately when you see the screen (or a similar screen) below; otherwise, it will trigger a system reboot.



Note: On the other hand, if the following screen displays, please load the "Super.ROM" file to the root folder and connect this folder to the system. (You can do so by inserting a USB device that contains the new "Super.ROM" image to your machine for BIOS recovery.)

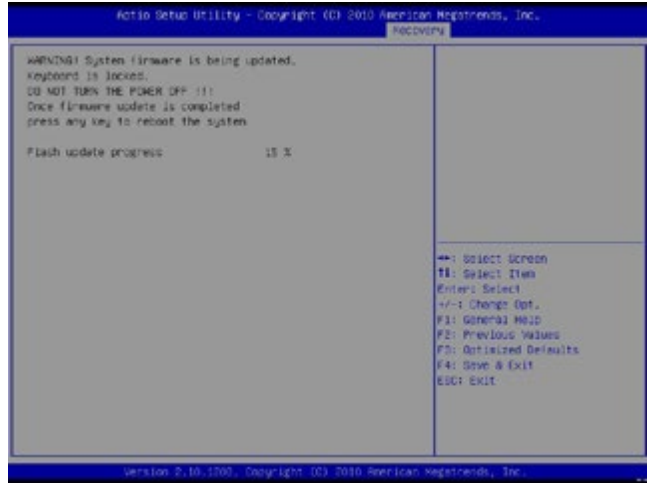


3. While powering on the system, please keep pressing <Ctrl> and <Home> simultaneously on your keyboard until the following screen (or a screen similar to the one below) displays.

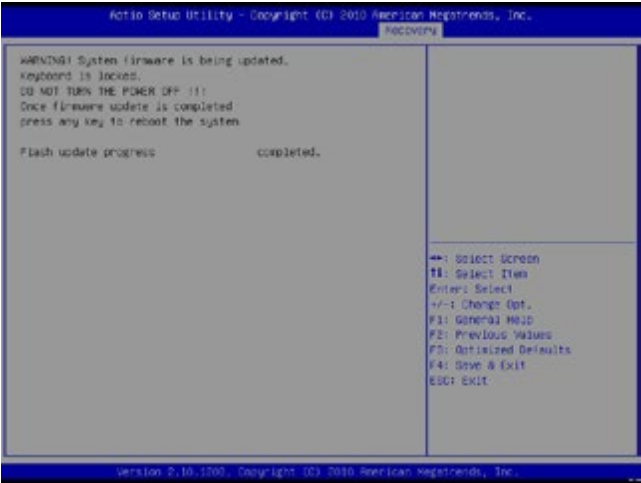


4. After locating the new BIOS binary image, the system will enter the BIOS Recovery menu as shown below.

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



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



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

6. After the BIOS recovery process has completed, press any key to reboot the system.
7. Using a different system, extract the BIOS package into a bootable USB flash drive.
8. When a DOS prompt appears, enter FLASH.BAT BIOSName.### at the prompt.

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

9. After seeing the message that BIOS update has completed, unplug the AC power cable from the power supply, clear CMOS, then plug the AC power cable in the power supply again to power on the system.
10. Press continuously to enter the BIOS Setup utility.
11. Press <F3> to load the default settings.
12. After loading the default settings, press <F4> to save the settings and exit the BIOS Setup utility.