



**COMPAL** Server™

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**SR210-2**  
**User Manual**

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**COMPALSERVER™ User Manual V0.1**

COMPALSERVER

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# Safety and Warnings



**CAUTION:**

Before installing and starting up a device, please observe the safety instructions listed in the following sections. This will help you to avoid making serious errors that could impair your health, damage the device and endanger the data base.



**CAUTION:**

To reduce the risk of electric shock, this equipment must be installed by trained service personnel in a restricted-access location.



**CAUTION:**

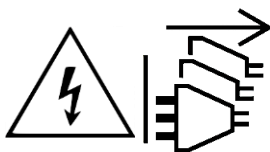
When laser products (such as CD-ROMs, DVD drives, fiber optic devices, or transmitters) are installed, note the following:

- Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation.
- There are no serviceable parts inside the device.
- Use of controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.



**CAUTION:**

Connect all power cords to a properly wired and grounded electrical outlet. The power control button on the device and the power switch on the power supply do not turn off the electrical current supplied to the device. The device also might have more than one power cord. To remove all electrical current from the device, ensure that all power cords are disconnected from the power source.







**CAUTION:**

Incorrectly installing a battery or using an incompatible battery may increase the risk of fire or explosion. Replace the battery only with the same or equivalent type.

**Do not:**

- Throw or immerse into water.
- Heat to more than 100°C (212°F).
- Repair or disassemble.
- Dispose of the battery as required by local ordinances or regulations.



**CAUTION:**

The following label indicates a hot surface nearby.



**CAUTION:**

Hazardous energy is present when the server is connected to the power source. Always replace the blade cover before installing the server.



**CAUTION:**

Hazardous moving parts are nearby.





**CAUTION:**

Slide/rail mounted equipment is not to be used as a shelf or work space. Do not add weight to slide/rail mounted equipment.



## Installation Safety Information

### Preparing for startup

The devices comply with the relevant safety regulations for information technology equipment.

The requirements, which need to be fulfilled at the site of installation, are described in the user documentation for this device. Please contact the service center if there is any doubt as to the safety of installing the device at the intended site.

### Transporting, unpacking, installing

Condensation may form when the device is brought into the operations room from a colder environment. Wait until the device has warmed up to the room temperature and is totally dry before starting it. The acclimation time depends on the device and its design.

### Connecting data cables



**CAUTION:**

No data transmission lines may be connected or disconnected during a storm (danger of being struck by lightning).

When wiring the devices, the cables need to be connected or removed in the order described in the user document for the device. When connecting or disconnecting any of the leads, always hold them by the plug. Never pull on the cables themselves. Doing so could cause a cable to become detached from the plug.

### Connecting the system to the power mains

Please check devices with adjustable rated voltage to determine whether the preset rated voltage of the device conforms to the local mains voltage. An incorrect setting leads to damage to or destruction of the device.

Before operating, check whether all the cables and wires are in perfect, undamaged condition. Ensure in particular that the cables have not been bent, have not been laid too tightly round corners, and that there are no objects located on top of them. Also make sure that all connectors have a tight fit. Defective screening or wiring may damage your health (electric shock) and can damage other devices.

Devices with power plugs are equipped with a safety-tested AC power line of the country of use and may only be connected to an approved shock-proof socket. This may otherwise result in an electric shock.

The product will be installed in ITE Room through skilled/service person and only applicable connect to 240 Vdc/ac outlet from certified Power distribution Unit (PDU) Suitable for installation in Information Technology Rooms in accordance with Article 645 of the National Electrical Code and NFPA 75.

### Safety during operation

#### Avoiding short circuits

Make sure that no objects (e.g. jewelry, paper clips, etc.) or liquids get inside the device. This can lead to electric shocks or short-circuits.

#### Ventilation slots

Please make sure that the air vents are not blocked or collect dust as this may lead to the risk of overheating while the device is in operation. This could lead to operating faults.

### Proper operation

Proper operation and compliance with the EMC (electromagnetic compatibility) limit values is only guaranteed when the housing cover is mounted correctly and the doors are closed (cooling, fire protection, screening against electrical, magnetic, and electromagnetic fields).

#### Switch off in the event of malfunction and during servicing

Devices are not disconnected from the mains by simply switching them off.

In the event of a malfunction or servicing, the devices need to be disconnected from the mains immediately.

Please proceed as follows:

- Switch off the devices,
- Pull out the mains plug (also refer to the device's user documentation),
- Inform Service.
- Devices that are connected to one or more uninterruptible power supplies (UPS's) will continue to operate even if the plug to the UPS ('s) is pulled. You therefore need to shut down the UPS ('s) in accordance with the accompanying user documentation.

## Maintenance Safety

### Expanding, repairing

When expanding the device, use only parts that have been approved for the device. Failure to observe this rule can lead to violation of the electromagnetic compatibility (EMC) or safety standards and cause device malfunctions.

The device may only be repaired by authorized, qualified personnel. Improper repairs may expose the user to considerable danger (electric shock, fire).

Unauthorized opening of the device or individual parts of the device can also expose the user to considerable danger. Unauthorized opening of the devices or parts thereof results in voiding of the warranty and exclusion of liability.

### Handling batteries

The life of the batteries/accumulators in the devices is approx. three to five years. In order to ensure the functional reliability, they must be exchanged at the end of this time. The batteries may only be changed by authorized personnel. The local regulations for disposal of special waste must be observed when disposing of the batteries.

Batteries can cause danger, e.g. fire, if handled incorrectly. Therefore avoid opening, puncturing or pressing together batteries. Never throw batteries on a fire.

### Special safety note for rack cabinets

Do not use device units mounted on pull-out rails as a surface on which to put things or as a work surface, and strictly avoid leaning on or against them.

### Setting up a rack

At least two people must always be used to set up a rack because of its weight and their size.

This is the only way to avoid accidents and damage to the equipment.

To install the server in the rack cabinet, please observe the instructions in the relevant system installation manual.

### **Overload protection**

Make sure if connecting a number of devices to the same circuit that you do not overload the current distribution. Please observe the nominal values indicated on the product ident plates.

### **Stabilizing the racks**

Even when the rack has been secured against tipping over, only one slide-in module may be removed on its rails at any one time. There is no guarantee that the rack will remain stable if several modules are pulled out simultaneously.

### **Second person for work on racks**

Two or more people are required to insert or remove rack trays as these are large and heavy.

This is particularly true regarding servers, peripheral devices and UPS's. This information can be found in the device's user documentation.

## **WEEE**



The device may not be disposed of with household rubbish. This appliance is labelled in accordance with European Directive 2002/96/EG concerning used electrical and electronic appliances (waste electrical and electronic equipment – WEEE).

The guideline determines the frame-work for the return and recycling of used appliances as applicable throughout the EU. To return your used device, please use the return and collection systems available to you.

## **Regional EMC Compliance Information**

### **FCC Verification Notice (USA only)**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

## Class A



This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

## INDUSTRY CANADA (Canada only)

This Class B (or Class A, if so indicated on the registration label) digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe B (ou Classe A, si ainsi indiqué sur l'étiquette d'enregistrement) respecte toutes les exigences du Règlement sur le Matériel Brouilleur du Canada.

## CE Declaration of Conformity (EUROPE only)



This product has been tested in accordance to, and complies with the European Low Voltage Directive (73/23/EEC) and European EMC Directive (89/336/EEC).

The product has been marked with the CE Mark to illustrate its compliance.

## 中国 CCC (China only)



The following CCC EMC Warning is marked on the product: EMC Warning is required for Class A products.

此为 A 级产品，在生活环境中，该产品可能会造成无线电干扰，在这种情况下，可能需要用户对其干扰采取可行的措施

### China RoHS Declaration Table

部件名称	有害物质					
	铅(Pb)	汞(Hg)	镉(Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
PCB 板	×	○	○	○	○	○
结构件	○	○	○	○	○	○
芯片及 其他主动零件	×	○	○	○	○	○
连接器	×	○	○	○	○	○
风扇、散热件	○	○	○	○	○	○
硬盘	○	○	○	○	○	○
助焊剂，散热膏， 标签及其他耗材	○	○	○	○	○	○

本表格依据 SJ/T 11364 的规定编制。

○：表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。

×：表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。

注：表中标记“×”的部件，皆因全球技术发展水平限制而无法实现有害物质的替代。

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# Chapter 1

## Specifications

<b>Form Factor</b>	2U 19" Rack-mount Chassis dimension: 735mm (L) x 438mm (W) x 87mm (H)
<b>Platform</b>	3rd Generation Intel® Xeon® Scalable Processors family Intel Lewisburg PCH C621A
<b>CPU</b>	3rd Generation Intel® Xeon® Scalable Processors, Dual Socket LGA-4189 (Socket P+) supported Up to 270W
<b>Memory</b>	32 x DDR4 DIMM slots Support DDR4 RDIMM/LRDIMM ECC & DCPMM (3200 MT/s) Support 8GB/16GB/32GB/64GB/128GB DIMM
<b>Front I/O and LED</b>	1 x Power Button with LED 1 x UID Button with LED (BMC Reset) 1 x Reset Button 1 x VGA ports 2 x USB 3.0 (Type A)
<b>Rear I/O</b>	1 x UID (BMC Reset) Button with LED 1 x VGA port 2 x USB 3.1 (Type A) 1 x COM Port 1 x Dedicated Management RJ45 port 2 x 1G RJ45 LAN port 1 x OCP port (OCP 2.0, Type A)
<b>Internal I/O</b>	1 x TPM/TCM Port 1 x USB 3.1 (Type A) 2 x M.2 (PCIe Gen4 x4) 4 x Slimline x8 Connectors 2 x Slimline x4 Connectors 3 x MiniSAS HD x4 Connectors (Front 12 SATA Ports) 2 x 7-Pin SATA (Rear SATA Ports)
<b>Storage</b>	8 x LFF Hot-Swap SATA/SAS + 4 x Tri-mode(Gen 3) + 2 x SFF Hot-Swap SATA/SAS (Rear) 4 x LFF Hot-Swap SATA/SAS + 8 x Tri-mode(Gen 4) + 4 x LFF Hot-Swap SATA/SAS (Rear) 16 x SFF Hot-Swap SATA/SAS + 8 x NVMe SSD + 2 x SFF Hot-Swap SATA/SAS (Rear) - 24 x SFF Hot-Swap SATA/SAS + 2 x SFF Hot-Swap SATA/SAS (Rear)
<b>Power Supply</b>	2 x 800W/1200W Redundant, Platinum CRPS
<b>Cooling</b>	6 x 6038 fans, hot swap

<b>Operating Temperature</b>	5°C to 35°C
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# Chapter 2

## Overview

### 2.1 Front View

#### 2.1.1 LFF Model



Number	Component
1	VGA port
2	USB 3.0
3	Service tag
4	12 x HDD (0 ~ 11)
5	USB 3.0 Port
6	Power / UID / Reset Button
7	LED (HDD status / System Status/ LAN1)

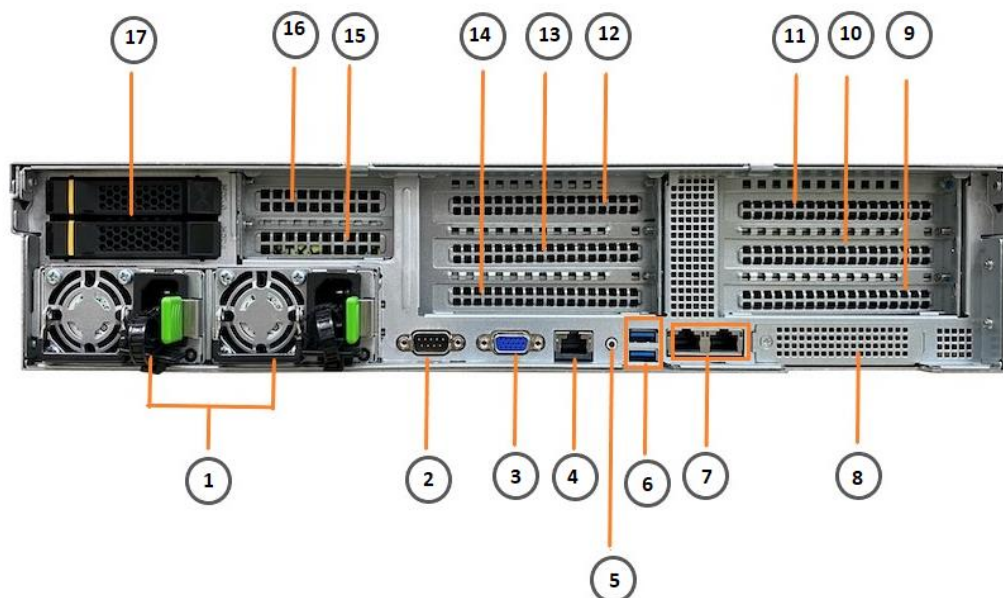
## 2.1.2 SFF Model



Number	Component
1	VGA Port
2	USB 3.0
3	Service Tag
4	24 x HDD (0~23)
5	USB 3.0
6	Power / ID /Reset Button
7	LED (HDD status / System Status/ LAN1)

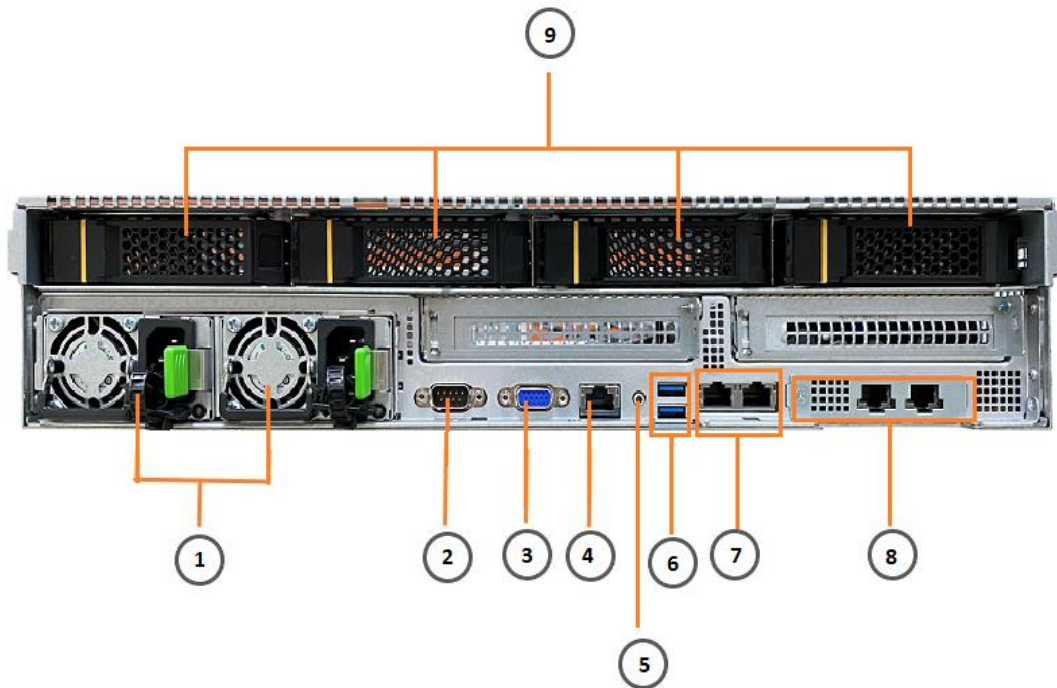
## 2.2 Rear View

### 2.2.1 I/O SKU



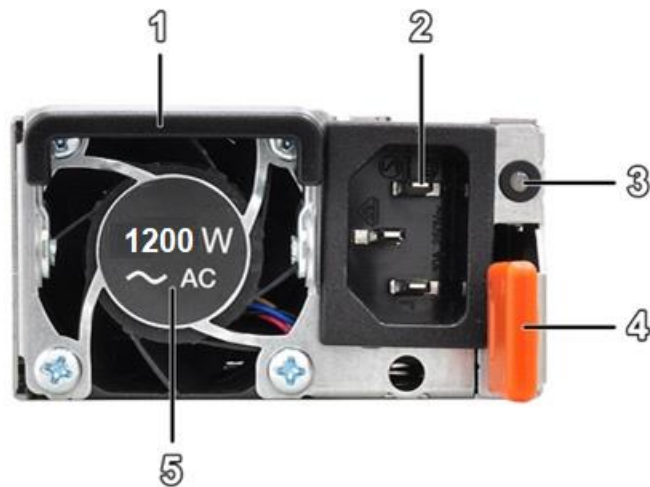
Number	Component
1	Power Supply x 2
2	COM Port
3	VGA Port
4	RJ45 Management Port
5	UID LED
6	USB 3.0 x 2
7	RJ45 x 2
8	OCP Slot
9	Slot 0 (PCe x 8 or PCIe x16)
10	Slot 1 (PCe x 8) or N.A (When Slot 0 PCIe x16 present)
11	Slot 2 (PCe x 8)
12	Slot 3 (PCe x 8 or PCIe x16)
13	Slot 4 (PCe x 8) or N.A (When Slot 3 PCIe x16 present)
14	Slot 5 (PCe x 8)
15	Slot 6 (PCe x 8)
16	2.5" HDD x 2
17	

## 2.2.2 Storage SKU



Number	Component
1	Power Supply x 2
2	COM Port
3	VGA Port
4	RJ45 Management Port
5	UID LED
6	USB 3.0 x 2
7	RJ45 x 2
8	OCP Slot
9	3.5" HDD x 4

## 2.3 Power Supply (PSU) View



Number	Component
1	<b>PSU Handle</b> - Pull to remove the PSU
2	<b>Power Connector</b> - Connects to a power source
3	<b>PSU LED Indicator</b> - Indicates the status of the power supply
4	<b>PSU Release Latch</b> - Press to release the PSU from the system
5	<b>PSU Fan</b> – Cool fan of the PSU unit

# Chapter 3 Installation / Removal

## 3.1 System Components

### 3.1.1 Hard Drive Installation (for SFF & LFF)

1. Remove the hard drive carrier from the system.
2. Remove the hard drive from the hard drive carrier.  
Skip this step if the hard drive carrier does not have a hard drive installed.
3. Slide the hard drive into the hard drive carrier ensuring the positioning studs fit into the holes at the side of the hard drive.

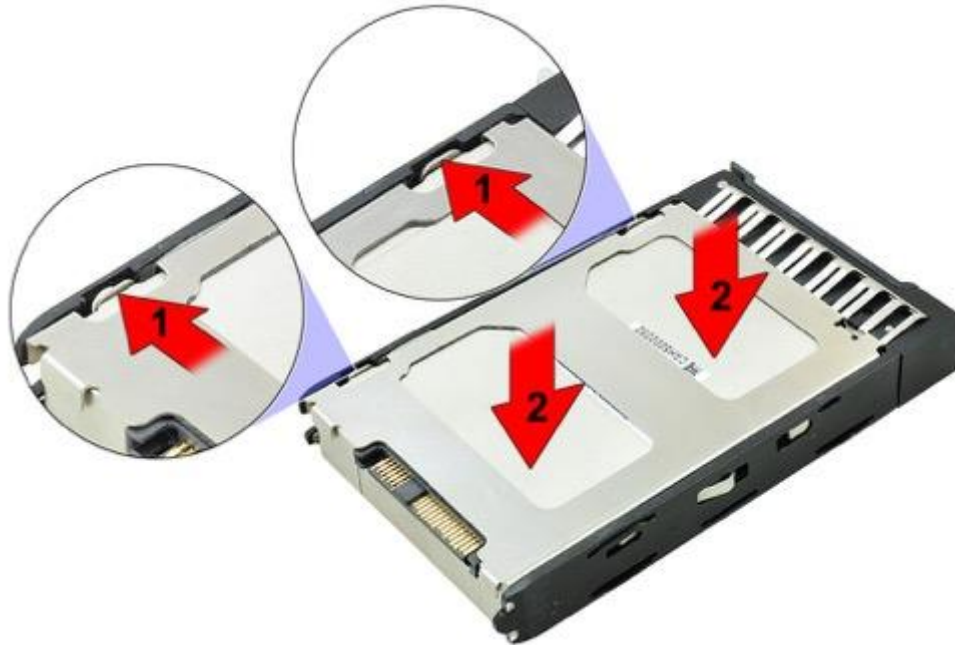


4. Press down on the hard drive to secure the hard drive to the carrier.



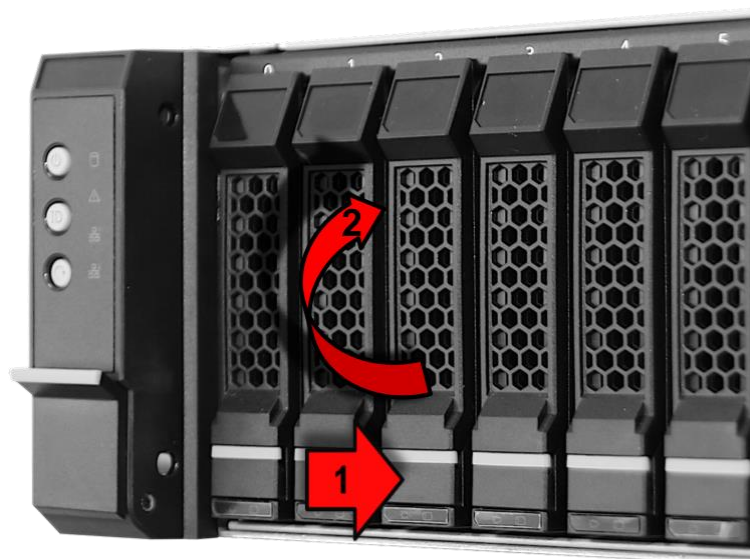
### 3.1.2 Hard Drive Removal (for SFF & LFF)

1. Remove the hard drive carrier from the system.
2. Push outwards the hard drive release latches on the hard drive carrier while pressing down on the hard drive to remove the hard drive from the hard drive carrier.

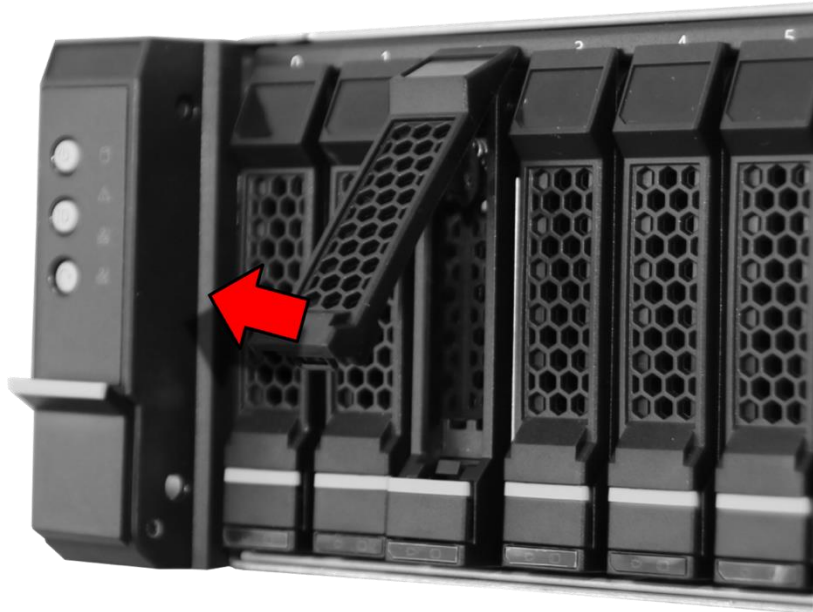


### 3.1.3 SFF Hard Drive Carrier Removal

1. Press the carrier release handle button then pull down the carrier release handle.

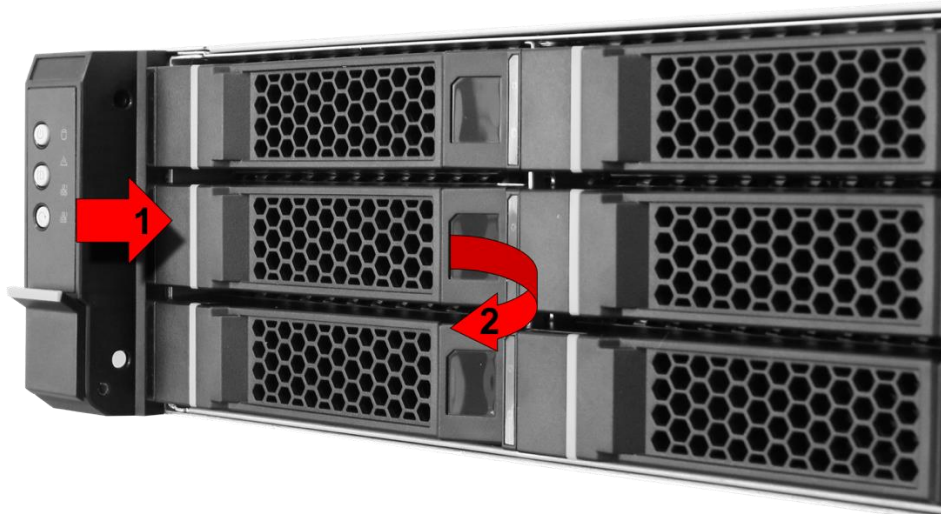


2. Pull the carrier release handle to remove the hard drive carrier.

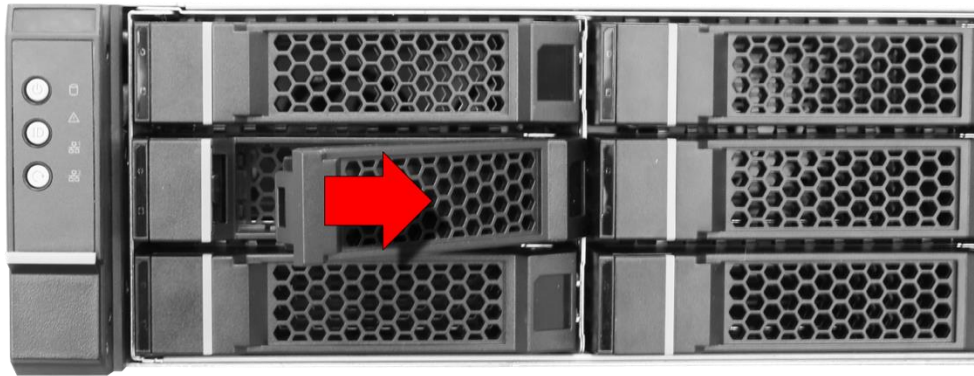


### 3.1.4 LFF Hard Drive Carrier Removal

1. Press the carrier release handle button then pull down the carrier release handle.



2. Pull the carrier release handle to remove the hard drive carrier.

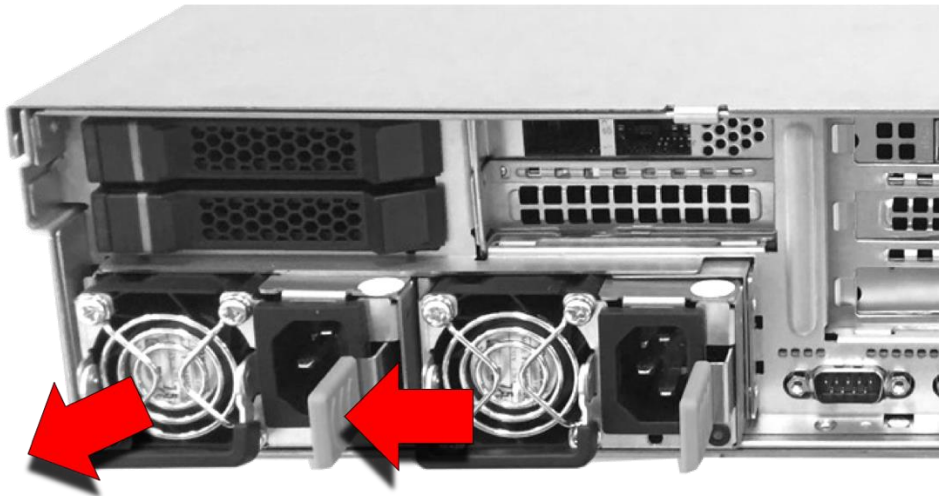


### 3.1.5 PSU Removal

1. Pull the PSU handle to a 90-degree angle.

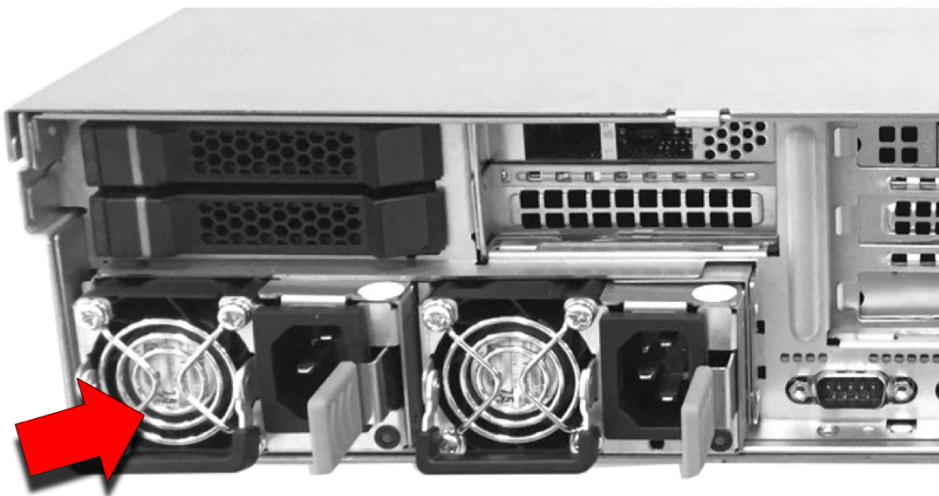


2. Press the PSU release latch while pulling the PSU handle to remove the PSU.

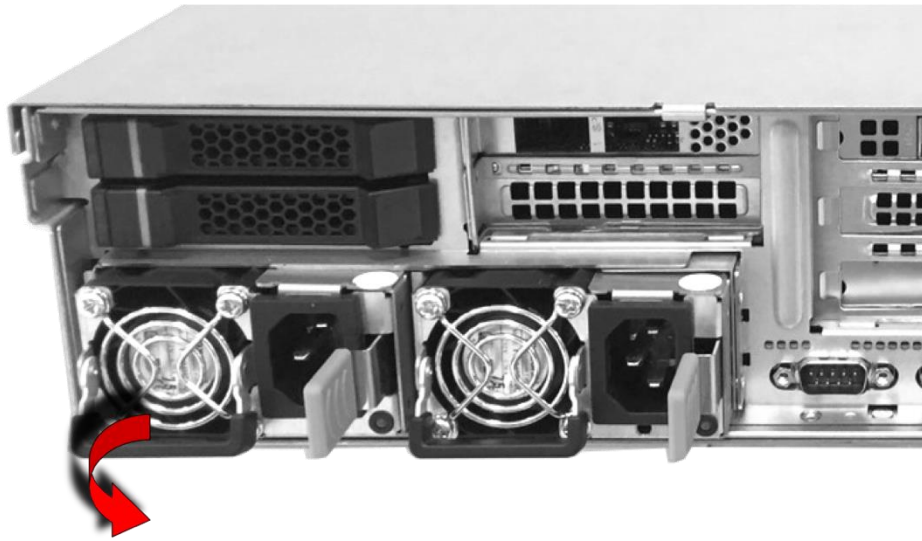


### 3.1.6 PSU Installation

1. Push the PSU to end of the slot and make sure the latch is locked.

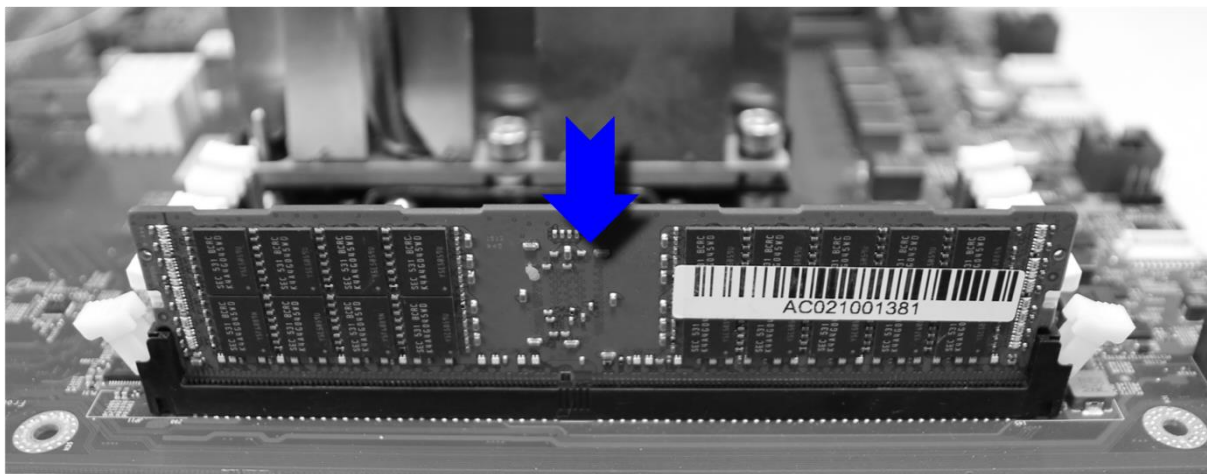


2. Push the PSU handle to a 0-degree angle. (See figure below)

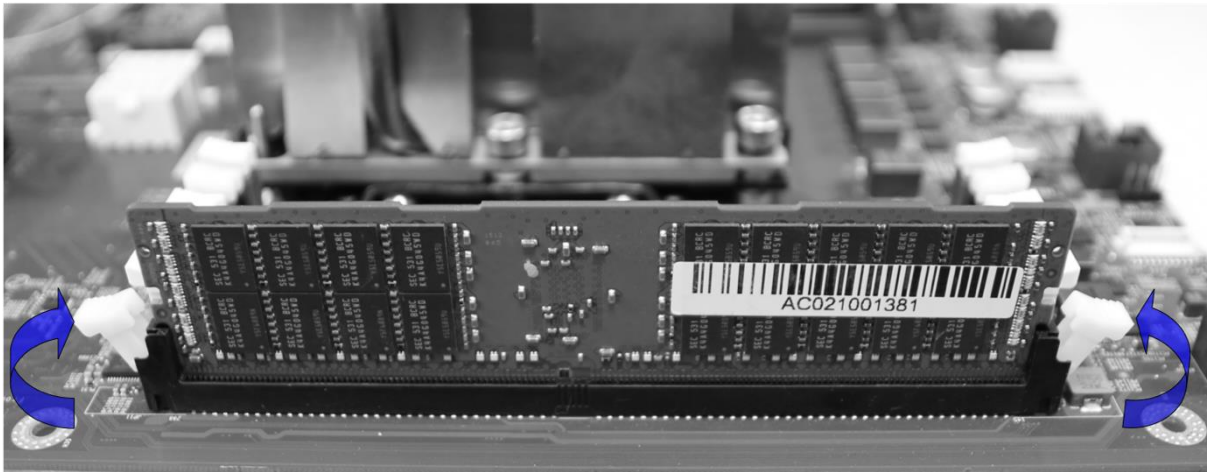


### 3.1.7 Memory Installation

1. Remove the air duct from the system.
2. Insert memory DIMM to slot, ensure module notch is aligned with slot key.

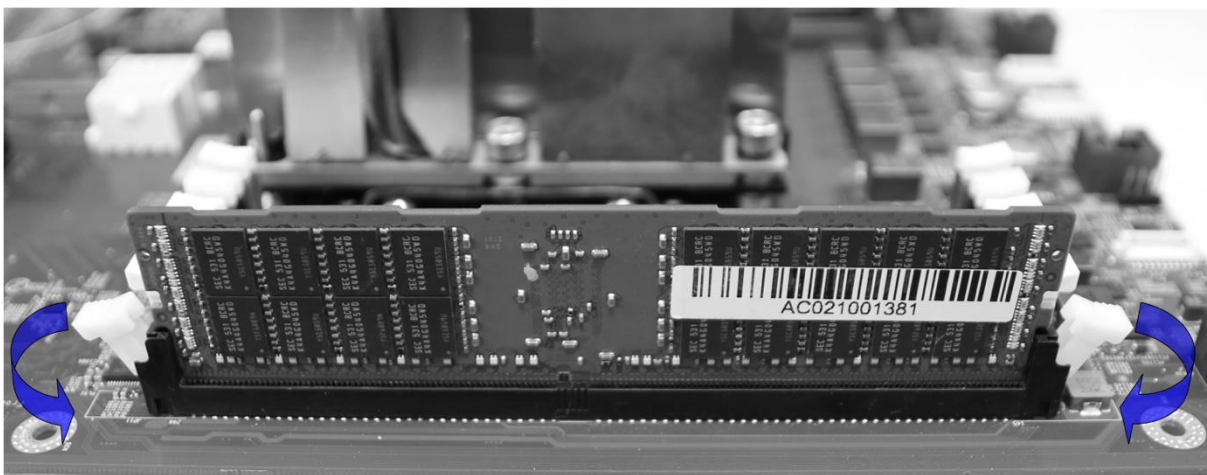


3. Push the retention clips inwards to lock the memory DIMM.
4. Install the air duct.

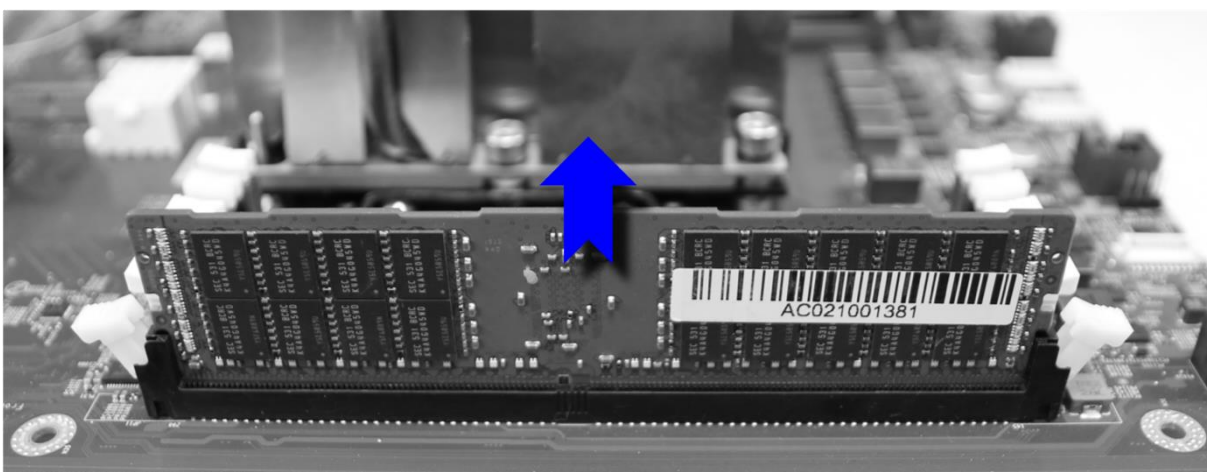


### 3.1.8 Memory Removal

1. Remove the air duct from the system.
2. Push the retention clips outwards to release the memory DIMM.



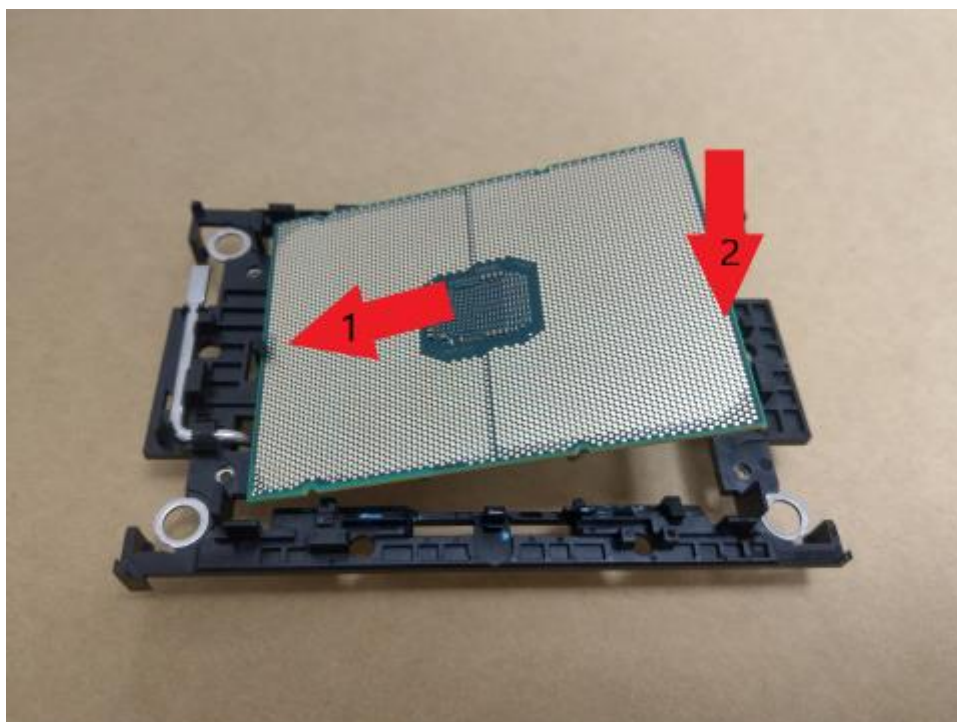
3. Lift and remove the memory DIMM.



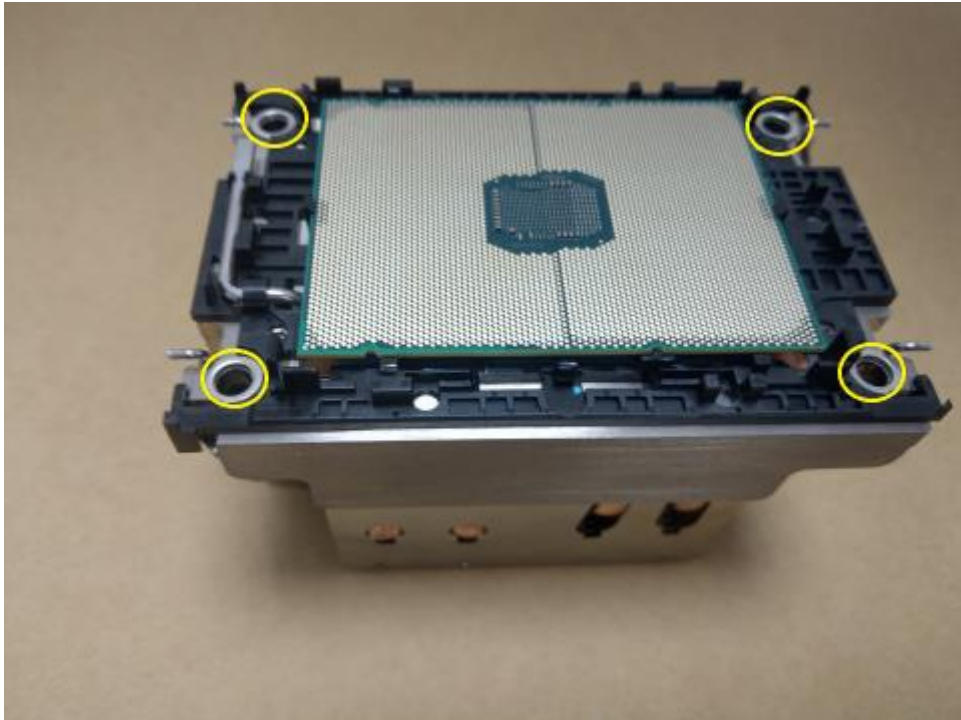
**IMPORTANT:** The server requires at least one DIMM per processor for functioning. When you install/remove memory DIMMs, please follow the sequence shown in the table (Appendix B & C) to maintain performance.

### 3.1.9 CPU Installation

1. Remove the air duct from the chassis.
2. Remove either the CPU heatsink 1 or CPU heatsink 2 from the chassis.
3. Remove the CPU from the CPU carrier.
4. Slide the CPU into the CPU carrier ensuring that the triangle mark on the CPU is aligned with the triangle mark on the CPU carrier, and then secure the CPU to the CPU carrier.



5. Install the CPU carrier onto the CPU heatsink. Ensure that the triangle mark on the CPU carrier is aligned with the blunt corner of the CPU heatsink and that the CPU carrier is firmly fixed on the CPU heatsink by the latches.

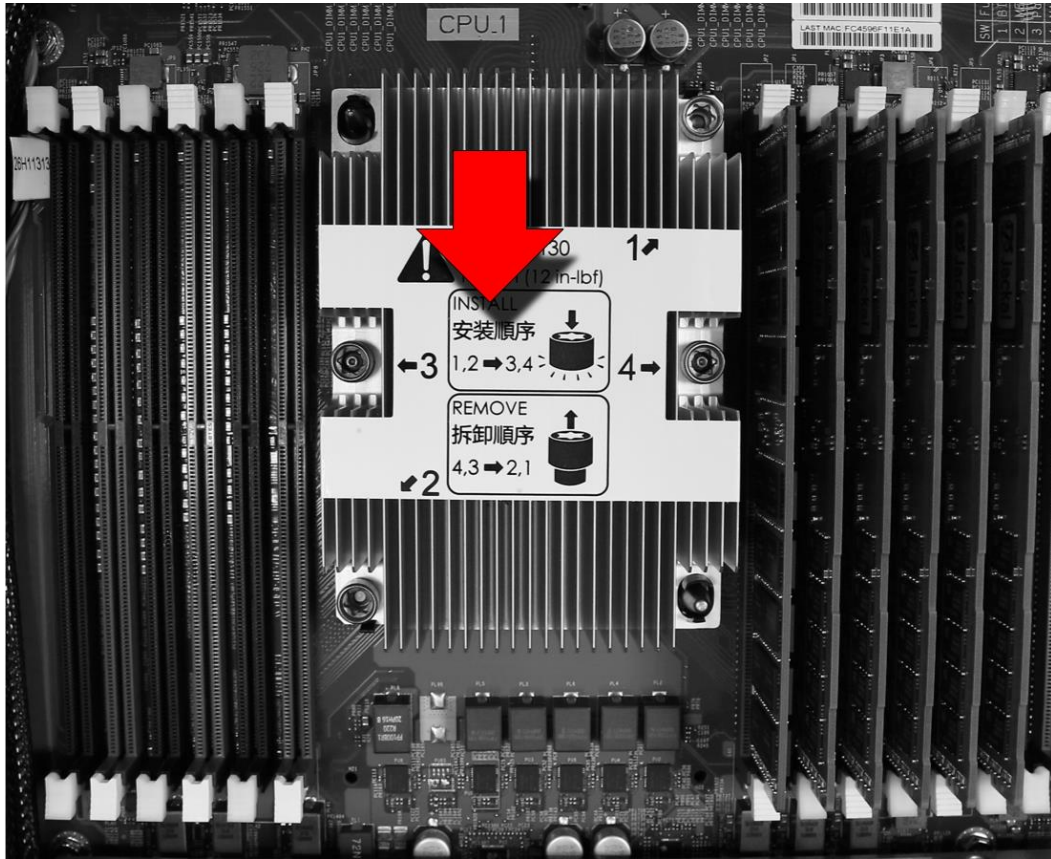


### 3.1.10 CPU Removal

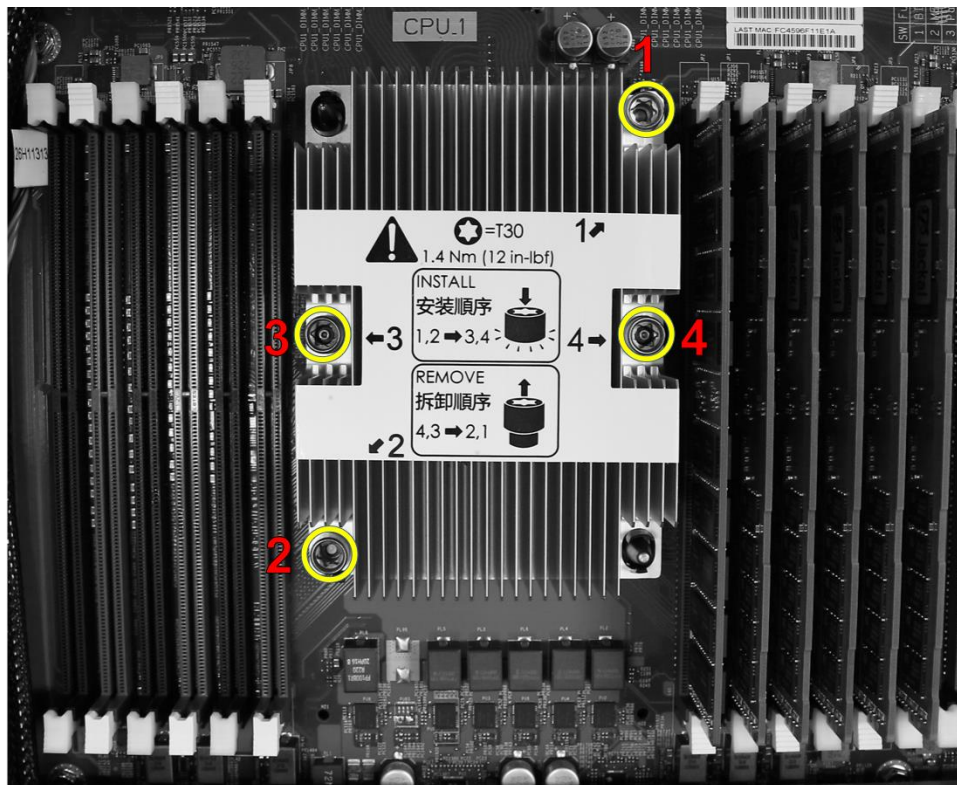
1. Remove the air duct from the chassis.
2. Remove either the CPU heatsink 0 or CPU heatsink 1 from the chassis.
3. Carefully push the CPU carrier tab outwards to release the CPU from the CPU carrier.
4. Lift to remove the CPU from the CPU carrier.

### 3.1.11 CPU Heatsink Installation

1. Remove the air duct from the chassis.
2. Put the CPU heatsink on socket.



3. Tighten the 4 captive screws in sequential order based on the numbers indicated on the heatsink (1 > 2 > 3 > 4)



**IMPORTANT:** When installing the CPU heatsink, follow the sequence indicated on the heatsink. Incorrect sequence will result in an uneven application of the thermal grease on the CPU.

### 3.1.12 CPU Heatsink Removal

1. Remove the air duct from the system.
2. Loosen the 4 captive screws in sequential order based on the numbers indicated on the heatsink (4 > 3 > 2 > 1).



**IMPORTANT:** When removing the CPU heatsink, follow the sequential order based on the numbers indicated on the heatsink. Incorrect sequence will result in an uneven application of the thermal grease on the CPU.

# Chapter 4

## BIOS Setup

### 4.1 Overview

This document provides the information for Basic Input-Output System (BIOS) and software features. It describes the architecture and feature set for all function in the system.

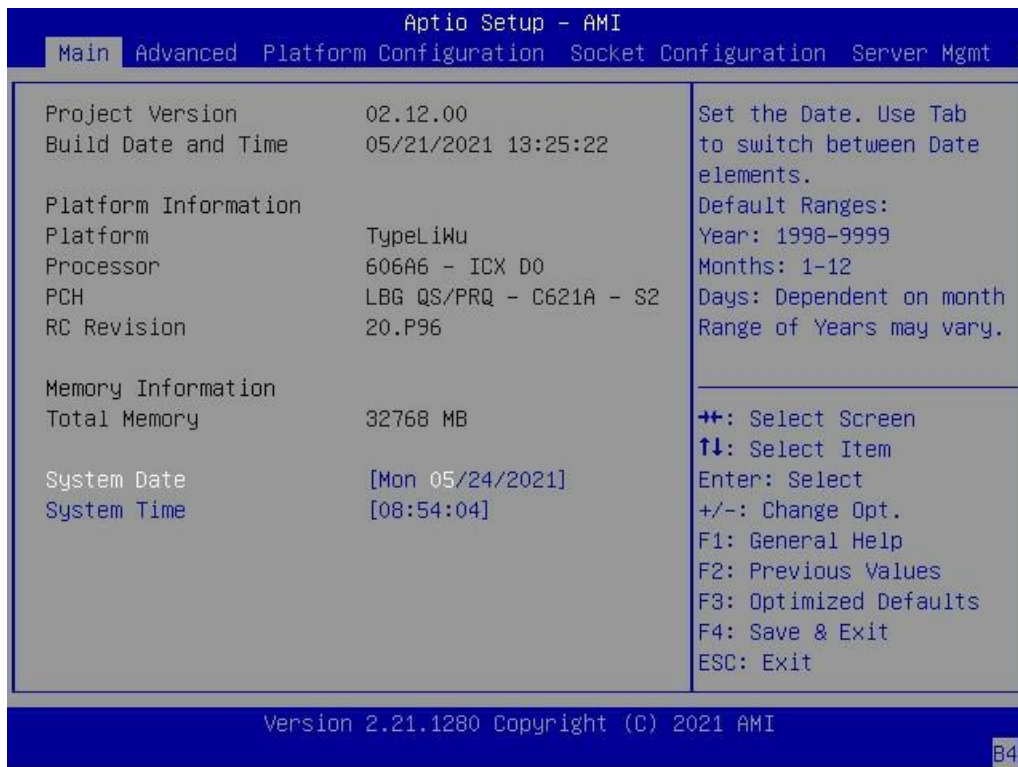
#### Hot Keys

Item	Function
Tab	Allows users to exit Quiet Boot Mode.
F1	Allows users to enter setup. The message "Entering Setup ..." will appear during the POST process after pressing the <F1> key.
F12	Allows users to prompt boot menu. The message "Entering Boot Menu ..." will appear during the POST process after pressing the <F12> key.

#### Keys for BIOS Menu Navigation

Item	Function
Up & Down Arrow Keys	Allows users to move the cursor up and down.
Left & Right Arrow Keys	Allow users to move to another menu.
Enter	Allows users to select an item or enter a sub menu.
+/-	Allows users to add or reduce value of the parameters.
ESC	Exit
F1	General Help
F2	Previous Value
F3	Optimized Defaults
F4	Save & Exit Setup

## 4.2 Main



### BIOS Information

This page show BIOS Vendor/BIOS version... information.

### Memory Information

Show the total memory size and patten of your system.

### System Language

Change the BIOS language.

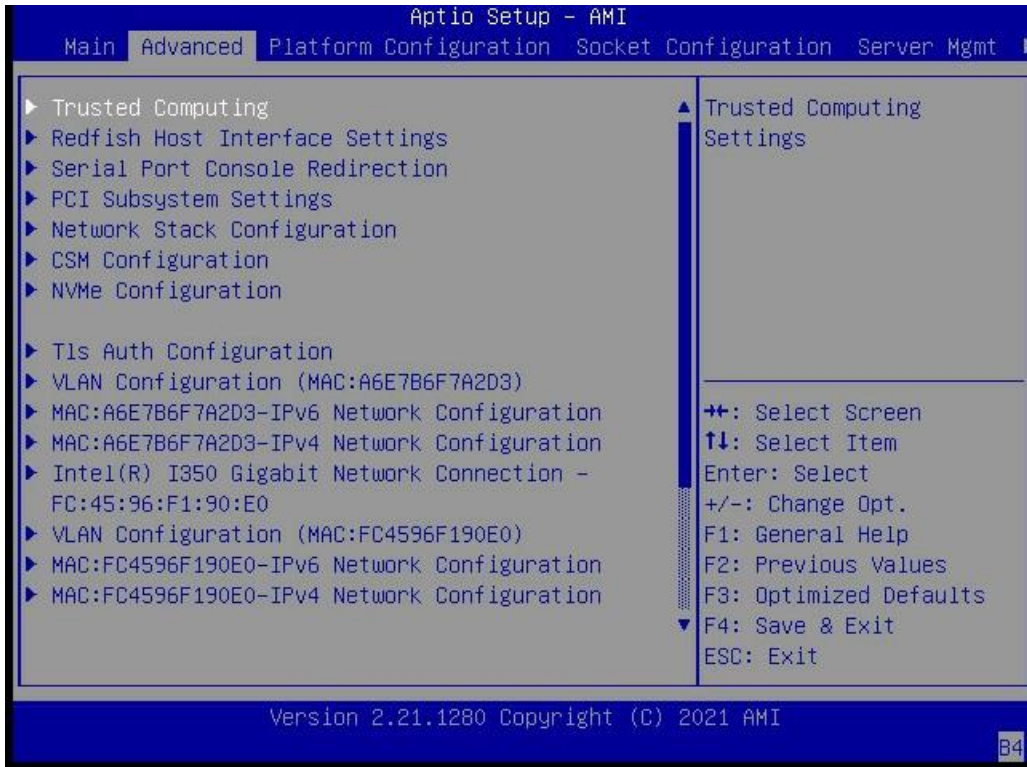
### System Date

Set the system date.

### System Time

Set the system time.

### 4.3 Advanced



Advance setting of BIOS

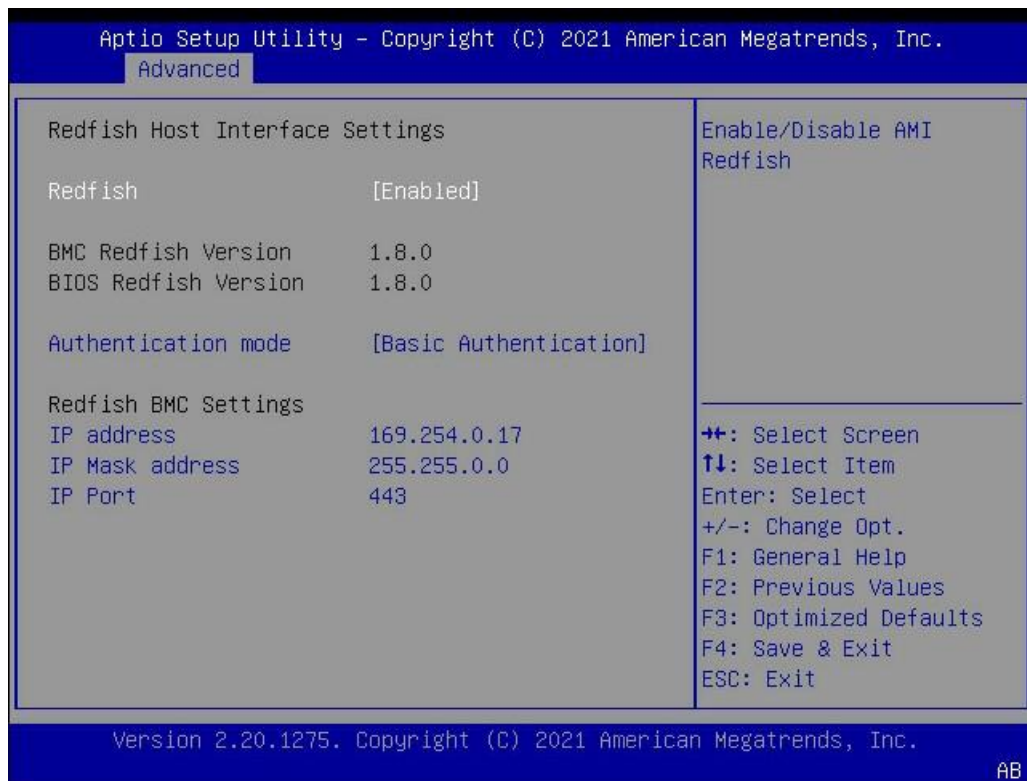
### 4.3.1 Trusted Computing



#### **Security Device Support** ([Disabled], Enabled)

Enables or Disables BIOS support for security device. OS will not show security device. TCG EFI protocol and INT1A interface will not be available.

## 4.3.2 Redfish Host Interface Settings



### **Redfish** ([Disabled], Enabled)

Enable/disable AMI Redfish function.

### **BMC Redfish Version**

Indicate the BMC Redfish version.

### **BIOS Redfish Version**

Indicate the BIOS Redfish version.

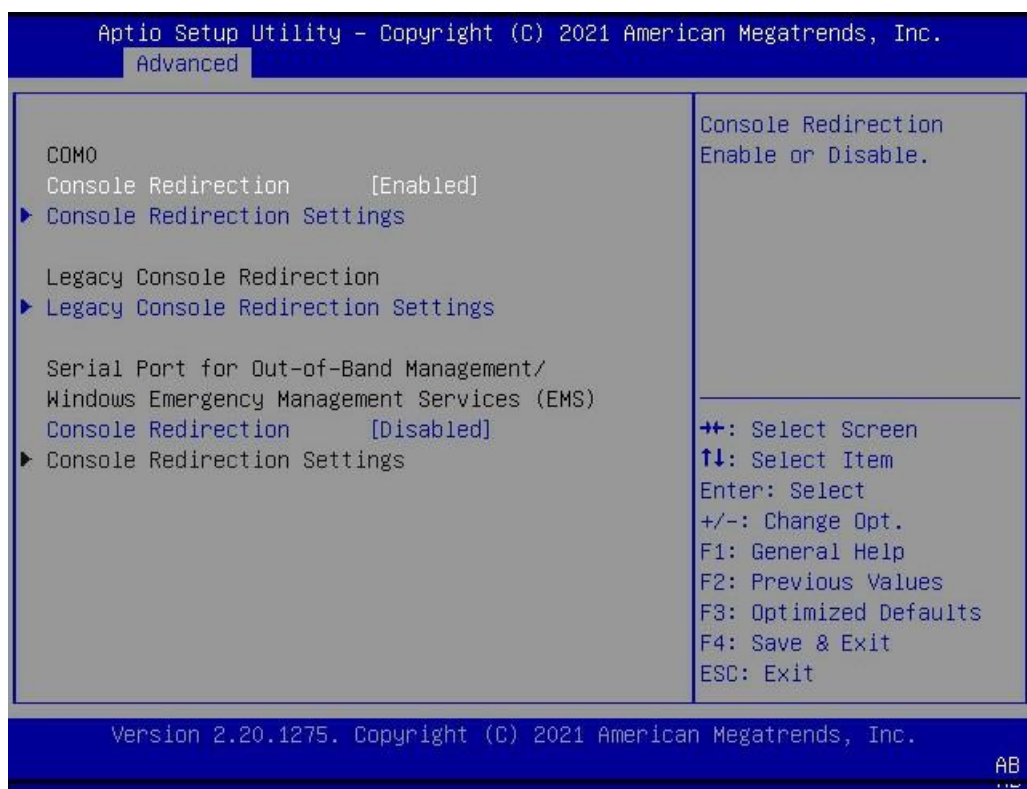
### **Authentication** ([Basic Authentication], Session Authentication)

Set the authentication to be Basic Authentication & Session Authentication

### **Redfish BMC Settings**

Set the BMC IP.

### 4.3.3 Serial Port Console Redirection



#### Console Redirection (Disabled, [Enabled])

Enable/disable Console Redirection function.

#### Console Redirection Settings

##### Terminal Type ([ANSI]/VT100/VT100+/VT-UTF8)

The VT100 and VT100+ terminal emulations are essentially the same. VT-UTF8 is a UTF8 encoding of VT100+. PC-ANSI is the native character encoding used by PC-compatible applications and emulators.

##### Bits Per Second (9600/19200/38400/57600/[115200])

Serial port transmission speed. This setting must match the remote terminal application.

##### Data Bits (7/[8])

Serial port transmission data bits.

##### Parity ([None]/Even/Odd/Mark/Space)

A parity bit can be sent with the data bits to detect some transmission error.

Even: parity bit is 0 if the num of 1's in the data bits is even.

Odd: parity bit is 0 if num of 1's in the data bits is odd.

Mark: parity bit is always 1.

Space: parity bit is always 0.

**Stop Bits** ([1]/2)

Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning.)The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.

**Flow Control** ([None]/Hardware/RTS/CTS)

Flow control can prevent data loss from buffer overflow.

**VT-UTF8 Combo Key Support** (Disabled, [Enabled])

Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals.

**Recorder Mode** ([Disabled], Enabled)

With this mode enabled only text will be sent. This is to capture Terminal data.

**Resolution 100x31** ([Disabled], Enabled)

Enables or disables extended terminal resolution

**Putty Keypad** ([VT100]/LINUX/XTERMR6/SCO/ESCN/VT400)

Select Function Key and KeyPad in Putty.

## Legacy Console Redirection Settings

**Redirection COM Port**

Select a COM port to display redirection of Legacy OS and Legacy OPROM Messages.

**Resolution** ([80x24]/ 80x25)

Select resolution of console display.

**Redirection After POST** ([Always Enable]/ Bootloader)

Select Redirection mode to always enable after POST.

## Serial Port for Out-of-Band Management

**Console Redirection**([Disabled], Enabled)

Enable/disable Console Redirection function.

## Console Redirection Settings

**Terminal Type EMS** ([ANSI]/VT100/VT100+/VT-UTF8)

The VT100 and VT100+ terminal emulations are essentially the same. VT-UTF8 is a UTF8 encoding ofVT100+. PC-ANSI is the native character encoding used by PC-compatible applications and emulators.

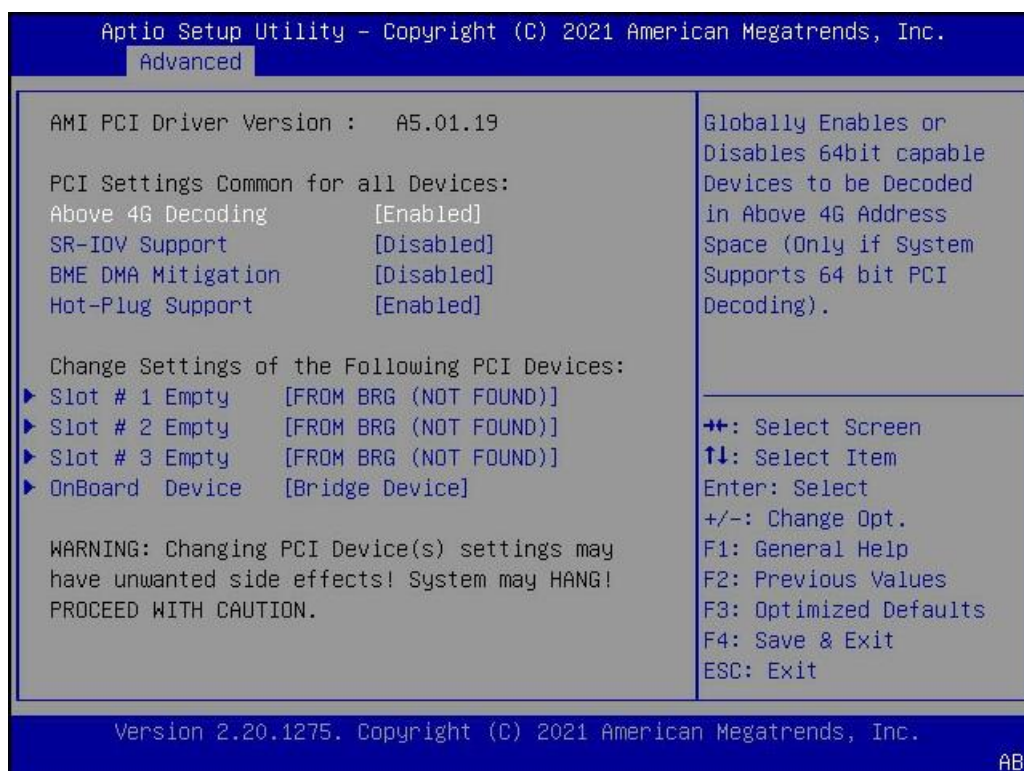
**Bits Per Second EMS** (9600/19200/38400/57600/[115200])

Serial port transmission speed. This setting must match the remote terminal application.

**Flow Control EMS** ([None]/Hardware RTS/CTS /Software Xon/Xoff)

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow.

**4.3.4 PCI Subsystem Setting**



**Above 4 G Decoding** (Disabled, [Enabled])

Enables or Disables 64bit capable Devices to be decoded in above 4G Address Space (Only if System Supports 64 bit PCI Decoding).

**SR-IOV Support** ([Disabled], Enabled)

Enable or disable the SR-IOV support.

**BME DMA Mitigation** ([Disabled], Enabled)

Re-enable Bus Master Attribute disabled during PCI enumeration for PCI Bridges after SMM Locked.

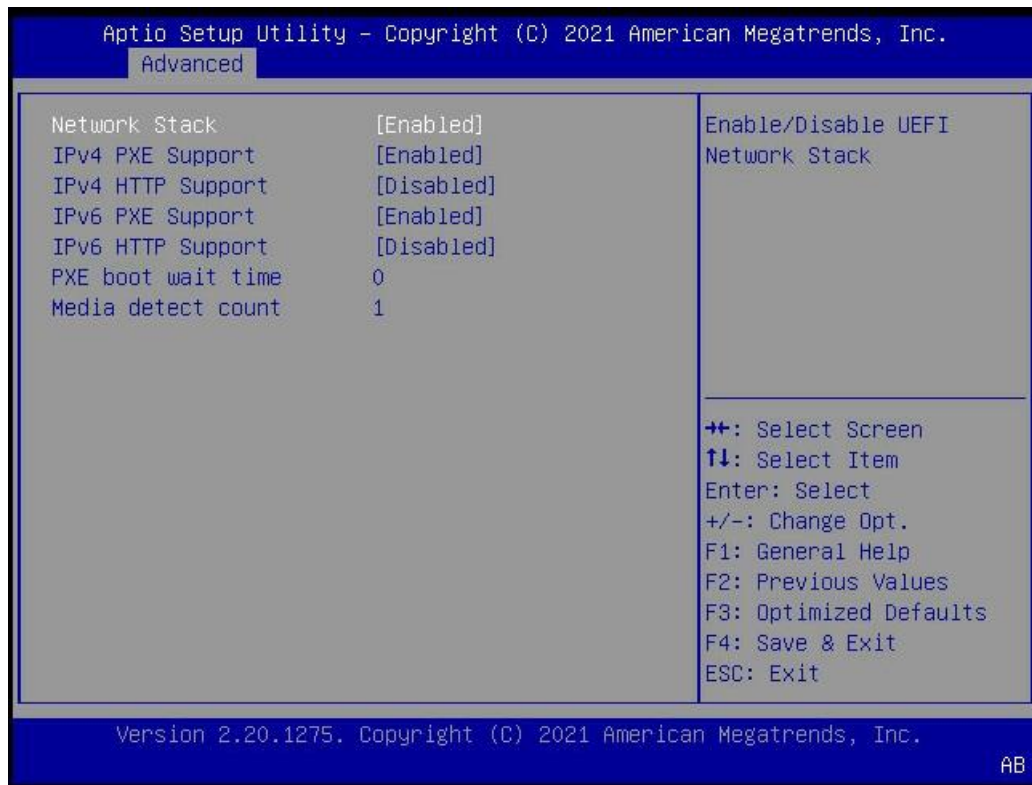
**Hot-Plug Support** (Disabled, [Enabled])

If system has SR-IOV capable PCIe Devices, this option enables or disables single root IO virtualization support.

**Change Settings of the Following PCI Devices**

Change the PCI Slot settings.

### 4.3.5 Network Stack Configuration



The Network stack Module is set of drivers that produce network protocols. The UEFI Network Stack implements the TCP/IP network interfaces such as SNP, MNP, ARP, IP, UDP, DHCP, MTFTP, TCP and VLAN.

#### **Network Stack ([Enabled]/Disabled)**

Enable / Disable UEFI Network Stack setting.

#### **IPv4 PXE Support ([Enabled]/Disabled)**

Enable / Disable the IPv4 PXE support

#### **IPv4 HTTP Support ([Enabled]/Disabled)**

Enable / Disable the IPv4 HTTP support

#### **IPv6 PXE Support ([Enabled]/Disabled)**

Enable / Disable the IPv6 PXE support

#### **IPv6 HTTP Support ([Enabled]/Disabled)**

Enable / Disable the IPv6 HTTP support

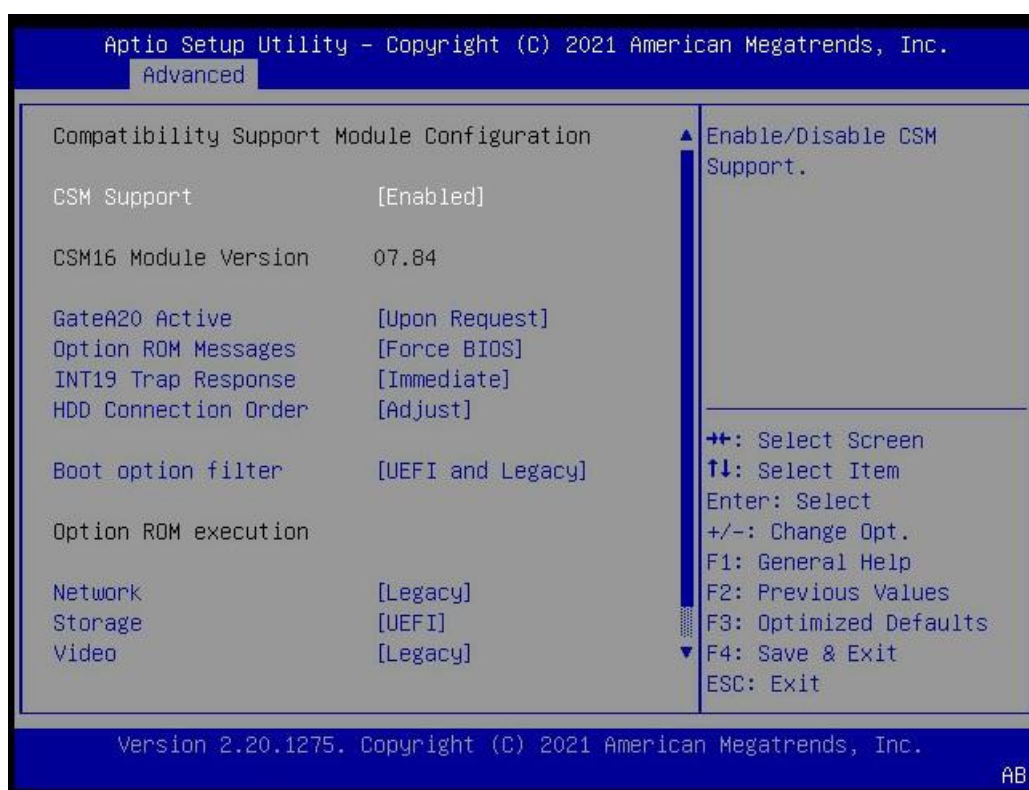
**PXE boot wait time (0)**

Wait time to press ESC key to abort the PXE boot

**Media detect count (1)**

Wait time to press ESC key to abort the PXE boot

**4.3.6 CSM Configuration**



**CSM Support ([Enabled]/Disabled)**

Enable / Disable the Compatibility Support Module.

**GateA20 Active ([Upon Request]/Always)**

Upon Request will make the GateA20 can be disabled by using BIOS services. Always will not allow disabling the GateA20.

This option is useful when any RT code is executed above 1MB.

**Option ROM Message ([Force BIOS]/Keep Current)**

Set display mode for option ROM.

**INT19 Trap Response ([Immediate]/Postponed)**

BIOS reaction on INT19 trapping by option ROM:

Immediate – Execute the trap right away.

Postponed – Execute the trap during legacy boot.

**HDD Connection Order** ([Adjust]/Keep)

Some OS require HDD handles to be adjusted, ie. OS is installed on drive 80h.

**Boot Option Filter** ([UEFI and Legacy]/Legacy only/UEFI only)

The option controls Legacy/UEFI ROMs priority.

**Option ROM Execution**

**Network** (Do Not Launch/[UEFI]/Legacy)

Controls the execution of UEFI and Legacy Network option ROM.

**Storage** (Do Not Launch/[UEFI]/Legacy)

Controls the execution of UEFI and Legacy Storage option ROM.

**Video** (Do Not Launch/[UEFI]/Legacy)

Controls the execution of UEFI and Legacy Video option ROM.

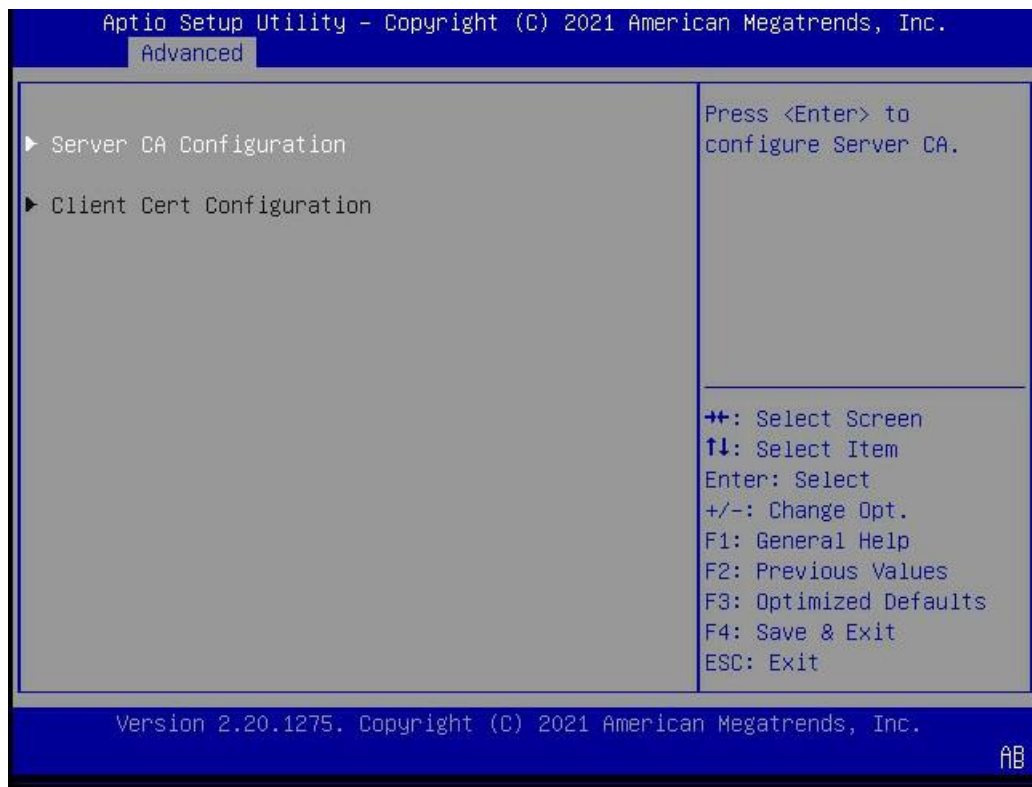
**Other PCI devices** (Do Not Launch/[UEFI]/Legacy)

Controls the execution of UEFI and Legacy other than Network/Storage/Video option ROM.

### 4.3.7 NVMe Configuration



## 4.3.8 T1s Auth Configuration



### Server CA Configuration

#### Server CA Configuration

**Enroll Cert** – Input digit character in 11111111-2222-3333-4444-1234567890ab format

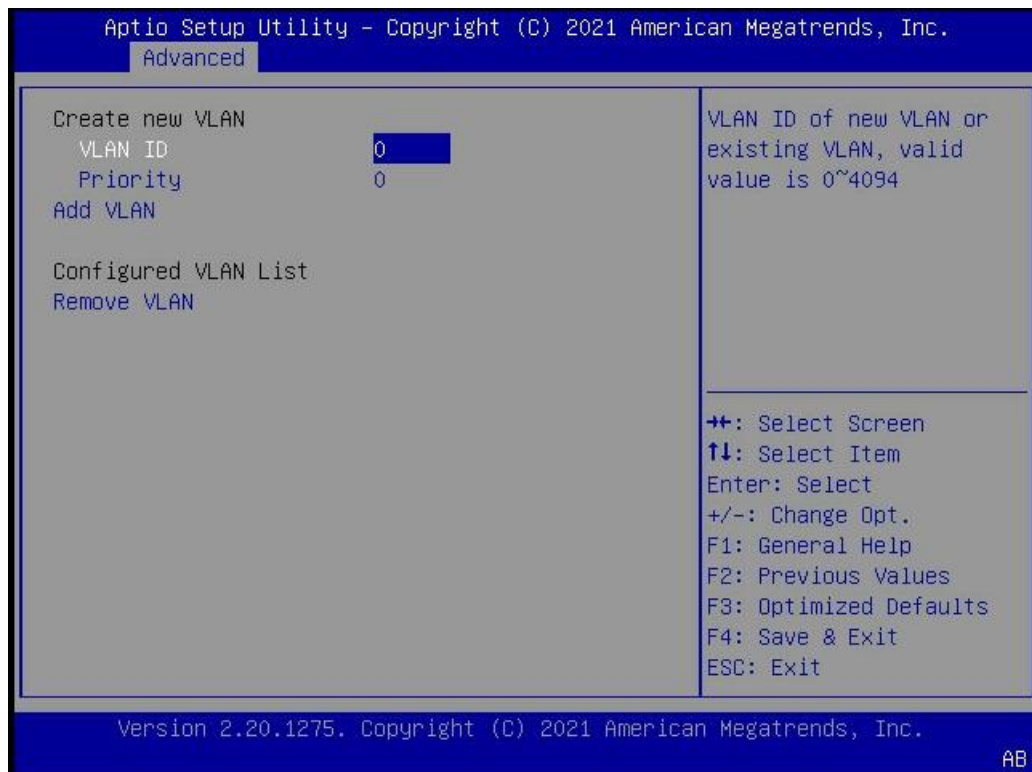
**Delete Cert** – Delete the Cert.

#### Client Cert Configuration

**Enroll Cert** – Input digit character in 11111111-2222-3333-4444-1234567890ab format

**Delete Cert** – Delete the Cert.

### 4.3.9 VLAN Configuration



#### Create new VLAN

##### VLAN ID

Set VLAN ID of new VLAN or existing VLAN, valid value is 0~4094

##### Priority

Set the Priority of VLAN

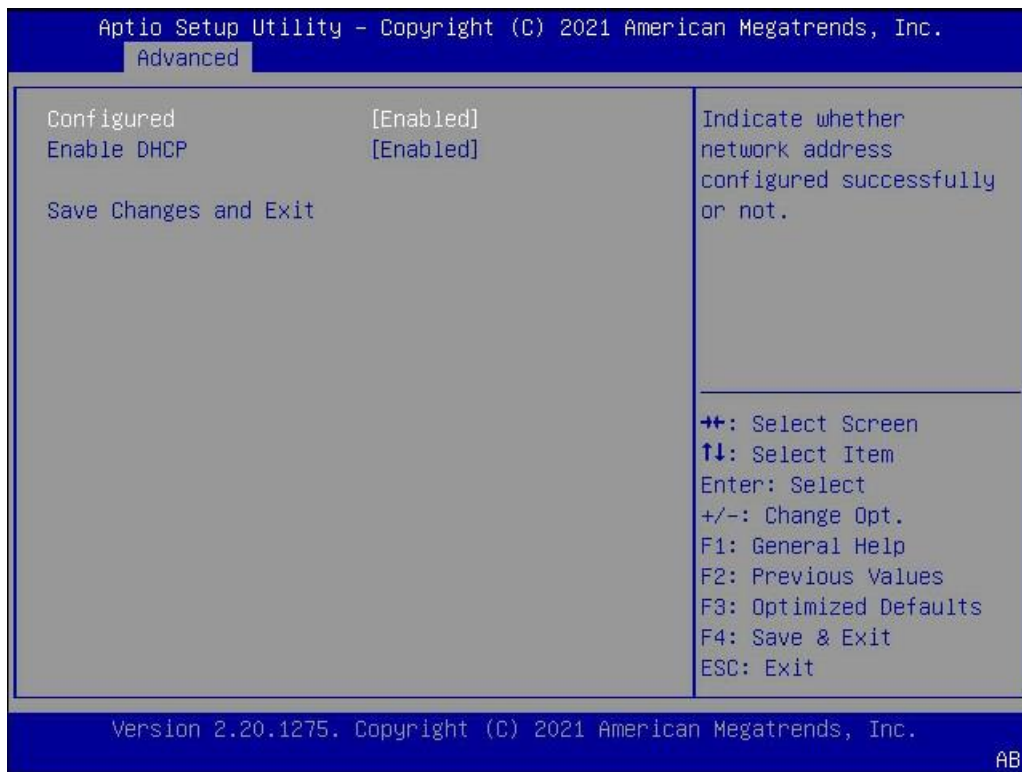
#### Add VLAN

Add VLAN.

#### Remove VLAN

Remove existing VLAN.

### 4.3.10 Network Stack Configuration



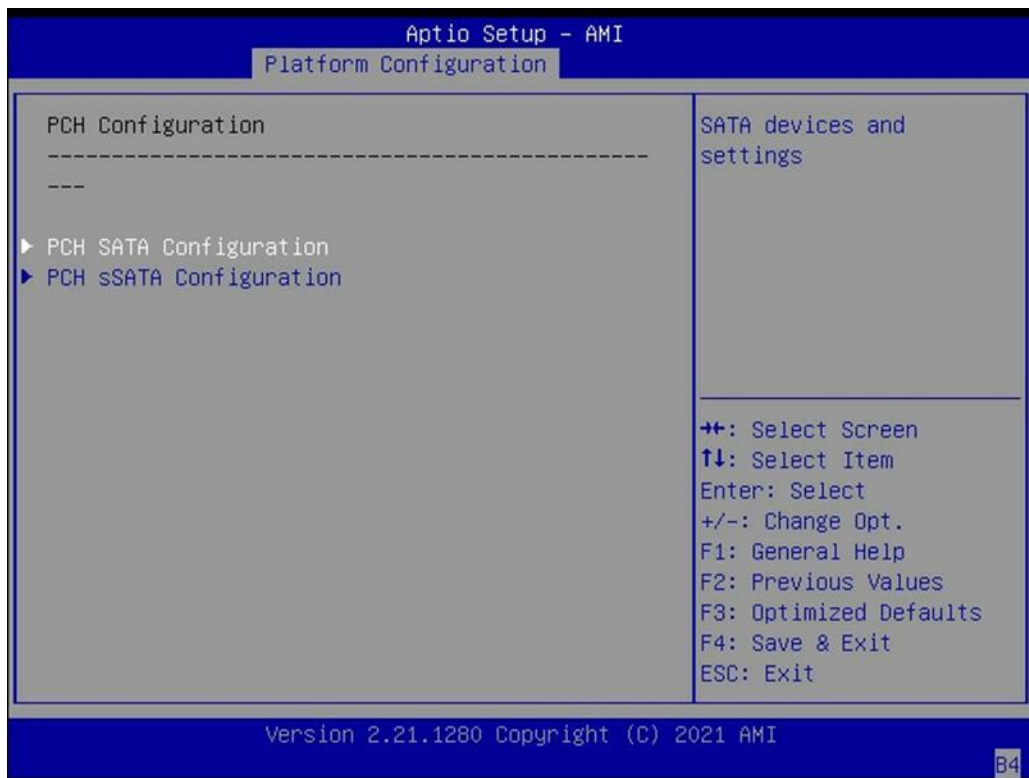
Configure the IPv4 information.

## 4.4 Platform Configuration



Indicate the information of CPU and memory

### 4.4.1 PCH Configuration



### 4.4.2 Server ME Configuration

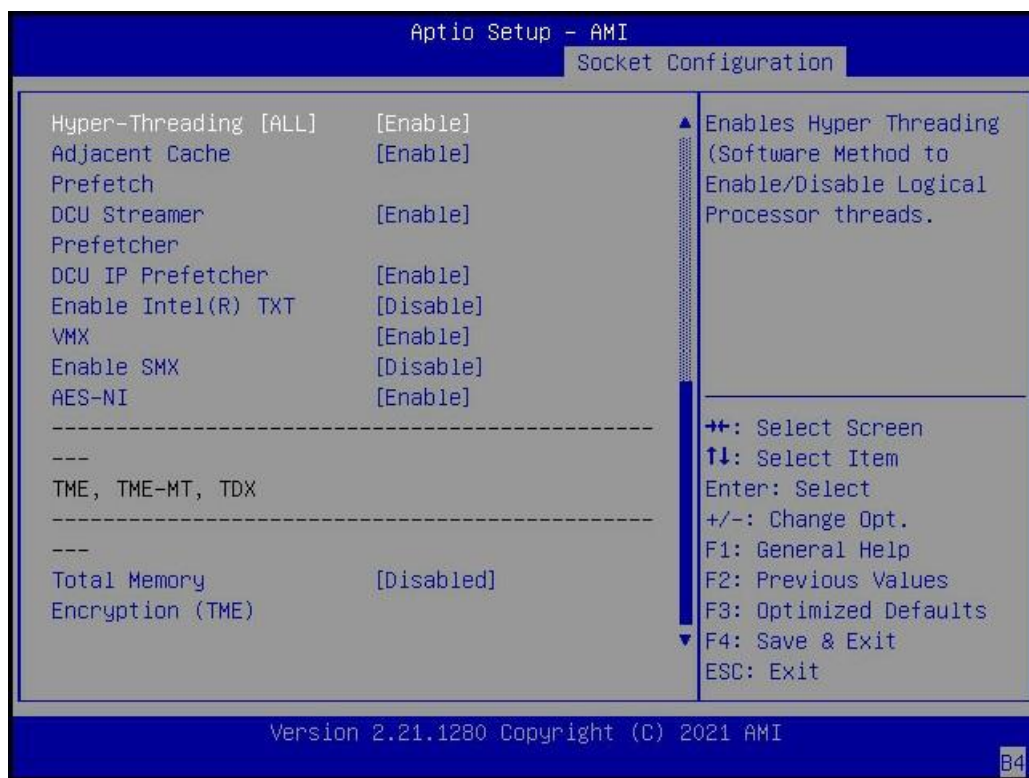
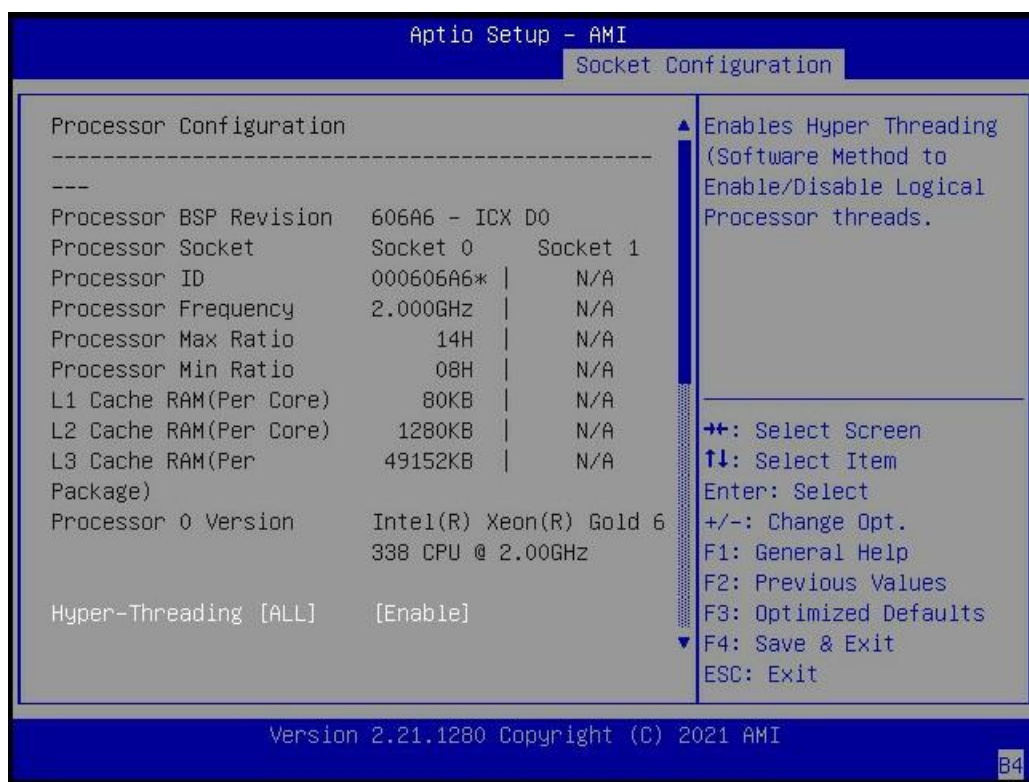




## 4.5 Socket Configuration



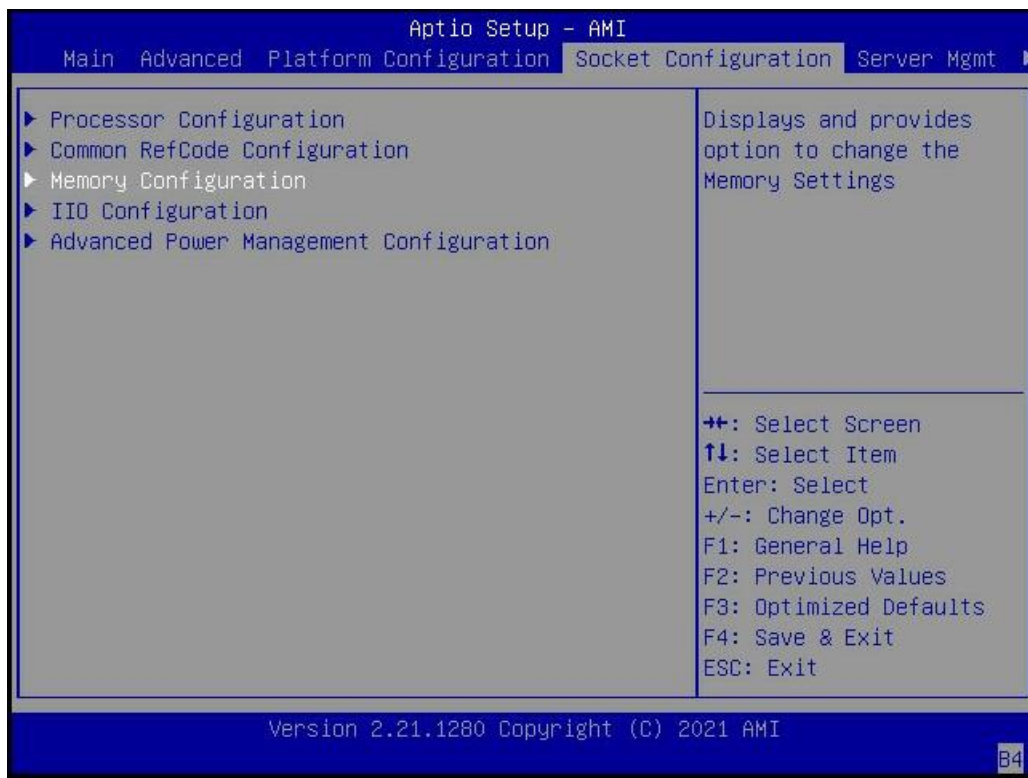
## 4.5.1 Processor configuration



## 4.5.2 Common Refcode Configuration



## 4.5.3 Memory Configuration



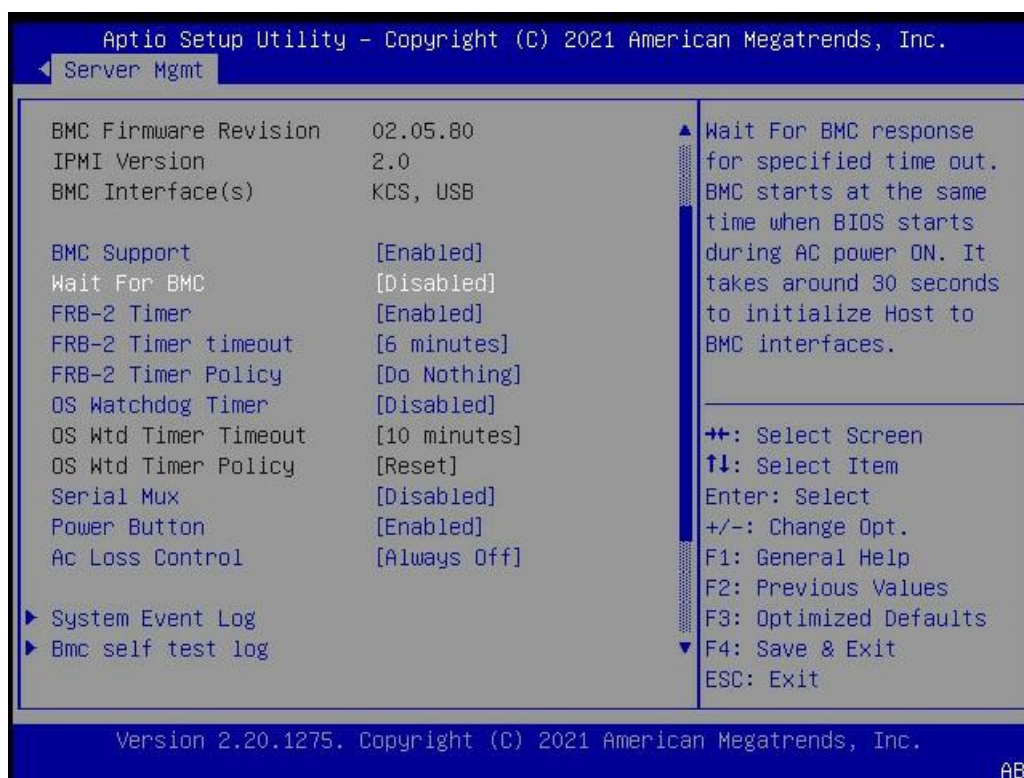
## 4.5.4 IIO Configuration



## 4.5.5 Advanced Power Management Configuration



## 4.6 Server Mgmt



### **BMC Support** ([Enabled]/Disabled)

Enable/Disable the interfaces to communicate with BMC.

### **Wait for BMC** (Enabled/[Disabled])

Wait for BMC response for specified time out. BMC starts at the same time when BIOS starts during AC power ON, it takes around 30 seconds to initialize host to BMC interfaces.

### **FRB-2 Timer** ([Enabled]/Disabled)

Enable/Disable FRB-2 timer (POST timer).

### **FRB-2 Timer Timeout** (3/4/5/[6] minutes)

Enter value between 3 to 6 minutes for FRB-2 timer expiration value.

### **FRB-2 Timer Policy** ([Do Nothing]/Reset/Power Down/Power Cycle)

Configure how the system should respond if the FRB-2 timer expires. Not available if FRB-2 timer is disabled.

**OS Watchdog Timer** ([Enabled]/Disabled)

If enabled, starts a BIOS timer which can only be shut off by management software after the OS loads. Helps determine that the OS successfully loaded or follow the.

**OS Wtd Timer Timeout** (5/[10]/15/20 minutes)

Configure the length of the OS boot watchdog timer. Not available if OS boot watchdog timer is disabled

**OS Wtd Timer Policy** (Do Nothing/[Reset]/Power Down/Power Cycle)

Configure how the system should respond if the OS watchdog timer expires. Not available if OS watchdog timer is disabled.

**Serial Mux** (Enabled/[Disabled])

Enable/Disable serial Mux configurations.

**Power Button** ([Enabled]/Disabled)

Select power button function behavior.

**AC Loss Control** ([Always off]/Always on/Last State)

Select AC loss control mode.

**System Event Log**

**SEL Components** ([Enabled]/Disabled)

Change this to enable or disable event logging for error/Progress codes during boot.

**Erase SEL** ([No]/Yes, On next reset/Yes, On every reset)

Sets options for erasing SEL.

**When SEL is Full** ([Do Nothing]/Erase Immediately/Delete Oldest Record)

Choose options for reactions to a full SEL.

**Log EFI Status Codes** (Disabled/Both/[Error Code]/Progress code)

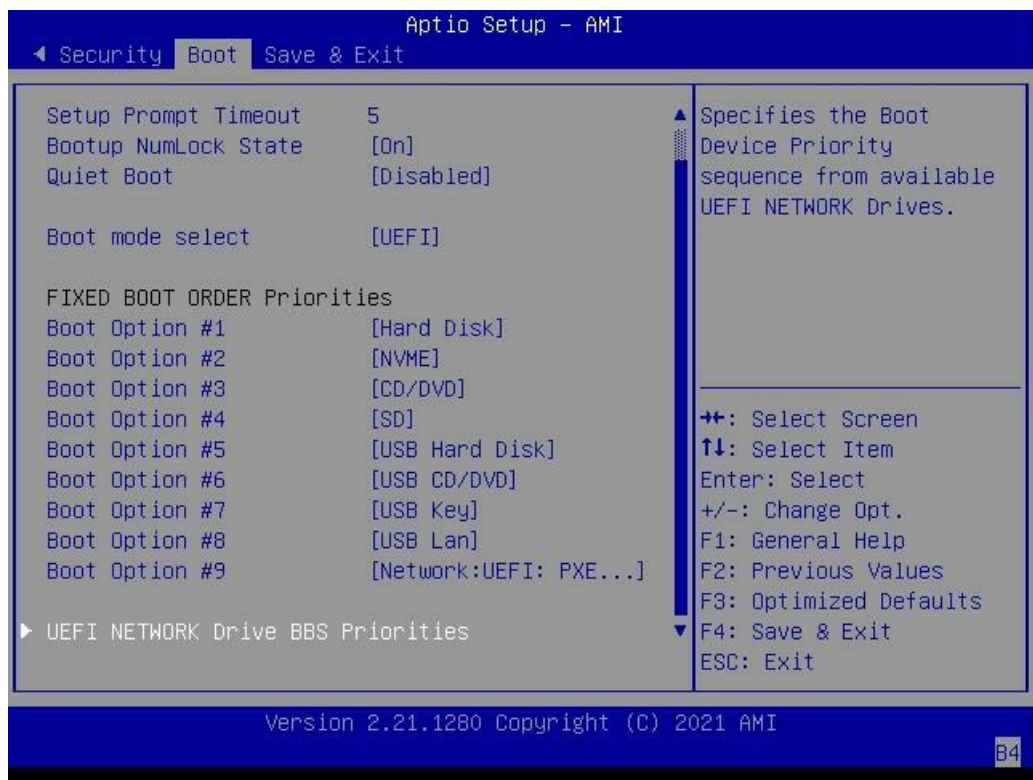
Disable the logging of EFI status codes or log only error code or only progress code or both.

## 4.7 Security



**Set Administrator password & User password.**

## 4.8 Boot



### Setup Prompt Time-out (1)

Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

### Boot up Num Lock State ([On]/Off)

Select the keyboard NumLock State.

### Quiet Boot ([Enabled]/Disabld)

Enables or disables Quiet Boot option.

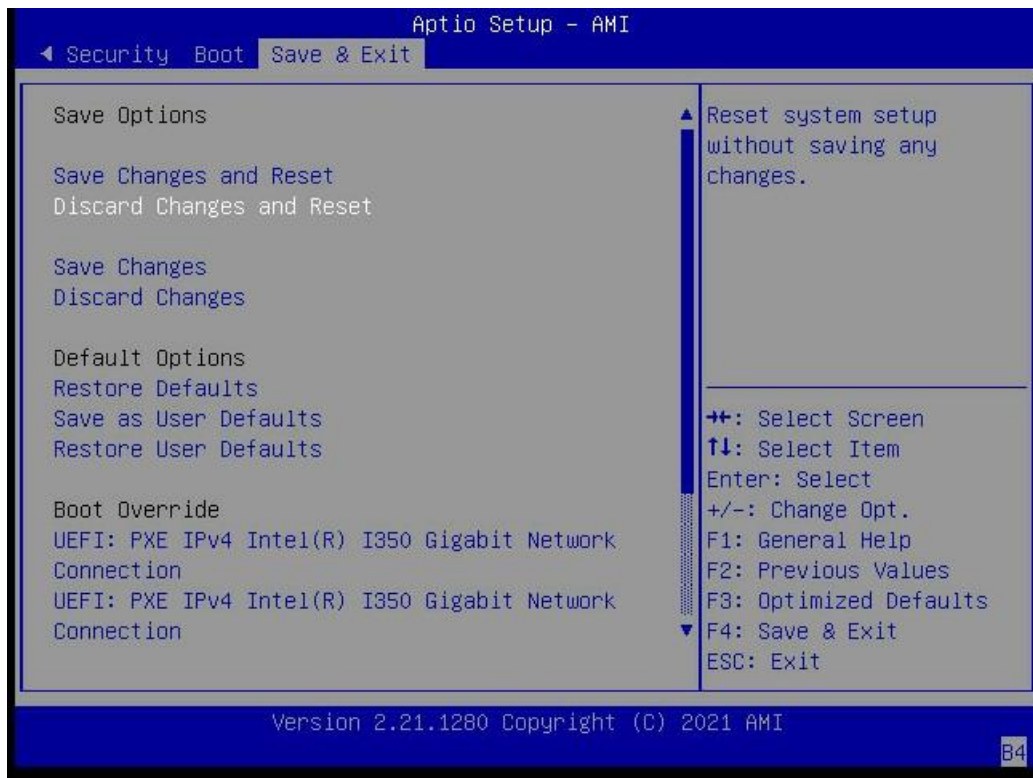
### Quiet Mode Select ([UEFI]/Legacy)

Select boot mode LEGACY/UEFI.

### Fixed Boot Order Priorities

Use +/- keys to change options.

## 4.9 Save & Exit



### Save Changes and Exit

Exiting the system after saving the changes.

### Discard Changes and Exit

Exiting system setup without saving any changes. **Save Changes and Reset**

### Save Changes and Reset

Resetting system setup after saving changes.

### Discard Changes and Reset

Resetting system without saving any changes.

### Save Changes

Save Changes done so far to any of the setup options.

### Discard Changes

Discard Changes done so far to any of the setup options.

### Restore Defaults

Restore/Load Default values for all the setup options.

**Save as User Defaults**

Save the changes done so far as User Defaults.

**Restore User Defaults**

Restore the User Defaults to all the setup options.

**Boot Override**

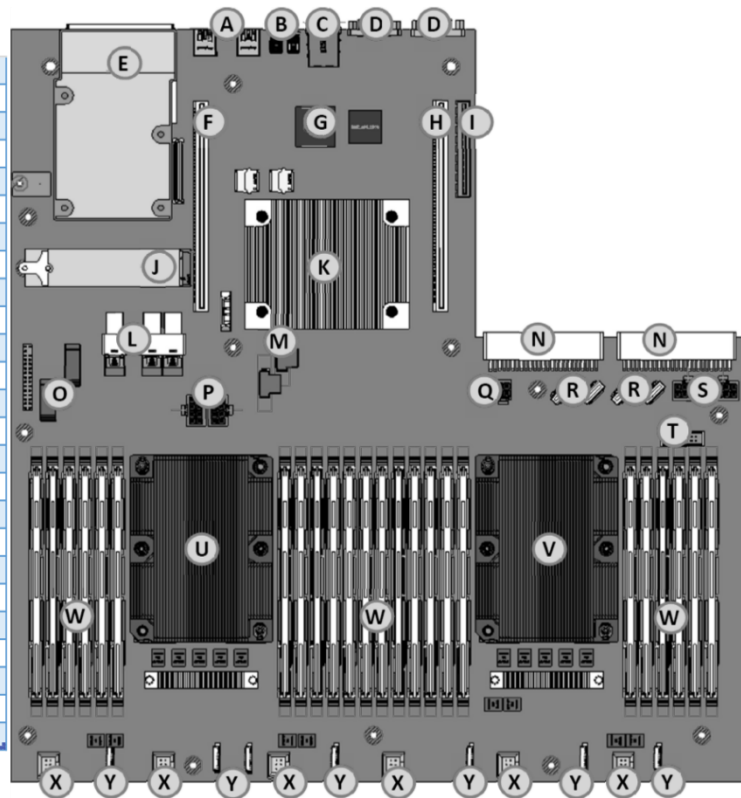
Display One-Time Boot Menu options.



# Appendix A

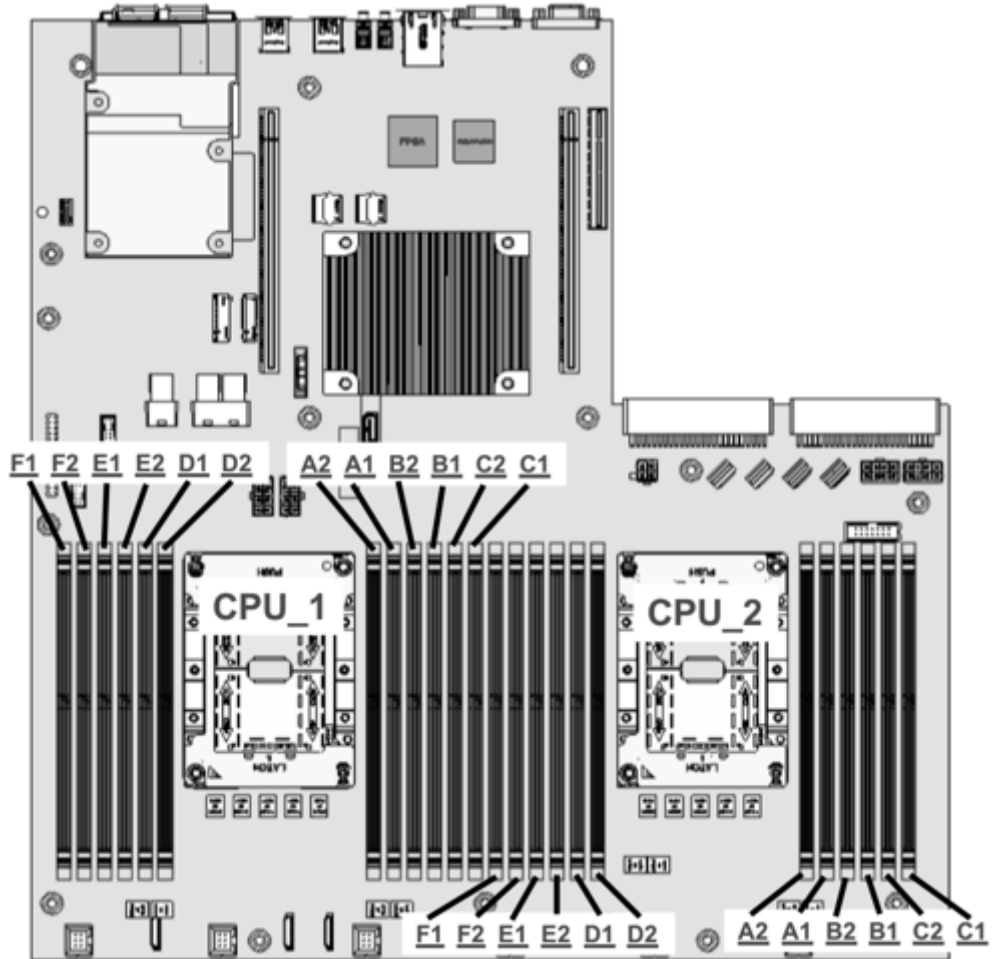
## Motherboard connectors and slots

A.	2* USB 3.0
B.	UID & Power Button/LED
C.	Management Port (RJ45)
D.	VGA & COM Port
E.	OCP Slot
F.	PCIe x 24
G.	BMC PHY chip
H.	PCIe x 24
I.	PCIe x 8
J.	2 * M.2 (Type 2280)
K.	PCH
L.	3 * MiniSAS HD Connector
M.	2 * SATA Connector
N.	PSU Connector
O.	2 * USB3.0 Connector
P.	2 * GPU Power Connector
Q.	Rear HDBP Power Connector
R.	4 * Slimline Connector (NVMe)
S.	2 * HDBP Power Connector
T.	Front VGA Pin-header
U.	CPU1
V.	CPU2
W.	24 * DDR4 DIMM Slots
X.	2U/ 6 * FAN board Signal Connector
Y.	1U/ 7 * FAN board Signal Connector



# Appendix B

## Memory Slot Layout



# Appendix C

## Memory Module Installation Order

The memory configurations supported by SR110-2/SR210-2 server are:

- Independent Mode
- Mirror Mode
- Sparing Mode

The installation sequences for each mode are demonstrated in the following tables.

### Independent Mode

Number of Processor		Installation Sequence																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Processor x 1	CPU1	A1	D1	B1	E1	C1	F1	A2	D2	B2	E2	C2	F2	-	-	-	-	-	-	-	-	-	-	-	-
Processor x 2	CPU1	A1	-	D1	-	B1	-	E1	-	C1	-	F1	-	A2	-	D2	-	B2	-	E2	-	C2	-	F2	-
	CPU2	-	A1	-	D1	-	B1	-	E1	-	C1	-	F1	-	A2	-	D2	-	B2	-	E2	-	C2	-	F2

### Mirror Mode

Number of Processor		Installation Sequence																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Processor x 1	CPU1	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	F1	F2	-	-	-	-	-	-	-	-	-	-	-	-
Processor x 2	CPU1	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	F1	F2	-	-	-	-	-	-	-	-	-	-	-	-
	CPU2	-	-	-	-	-	-	-	-	-	-	-	-	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	F1	F2

Mirroring is supported with 6 or 12 DIMMs per CPU.

### Sparring Mode

Number of Processor		Installation Sequence																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Processor x 1	CPU1	A1	D1	B1	E1	C1	F1	A2	D2	B2	E2	C2	F2	-	-	-	-	-	-	-	-	-	-	-	-
Processor x 2	CPU1	A1	-	D1	-	B1	-	E1	-	C1	-	F1	-	A2	-	D2	-	B2	-	E2	-	C2	-	F2	-
	CPU2	-	A1	-	D1	-	B1	-	E1	-	C1	-	F1	-	A2	-	D2	-	B2	-	E2	-	C2	-	F2

## Appendix D

# BIOS Function Key

### Hot Keys

Item	Function
Tab	Allows users to exit Quiet Boot Mode.
F1	Allows users to enter setup. The message "Entering Setup ..." will appear during the POST process after pressing the <F1> key.
F12	Allows users to prompt boot menu. The message "Entering Boot Menu ..." will appear during the POST process after pressing the <F12> key.


### Keys for BIOS Menu Navigation



Item	Function
Up & Down Arrow Keys	Allows users to move the cursor up and down.
Left & Right Arrow Keys	Allow users to move to another menu.
Enter	Allows users to select an item or enter a sub menu.
+/-	Allows users to add or reduce value of the parameters.
ESC	Exit
F1	General Help
F2	Previous Value
F3	Optimized Defaults
F4	Save & Exit Setup

## Appendix E

# LED Descriptions


The following LEDs and buttons are located on the front and rear panel and for each individual node:


Icon	LED/Button Name	LED/Button Definition
	Power LED/Button	Button: <ul style="list-style-type: none"> <li>• Press to power the system on/off</li> <li>• Press and hold for 4 seconds to force the system to power off</li> </ul> LED: <ul style="list-style-type: none"> <li>• <b>Off</b>: System is powered off</li> <li>• <b>Blue</b>: System is powered on (Front)</li> <li>• <b>Green</b>: System is powered on (Rear)</li> </ul>

	UID LED/Button	Button: <ul style="list-style-type: none"> <li>• Press to toggle the ID LED</li> <li>• Press and hold for 4 seconds to reset the Baseboard Management Controller (BMC)*</li> </ul> LED: <ul style="list-style-type: none"> <li>• <b>Off</b>: System is not identified</li> <li>• <b>Blue</b>: System is identified</li> <li>• <b>Blinking Blue</b>: System is resetting the BMC</li> </ul> <p><i>*The Baseboard Management Controller is a processor which measures the internal physical variables of the server.</i></p>
	System Health LED (Front panel)	<ul style="list-style-type: none"> <li>• <b>Red</b>: System error detected Possible problem:                         <ul style="list-style-type: none"> <li>• Sensor reading over critical threshold</li> <li>• CPU Catastrophic Error (CATERR)</li> <li>• CPU / Memory VR fault</li> <li>• CPU / PCH / DIMM thermal trip</li> <li>• Power supply AC lost</li> <li>• Power supply failure</li> </ul> </li> <li>• <b>Blinking Red</b>: System error detected Possible problem:                         <ul style="list-style-type: none"> <li>• Sensor reading over non-critical threshold</li> <li>• Power supply mismatched, or not present</li> <li>• System event log (SEL) almost full asserted</li> <li>• IPMI watchdog asserted</li> <li>• CPU throttling</li> <li>• LAN leash lost</li> <li>• HDD fault</li> </ul> </li> <li>• <b>Off</b>: System health is good</li> </ul>

### Hard Drive LEDs

The following LEDs are located on the front panel and on each individual hard drive:

Icon	LED Name	LED Definition
	Hard Drive Activity LED (Amber)	<ul style="list-style-type: none"> <li>• <b>Amber</b>: Present</li> <li>• <b>Blinking Amber</b>: Locate, activity</li> <li>• <b>Off</b>: Not present</li> </ul>

	Hard Drive Health LED (Red)	<ul style="list-style-type: none"><li>• <b>Red</b>: Fail</li><li>• <b>Blinking Red</b>: Locate, rebuild</li><li>• <b>Off</b>: N/A</li></ul>
---	--------------------------------	---