CSA-7200

2U Rackmount Network Appliance with Dual Intel® Xeon® Processor E5-2600 v3/v4

User's Manual



Manual Revision: 1.2
Revision Date: November 24, 2017
Part No.: 50-1Z211-1020

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Leading **EDGE COMPUTING**

Preface

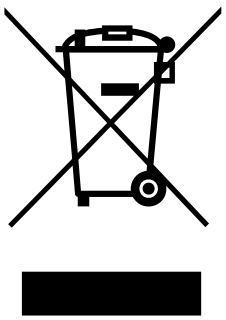
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Revision History

Revision	Release Date	Description of Change(s)
1.00	2016-12-14	Initial release
1.1	2017-05-17	Add NIM slot PCIe mapping table
1.2	2017-11-24	Remove power cord from packing list

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1 Overview

1.1 Introduction

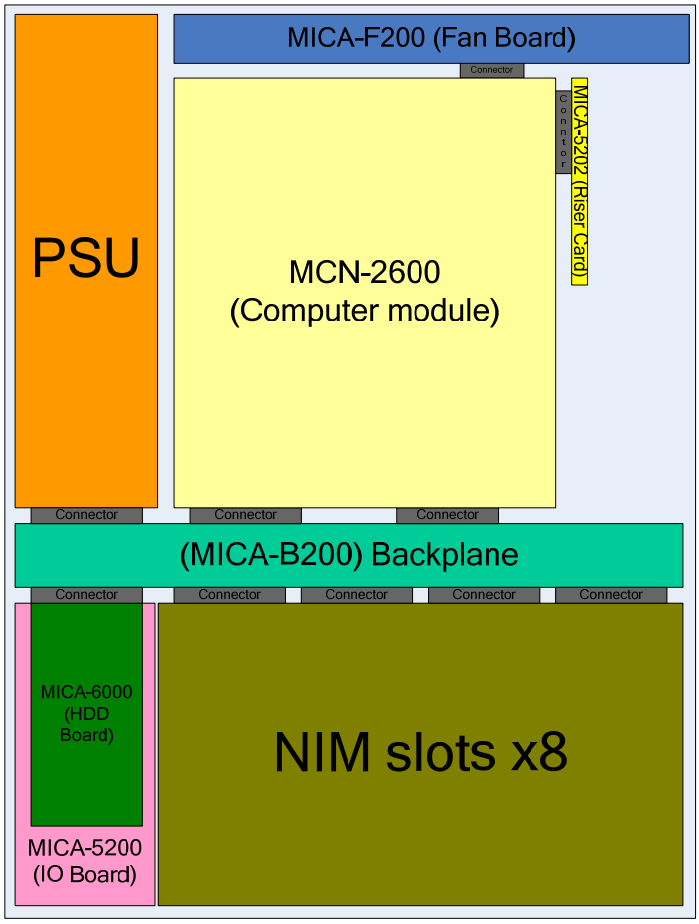
The ADLINK CSA-7200 is a 2U 19" rackmount Network Appliance with Intel® Xeon® processor E5-2600 v3/v4 and Intel® C610 Chipset. The CSA-7200 features an IO intensive architecture with up to 64x SFP+ ports, high scalability with four Network Interface Module (NIM) slots, 2.5’’ SATA drive bays, additional storage interfaces (M.2 SSD), and is an ideal platform for communications infrastructure deployment.

The main features of the CSA-7200 are summarized as follows:

- Flexible IO interfaces through eight network interface modules (NIMs) adaptable to a variety of complex connectivity scenarios
- Advanced LAN bypass features; bypass modes of each NIM can be set independently through BIOS or IPMI interface
- 12x DDR4 memory slots for up to 192GB memory to meet the requirement of network packet processing
- 3x 2.5" hot-swappable SATA drive bays, supports additional storage expansion via PCIe or M.2
- Intelligent system management compatible with IPMI 2.0, supports SOL and adaptive fan speeds
- Support for PacketManager software to provide data plane software stacks for dynamic layer 3 forwarding and flow-based forwarding, accelerating development of customer applications
- Integrates Wind River® Titanium Server, and open source software including Intel® DPDK, Open vSwitch and nDPI, facilitating the building of packet parsing applications

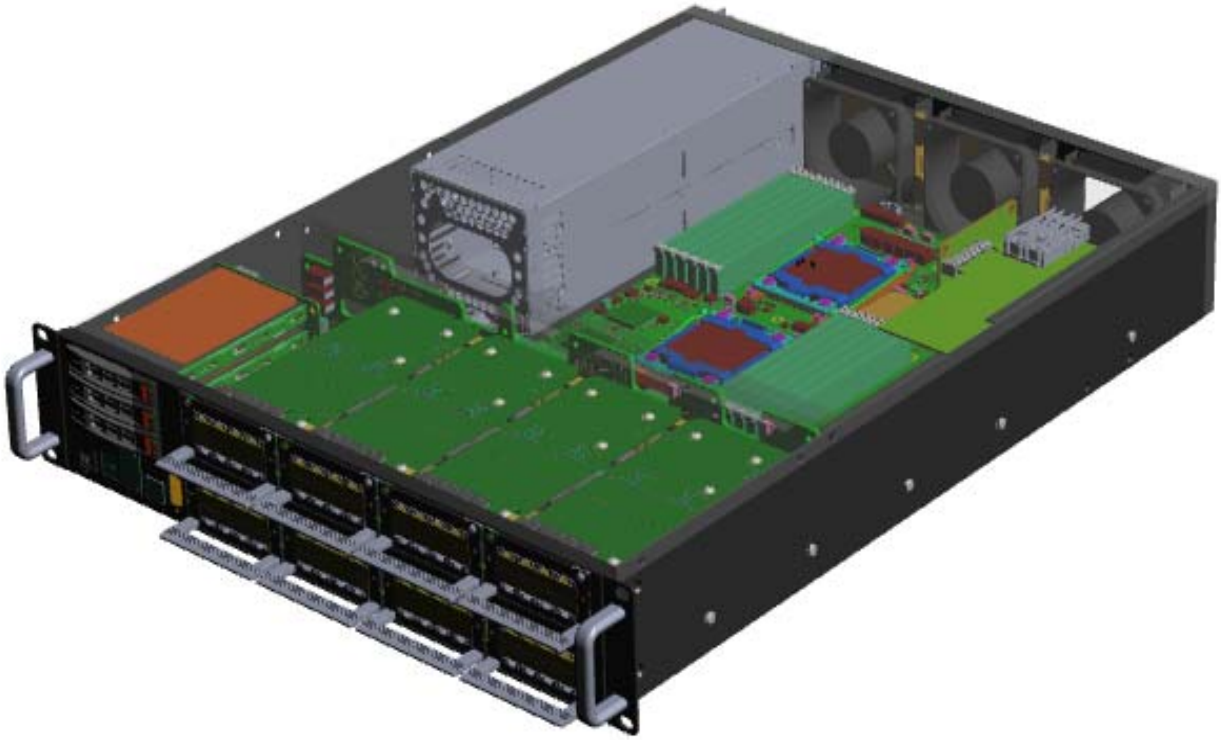
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1.2 Block Diagram

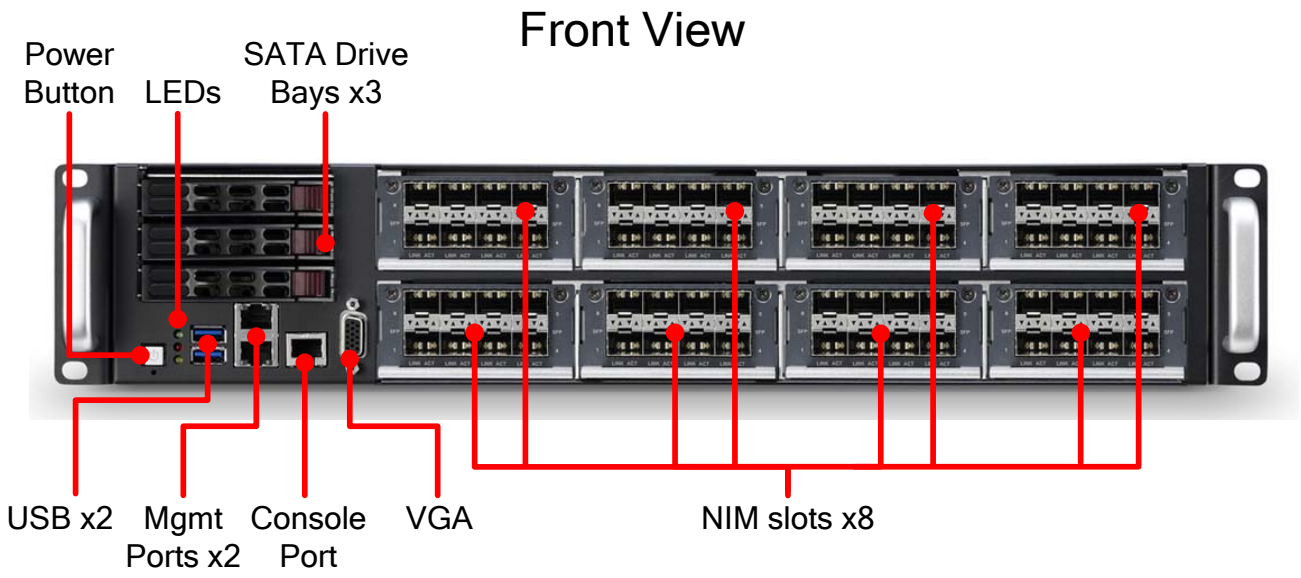


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1.3 Mechanical Overview

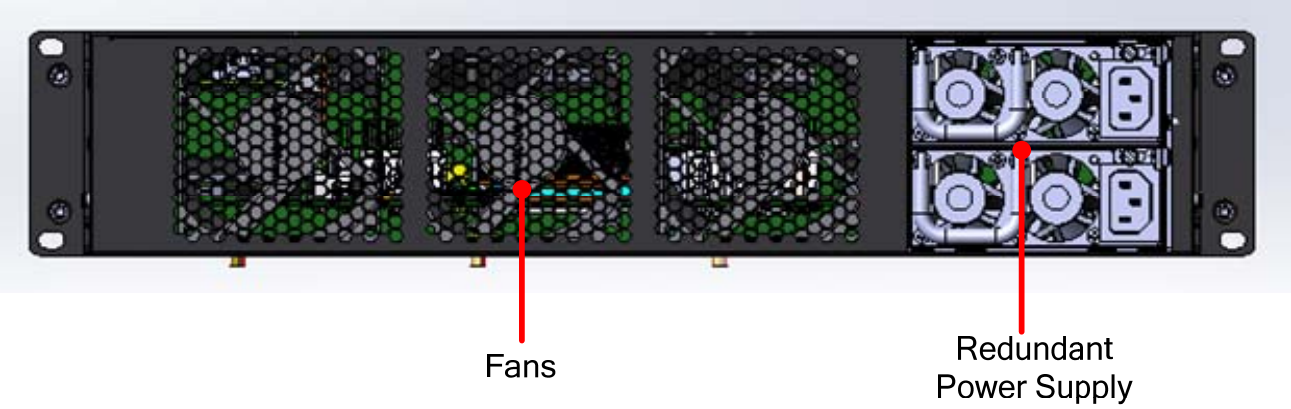


1.3.1 Front Panel



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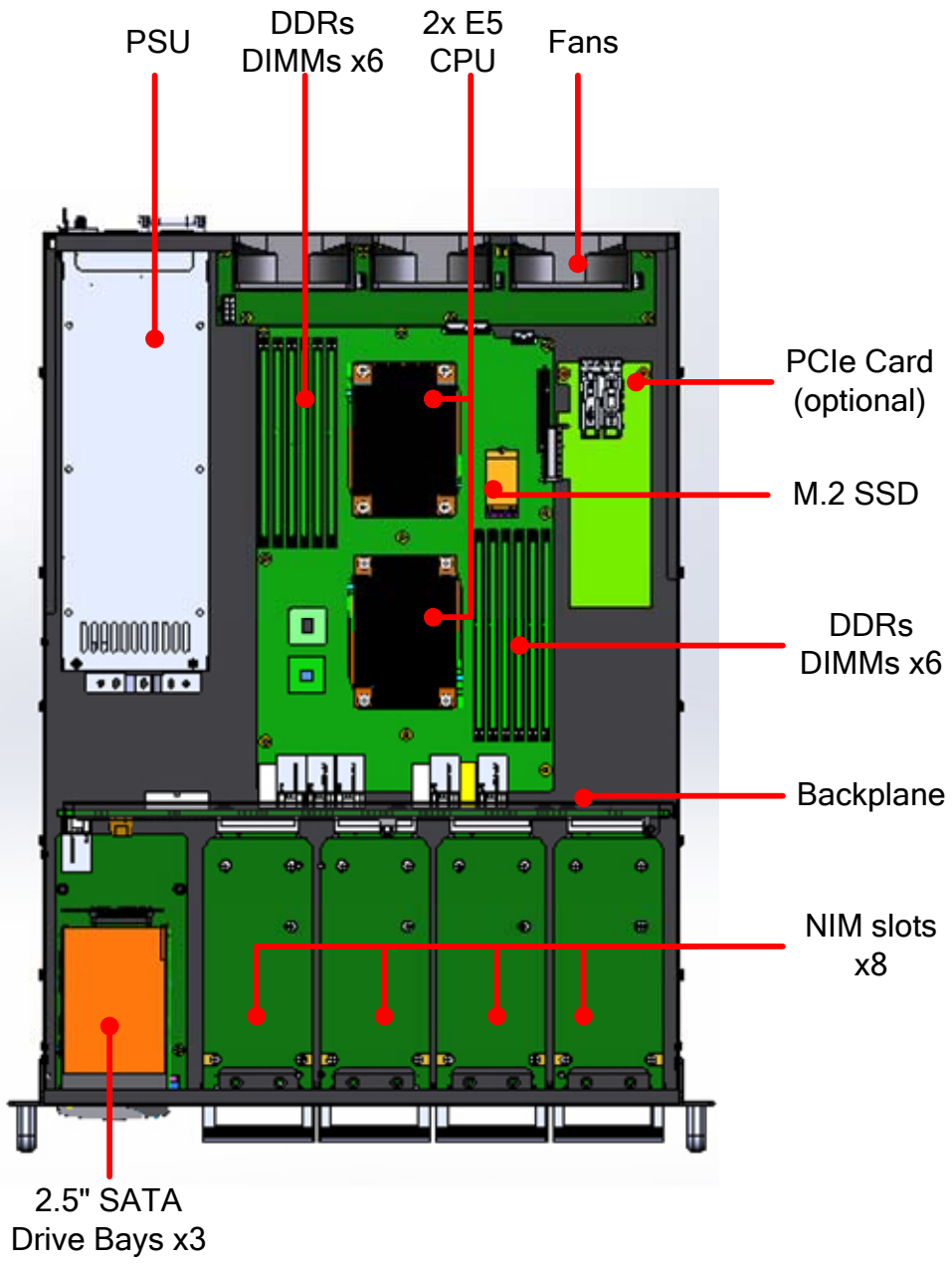
1.3.2 Rear Panel



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1.3.3 Chassis Layout

Top View

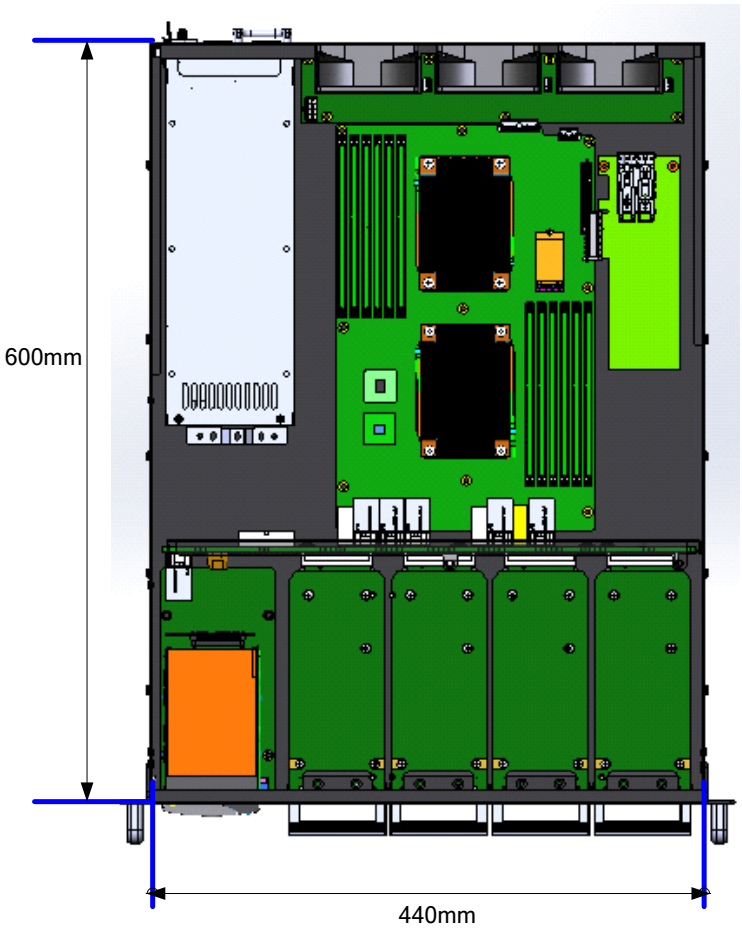


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1.4 Mechanical Dimensions

1.4.1 Dimensions

Top View



Front View



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1.5 Package Contents

Before opening, please check the shipping carton for any damage. If the shipping carton and contents are damaged, notify the dealer for a replacement. Retain the shipping carton and packing material for inspection by the dealer. Obtain authorization before returning any product to ADLINK.

Check that the following items are included in the package. If there are any missing items, contact your dealer:

- CSA-7200 Rackmount Network Appliance
- Console adapter cable (RJ-45 to DB-9)
- ADLINK All-In-One CD

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2 Specifications

2.1 CSA-7200 Specifications

Main System

CPU	Intel® Xeon® E5-2680 v4 (14C/28T) Intel® Xeon® E5-2628L v4 (12C/24T) Intel® Xeon® E5-2680 v3 (12C/24T) Intel® Xeon® E5-2628L v3 (10C/20T) Intel® Xeon® E5-2630 v3 (8C/16T) Intel® Xeon® E5-2620 v3 (6C/12T)
L2 Cache	15MB/20MB/25MB/30MB dependent on CPU
Chipset	Intel® C610 PCH
Memory	12x DDR4-1600/1866/2133 DIMM socket, ECC, up to 192GB
BIOS	AMI BIOS on SPI flash memory
Chassis Management	Advanced Chassis Management for CPU node, Fan, PSU via CLI and Web, IPMI V2.0 Compliant
Operating System	Windows 7 64-bit, Linux Kernel 2.6 or above

I/O Interfaces

Expansion	8x Network Interface Module(NIM) slots (proprietary)
Ethernet	2x RJ-45 10/100/1000BASE-T Ethernet port
Remote Console	1x RJ-45 serial port
USB	2x USB 2.0
Graphics	1x VGA port

Chassis Management

Power	1x Power button (front)
Reset	1x Reset button (front)

Buttons/LEDs

Power	1x Power button (front)
Reset	1x Reset button (front)
LEDs	Power, Health, OOS, Bypass

Storage

Drive Bays	3x 2.5” hot-swappable SATA drive bays (3x 2.5” internal drive bays optional)
Internal	2x M.2 for SATA/PCIe SSD
NIM Slot Expansion	NIM slots 1 and 2 support 2.5” SATA drives with CSA-ZH110 NIM slot drive tray adapter

*Note: *SATADOM shares SATA port with drive bays.

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Mechanical & Environmental

Form Factor	2U 19” rackmount 440mm x 88mm x 600mm (W x H x D)
Fans	4x fans, variable speed
Power	800W or 1200W, 100-240V AC @0-60Hz or -36V to -72V DC
Temperature	Operating temp.: 0°C -40°C Storage temp.: -40°C to 70°C Short term operating: -5°C to +45°C (5%-90% rel. humidity)
Humidity	Operating: 10% to 85% @40°C, non-condensing Storage: 5% - 90%, non-condensing
Shock	Operating: half-sine 2G, 11ms pulse, 100 pulses on each of three axes
	Non-operating: trapezoidal, 25G, 170 inches/sec delta V, three drops on each of three axes
Vibration	Non-operating: 2.2Grms, 10 minutes per axis on all three axes
Acoustic Level	Sound pressure < 75 dBA @1m with all fans at maximum speed
Certifications	FCC Class A, CE emissions, UL, CB, CCC and RoHS compliant; NEBS Level 3 design
MTBF	90,000 hours

2.2 Software Support

ADLINK DPDK Toolkit	Enables Intel® DPDK
ADLINK DPI Toolkit	Intel® DPDK-based OpenDPI to boost DPI performance
ADLINK Load Balancing Toolkit	Intel® DPDK vSwitch-based Load Balancer

2.3 Network Interface Module Support

CSA-Z4X01	4-port GbE copper with LAN bypass	PN: 91-37584-100E
CSA-Z5C4F	4-port GbE SFP without LAN bypass	PN: 91-37585-000E
CSA-Z8X10	8-port GbE copper with LAN bypass	PN: 91-37588-000E
CSA-Z5C2F	2-port SFP+ without LAN bypass	PN: 91-37589-000E
CSA-Z5C8F	8-port SFP without LAN bypass	PN: 91-37592-000E
CSA-Z5C8F+	8-port SFP+ without LAN bypass	PN: 91-37599-000E

2.4 Optional Accessories

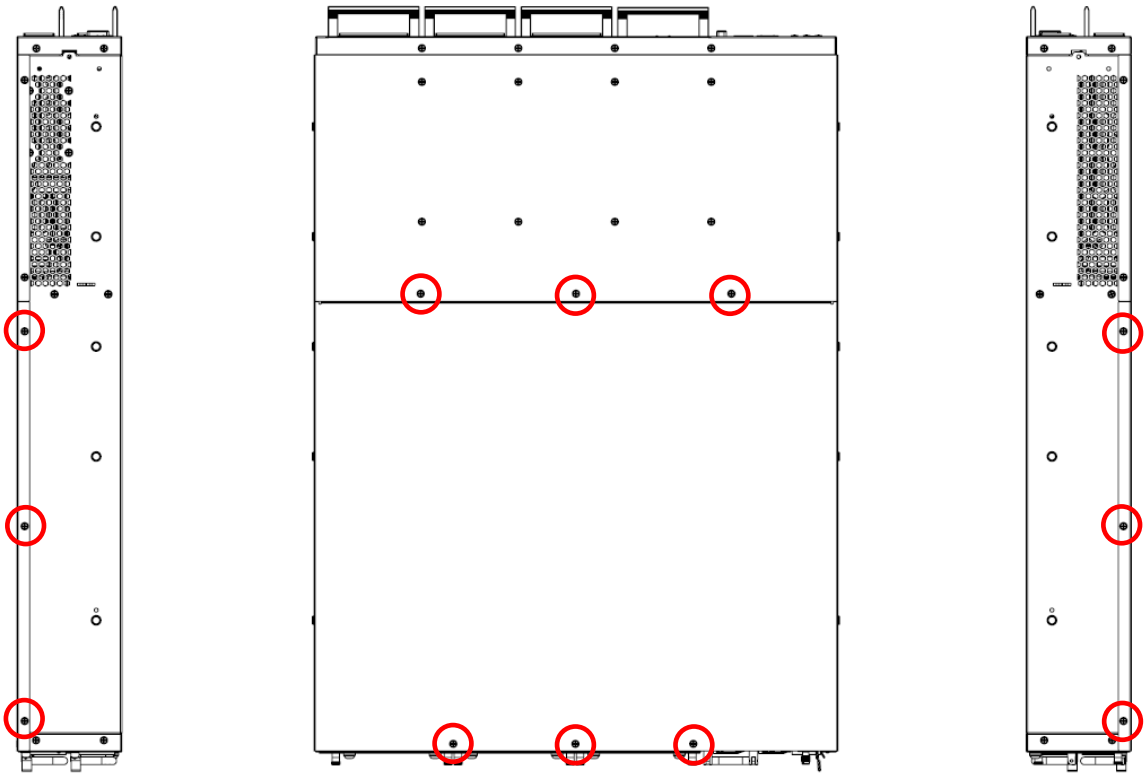
Riser Card	Riser card for PCIe x8 acceleration card	PN: TBD
CSA-ZH110	NIM slot drive tray adapter	PN: TBD

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3 Getting Started

3.1 Removing the Chassis Lid

1. Remove the 3 screws securing each side of the lid to the chassis (6 screws total).
2. Remove the 6 screws securing the top of the lid to the chassis (3 at rear edge, 3 at middle).



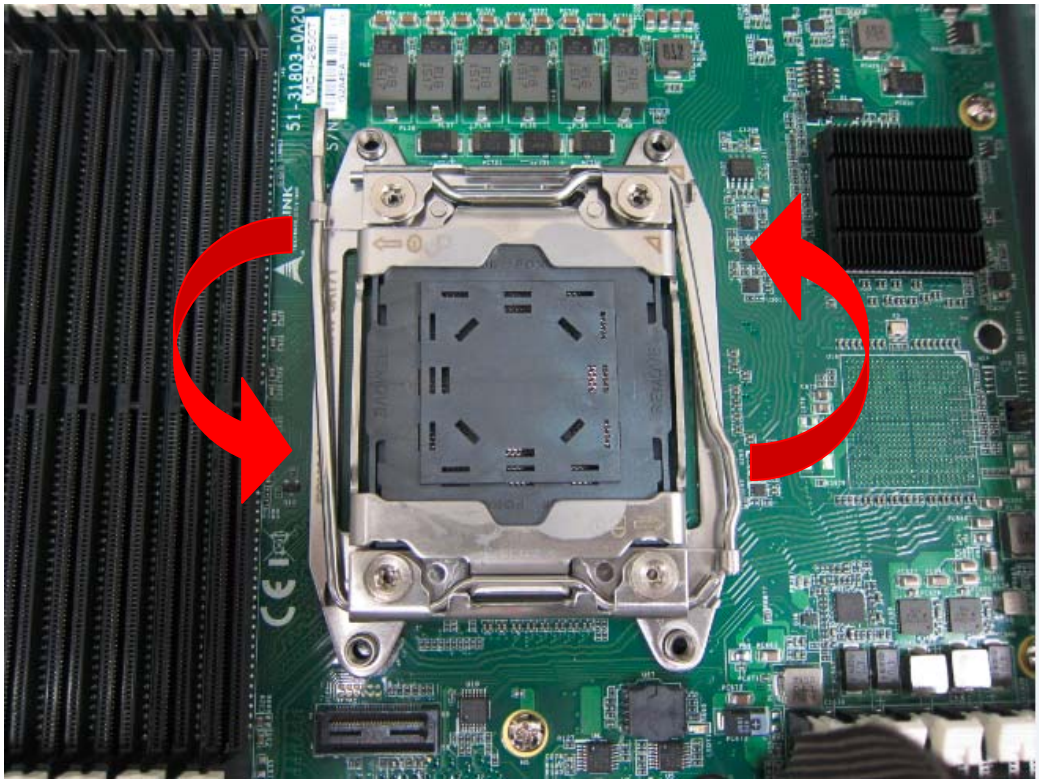
3. Slide the lid to the rear and remove from the chassis.

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3.2 Installing the CPU/Heatsink

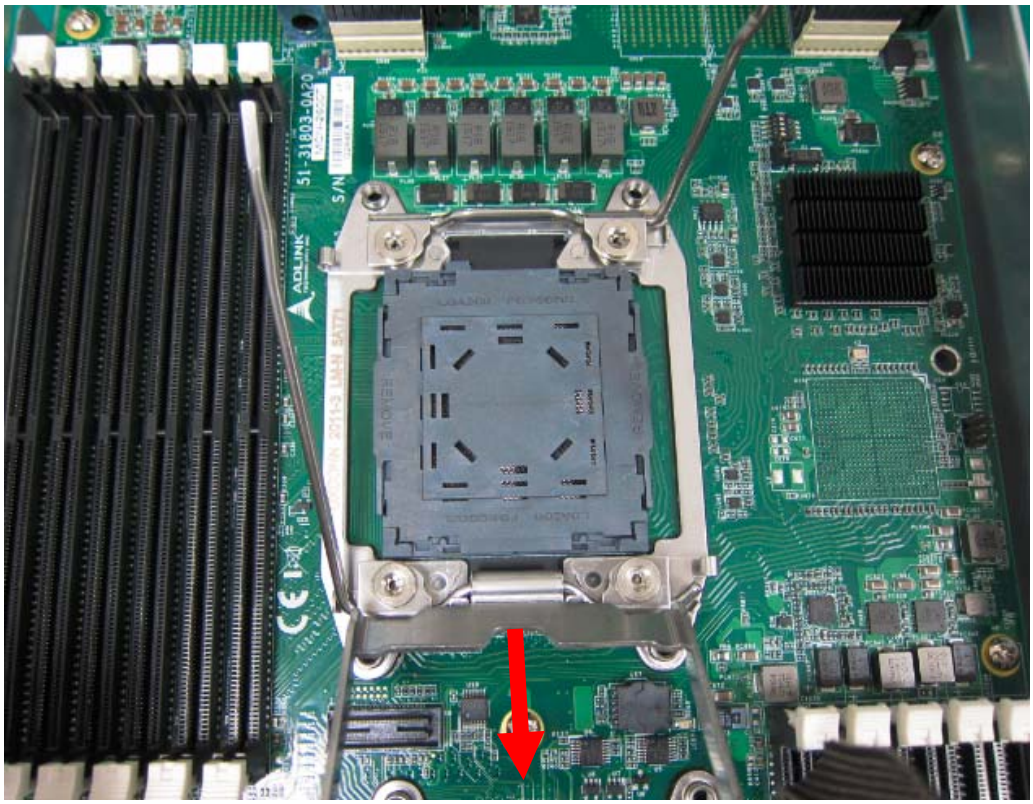
1. Locate the CPU sockets on the board.

2. Press the two load levers, move them outwards until they are clear of the retention tabs, then raise them.



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3. Open the load plate and remove the protective cover from the socket. Do not touch the socket contacts or the bottom of the processor.



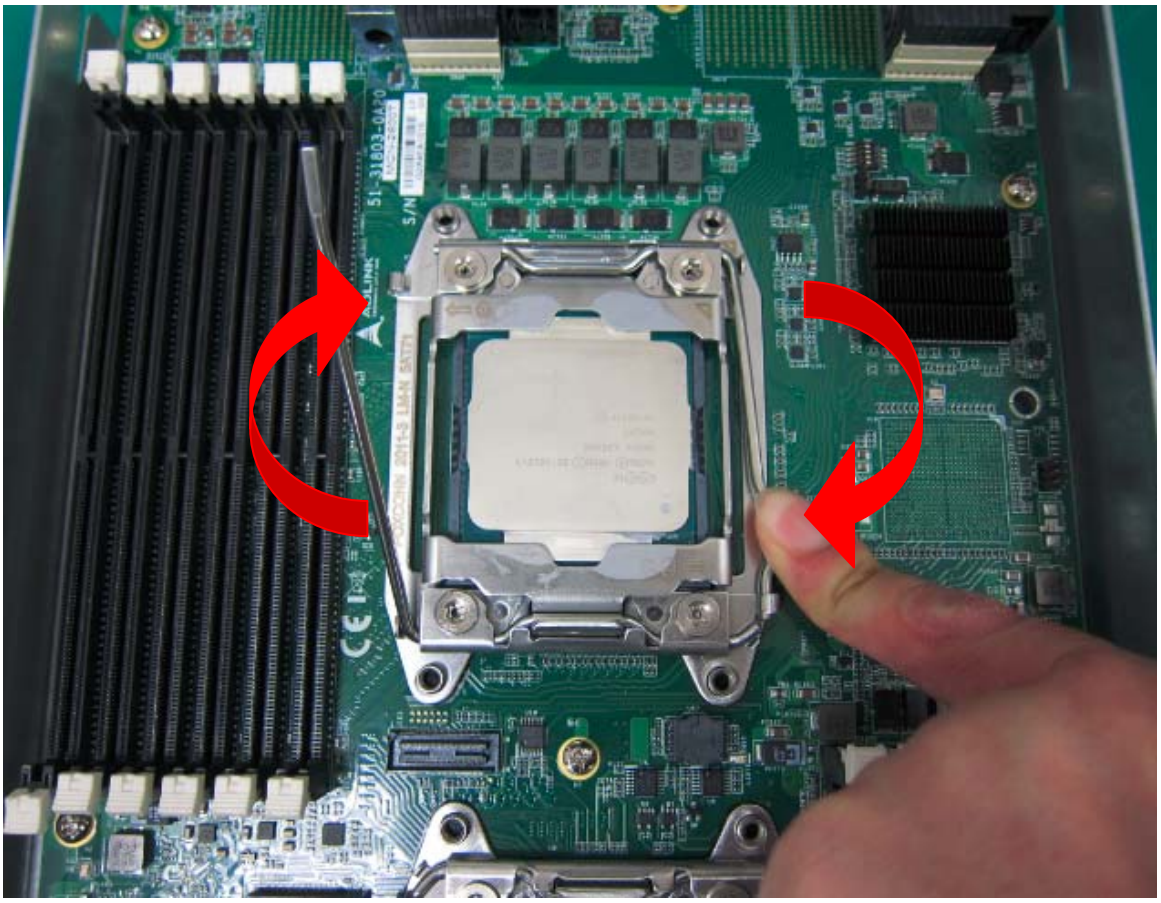
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4. Carefully place the CPU into the socket, making sure the socket notches align with the processor notches and the alignment triangle on the CPU lines up with the correct corner on the socket,. Lower the processor straight down, without tilting or sliding the processor in the socket. Gently release the processor, making sure that it is seated correctly in the socket.



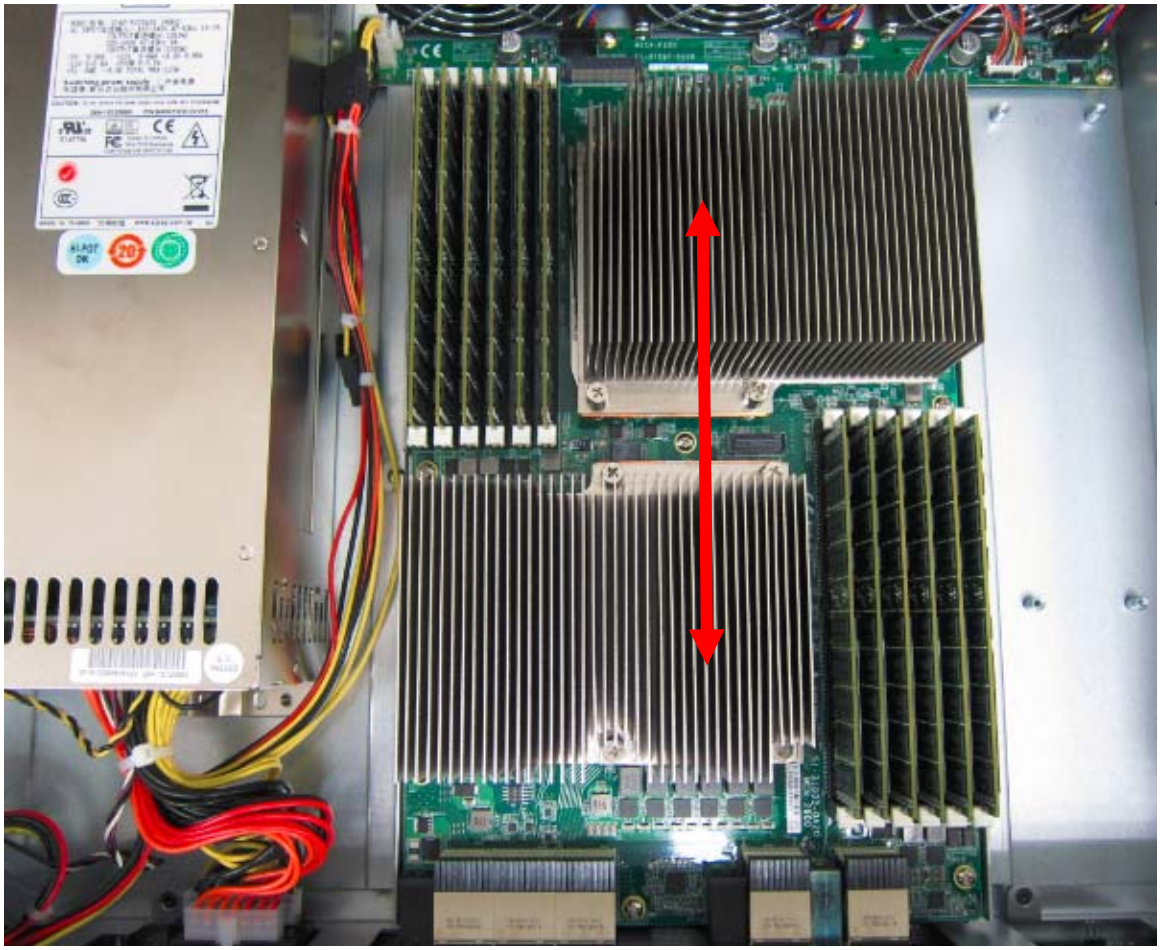
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5. Close the load plate, push the two load levers back down, and engage them with the retention tabs.



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6. Make sure there is sufficient thermal paste on of the heatsink and place it on the CPU with the cooling fins aligned with the DIMM slots as shown.

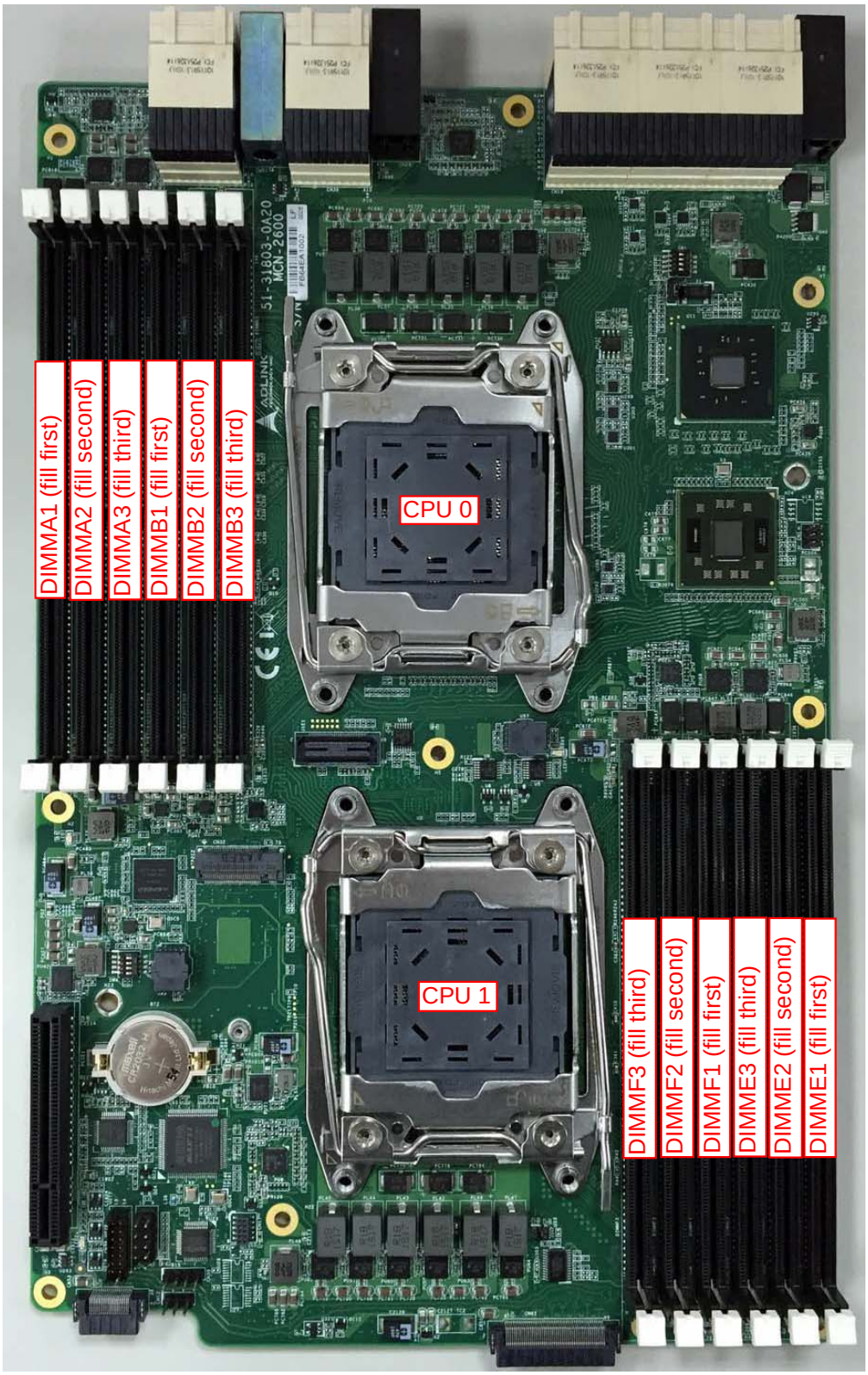


7. Tighten the captive screws in an "X" pattern until the heatsink is secured on the CPU. Do NOT over tighten the screws

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3.3 Installing Memory Modules

When installing memory modules in the CSA-7200, the DIMM slots of each channel must be populated in order from lowest to highest (e.g. DIMMA1> DIMMA2 > DIMMA3) as shown in the diagram below.

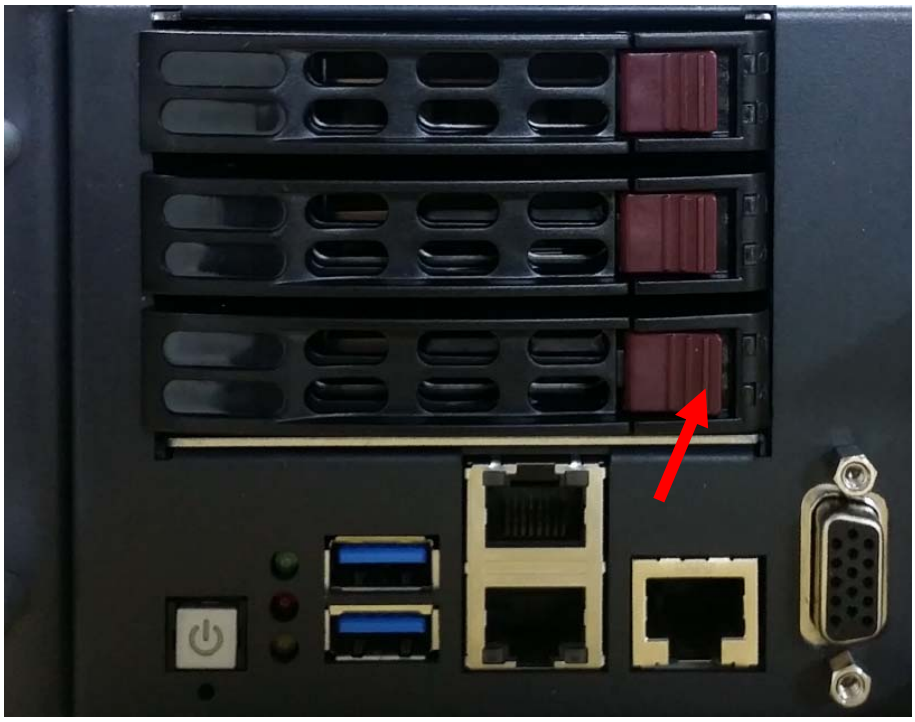


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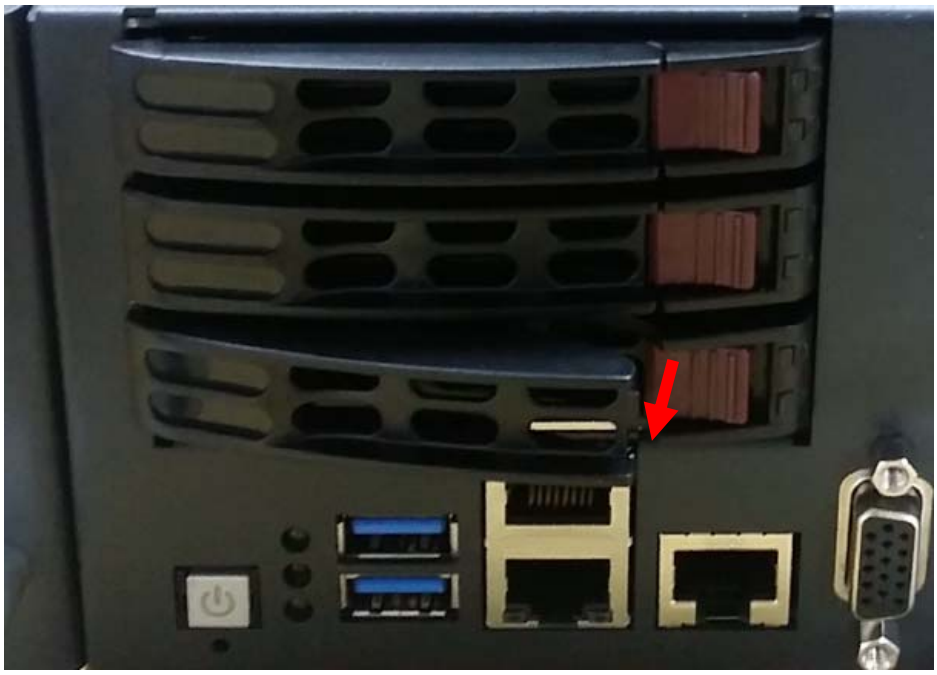
3.4 Installing Storage Drives

3.4.1 Hot-swappable Drive Bays

1. To remove the drive tray, press down on the release catch as indicated below.

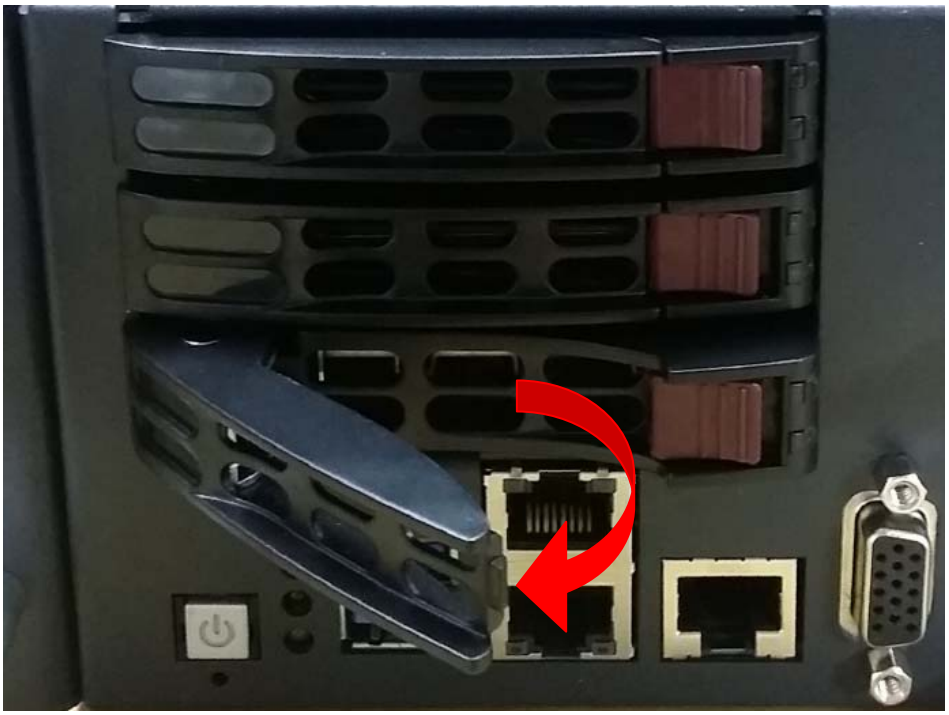


2. The ejector handle should release. If not, pinch it with you fingers and pull it outwards.

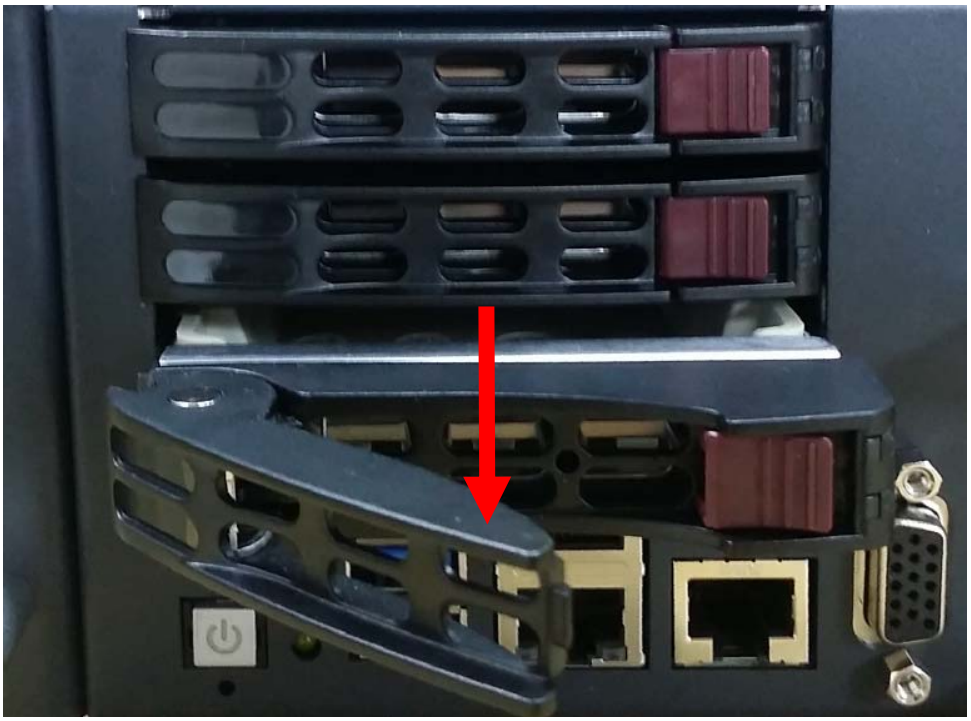


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3. Pull the ejector handle fully outwards. This will release the drive from the SATA connector inside the drive bay if a drive is installed.



4. Pull the drive tray out of the drive bay assembly.



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5. Place the drive tray on a flat surface.



6. Turn the drive tray over and remove the 4 screws securing the plastic placeholder as shown.

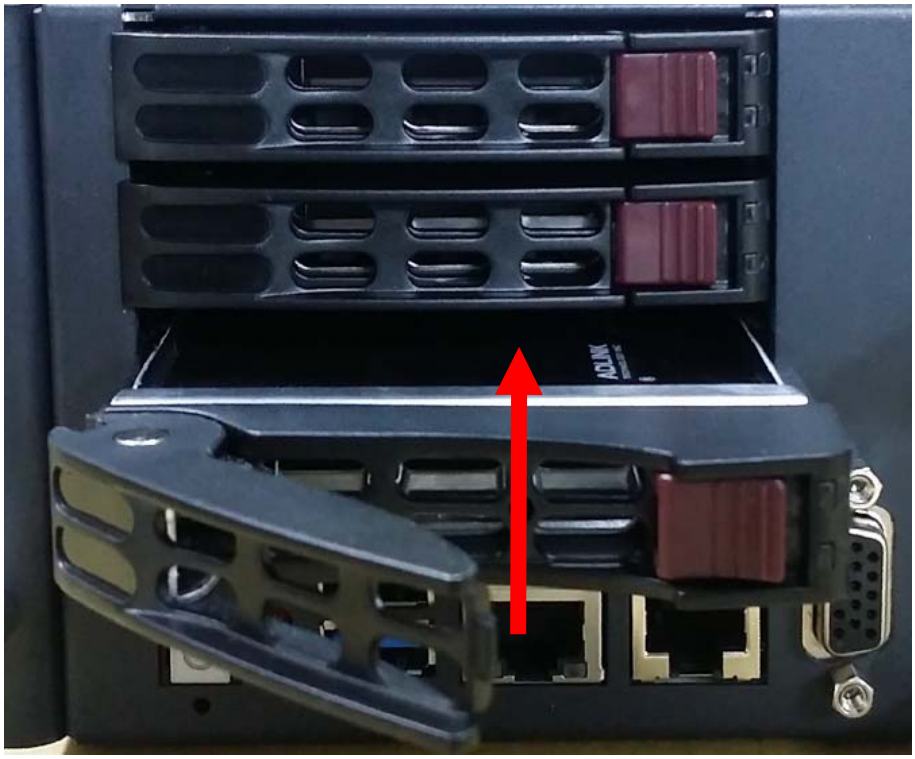


7. Use the screws provided with the accessory kit to install a 2.5” SATA drive into the drive tray.

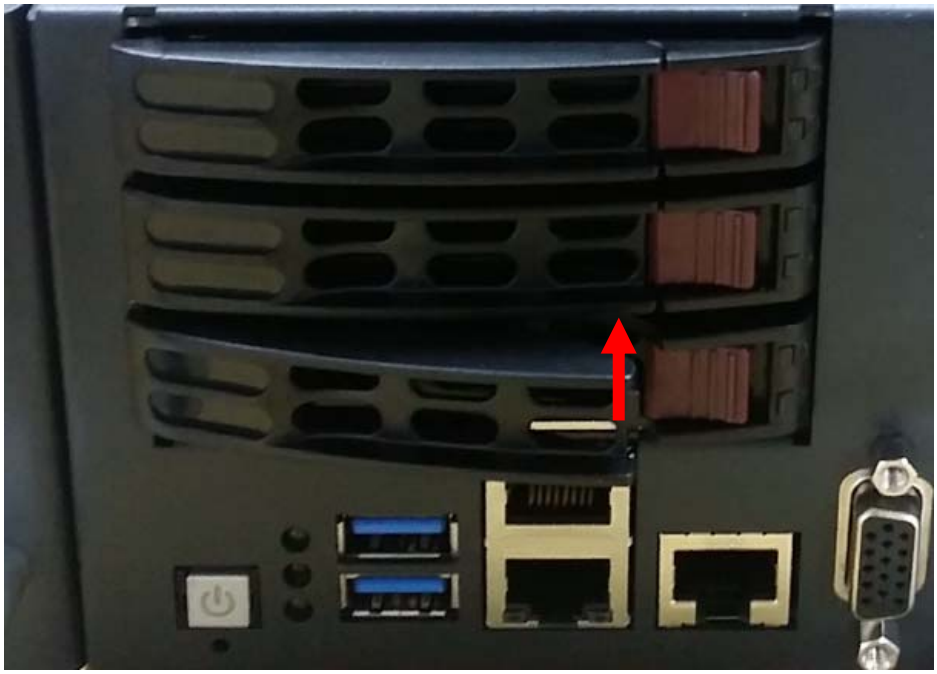


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8. Insert the drive tray into the drive bay with the ejector handle fully open.



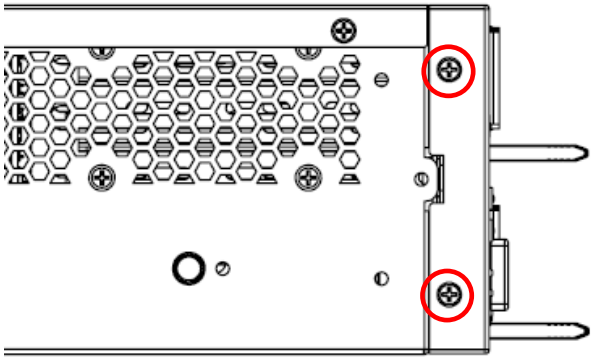
9. Press on the release catch until the ejector handle retracts to the position shown below. Lock the drive dray into the drive bay by pressing on the ejector handle until it clicks.



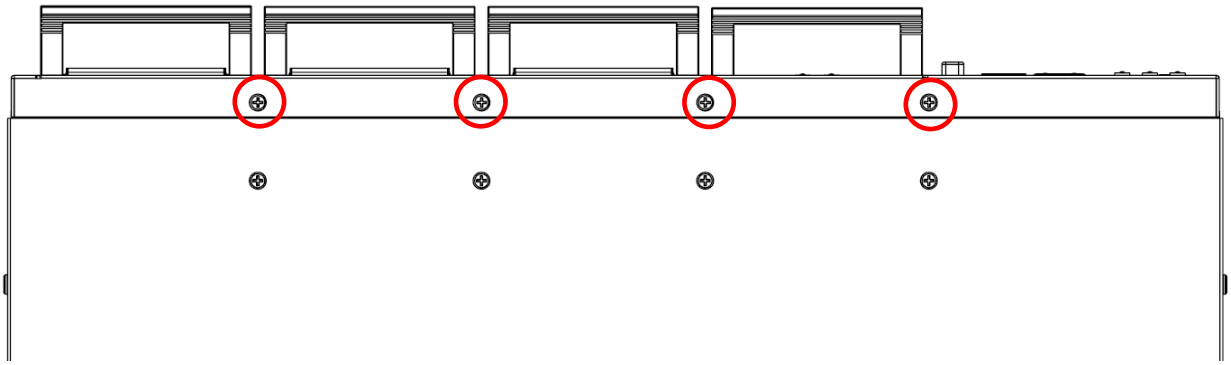
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3.4.2 Internal Drive Bays (optional)

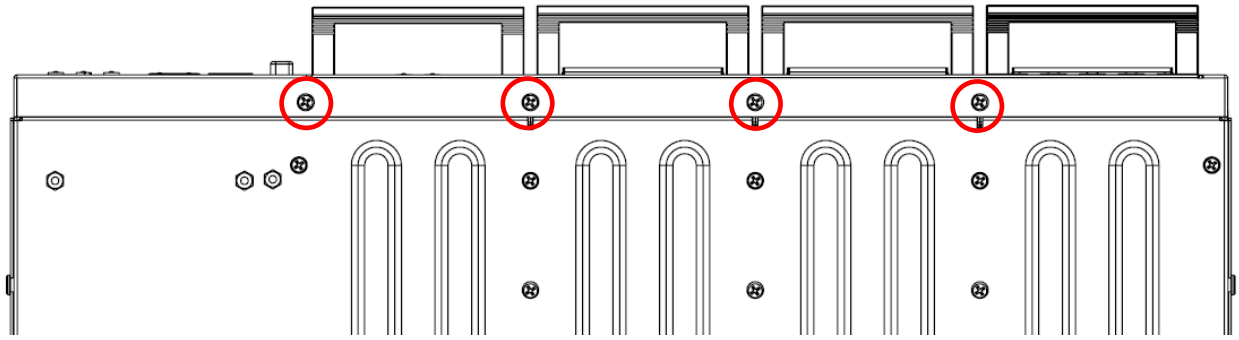
1. To access the 3 internal drive bays, remove the front face panel by unscrewing the 2 screws on either side of the chassis and 4 screws on the top and bottom as shown below (first remove the rackmount handles if necessary).



Side



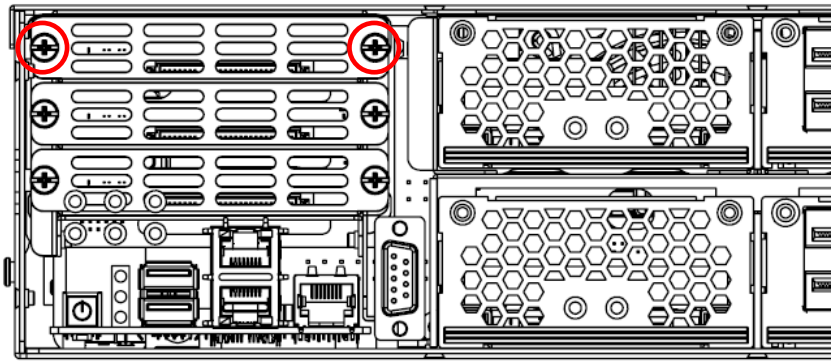
Top



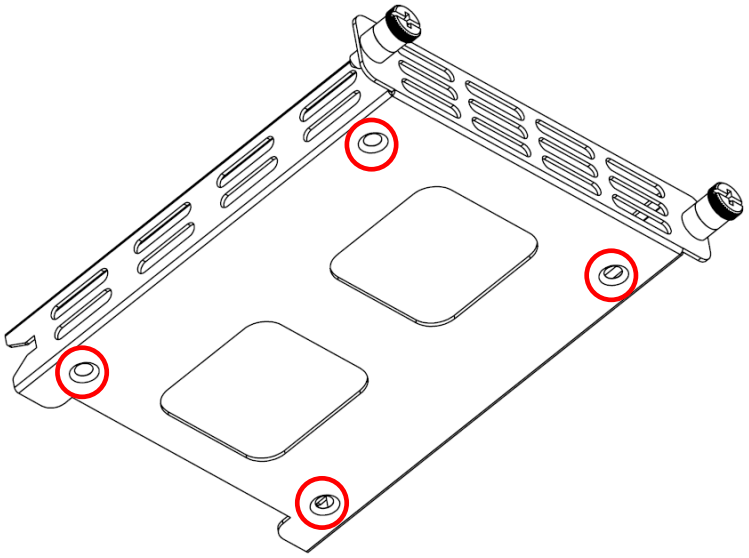
Bottom

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2. To remove the internal drive tray, unscrew the 2 screws shown below and pull it out of the drive bay slot.



3. Use the screws provided with the accessory kit to install a 2.5” SATA drive into the drive tray (refer to step 7 above).



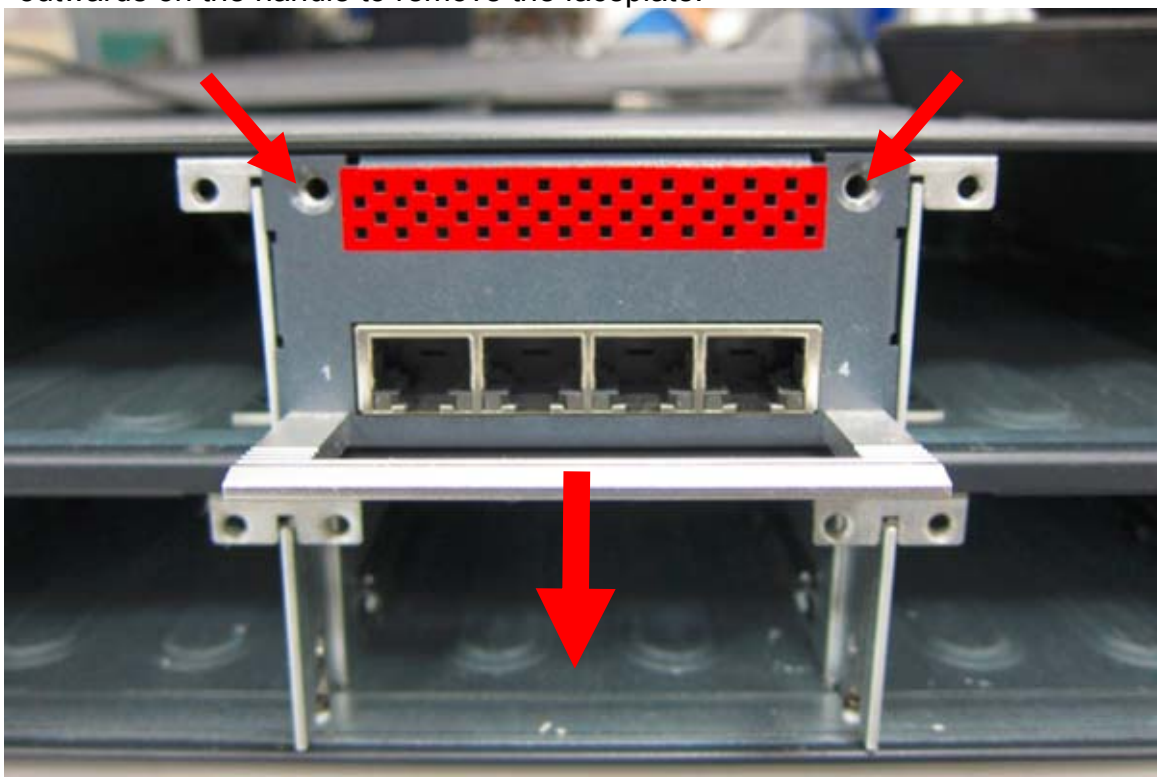
4. Insert the drive tray into the internal drive bay and secure it with the 2 screws removed in step 2.

5. Replace the front face panel.

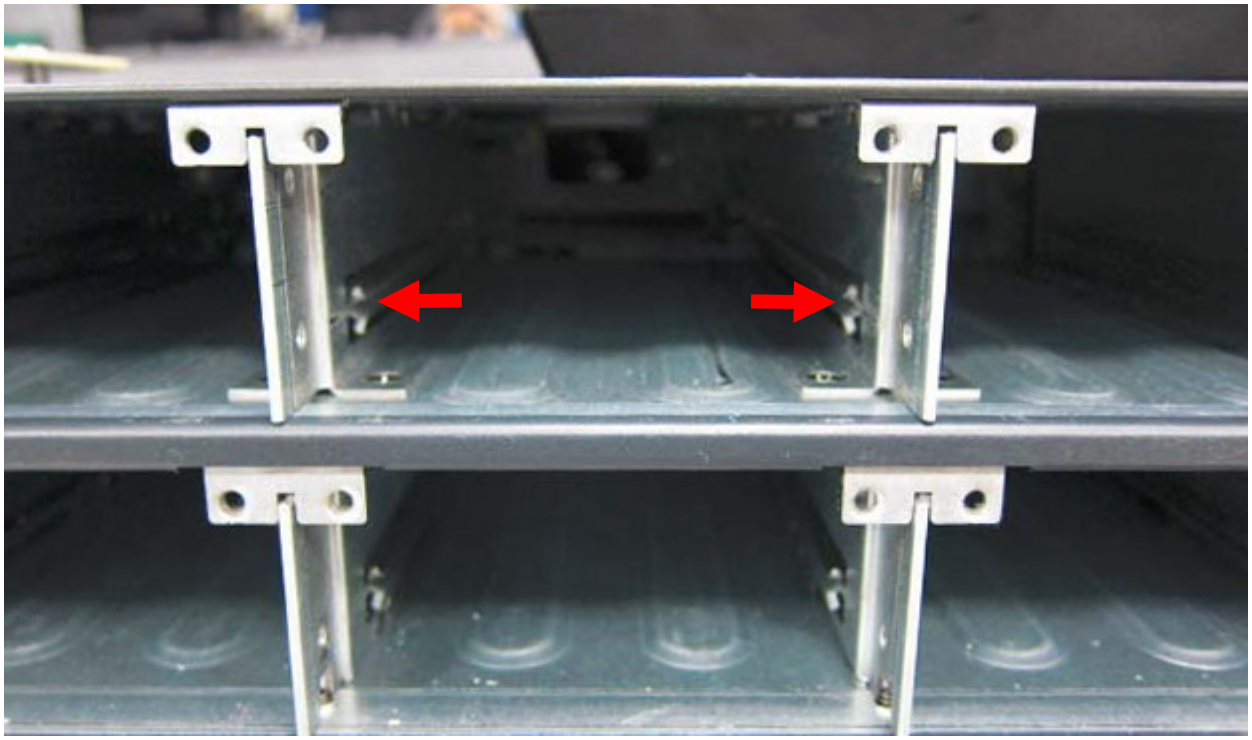
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3.5 Installing a Network Interface Module

1. Loosen the two screws on the Network Interface Module (NIM) faceplate, and pull outwards on the handle to remove the faceplate.

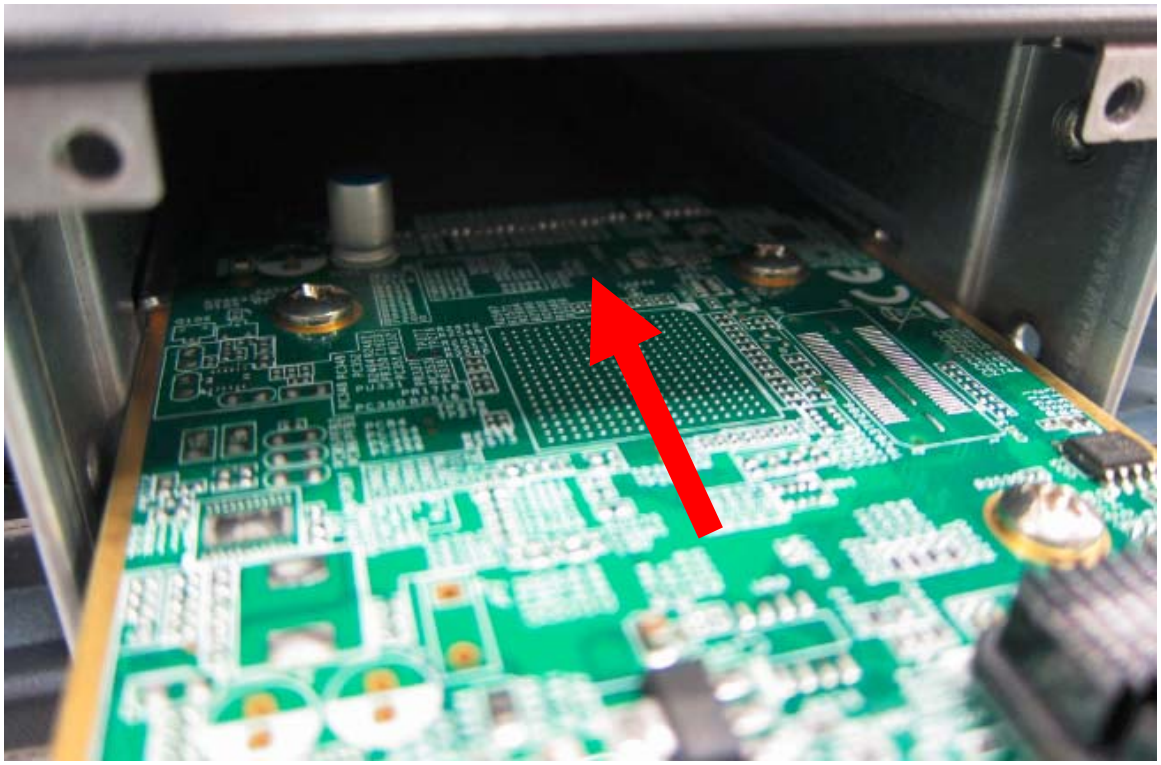


2. Align the NIM with the card guides in the slot as shown below.

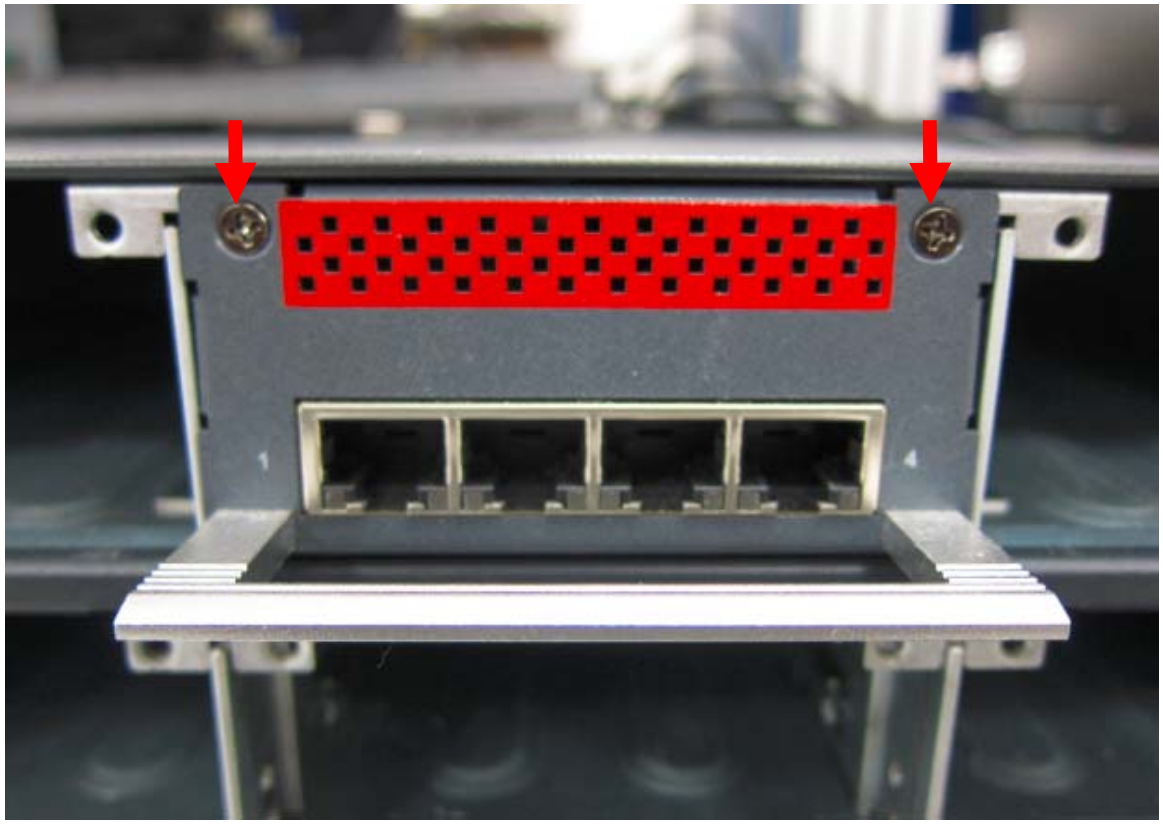


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3. Insert the NIM into the slot.



4. Secure the NIM with the two screws removed in Step 1.

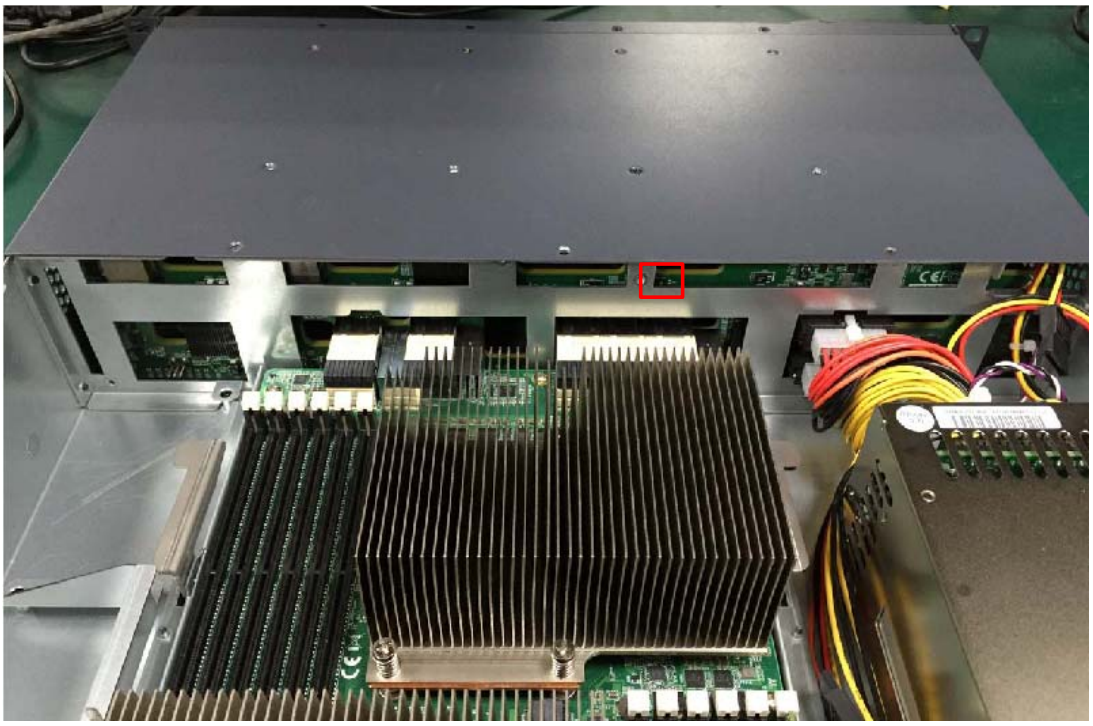


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3.6 Using NIM Slots 1 and 2 for Storage

NIM Slots 1 and 2 can be used for additional storage if required. A CSA-ZH110 drive tray can be inserted in place of a Network Interface Module. To enable the NIM slots for use as storage, the DIP switch SW3 located on the backplane (MICA-B200) must be set accordingly.

1. Remove the chassis lid as described in 3.1 above.
2. Locate switch SW3 as shown below.



3. Set the DIP pins on SW3 as required for use as a network module or storage bay.

Pin	NIM Slot	On	Off
1	Slot1	Network (PCIe)	Storage (SATA)
2	Slot2	Network (PCIe)	Storage (SATA)

4. Set pin 1 of SW1 on the CSA-ZH110 according to the table below so that the hardware address can be correctly recognized by the CSA-7200.

Pin	Setting	NIM Slot
1	On	Slot 1
1	Off	Slot 2



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5. Install a 2.5” SATA drive in the CSA-ZH110 drive tray as shown.





6. Install the drive tray into the desired NIM slot as described in 3.5 Installing a Network Interface Module above.



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3.6.1 CSA-ZH110 Status LEDs



The ACT and ERR status LEDs on the CSA-ZH110 will light under the following conditions:

Description	ACT	ERR
Drive Not Present	Off	X
Drive Present, No Activity	On	X
Drive Present, Activity	4Hz	X
Locate (Identify)	4Hz	4Hz
Fail	Off	On
Rebuild	X	1Hz
PFA	X	2 Fast Blink at 4Hz & Pause for 0.5Sec
Locate (Identify)	4Hz	4Hz

Note: “X” means the LED is off unless another condition causes it to turn on.

To enable RAID functionality, refer to 6.6.6 PCH Configuration on page 68.

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3.7 BIOS Update

Users can update the CSA-7200 system BIOS over various interfaces (Gigabit LAN, KCS, console port).

3.7.1 Updating the BIOS via Network with BMC tool

(1) Login to the OS with root user permission.
(2) Update the BIOS over network with the command below:

Example:

```
$./Yafuflash -nw -ip 192.168.2.101 -u root -p superuser -bios BIOS.BIN

-------------------------------------------------

YAFUFlash - Firmware Upgrade Utility (Version 1.3)

            Customized for BMC

-------------------------------------------------

(C)Copyright 2013, American Megatrends Inc.
[100%  ]  | | Block 256 of 256 | Success
```

3.7.2 Updating the BIOS via Host with BMC tool

(1) Login to the OS with root user permission
(2) Update the BIOS over host with the command below:

Example:

```
$ sudo ./Yafuflash -mbox -bios BIOS.BIN
-------------------------------------------------

YAFUFlash - Firmware Upgrade Utility (Version 1.3)

            Customized for BMC

-------------------------------------------------

(C)Copyright 2013, American Megatrends Inc.
[100%  ]  | | Block 256 of 256 | Success
```

3.7.3 Updating BIOS via Host with BIOS tool

(1) Boot/Login to DOS/OS with root user permission
(2) Update the BIOS over host with the command below:

Example:

AFUDOS.exe BIOS.ROM /x /n /b /p (If only update BIOS part without ME)
AFUDOS.exe BIOS.BIN /x /n /b /p /me (Update whole BIOS)

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3.8 BMC Firmware Update

The CSA-7200 supports a BMC Chassis Management firmware, IPMI v2.0 compliant. To install the BMC firmware, perform the following steps.

1. Login to the OS with root user permission
2. Upgrade the BMC firmware over host with the command:
   Yafuflash -mbox <BMC IMAGE>

Example:

```
$ sudo ./Yafuflash -mbox bmc-rom.ima

-------------------------------------------------

YAFUFlash - Firmware Upgrade Utility (Version 1.3)

            Customized for BMC

-------------------------------------------------

(C)Copyright 2013, American Megatrends Inc.

*****************************************************************
******

 WARNING!

        FIRMWARE UPGRADE MUST NOT BE INTERRUPTED ONCE IT IS STARTED.

        PLEASE DO NOT USE THIS FLASH TOOL FROM THE REDIRECTION CONSOLE.

*****************************************************************
******

[100% ] | Skipping   boot       | Block   4 of   4 | Success

[100% ] | Upgrading  conf       | Block   8 of   8 | Success

[100% ] | Upgrading  root       | Block  14 of  14 | Success

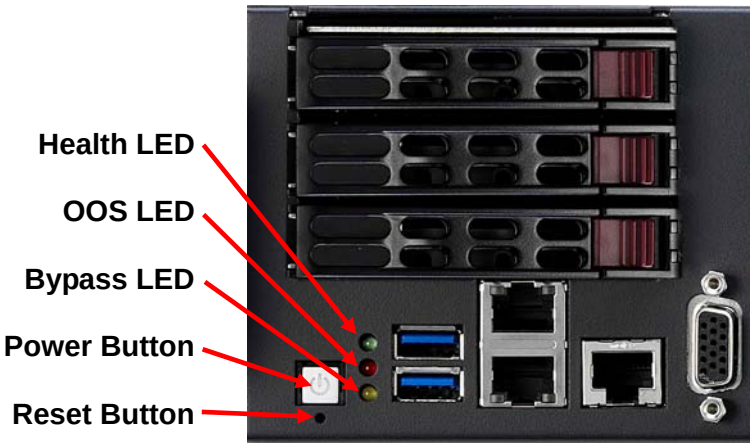
[100% ] | Upgrading  osimage    | Block  30 of  30 | Success

[100% ] | Upgrading  ast1010e   | Block   1 of   1 | Success

Resetting the firmware........
```


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4 System Interfaces



4.1 Status LEDs

4.1.1 Power LED (Blue)

The Power LED is integrated into the Power button and glows blue when the system is powered on.

4.1.2 Health LED (Green)

The Health LED is controlled by BMC and glows green to indicate healthy system status after BIOS post is completed. A BMC watchdog timeout will turn off the LED. If the BMC watchdog is not enabled, the Health LED will always stay on. The BMC implements an OEM command to let the user control the Health LED via IPMI command.

4.1.3 OOS LED (Red)

The OOS LED is controlled by BMC and indicates BIOS post status. The OOS LED turns on (red) once the BMC detects that payload power is enabled. The OOS LED turns off only when the BMC receives a message that BIOS post has completed successfully. The BMC implements an OEM command to let the user control the OOS LED via IPMI command.

4.1.4 Bypass LED (Yellow)

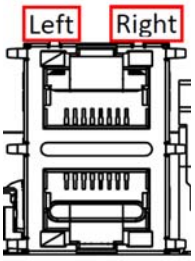
The Bypass LED is controlled by BMC and indicates the LAN bypass status (“On” when bypass is on in 1 or more LAN segments). The BMC implements an OEM command to let the user control the Bypass LED via IPMI command.

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4.2 LAN LEDs

The LAN LEDs are integrated into the RJ-45 connector. Their behavior is as follows:

LED	Status	LED Color
Left (speed)	10 Mbps	Off
	100 Mbps	Green
	1000 Mbps	Yellow
Right (activity)	Link with no activity	Green
	Link with activity	Green blinking
	Link down	Off



4.3 SATA LEDs

There are two LEDs on the right side of each drive tray. The top LED flashes green when there is drive activity, The bottom LED lights red when the drive status is abnormal.



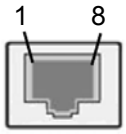
4.4 NIM LED Definitions

NIM Service Port Status LED behaviour is shown below:

LAN	LED	Status	LED Color
SFP/SFP+	Left	Link up	Yellow
		Link down	Off
	Right	Link with no activity	Off
		Link with activity	Green Blinking
		Link down	Off
GbE RJ45	Left	10 Mbps	Off
		100 Mbps	Green
		1000 Mbps	Yellow
	Right	Link with no activity	Green
		Link with activity	Green blinking
		Link down	Off

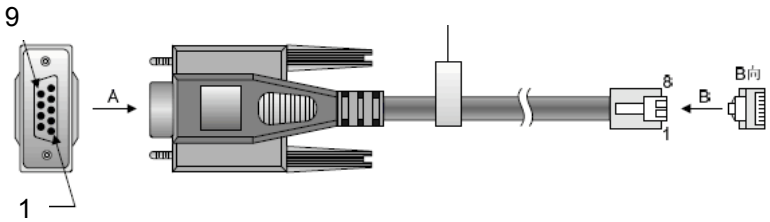
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4.5 Console Port



RJ-45 Pin	Signal
1	RTS
2	DTR
3	TXD
4	SG
5	SG
6	RXD
7	DSR
8	CTS

The CSA-7200 comes with an RJ-45 to DB-9 console port adapter cable.



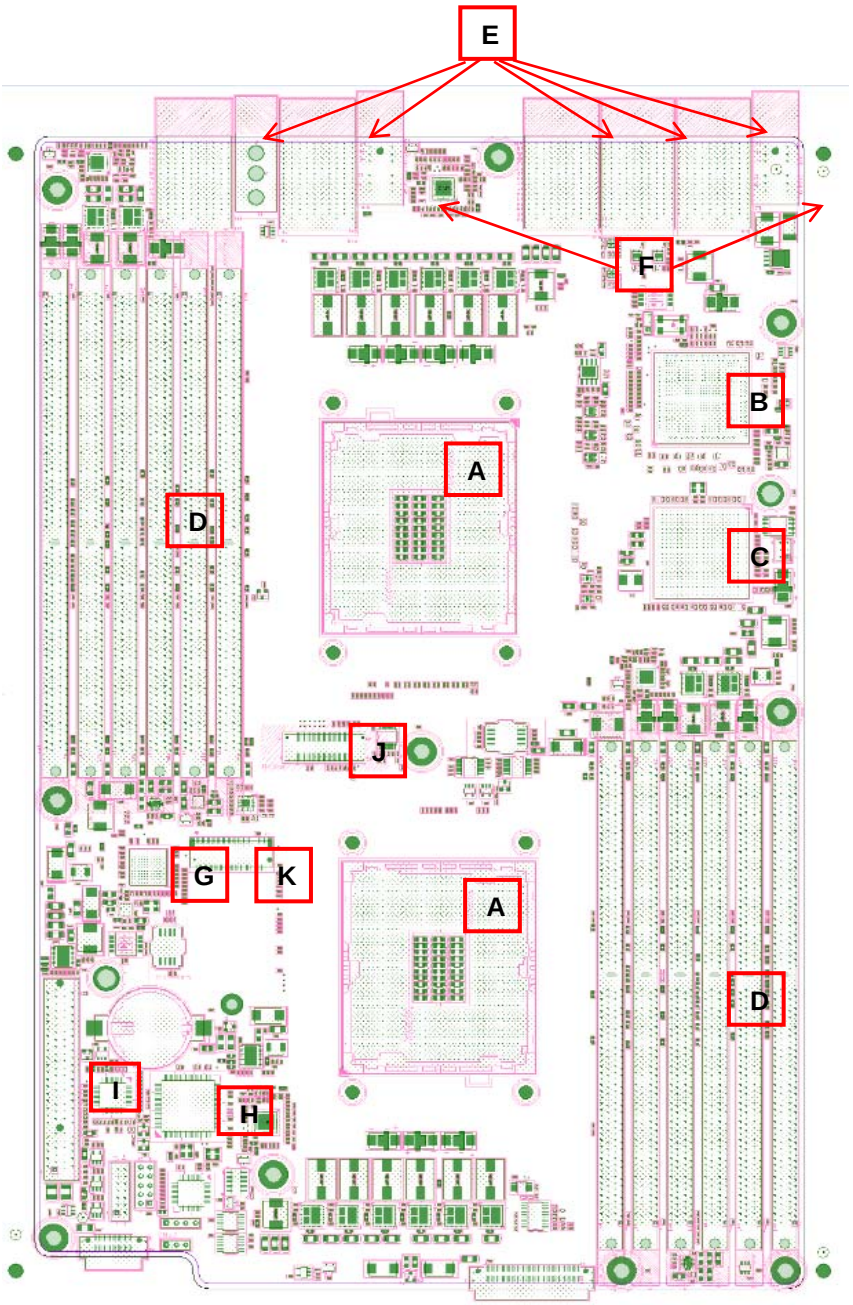
DB-9 Pin	Signal
1	—
2	RXD
3	TXD
4	DTR
5	SG
6	DSR
7	RTS
8	CTS
9	—

4.6 VGA Interface

The Analog VGA display interface on the front panel has a maximum resolution of 1920x1440.

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4.7 Board Layout



A	LGA-2011 R3 socket	B	Intel C612 chipset
C	Intel 82599 (optional)	D	DDR4 socket
E	Board-to-Board connector	F	Power connector
G	BMC	H	CPLD
I	PCIe x8 connector	J	XDP connector
K	M.2 connector		

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5 LAN Bypass Function

The CSA-7200 is equipped with a LAN Bypass function to allow uninterrupted network traffic in the case of power disruption, system failure, or if a single in-line appliance is shut down or hangs. The default behavior of the LAN Bypass function is determined by BIOS setting.

5.1 LAN Bypass Support

The following table outlines the behaviour of the LAN Bypass function when when set On/Off in the BIOS under different power conditions.

Power Status / Bypass Setting		Power On Mode	Power Off Mode (S5, Standby Power only)	No AC/DC power with 1st Gen NIM	No AC/DC power with 2nd Gen NIM
All Bypass Off		Bypass **Off**	Bypass **Off**	Bypass **On**	Bypass **Off**
All Bypass On		On boot Bypass is **On** for all segments. Control is handed to the BMC as soon as it is ready.	Bypass **On**	Bypass **On**	Bypass **On**
By Segment	**Bypass On**	On boot Bypass is **On.** Control is handed to the BMC as soon as it is ready.	Bypass **On**	Bypass **On**	Bypass **On**
	Bypass Off	On boot Bypass is **Off.** Control is handed to the BMC as soon as it is ready.	Bypass **Off**	Bypass **On**	Bypass **Off**

Table 1. LAN Bypass Support for 1st and 2nd generation of NIMs

Note: Check the generation of the installed NIMs and make sure the LAN Bypass Settings on page 57 are correct.

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5.2 NIM Hardware Description

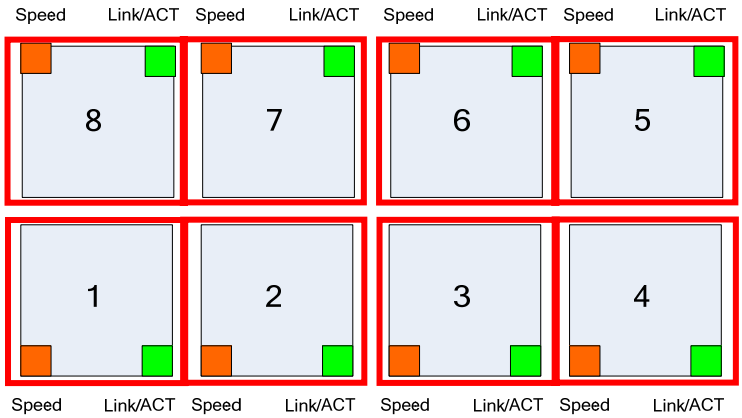
The CSA-7200 can bypass the LAN port on designated NIMs (CSA-Z4X01, CSA-Z8X10).

(1) Bypass LED (Front Panel)
Yellow: When one or more LAN segment has LAN Bypass is enabled
Off: When all LAN segments LAN Bypass are disabled

(2) CSA-Z4X01 LAN Bypass Port Pairing

LAN Bypass Pair 1: Port 1 & Port 2
LAN Bypass Pair 2: Port 3 & Port 4

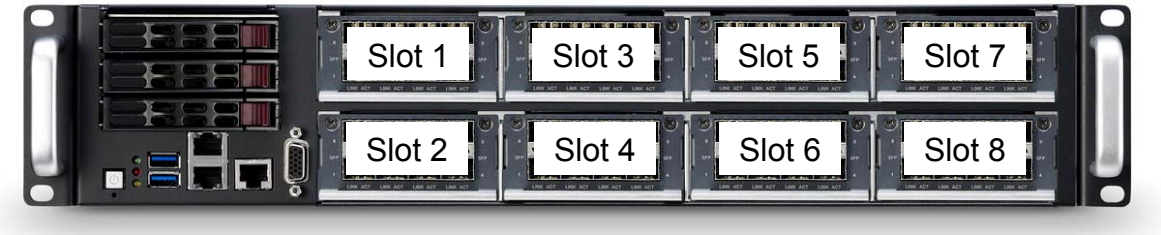
(3) CSA-Z8X10 LAN Bypass Port Pairing



LAN Bypass Pair 1: Port 1 & Port 2
LAN Bypass Pair 2: Port 3 & Port 4
LAN Bypass Pair 3: Port 5 & Port 6
LAN Bypass Pair 4: Port 7 & Port 8

5.3 NIM Slot LAN Segmentation

The NIM slot numbers correspond to the LAN segment numbers.



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5.4 NIM Slot PCIe Mapping Table

CPU	NIM Slot	PCIe Root Port Number
CPU0	Slot 1	2a2b
CPU0	Slot 3	3a3b
CPU0	Slot 4	3c3d
CPU0	Slot 2	1a1b
CPU1	Slot 5	1a1b
CPU1	Slot 7	2a2b
CPU1	Slot 8	2c2d
CPU1	Slot 6	3c3d

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6 BIOS Setup

The following chapter describes basic navigation for the CSA-7200 BIOS setup utility.

6.1 Entering BIOS Setup

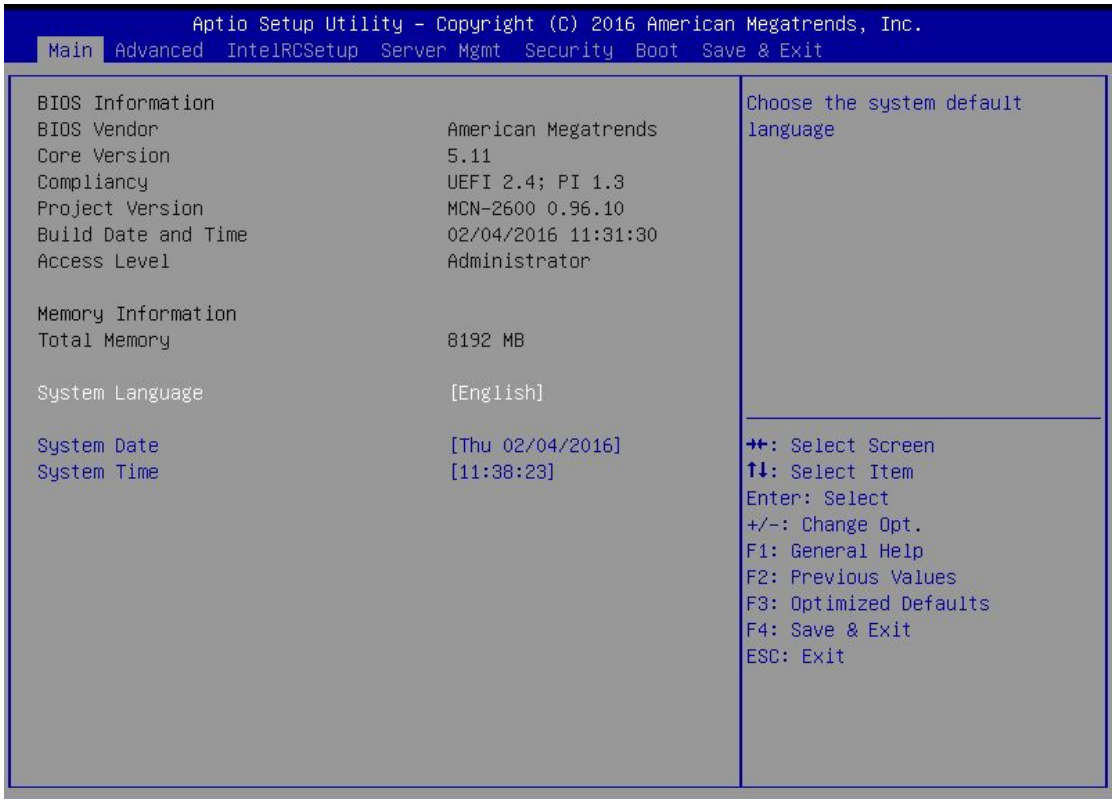
To enter the setup screen, follow these steps:

1. Power on the motherboard
2. Press the < Delete > key on your keyboard when you see the following text prompt: < Press DEL to enter Setup >
3. After you press the < Delete > key, the main BIOS setup menu displays. You can access the other setup screens from the main BIOS setup menu, such as Chipset and Power menus.

NOTE: In most cases, the < Delete > key is used to invoke the setup screen. However, there are several cases that use other keys, such as < F1 >, < F2 >, and so on.

6.2 Setup Menu

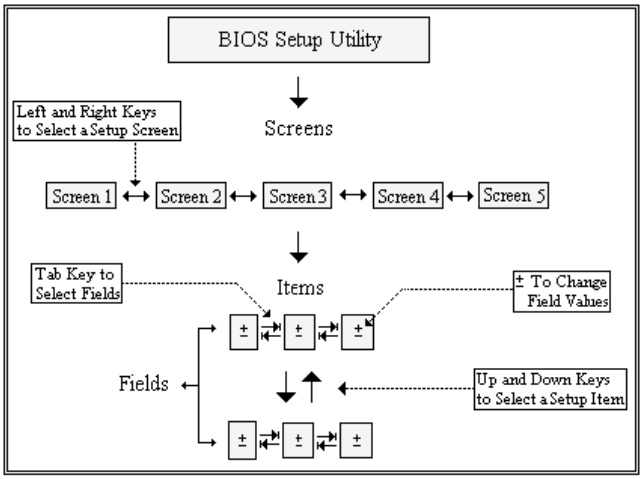
The Main BIOS setup menu is the first screen that you can navigate to. The Main BIOS setup menu screen has two main frames. The left frame displays all the options that can be configured. “Grayed” options cannot be configured, and “Blue” options can be. The right frame displays the key legend. Above 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.



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6.3 Navigation

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process. These keys include < F1 >, < F10 >, < Enter >, < ESC >, < Arrow > keys, and so on.



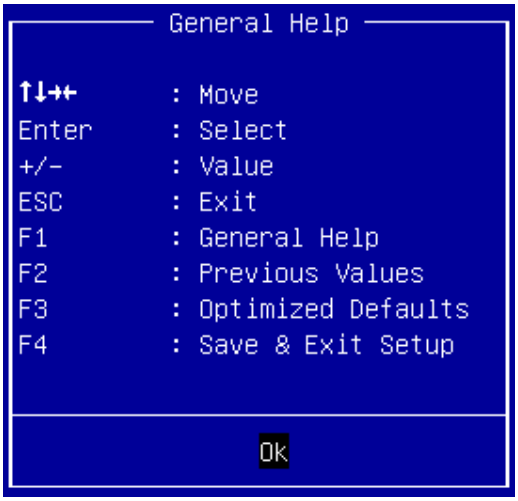
NOTE: There is a hot key legend located in the right frame on most setup screens.

→←	Left/Right. The *Left and Right* < Arrow > keys allow you to select a setup screen. For example: Main screen, Advanced screen, Chipset screen, and so on.
↑↓	Up/Down The *Up and Down* < Arrow > keys allow you to select a setup item or sub-screen.
+-	Plus/Minus The *Plus and Minus* < Arrow > keys allow you to change the field value of a particular setup item. For example: Date and Time.
Tab	The < Tab > key allows you to select setup fields.

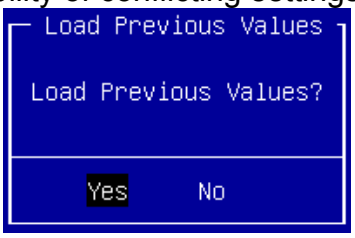
Hot Key	Description
Enter	The < Enter > key allows you to display or change the setup option listed for a particular setup item. The < Enter > key can also allow you to display the setup sub-screens.

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F1 The < F1 > key allows you to display the General Help screen. Press the < F1 > key to open the General Help screen.



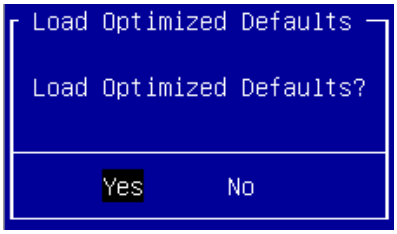
F2 The < F2 > key on your keyboard is the previous values key. It is not displayed on the key legend by default. To set the previous values settings of the BIOS, press the < F2 > key on your keyboard. It is located on the upper row of a standard 101 keyboard. The previous value settings allow the motherboard to boot up with the least amount of options set. This can lessen the probability of conflicting settings.



Press the < Enter > key to load previous values. You can also use the < Arrow > key to select *Cancel* and then press the < Enter > key to abort this function and return to the previous screen.

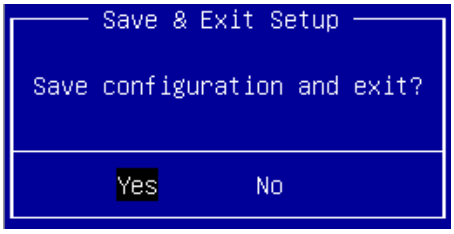
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F3 The < F3 > key on your keyboard is the optimized defaults key. To set the optimized defaults settings of the BIOS, press the < F3 > key on your keyboard. It is located on the upper row of a standard 101 keyboard. The optimized defaults settings allow the motherboard to boot up with the optimized defaults of options set. This can lessen the probability of conflicting settings.



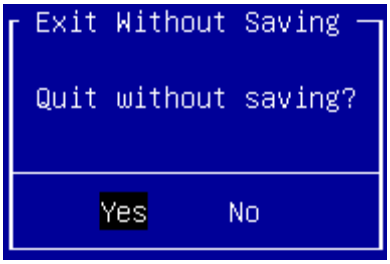
Press the < Enter > key to load optimized defaults. You can also use the < Arrow > key to select *Cancel* and then press the < Enter > key to abort this function and return to the previous screen.

F4 The < F4 > key allows you to save any changes you have made and exit Setup. Press the < F4 > key to save your changes. The following screen will appear:



Press the < Enter > key to save the configuration and exit. You can also use the < Arrow > key to select *Cancel* and then press the < Enter > key to abort this function and return to the previous screen.

ESC The < Esc > key allows you to discard any changes you have made and exit the Setup. Press the < Esc > key to exit the setup without saving your changes. The following screen will appear:

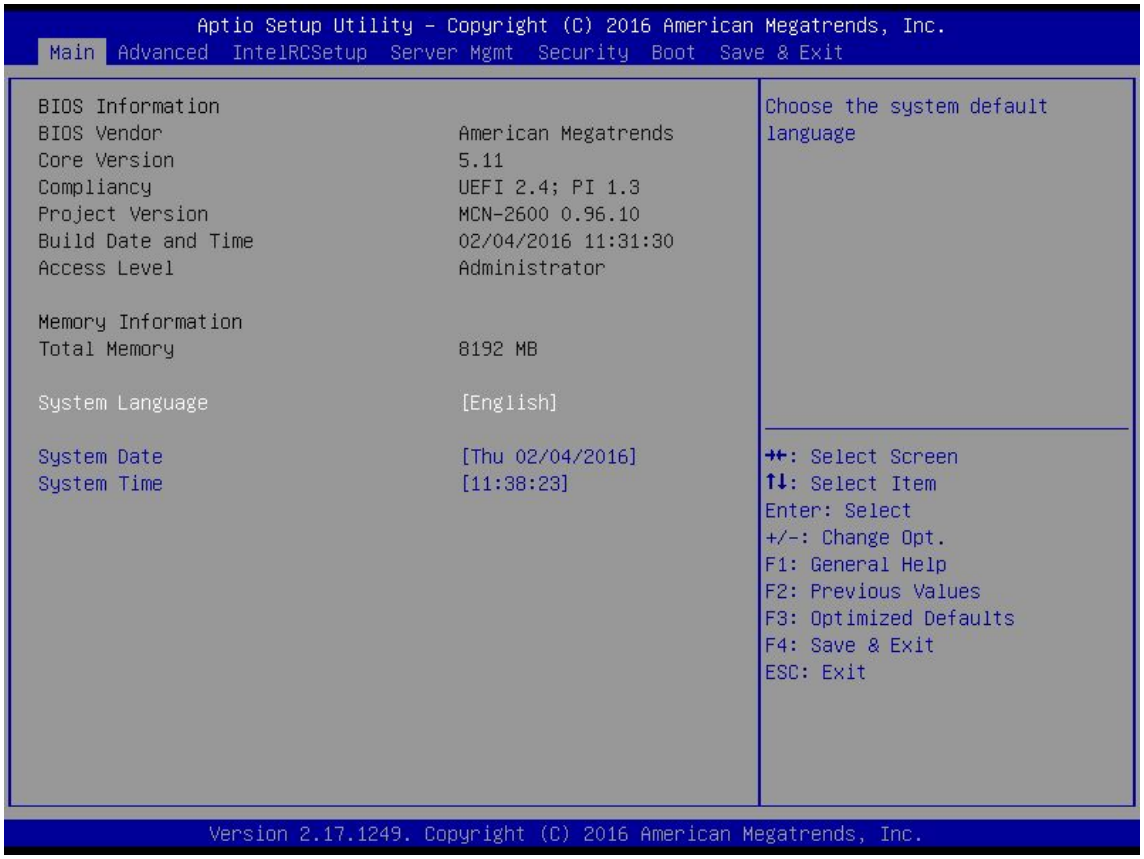


Press the < Enter > key to discard changes and exit. You can also use the < Arrow > key to select *Cancel* and then press the < Enter > key to abort this function and return to the previous screen.

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6.4 Main Setup

When you first enter the Setup Utility, you will find the Main setup screen. You can always return to the Main setup screen by selecting the *Main* tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup screen is shown below.



6.4.1 System & Board Info

The Main BIOS setup screen reports processor, memory and board information.

BIOS Vendor
Displays the BIOS vendor.

Core Version
Displays the BIOS core version.

Compliancy Version
Displays the current UEFI Specification version.

Project Version
Displays the current BIOS version.

Build Data and Time
Displays the BIOS build data and time.

System Language
Displays default system language.

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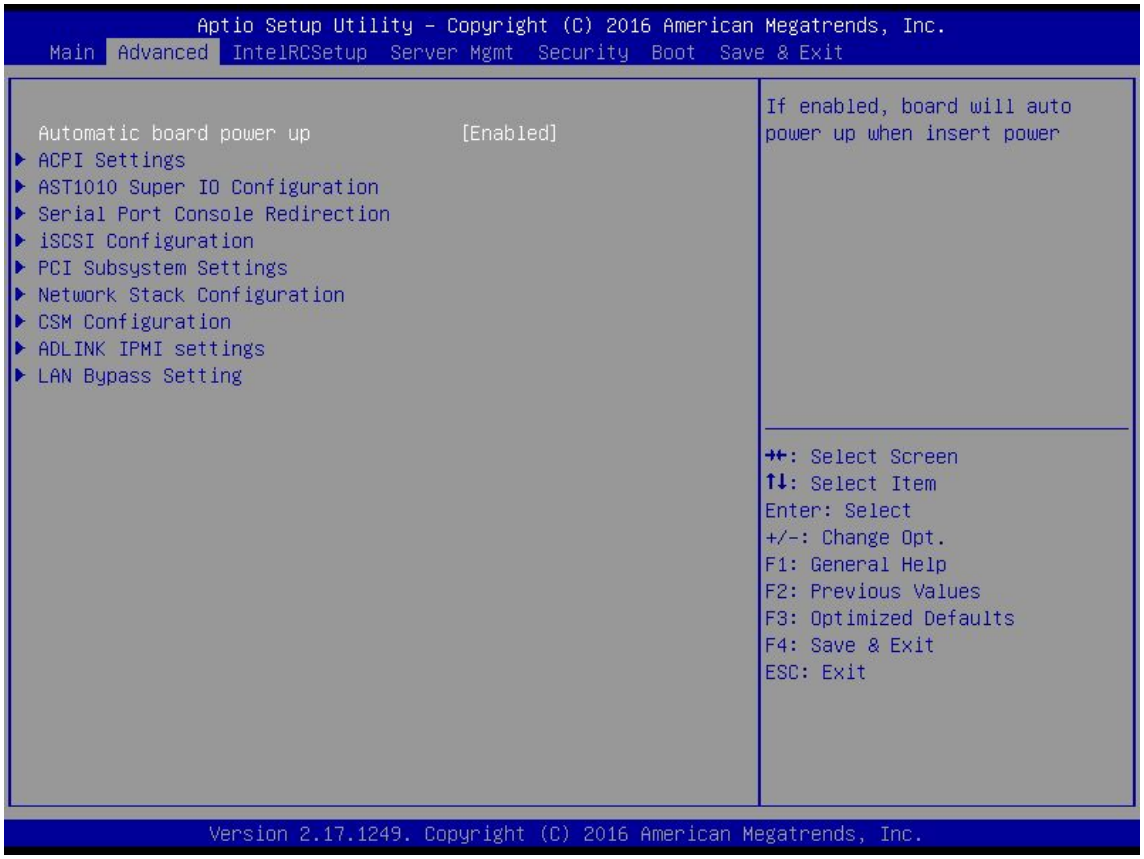
6.4.2 System Date/System Time

Use this option to change the system time and date. Highlight *System Time* or *System Date* 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/YY format. The time is entered in HH:MM:SS format.

NOTE: The time is in 24-hour format. For example, 5:30 A.M. appears as 05:30:00, and 5:30 P.M. as 17:30:00.

6.5 Advanced BIOS Setup

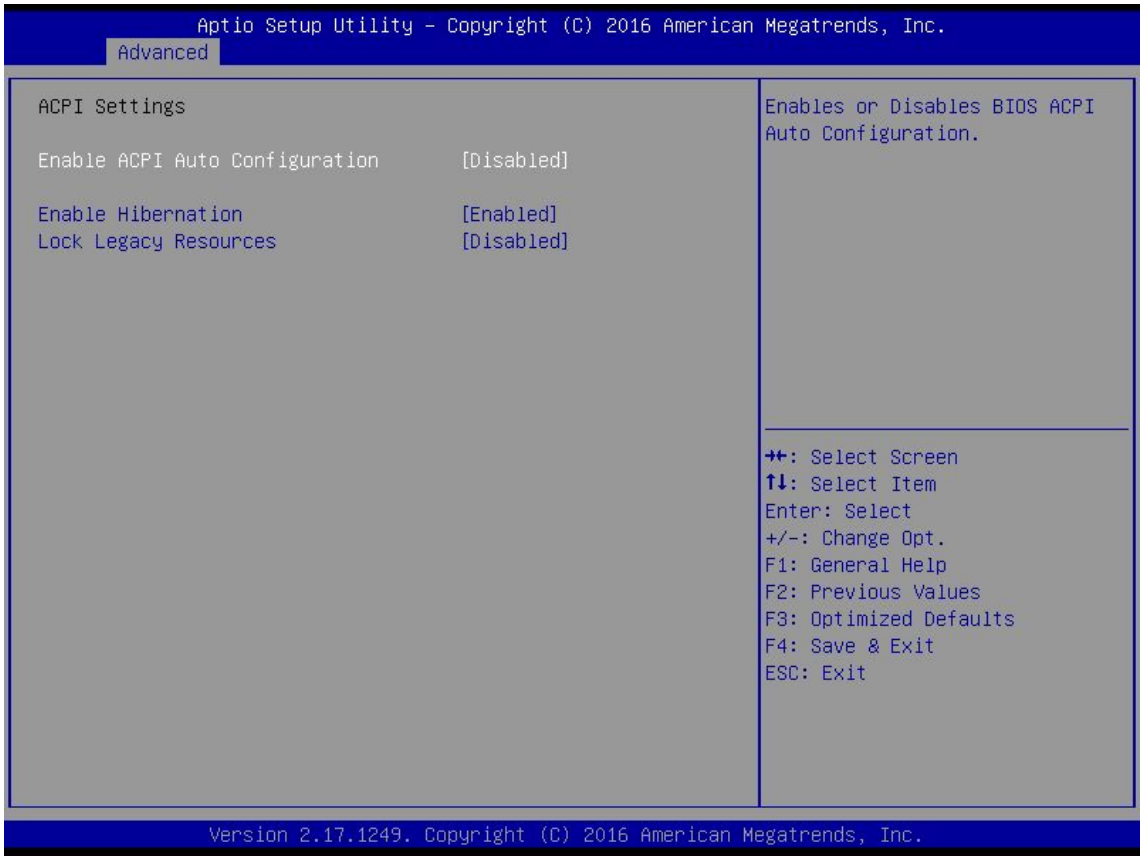
Select the *Advanced* tab from the setup screen to enter the Advanced BIOS Setup screen. You can select any of the items in the left frame of the screen, (ex: Super IO Configuration), to go to the sub menu for that item. You can display an Advanced BIOS Setup option by highlighting it using the < Arrow > keys. The Advanced BIOS Setup screen is shown below. The sub menus are described on the following pages.



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6.5.1 ACPI Settings

You can use this screen to select options for the ACPI Advanced Configuration Settings. Use the up and down < Arrow > keys to select an item. Use the < + > and < - > keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on this page. The screen is shown below.



Enable ACPI Auto Configuration

Enables or Disables BIOS ACPI Auto Configuration. Set this value to **Enabled / Disabled.**

Enable Hibernation

Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS. Set this value to **Enabled / Disabled.**

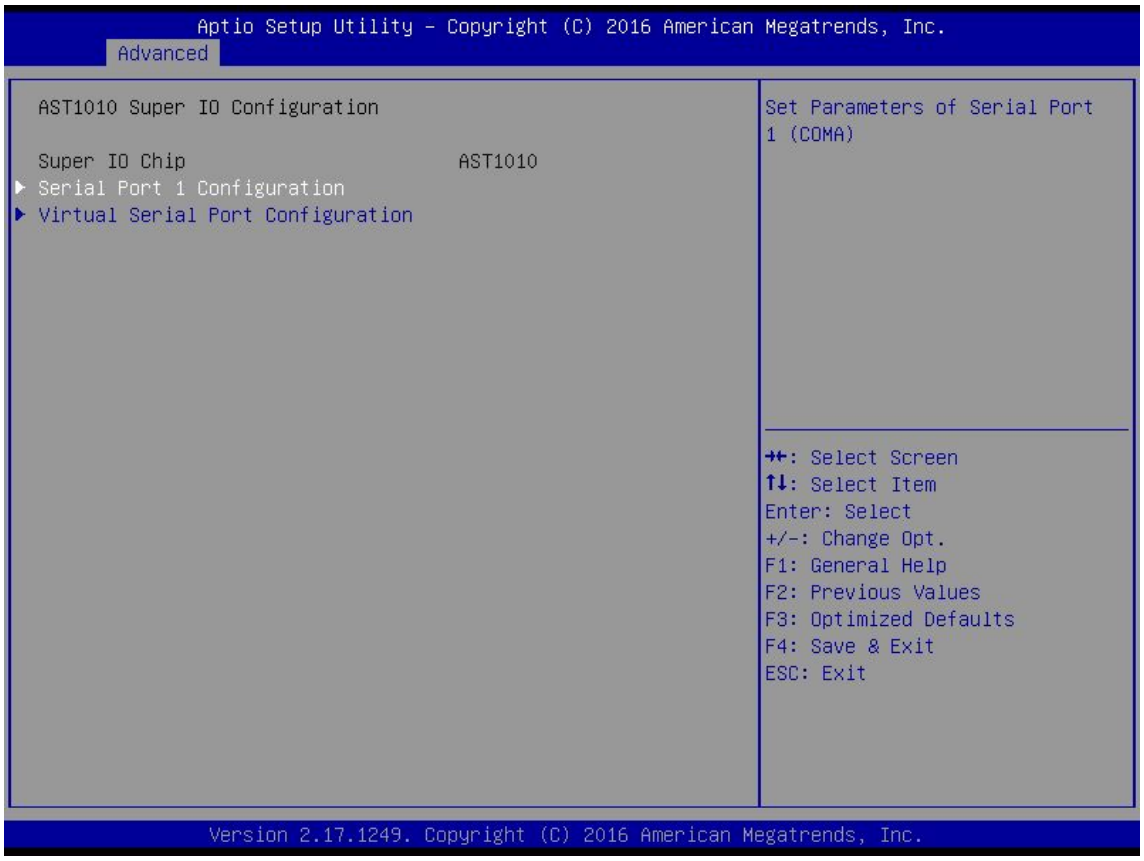
Lock Legacy Resources

Enables or Disables Lock of Legacy Resources. Set this value to **Enabled / Disabled.**

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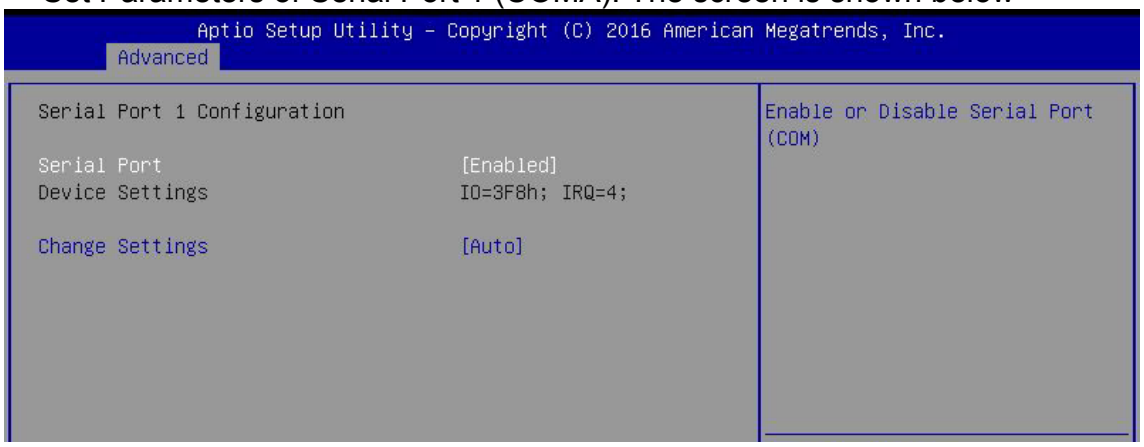
6.5.2 AST1010 Super IO Configuration

You can use this screen to select options for the AST1010 Super IO Configuration. Use the up and down < Arrow > keys to select an item. Use the < + > and < - > keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on the following pages. An example of the *AST1010 Super IO Configuration* screen is shown below.



Serial Port 1 Configuration

Set Parameters of Serial Port 1 (COMA). The screen is shown below



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Serial Port

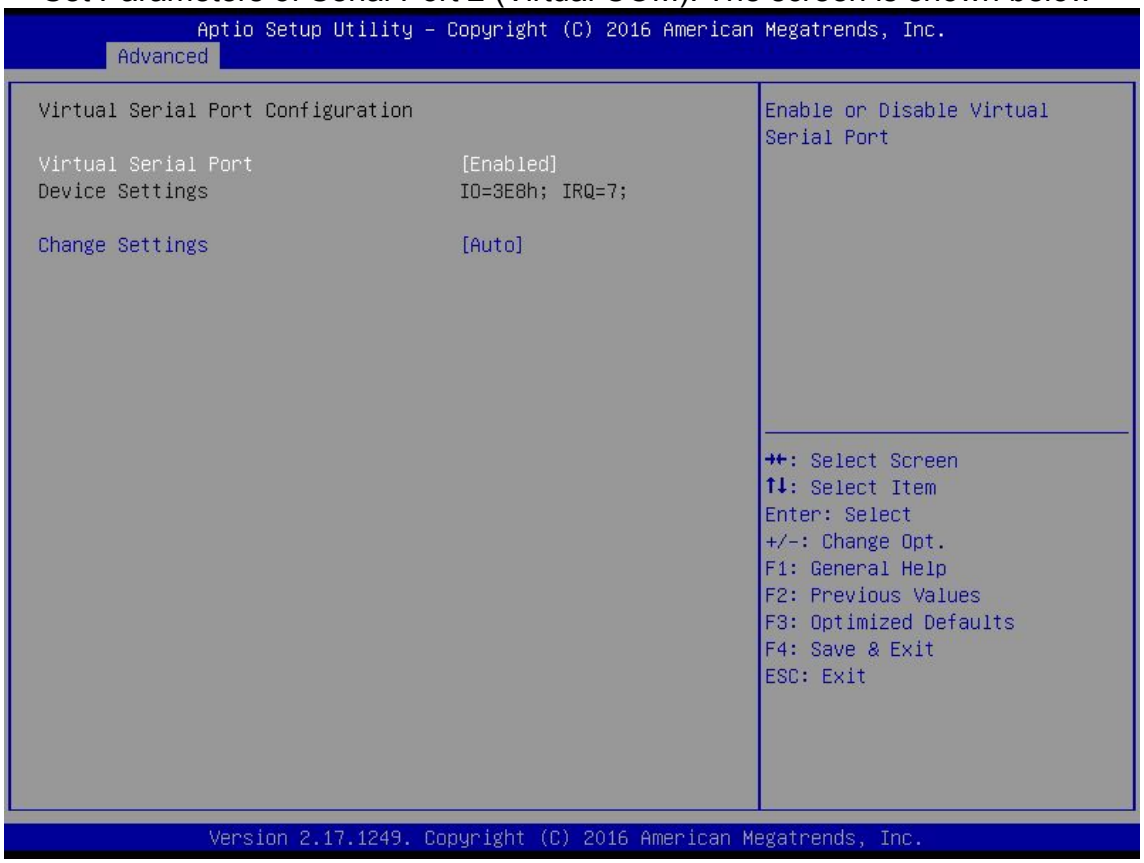
Enable or Disable Serial Port (COM). Set this value to **Enabled / Disabled**

Change Settings

Set Parameters Serial Port

Virtual Serial Port Configuration

Set Parameters of Serial Port 2 (Virtual COM). The screen is shown below



Virtual Serial Port

Enable or Disable Serial Port (COM). Set this value to **Enabled / Disabled**

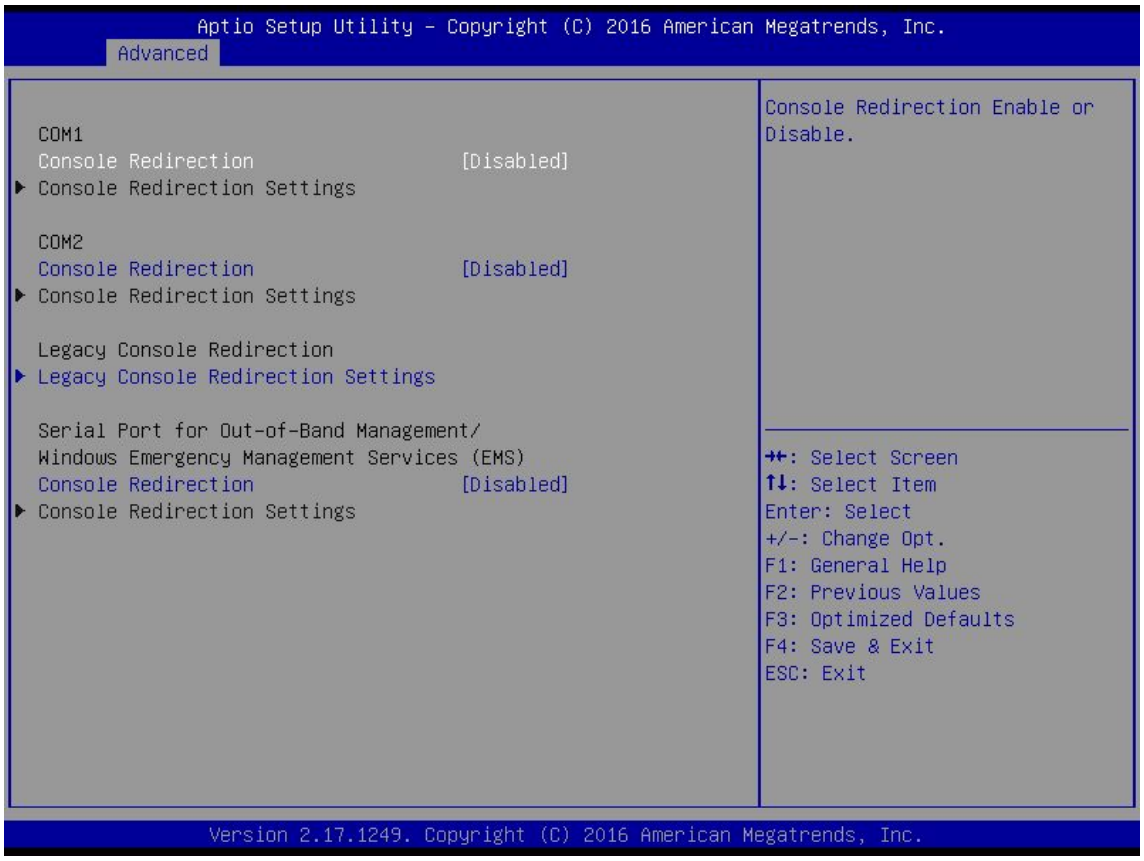
Change Settings

Set Parameters Virtual Serial Port

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6.5.3 Serial Port Console Redirection

You can use this screen to select options for the serial port console redirection settings. Use the up and down < Arrow > keys to select an item. Use the < + > and < - > keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described in the following pages. An example of the *Serial Port Console Redirection* screen is shown below.



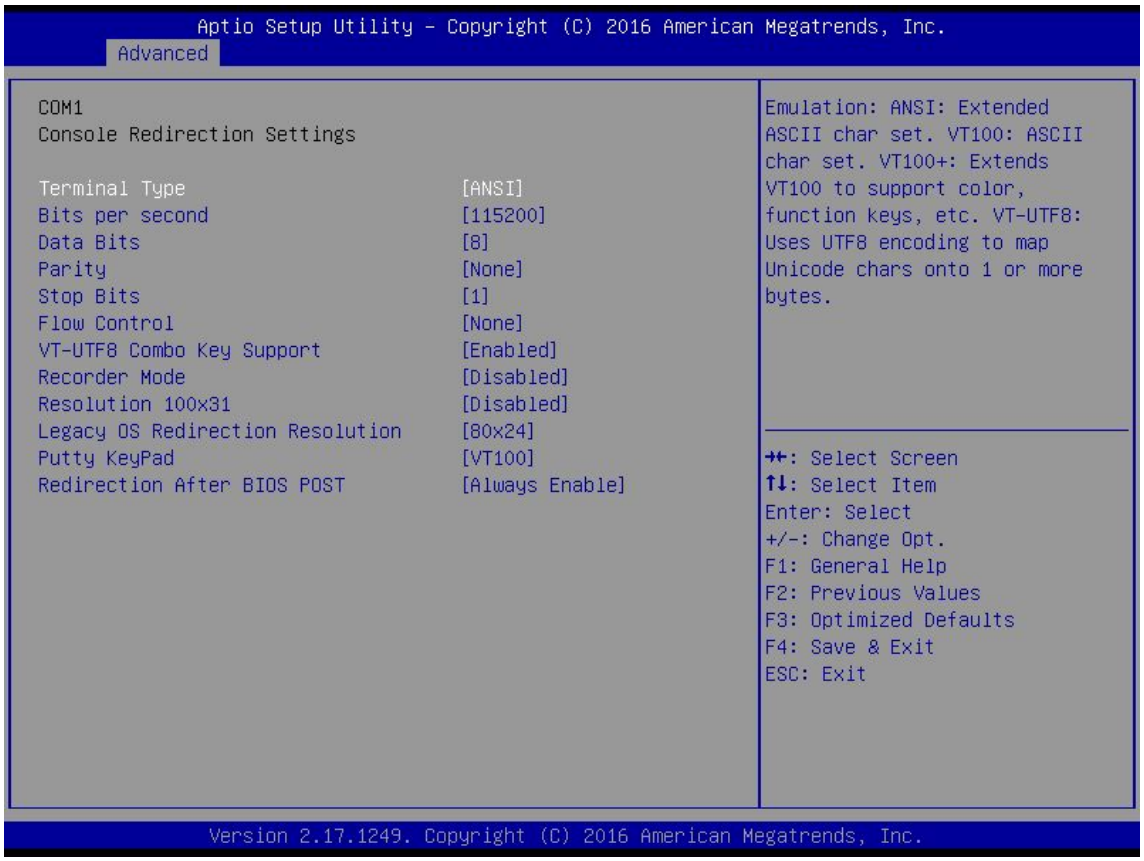
Console Redirection

The BIOS Console Redirection feature is here. Set this value to **Enabled/Disabled.**

Console Redirection Settings

The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings. The screen is shown below.

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Terminal Type

VT100+ is the preferred terminal type for out-of-band management. Configuration options are**: VT100, VT100+, VT-UTF8, ANSI.**

Bits per second

Select the bits per second you want the serial port to use for console redirection. The options are **115200, 57600, 38400, 19200**, **and 9600**.

Data Bits

Select the data bits you want the serial port to use for console redirection. Set this value to **7, 8**.

Parity

Set this option to select Parity for console redirection. The settings for this value are **None, Even, Odd, Mark, and Space.**

Stop Bits

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. Set this value to **1** and **2**.

Flow Control

Set this option to select Flow Control for console redirection.
The settings for this value are **None and Hardware RTS/CTS**.

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VT-UTF8 Combo Key Support

Enable VT-UTF8 Combination Key support for ANSI/VT100 terminals. The settings for this value are **Enabled and Disabled.**

Recorder Mode

When this mode is enabled, only text will be sent. This is to capture terminal data. Set this value to **Enabled/Disabled.**

Resolution 100x31

Set this option to extended terminal resolution. Set this value to **Enabled/Disabled.**

Legacy OS Redirection

On Legacy OS, the number of rows and columns support redirection. Set this value to **80x24, 80x25**.

Putty KeyPad

Select function key and keypad on putty. Set this value to **VT100, LINUX, XTERMR6, SCO, ESCN, VT400**.

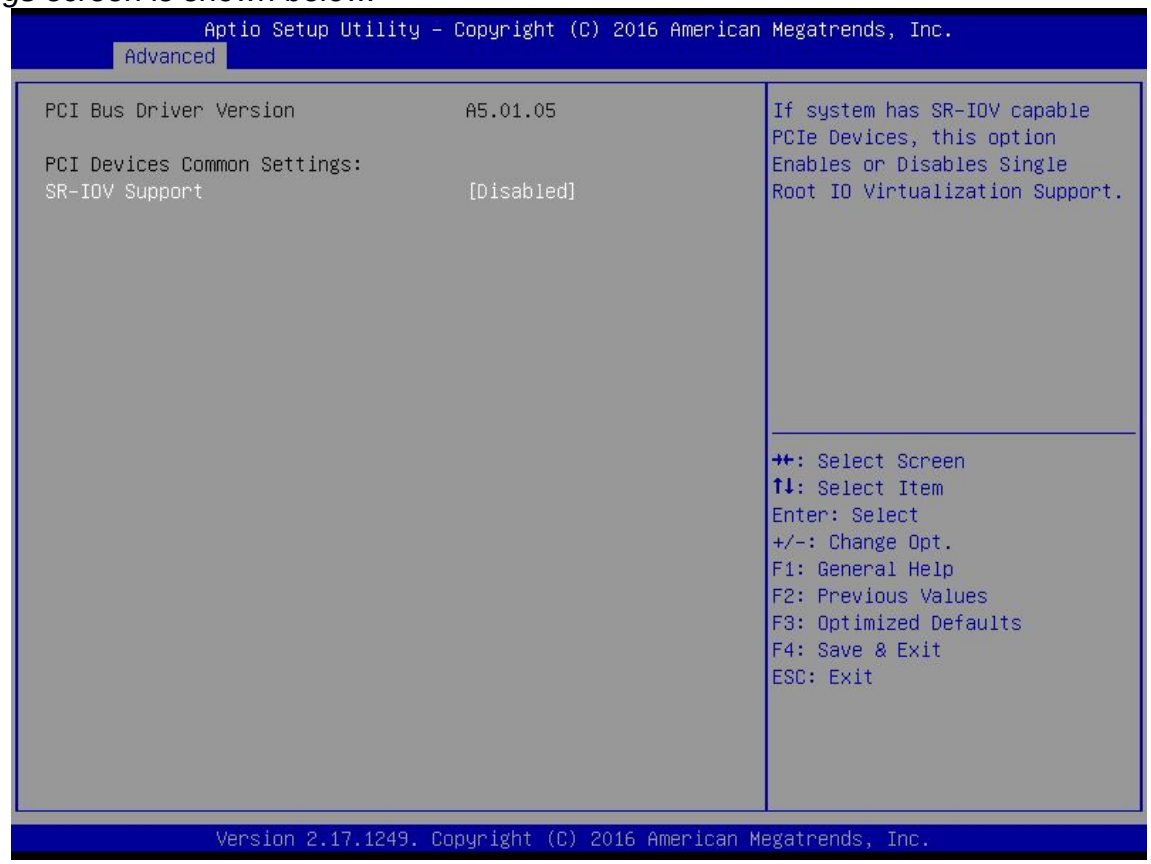
Redirection After BIOS POST

The settings specify if BootLoader is selected then legacy console redirection is disabled before booting to legacy OS. Default value is Always Enable which means legacy console redirection is enabled for legacy OS. Set this value to **Always Enable, BootLoader**.

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6.5.4 PCI Subsystem Settings

You can use this screen to select options for the PCI Subsystem Settings. Use the up and down < Arrow > keys to select an item. Use the < + > and < - > keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on the following pages. An example of the *PCI Subsystem Settings* screen is shown below.



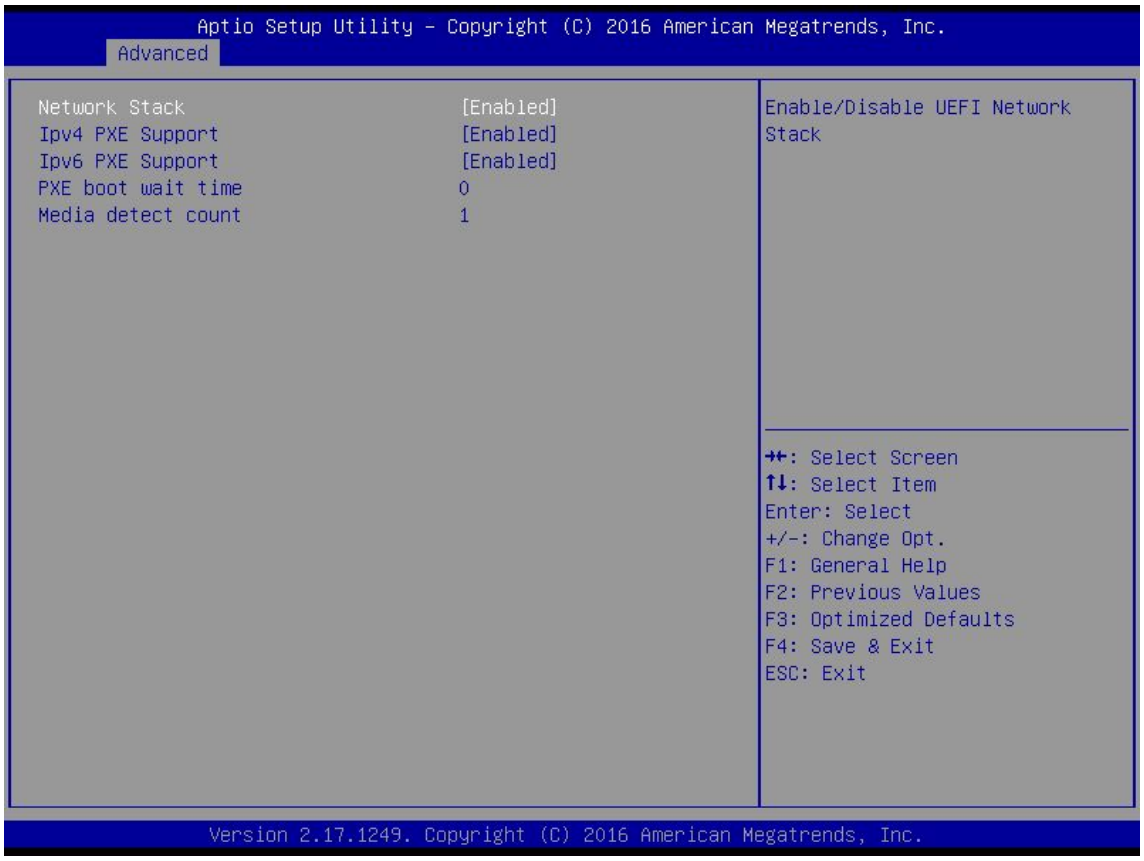
SR-IOV Support

If system has SR-IOV capable PCIe Devices, this option Enables or Disables Single Root IO Virtualization Support. Set this value to **Enabled/Disabled.**

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6.5.5 Network Stack Configuration

You can use this screen to select options for the Network Stack Configuration Settings. Use the up and down < Arrow > keys to select an item. Use the < + > and < - > keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on the following pages. An example of the *Network Stack Configuration* screen is shown below.



Network Stack

Enable/Disable UEFI Network Stack. Set this value to **Enabled/Disabled.**

Ipv4 PXE Support

Enable Ipv4 PXE Boot Support. If disabled IPV4 PXE boot option will not be created. Set this value to **Enabled/Disabled.**

Ipv6 PXE Support

Enable Ipv6 PXE Boot Support. If disabled IPV6 PXE boot option will not be created. Set this value to **Enabled/Disabled.**

PXE boot wait time

Wait time to press ESC key to abort the PXE boot. Set this value to desired time.

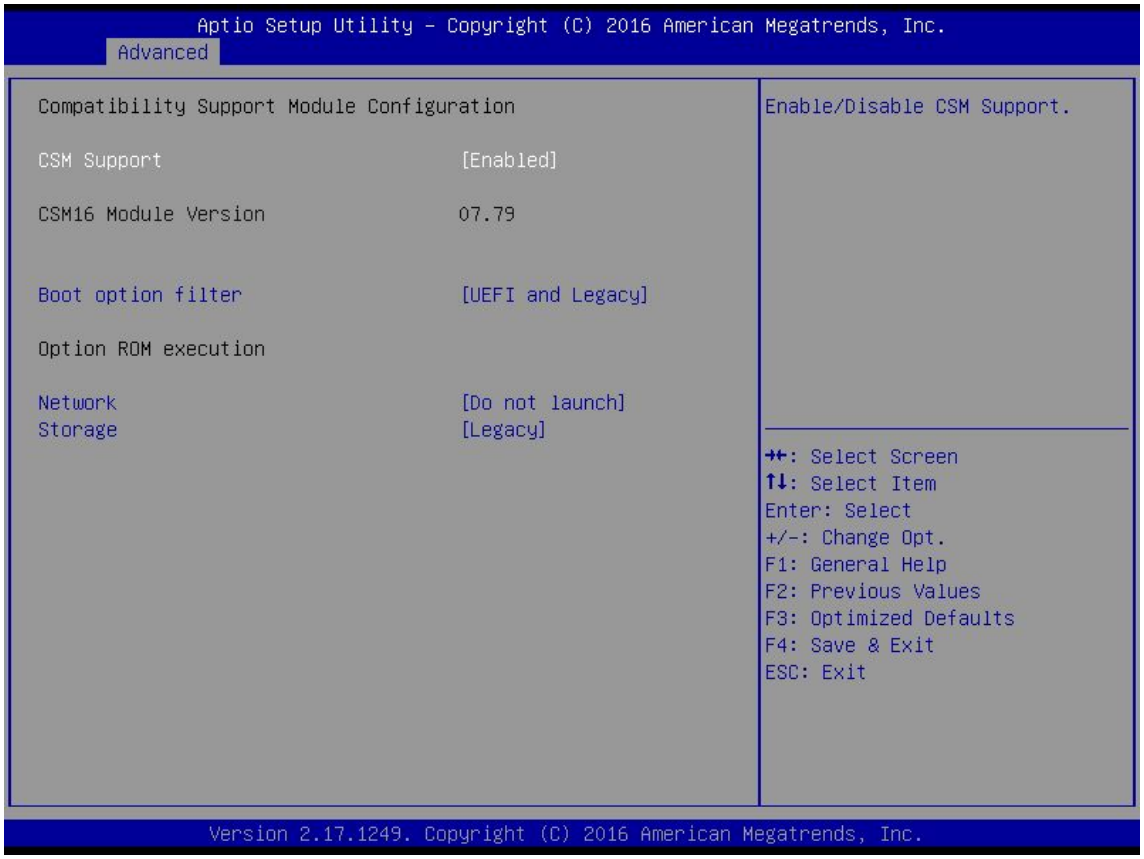
Media detect count

Number of times presence of media will be checked.

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6.5.6 CSM Configuration

You can use this screen to select options for the CSM Configuration Settings. Use the up and down < Arrow > keys to select an item. Use the < + > and < - > keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on the following pages. An example of the *CSM Configuration* screen is shown below.



CSM Support

Enable/Disable Compatibility Support Module. Set this value to **Enabled/Disabled.**

Boot option filter

This option controls whether Legacy/UEFI boot options will be enabled. Set this value to **UEFI and Legacy/Legacy only/UEFI only.**

Network

This option Controls the execution of UEFI and Legacy PXE OpROM. Set this value to **Do not launch/UEFI/Legacy.**

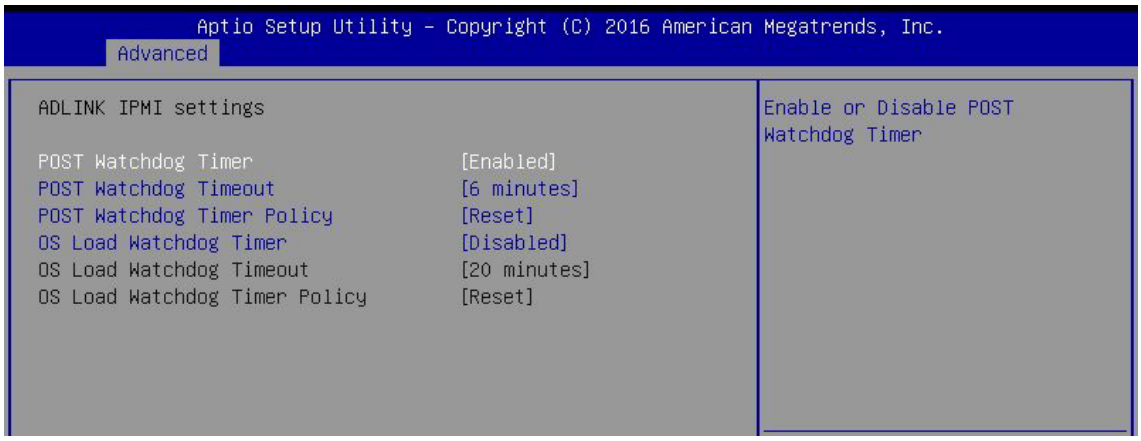
Storage

This option Controls the execution of UEFI and Legacy Video OpROM. Set this value to **Do not launch/UEFI/Legacy.**

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6.5.7 ADLINK IPMI Settings

You can use this screen to select options for the ADLINK IPMI Settings. Use the up and down < Arrow > keys to select an item. Use the < + > and < - > keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on the following pages. An example of the *ADLINK IPMI Settings* screen is shown below.



POST Watchdog Timer

Enable or Disable POST Watchdog Timer. Set this value to **Enabled/Disabled.**

POST Watchdog Timeout

Select the time value for POST Watchdog Timer Expiration value. Set this value to **3 minutes/4 minutes/5 minutes/6 minutes.**

POST Watchdog Timer Policy

Configure how the system should respond if the POST Watchdog Timer expires. Not available if POST Watchdog Timer is disabled. Set this value to **Reset/Power Down/ Do Nothing.**

OS Load Watchdog Timer

Enable or Disable OS Watchdog Timer. Set this value to **Enabled/Disabled.**

OS Load Watchdog Timeout

Select the time value for OS Watchdog Timer Expiration value. Set this value to **5 minutes/10 minutes/15 minutes/20 minutes.**

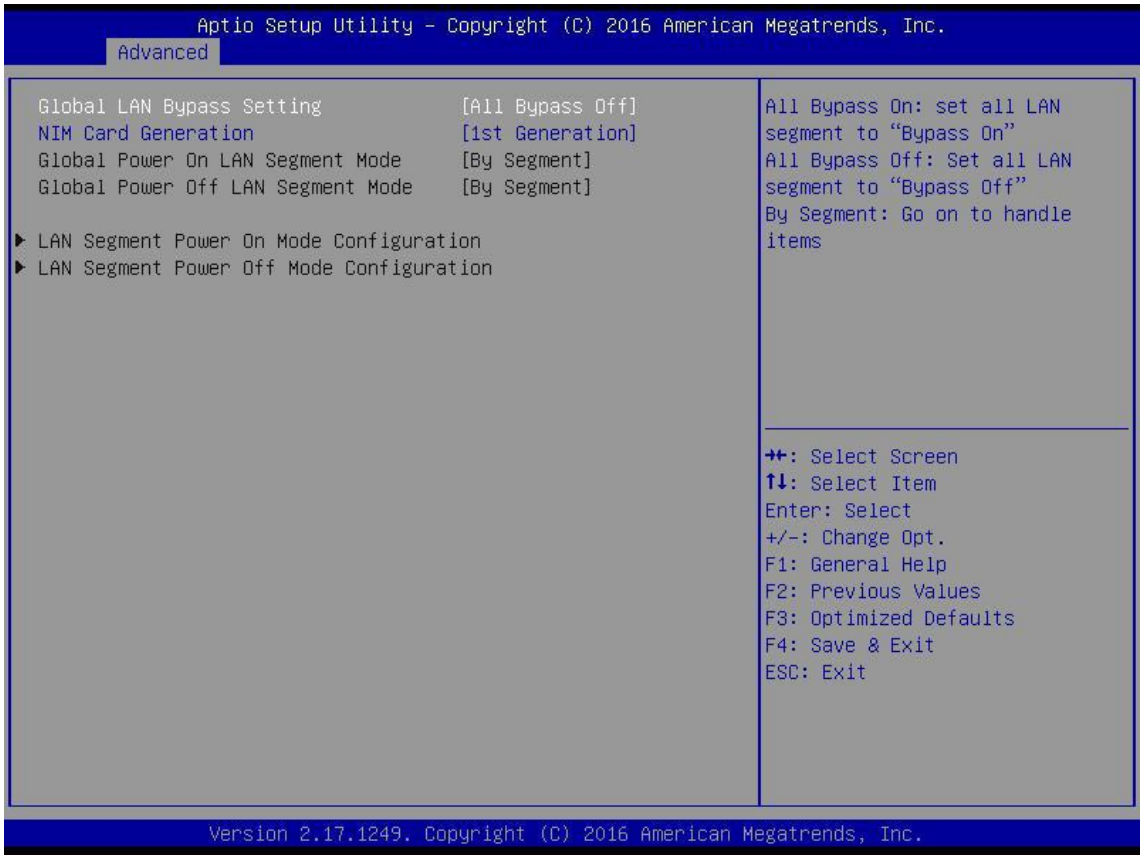
OS Load Watchdog Timer Policy

Configure how the system should respond if the OS Watchdog Timer expires. Not available if OS Watchdog Timer is disabled. Set this value to **Reset/Power Down/ Do Nothing.**

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6.5.8 LAN Bypass Settings

You can use this screen to select options for the LAN Bypass Setting. Use the up and down < Arrow > keys to select an item. Use the < + > and < - > keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on the following pages. An example of the *LAN Bypass Setting* screen is shown below.



Global LAN Bypass Setting

This option controls all LAN Bypass settings. **All Bypass On:** set all LAN segment to "Bypass On"; **All Bypass Off:** Set all LAN segment to "Bypass Off"; **By Segment:** Set LAN Bypass for each LAN segment

NIM Card Generation

Select NIM Card Generation. Set this value to **1st Generation/2nd Generation**.

Global Power On LAN Segment Mode

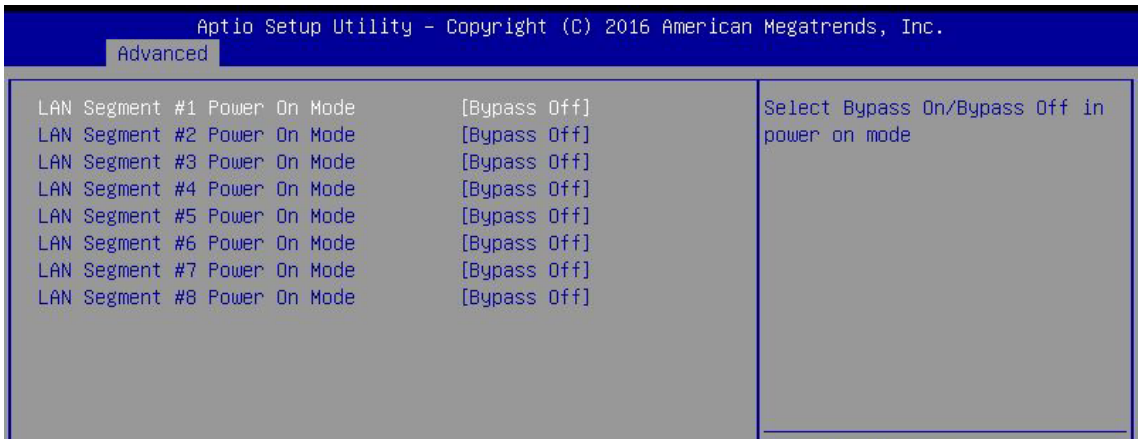
This option controls Power On Mode LAN Bypass settings for all LAN segments globally. Set this value to **All Bypass On/All Bypass Off/By Segment.**

Global Power Off LAN Segment Mode

This option controls Power Off Mode LAN Bypass settings for all LAN segments globally Set this value to **All Bypass On/All Bypass Off/By Segment.**

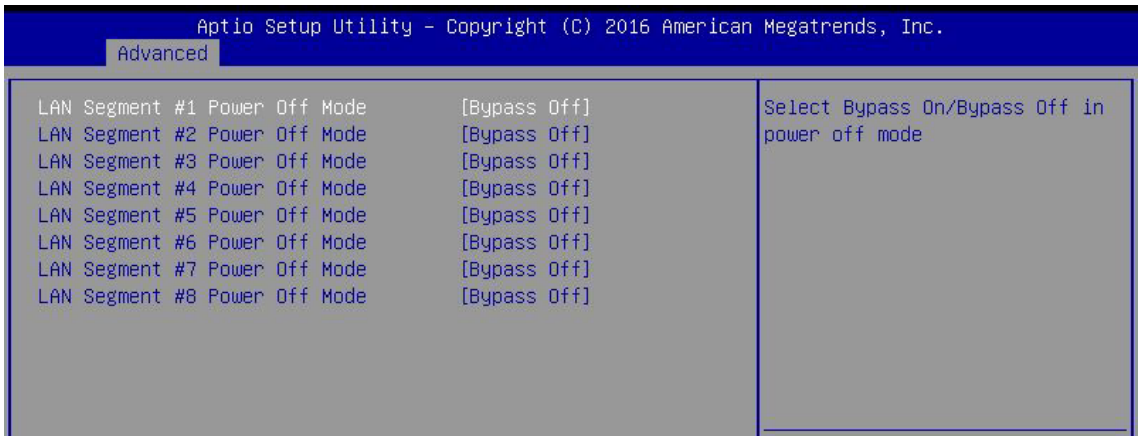
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LAN Segment Power On Mode Configuration



LAN Segment #1-8 Power On Mode
This option controls the LAN Bypass setting in Power On Mode for each segment. Set this value to **Bypass On/Bypass Off**.

LAN Segment Power Off Mode Configuration

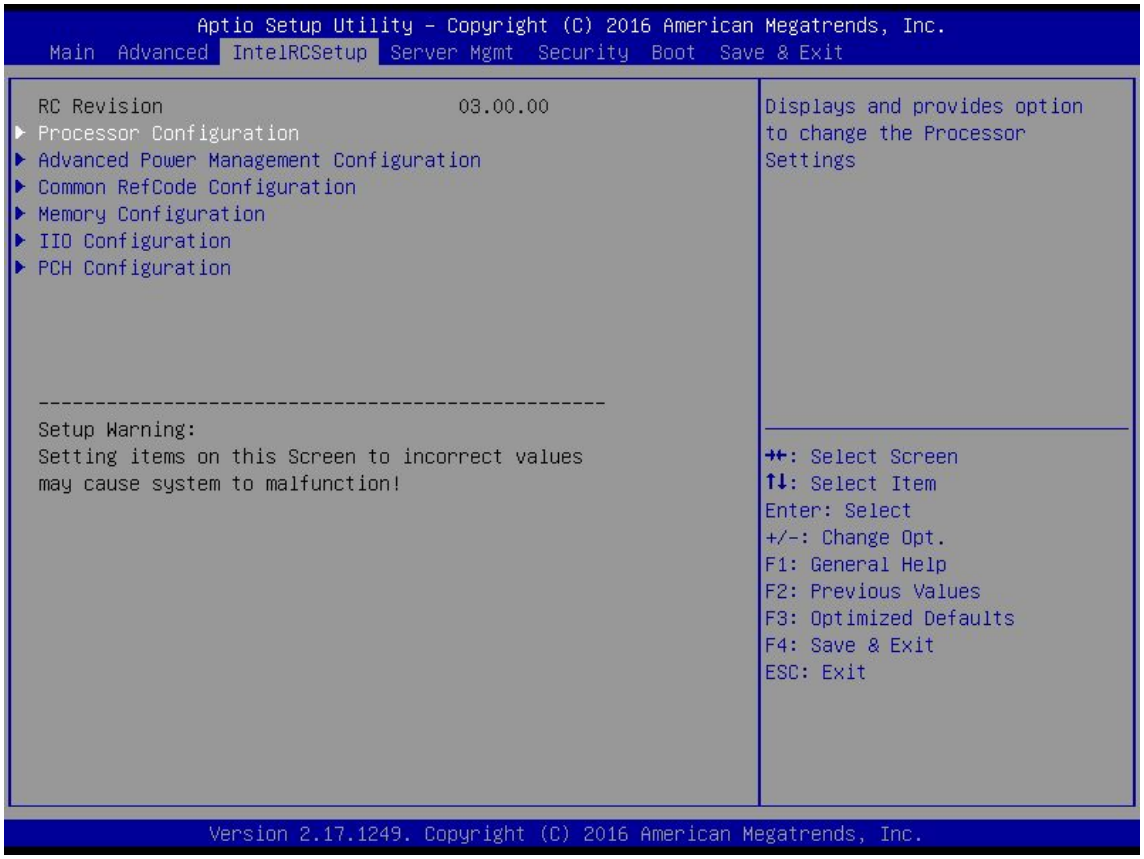


LAN Segment #1-8 Power Off Mode
This option controls the LAN Bypass setting in Power Off Mode for each segment. Set this value to **Bypass On/Bypass Off**.

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6.6 IntelRCSetup

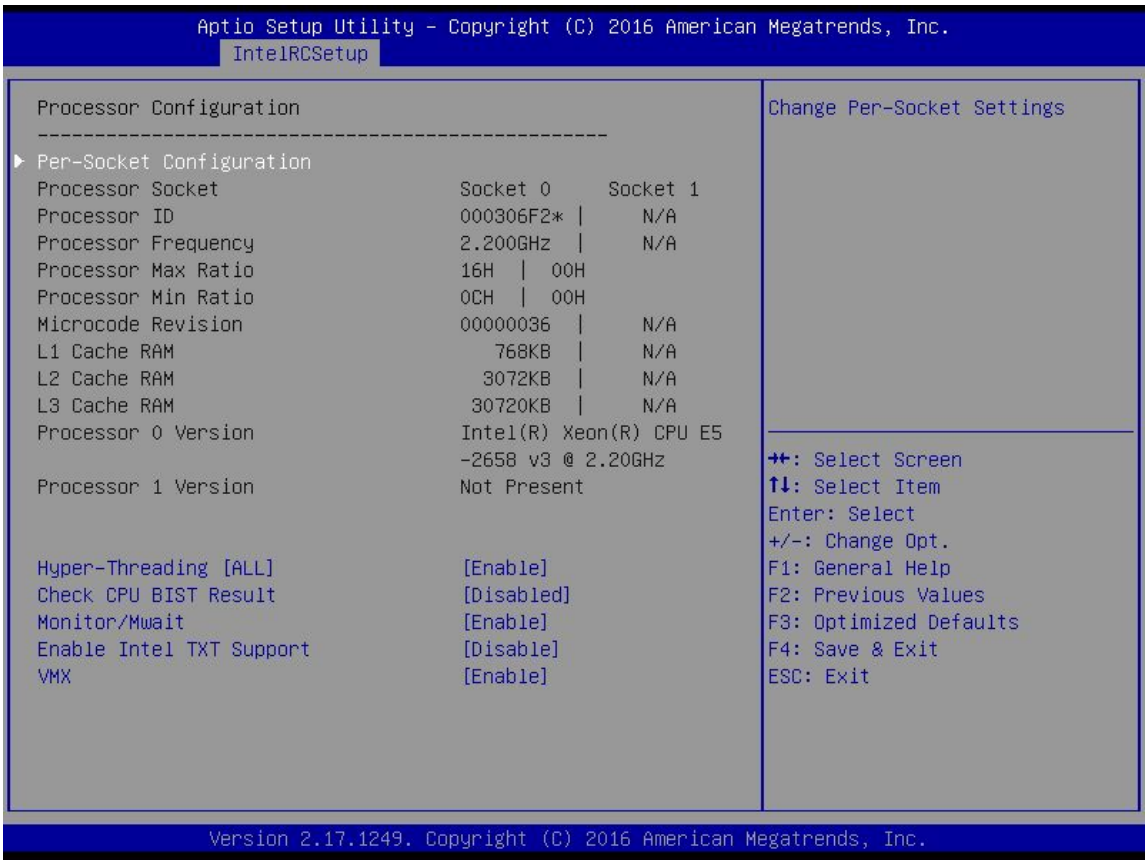
Select the IntelRCSetup tab from the setup screen to enter the IntelRCSetup BIOS Setup screen. You can select any of IntelRCSetup BIOS Setup options by highlighting an option using the < Arrow > keys. The IntelRCSetup BIOS Setup screen is shown below.



6.6.1 Processor Configuration

You can use this screen to select options for the Processor Configuration. Use the up and down < Arrow > keys to select an item. Use the < + > and < - > keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on the following pages. An example of the *Processor Configuration* screen is shown below.

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Hyper-threading

Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology).

Options	
Enabled	For Windows XP and Linux (OS optimized for Hyper-Threading Technology).
Disabled	For other OS (OS not optimized for Hyper-Threading Technology).

Check CPU BIST Result

Disable failed BIST core when enable, otherwise, ignore BIST result.
Set this value to Set this value to **Enabled/Disabled.**

Monitor/Mwait

Enable or Disable the Monitor/Mwait instruction. Set this value to **Enabled/Disabled.**

Enable Intel TXT Support

Enables Intel Trusted Execution Technology Configuration. Please disable "EV DFX Features" when TXT is enabled. Set this value to **Enabled/Disabled.**

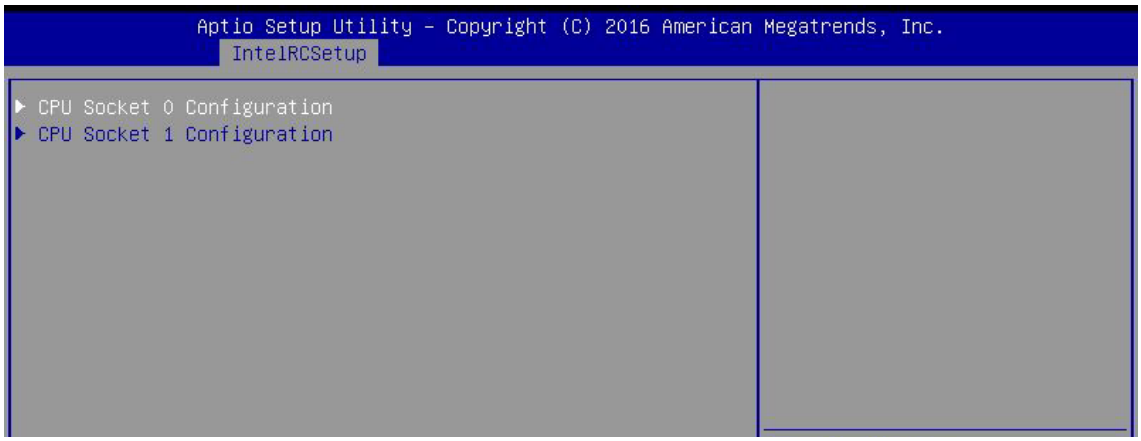
VMX

Enables the Vanderpool Technology, takes effect after reboot. Set this value to **Enabled/Disabled.**

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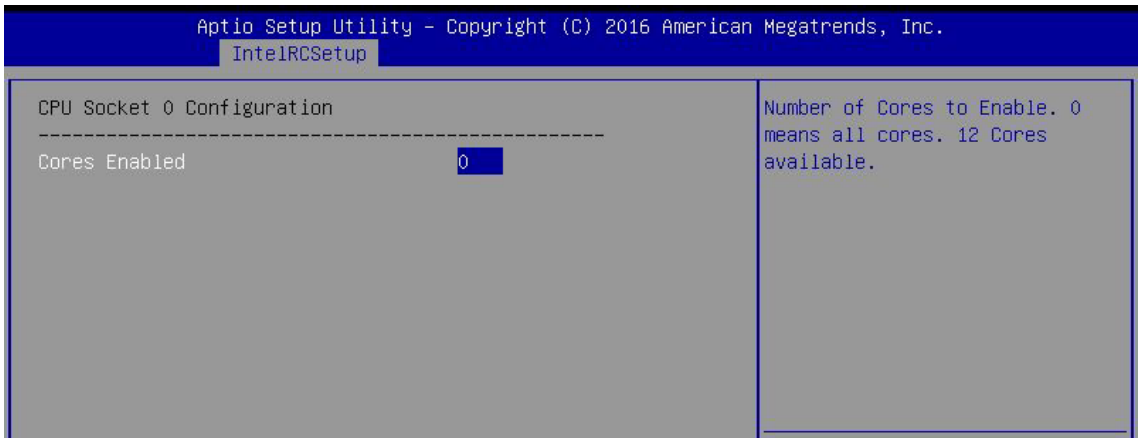
Per-Socket Configuration

You can use this screen to select options for Per-Socket Configuration. The screen is shown below.



CPU Socket 0/1 Configuration

You can use this screen to select options for CPU Socket 0/1 Configuration. The screen is shown below.



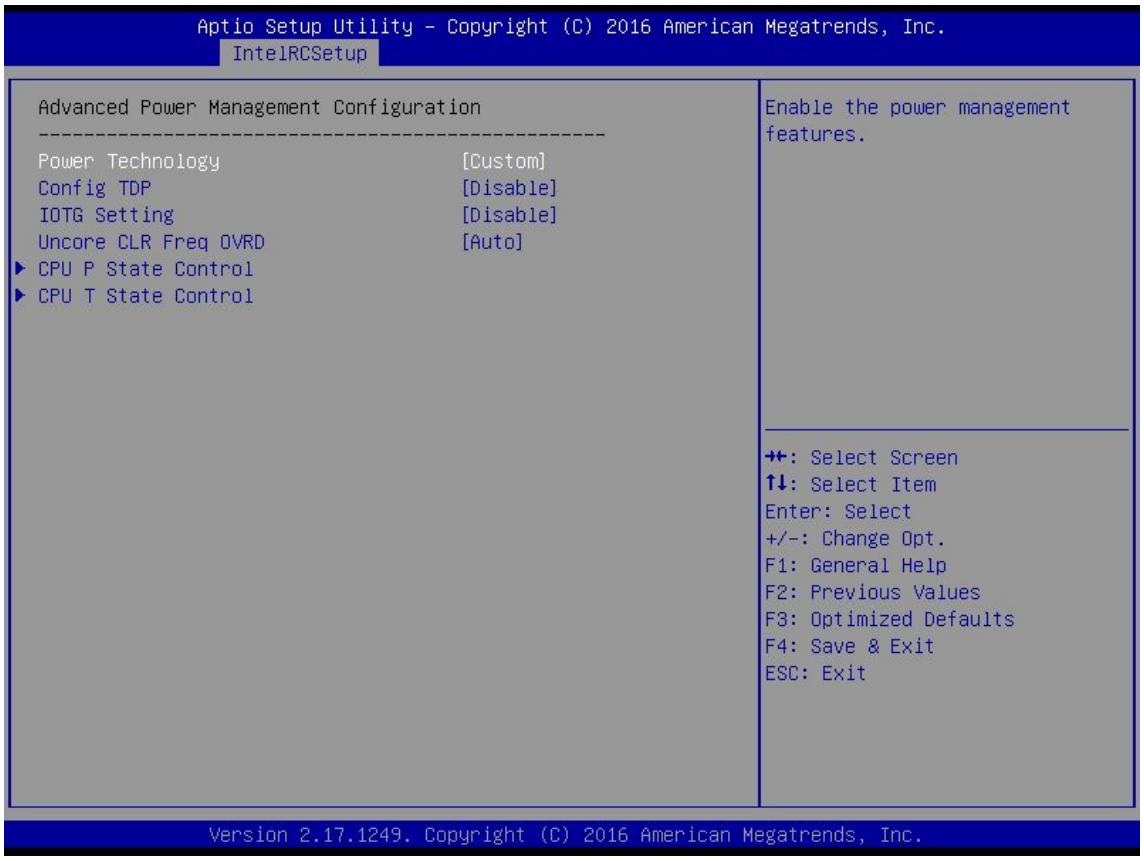
Cores Enabled

Number of Cores to Enable. 0 means all cores. Set this value to **Desired number.**

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6.6.2 Advanced Power Management Configuration

You can use this screen to select options for the Advanced Power Management Configuration. Use the up and down < Arrow > keys to select an item. Use the < + > and < - > keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on the following pages. An example of the *Advanced Power Management Configuration* screen is shown below.



Power Technology

This option controls the power management features. Set this value to **Disable/ Energy Efficient/Custom.**

Config TDP

This option can disable/enable Config TDP. Set this value to **Disable/Enable.**

Config TDP Level

This option can select Config TDP level. Set this value to **Nominal/Level 1/Level 2.** Note:This option will not be shown if “**Config TDP**” is not “**Enable**”

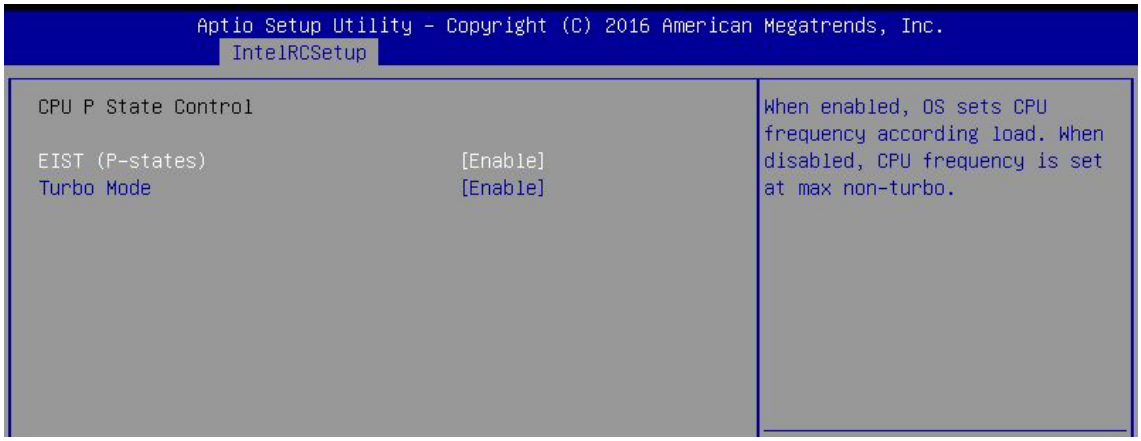
IOTG Setting

This option controls IOTG Setting via sticky scratch pad register. Set this value to **Disable/Enable.**

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CPU P State Control

You can use this screen to select options for CPU P State Control. The screen is shown below.



EIST (P-states)

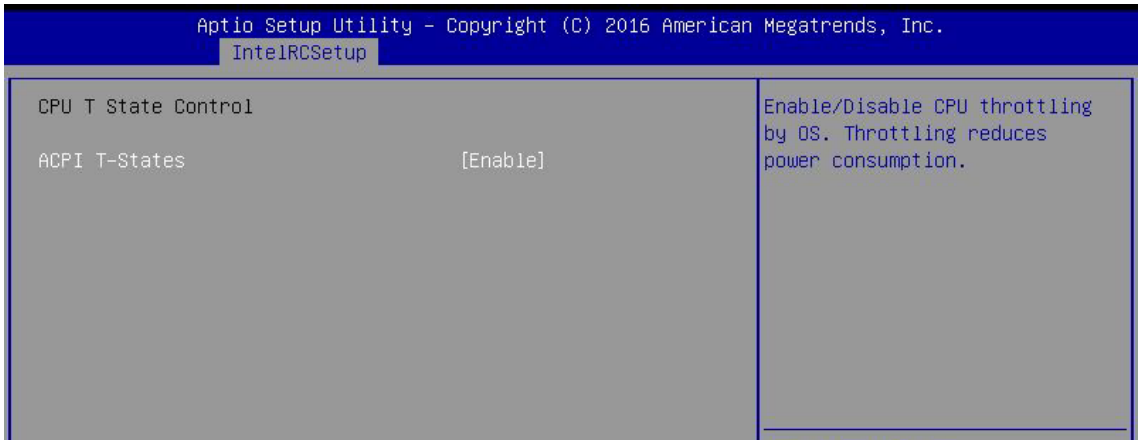
When enabled, OS sets CPU frequency according load. When disabled, CPU frequency is set at max non-turbo. Set this value to **Disable/Enable.**

Turbo Mode

This option enable or disable CPU Turbo mode. Set this value to **Disable/Enable.**

CPU T State Control

You can use this screen to select options for CPU T State Control. The screen is shown below.



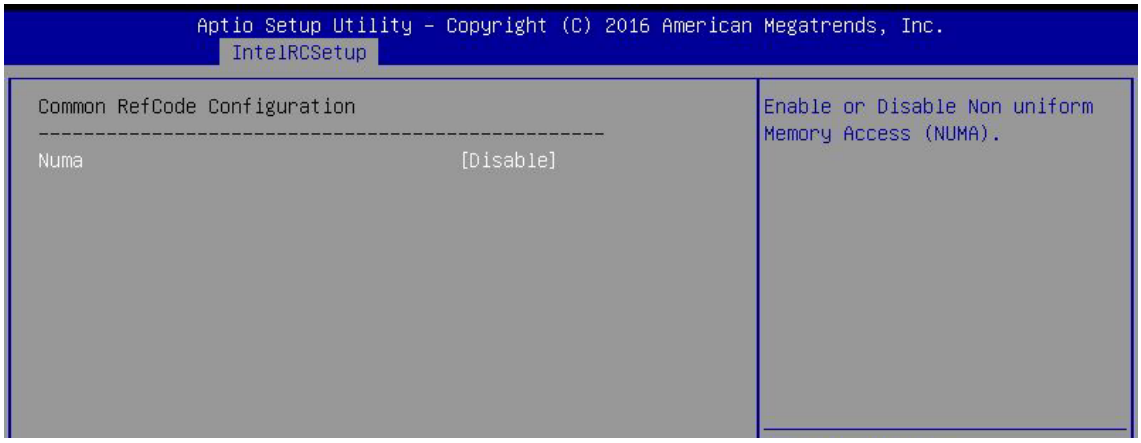
ACPI T-States

This option enable/disable CPU throttling by OS. Throttling reduces power consumption. Set this value to **Disable/Enable.**

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6.6.3 Common RefCode Configuration

You can use this screen to select options for the Common RefCode Configuration. Use the up and down < Arrow > keys to select an item. Use the < + > and < - > keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on the following pages. An example of the Common RefCode Configuration screen is shown below.

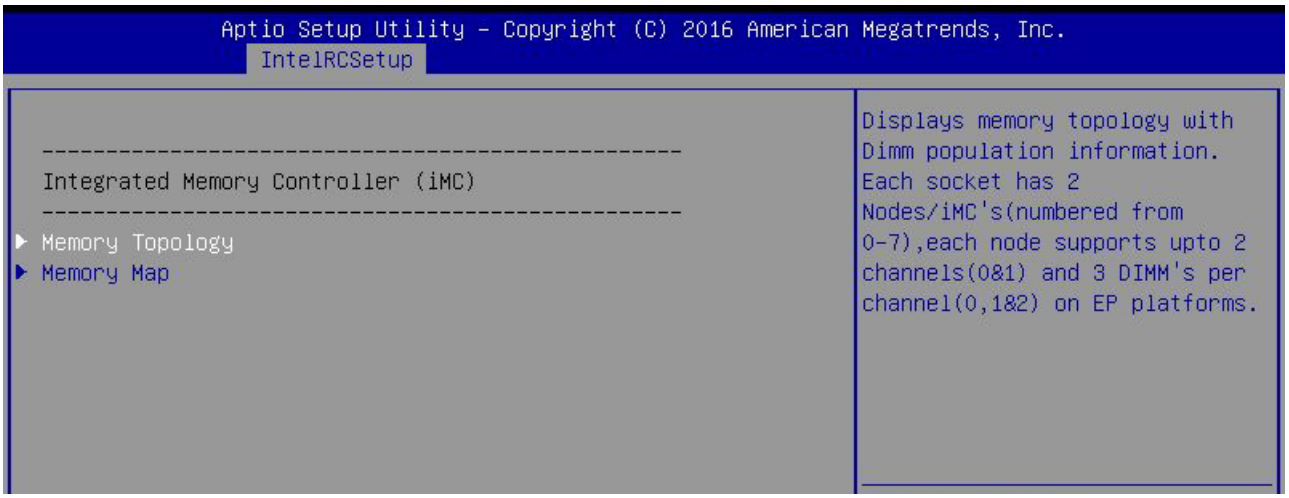


Numa

This option enable or disable Non uniform Memory Access (NUMA).Set this value to **Disable/Enable.**

6.6.4 Memory Configuration

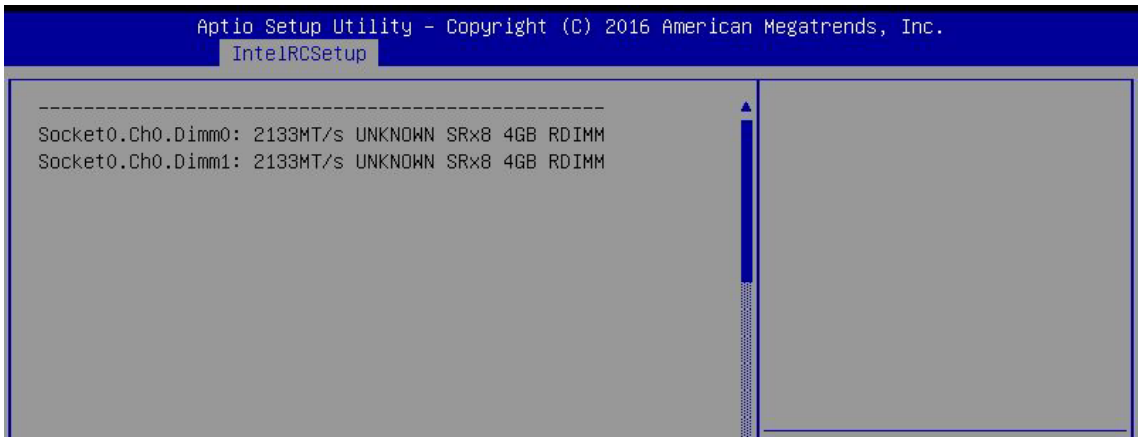
You can use this screen to select options for the Memory Configuration. Use the up and down < Arrow > keys to select an item. Use the < + > and < - > keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on the following pages. An example of the Memory Configuration screen is shown below.



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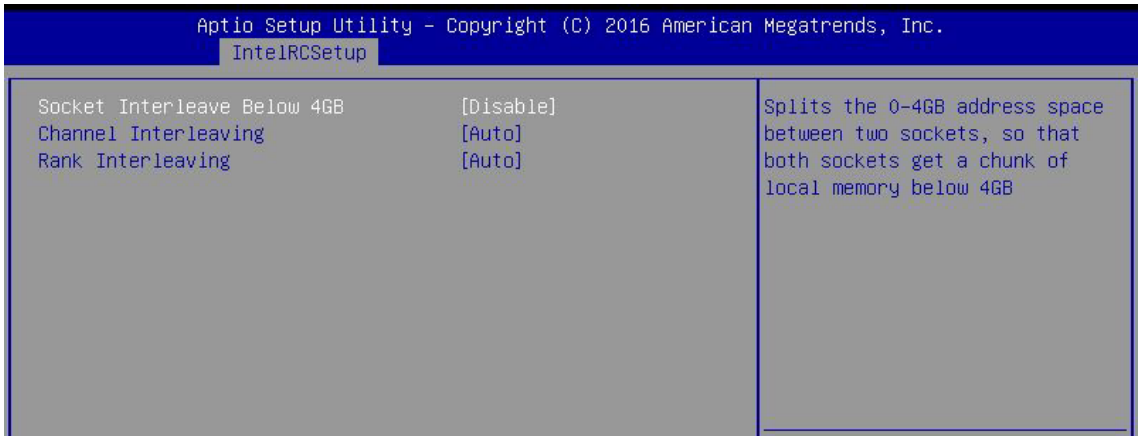
Memory Topology

You can use this screen to select options for Memory Topology. The screen is shown below.



Memory Map

You can use this screen to select options for Memory Map. The screen is shown below.



Socket Interleave Below 4GB

Splits the 0-4GB address space between two sockets, so that both sockets get a chunk of local memory below 4GB.Set this value to **Disable/Enable.**

Channel Interleaving

Select Channel Interleaving setting.Set this value to **AUTO/1-way Interleave/2-way Interleave/3-way Interleave/4-way Interleave.**

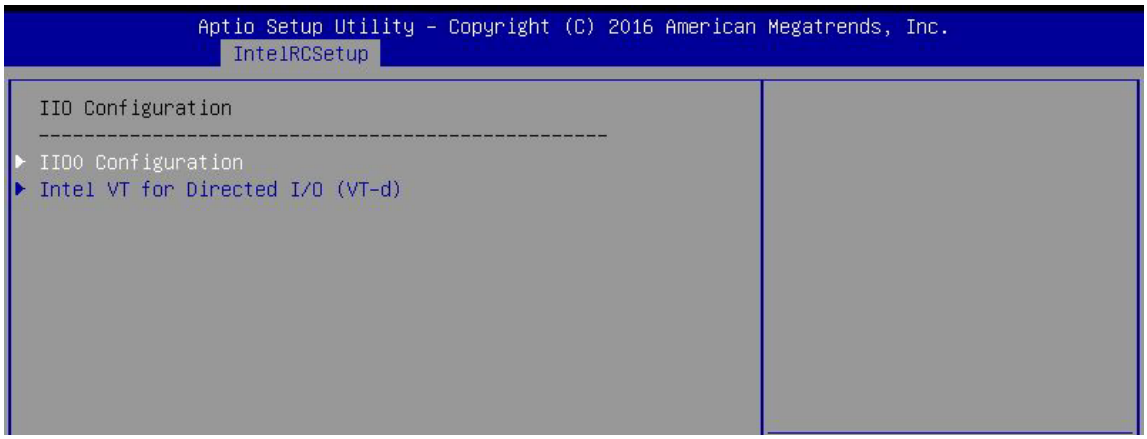
Rank Interleaving

Select Rank Interleaving setting.Set this value to **AUTO/1-way Interleave/2-way Interleave/4-way Interleave/8-way Interleave.**

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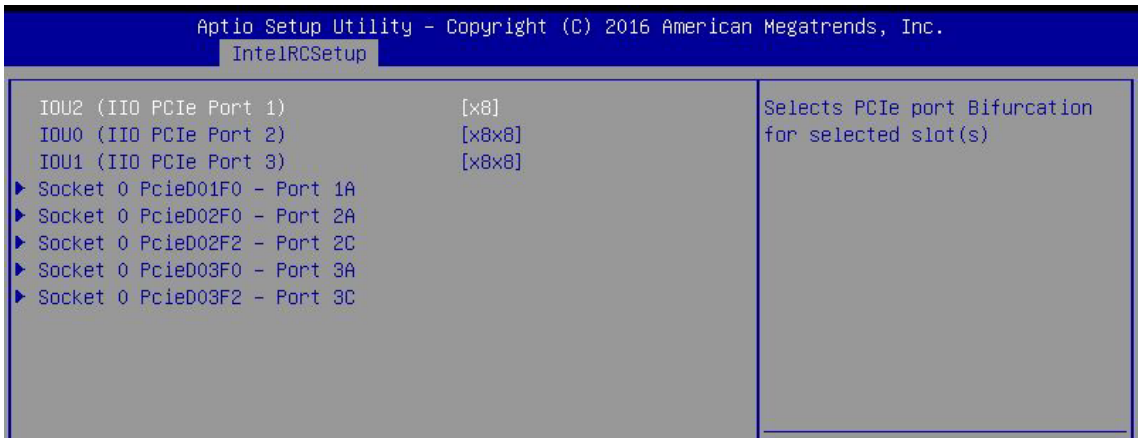
6.6.5 IIO Configuration

You can use this screen to select options for the IIO Configuration. Use the up and down < Arrow > keys to select an item. Use the < + > and < - > keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on the following pages. An example of the IIO Configuration screen is shown below.



IIO0/1 Configuration

You can use this screen to select options for IIO0/1 Configuration. The screen is shown below.



IOU2 (IIO PCIe Port 1)

Selects PCIe port Bifurcation for selected slot(s).Set this value to **AUTO/x8/x4x4.**

IOU0 (IIO PCIe Port 2)

Selects PCIe port Bifurcation for selected slot(s).Set this value to **AUTO/x16/x8x8/x8x4x4/x4x4x8/x4x4x4x4.**

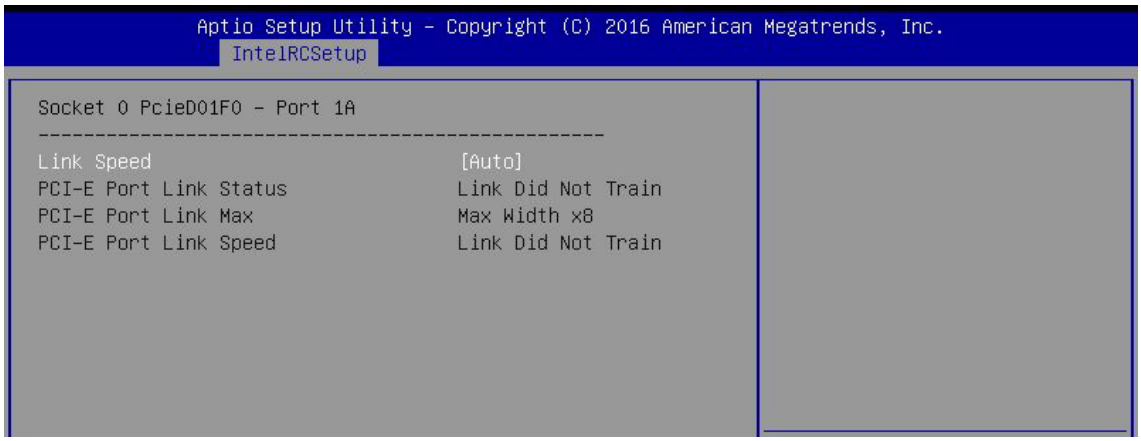
IOU1 (IIO PCIe Port 3)

Selects PCIe port Bifurcation for selected slot(s).Set this value to **AUTO/x16/x8x8/x8x4x4/x4x4x8/x4x4x4x4.**

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Socket 0 PcieD01F0 - Port 1A

You can use this screen to select options for Socket 0 PcieD01F0 - Port 1A Configuration. The screen is shown below.
Note: Other Port screen are similar to this screen

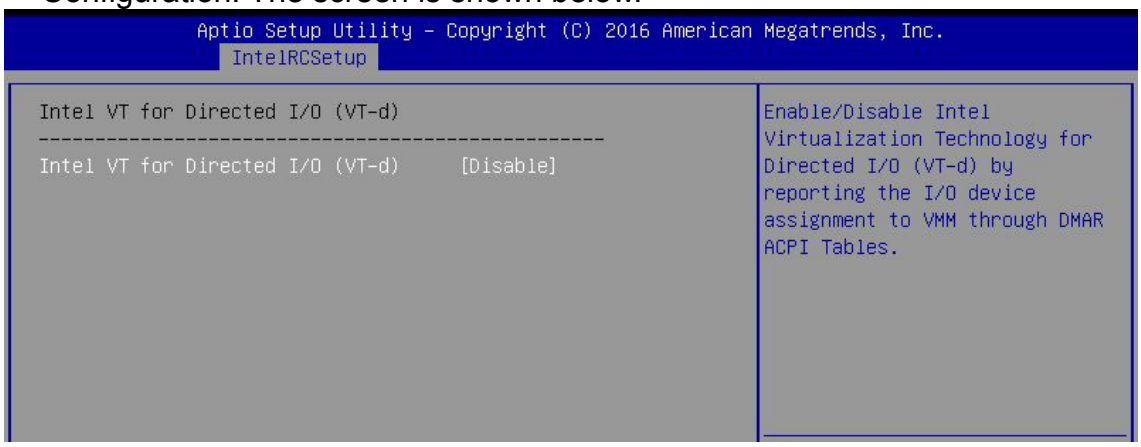


Link Speed

Selects PCIe link speed.Set this value to **AUTO/Gen 1 (2.5 GT/s)/ Gen 2 (5 GT/s)/ Gen 3 (8 GT/s).**
Note: Socket 0/1 PcieD01F0 - Port 1A doesn't have Gen3 option

Intel VT for Directed I/O (VT-d)

You can use this screen to select options for Intel VT for Directed I/O (VT-d) Configuration. The screen is shown below.



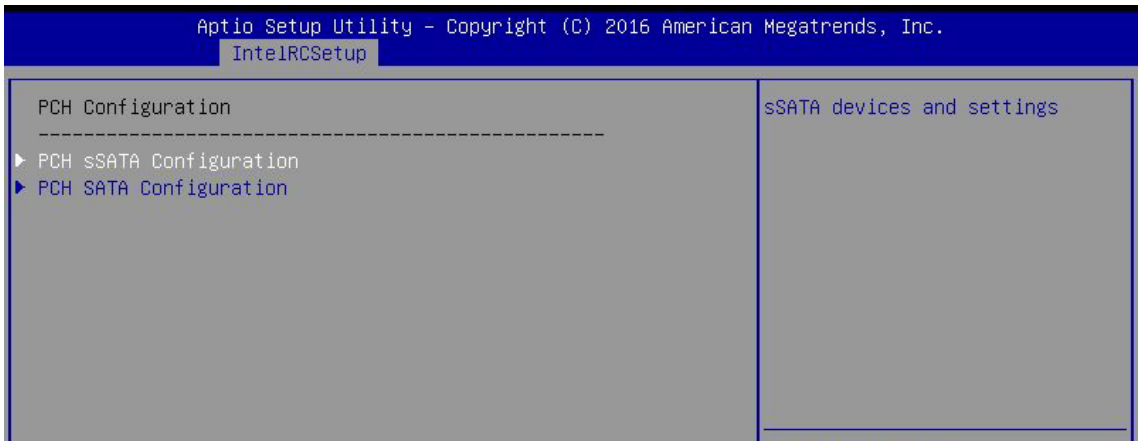
Intel VT for Directed I/O (VT-d)

Enable/Disable Intel Virtualization Technology for Directed I/O (VT-d) by reporting the I/O device assignment to VMM through DMAR ACPI Tables.Set this value to **Disable/Enable.**

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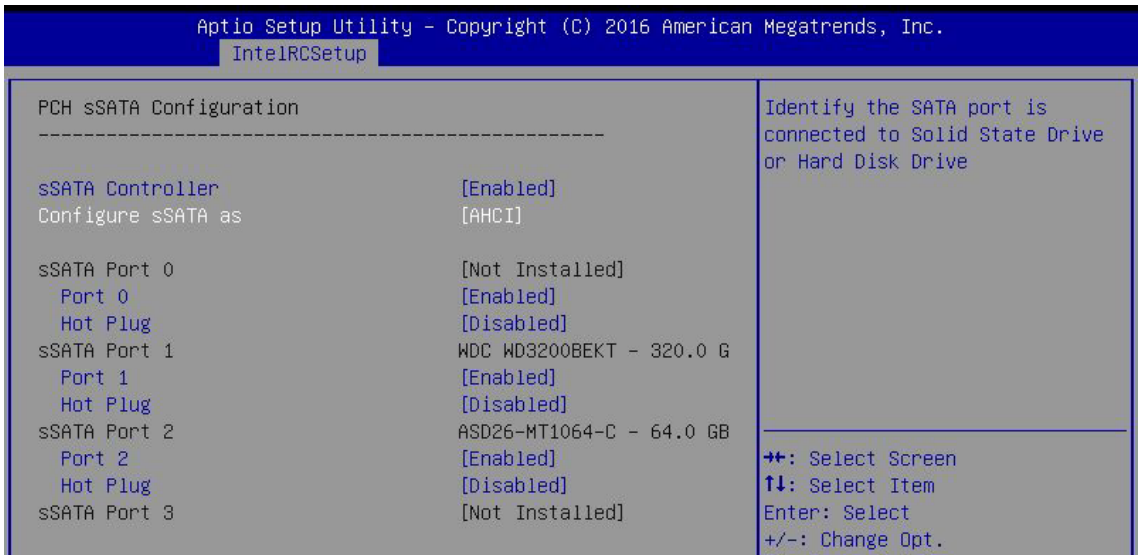
6.6.6 PCH Configuration

You can use this screen to select options for the PCH Configuration. Use the up and down < Arrow > keys to select an item. Use the < + > and < - > keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on the following pages. An example of the PCH Configuration screen is shown below.



PCH sSATA Configuration

You can use this screen to select options for PCH sSATA Configuration. The screen is shown below.



sSATA Controller

Enable or disable sSATA Controller.Set this value to **Disable/Enable.**

Configure sSATA as

This will configure sSATA as IDE ,RAID or AHCI.Set this value to **IDE/AHCI/RAID.**

Port 0/1/2/3

Enable or disable the sSATA port.Set this value to **Disable/Enable.**

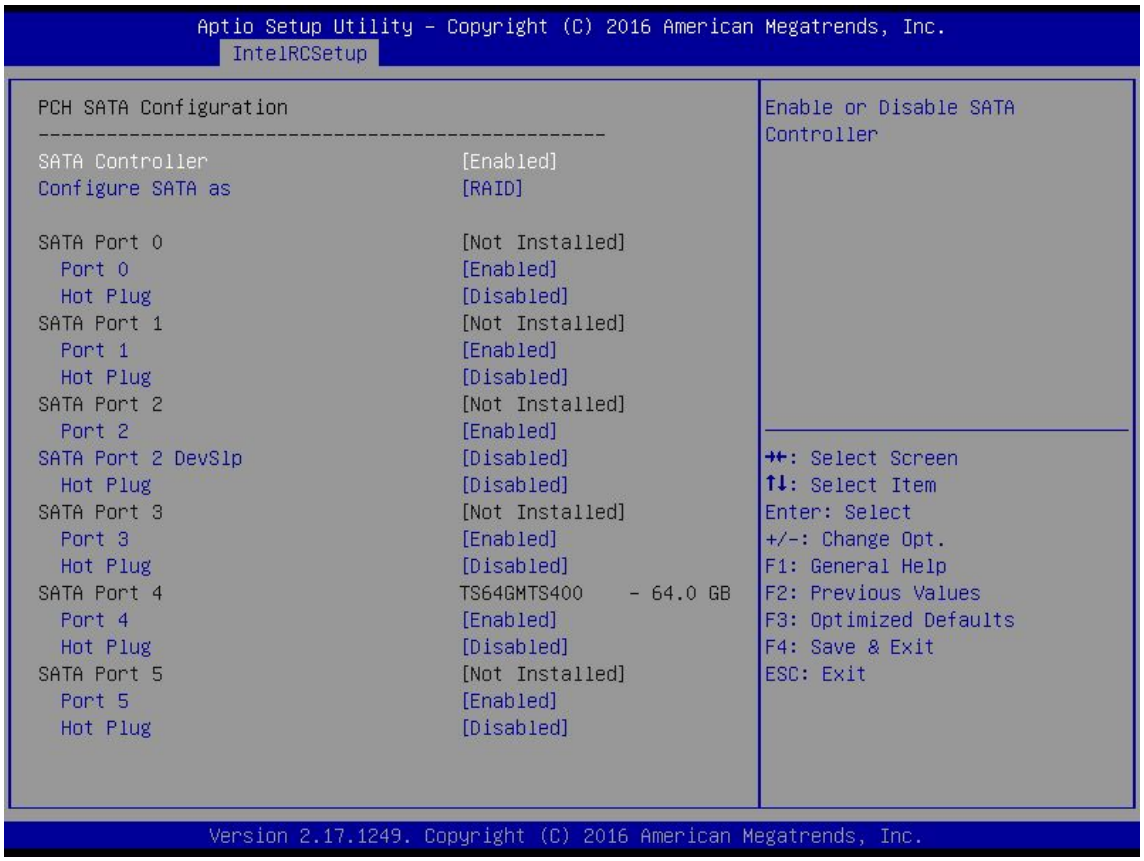
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Hot Plug

Designates this port as Hot Pluggable.Set this value to **Disable/Enable.**

PCH SATA Configuration

You can use this screen to select options for PCH SATA Configuration. The screen is shown below.



SATA Controller

Enable or disable SATA Controller.Set this value to **Disable/Enable.**

Configure SATA as

This will configure SATA as IDE, RAID or AHCI.Set this value to **IDE/AHCI/RAID.**

Port 0/1/2/3/4/5

Enable or disable the SATA port.Set this value to **Disable/Enable.**

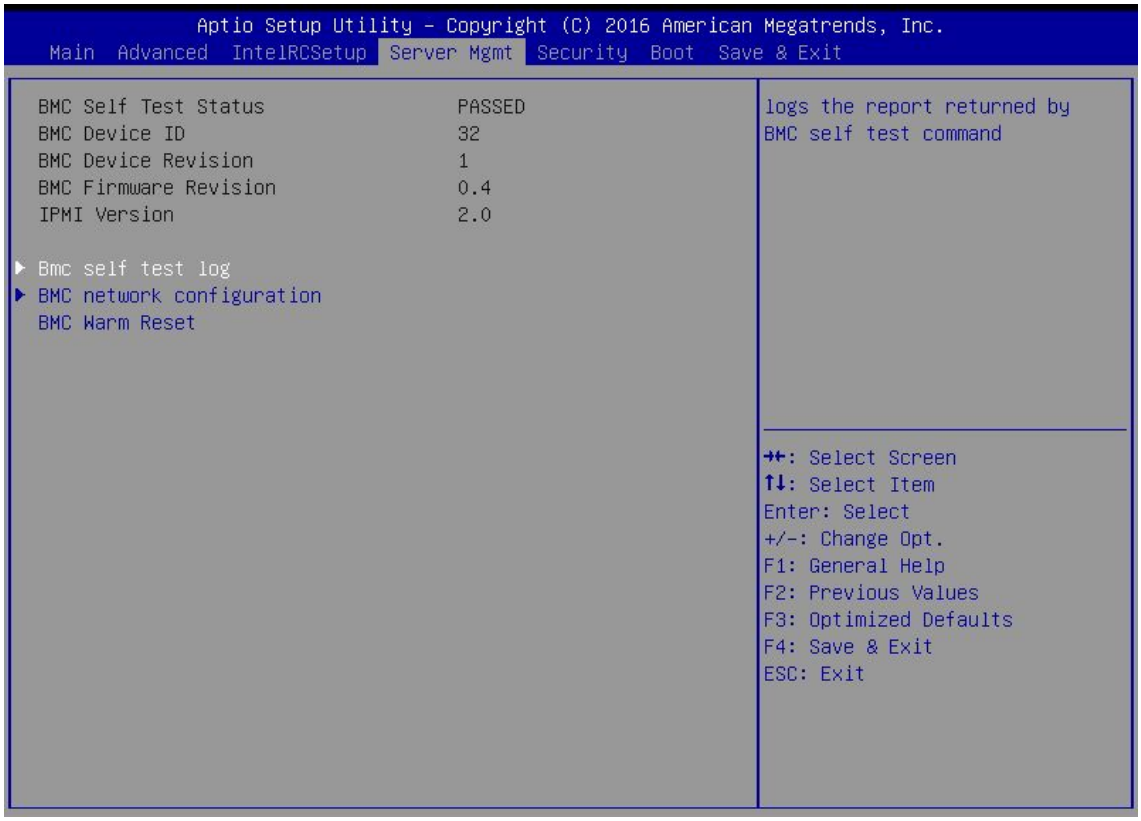
Hot Plug

Designates this port as Hot Pluggable.Set this value to **Disable/Enable.**

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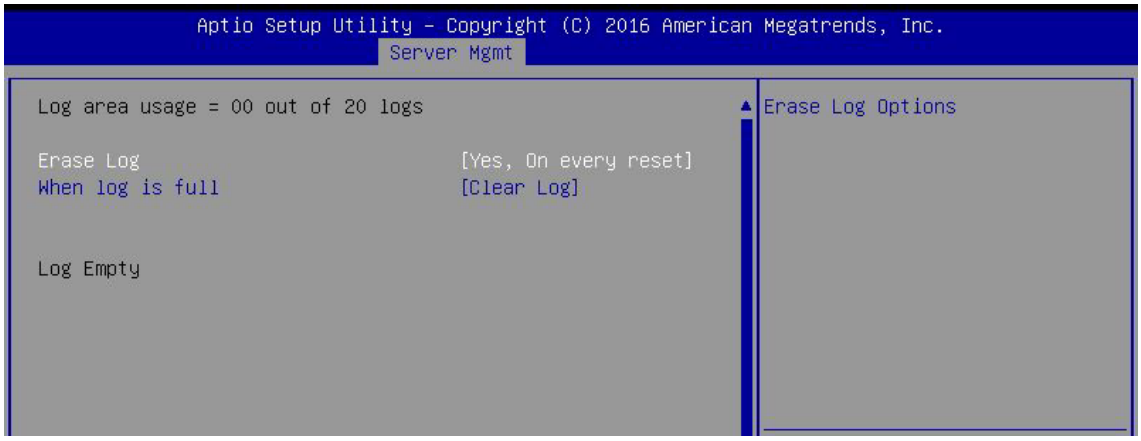
6.7 Server Mgmt

Select the Server Mgmt tab from the setup screen to enter the Server Mgmt BIOS Setup screen. You can select any of the items in the left frame of the screen.The Server Mgmt Settings screen is shown below:



Bmc self test log

You can use this screen to select options for Bmc self test log. The screen is shown below.



Erase Log

Erase Log Options.Set this value to **No/Yes, On every reset.**

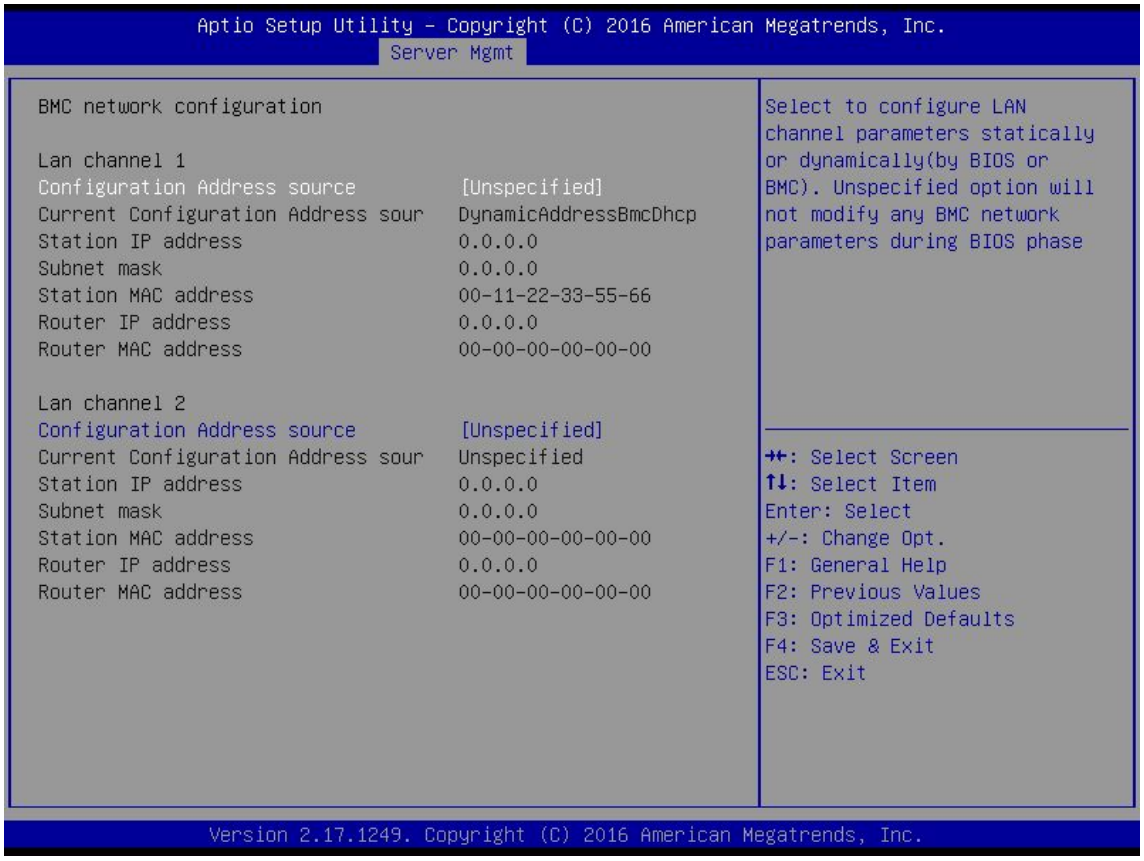
When log is full

Select the action to be taken when log is full.Set this value to **Clear Log/ Do not log any more.**

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BMC network configuration

You can use this screen to select options for BMC network configuration. The screen is shown below.

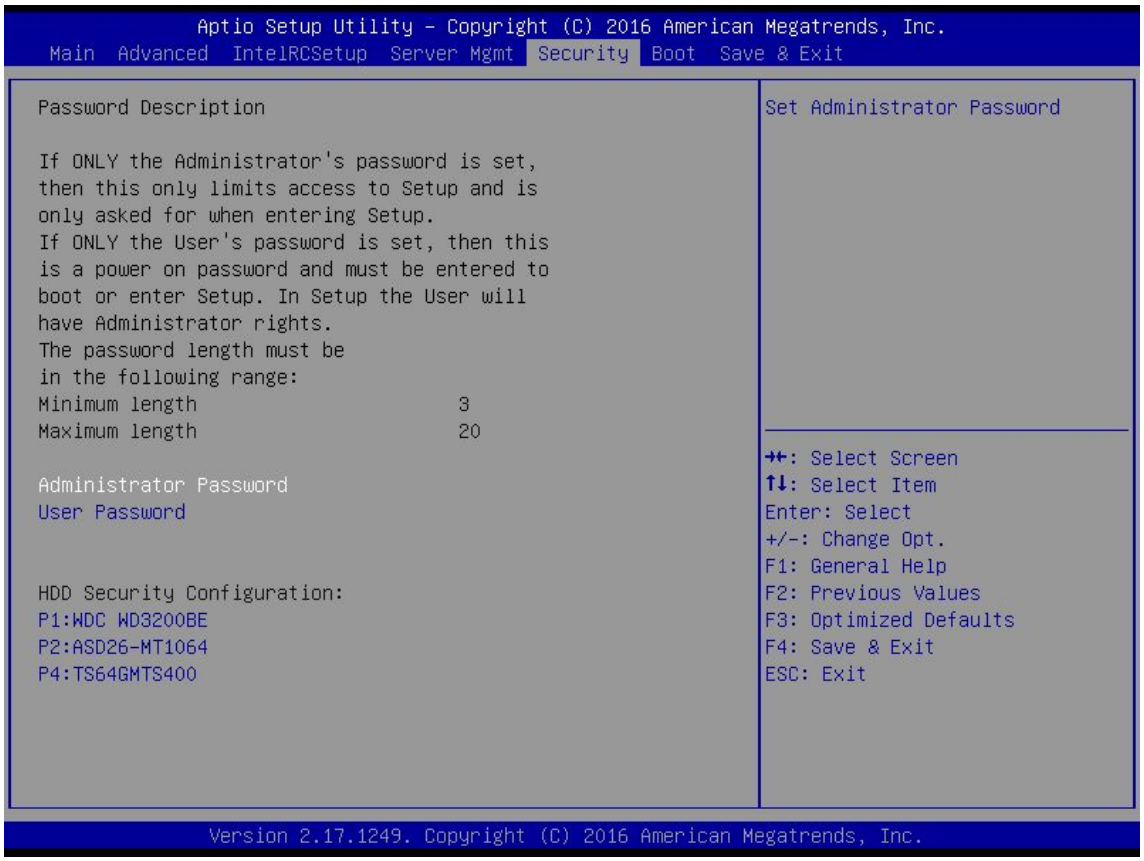


Configuration Address source

Select to configure LAN channel parameters statically or dynamically (by BIOS or BMC). Unspecified option will not modify any BMC network parameters during BIOS phase.Set this value to **Unspecified/Static/DynamicBmcDhcp/ DynamicBmcNonDhcp.**

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6.8 Security Setup



Administrator / User Password

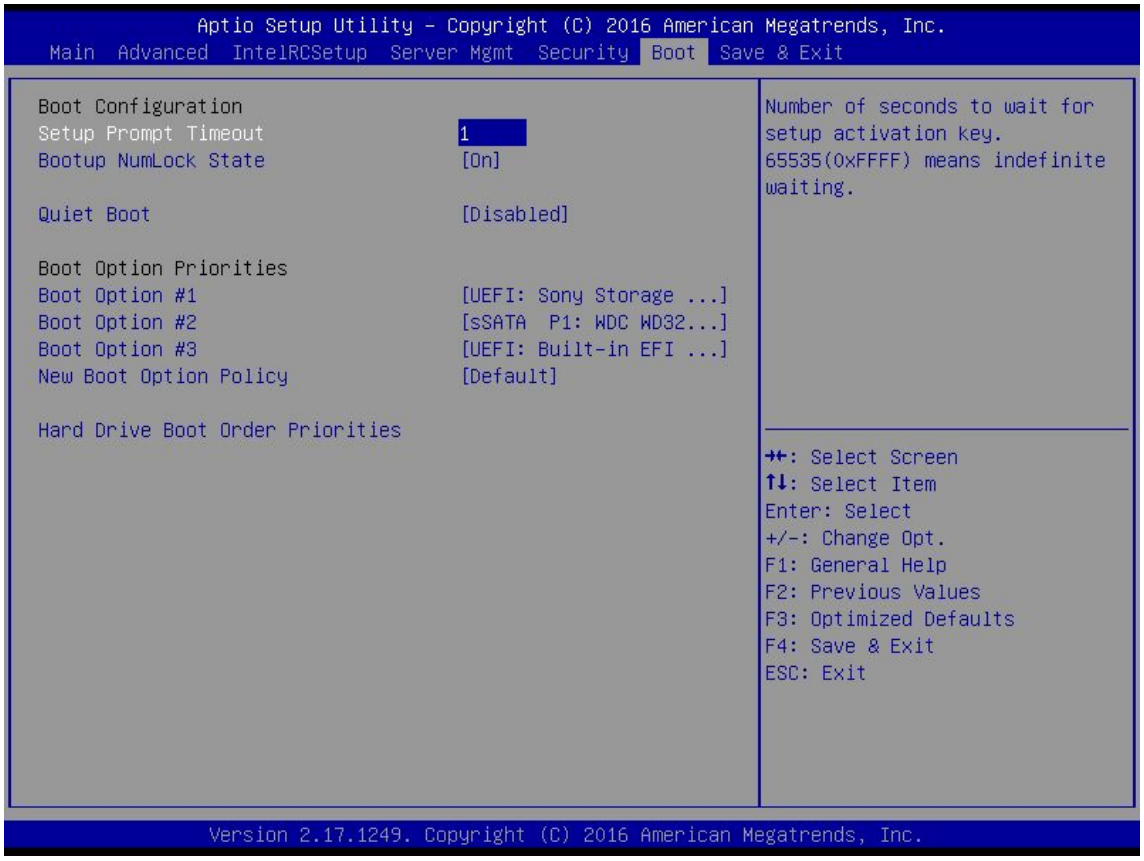
If only the administrator's password is set, then this limits access to setup and is only asked for when entering setup.

If only the user's password is set, then this is a power on password and must be entered to boot or enter setup. In setup the user will have administrator rights.

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6.9 Boot Setup

Select the Boot tab from the setup screen to enter the Boot BIOS Setup screen. You can select any of the items in the left frame of the screen, such as Boot Device Priority, to go to the sub menu for that item. You can display a Boot BIOS Setup option by highlighting it using the < Arrow > keys. The Boot Settings screen is shown below:



Setup Prompt Timeout

Set the number of seconds that the system will wait for the setup activation key. The number of 65535(0xFFFF) means indefinite waiting.

Bootup NumLOck State

Select the keyboard NumLock state. Set this value to **On, Off.**

Quiet Boot

Disabled - Set this value to allow the computer system to display the POST messages.

Enabled - Set this value to allow the computer system to display the OEM logo.

Fast Boot

Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options. Set this value to **Enable / Disable.**

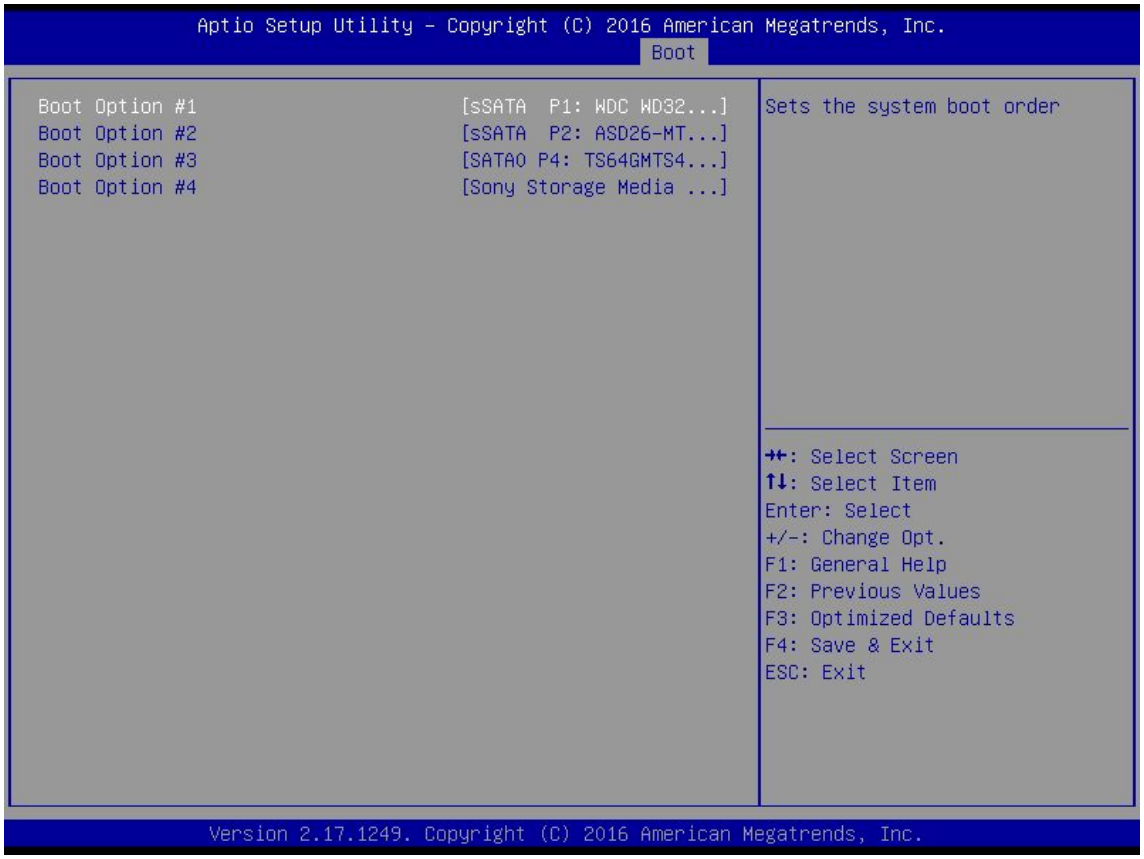
Boot Option Priorities

Set Boot Option #1 -2 boot priority.

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Hard Drive BBS Priorities

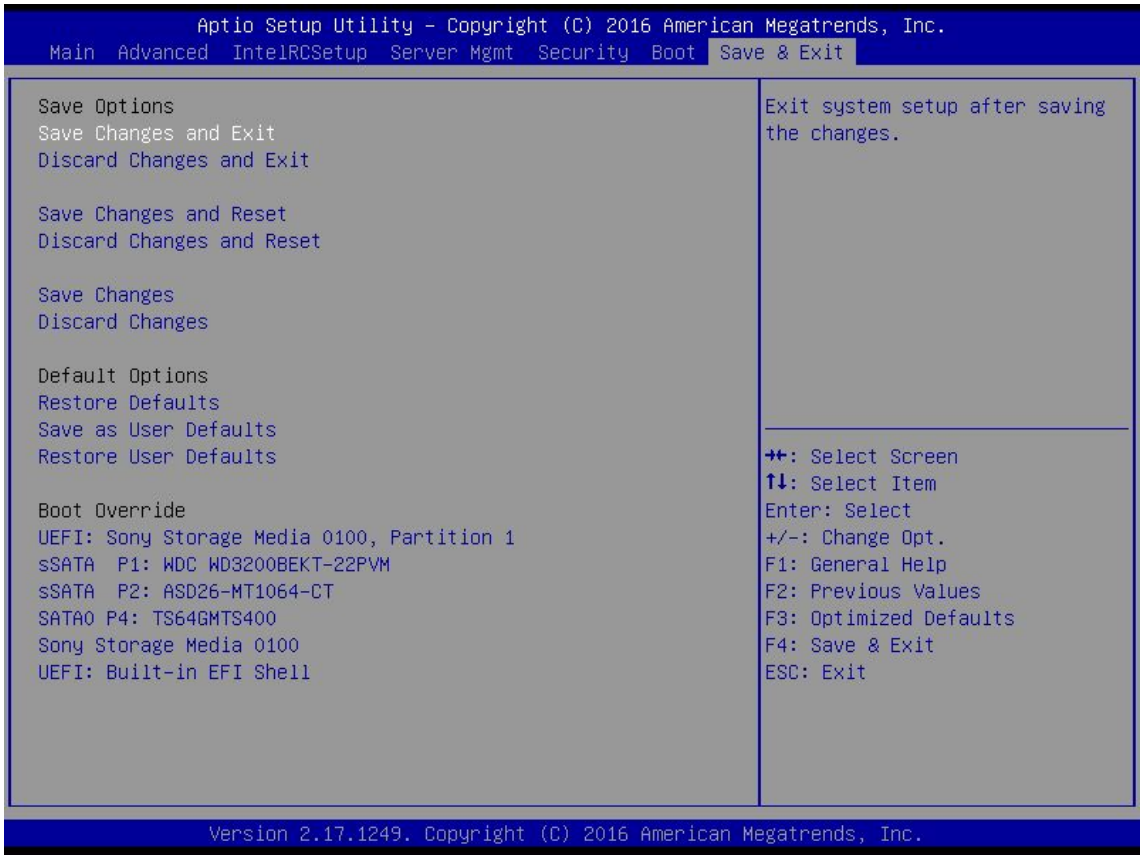
Specifies the boot device priority sequence from available hard drives.



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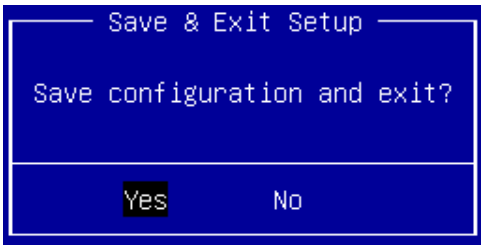
6.10 Save & Exit Menu

Select the *Exit* tab from the setup screen to enter the Exit BIOS Setup screen. You can display an Exit BIOS Setup option by highlighting it using the < Arrow > keys. The Exit BIOS Setup screen is shown below.



Save Changes and Exit

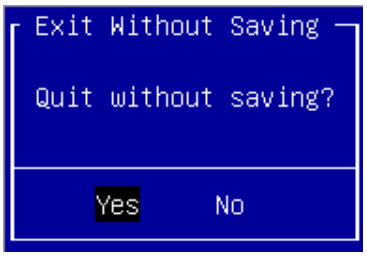
Exit system setup after saving the changes.



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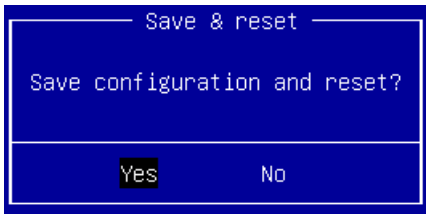
Discard Changes and Exit

Exit system setup without saving any changes.



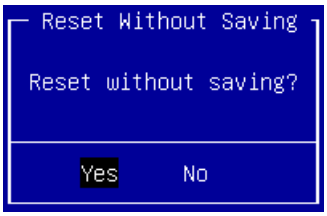
Save Changes and Reset

Reset the system after saving the changes.



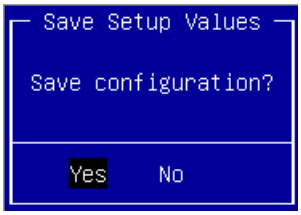
Discard Changes and Reset

Reset system setup without saving any changes.



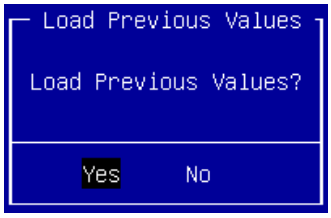
Save Changes

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



Discard Changes

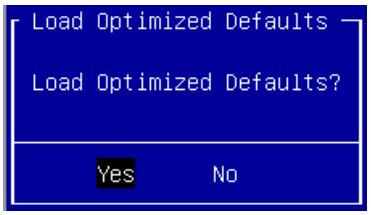
Discard Changes done so far to any of the setup options.



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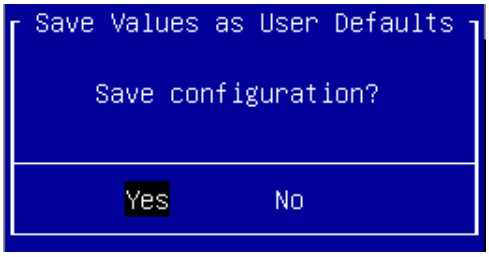
Restore Defaults

Restore/Load Defaults values for all the setup options.



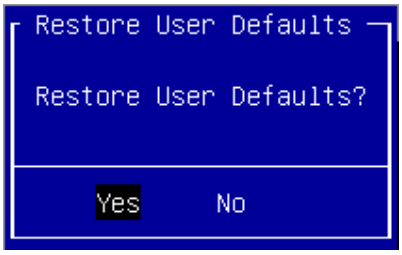
Save as User Defaults

Save the changes done so far as user defaults.



Restore User Defaults

Restore the user defaults to all the setup options.



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Safety Instructions

For user safety, please read and follow all **instructions**, **WARNINGS**, **CAUTIONS,** and **NOTES** marked in this manual and on the associated equipment before handling/operating the equipment.

1. Read these safety instructions carefully.
2. Keep this user's manual for future reference.
3. Read the specifications section of this manual for detailed information on the operating environment of this equipment.
4. The equipment can be operated at an ambient temperature of 40°C.
5. When installing/mounting or uninstalling/removing equipment; or when removal of the chassis lid required for user servicing (Section 3.1-3.5):
   - Turn off power and unplug any power cords/cables, and
   - Reinstall the chassis lid before restoring power.



WARNING! Hazardous moving parts. Keep away from moving fan blades.

6. To avoid electrical shock and/or damage to equipment:
   - Keep equipment away from water or liquid sources;
   - Keep equipment away from high heat or high humidity;
   - Keep equipment properly ventilated (do not block or cover ventilation openings);
   - Make sure to use recommended voltage and power source settings;
   - Always install and operate equipment near an easily accessible electrical socket-outlet;
   - Secure the power cord (do not place any object on/over the power cord);
   - Only install/attach and operate equipment on stable surfaces and/or recommended mountings;
   - If the equipment will not be used for long periods of time, turn off and unplug the equipment from its power source.
7. Never attempt to fix the equipment. Equipment should only be serviced by qualified personnel.
8. A Lithium-type battery may be provided for uninterrupted, backup or emergency power.
   CAUTION! Risk of explosion if battery is replaced with one of an incorrect type. Please dispose of used batteries appropriately.
9. Equipment must be serviced by authorized technicians when:
   - The power cord or plug is damaged;
   - Liquid has penetrated the equipment;
   - It has been exposed to high humidity/moisture;
   - It is not functioning or does not function according to the user's manual;
   - It has been dropped and/or damaged; and/or,
   - It has an obvious sign of breakage.
10. Please pay strict attention to all warnings and advisories appearing on the device, to avoid injury or damage.
11. The equipment may have more than one power supply input. To reduce the risk of electrical shock, trained personnel should disconnect all power supply inputs before servicing.
    CAUTION! Disconnect all power supply inputs before servicing.

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12. It is recommended that equipment be installed only in a server room or computer room where access is:
    - Restricted to qualified service personnel or users familiar with restrictions applied to the location, reasons therefor, and any precautions required;
    - Only afforded by the use of a tool or lock and key, or other means of security, and is controlled by the authority responsible for the location.

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Consignes de Sécurité Importantes

Pour assurer la sécurité de l'utilisateur, veuillez lire et suivre toutes les **directives**, ainsi que les **AVERTISSEMENTS**, **MISES EN GARDE** et **REMARQUES** de ce manuel et indiqués sur l'équipement associé avant de manipuler ou utiliser l'équipement.

1. Veuillez lire attentivement ces instructions de sécurité avec soin.
2. Veuillez conserver ce manuel pour référence future.
3. Veuillez lire la section des spécifications de ce manuel pour avoir des informations détaillées sur l'environnement d'exploitation de cet équipement.
4. L'équipement peut être utilisé à une température ambiante de 40 °C.
5. Lors de l'installation ou du montage et de la désinstallation ou de la dépose de l'équipement; ou lors de la dépose du couvercle du châssis pour procéder à l'entretien par l'utilisateur (Sections 3.1-3.5):
   - Coupez l'alimentation et débranchez les cordons et les câbles d'alimentation, et
   - Reposez le couvercle du châssis avant de remettre l'alimentation.



ATTENTION! Pièces mobiles dangereuses. Tenir loin des pales du ventilateur en mouvement.

6. Pour éviter un risque d'électrocution et pour éviter d'endommager l'équipement :
   - Éloignez l'équipement de l'eau et de toute source liquide;
   - Éloignez l'équipement de toute source de chaleur ou d'humidité élevée;
   - Gardez l'équipement correctement ventilé (ne pas bloquer ou couvrir les ouvertures de ventilation);
   - Veillez à utiliser la tension recommandée et les réglages adéquats pour la source d'alimentation;
   - Veuillez toujours installer et exploiter l'équipement à proximité d'une prise de courant facilement accessible;
   - Assurez-vous que le cordon d'alimentation est acheminé de manière sécuritaire (ne déposez aucun objet dessus);
   - Installez, fixez et utilisez l'équipement sur des surfaces stables ou sur les fixations recommandées uniquement;
   - Si l'équipement n'est pas utilisé pendant une longue période, éteignez-le et débranchez-le de sa source d'alimentation.
7. N'essayez jamais de réparer l'équipement. L'équipement ne doit être réparé que par du personnel qualifié.
8. Une pile au lithium peut être installée pour assurer l'alimentation de secours ou d'urgence en continu.
   ATTENTION! Risque d'explosion si la pile est remplacée par une autre de type incorrect. Veuillez jeter les piles usagées de façon appropriée.
9. L'équipement doit être entretenu par des techniciens agréés lorsque :
   - le cordon d'alimentation est endommagé ou lorsque la fiche électrique est endommagée;
   - du liquide a pénétré à l'intérieur de l'équipement;
   - l'équipement a été exposé à un taux d'humidité élevé;
   - l'équipement ne fonctionne pas ou ne fonctionne pas conformément au manuel de l'utilisateur;
   - l'équipement est tombé ou lorsqu'il a été endommagé;
   - l'équipement présente un signe évident de défaillance.
10. Veuillez porter une attention rigoureuse à tous les avertissements et à tous les avis figurant sur l'appareil, pour éviter des blessures ou des dommages.

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11. **ATTENTION!** L’équipement peut avoir plus d’une entrée d’alimentation. Pour réduire le risque d’électrocution, le personnel qualifié devrait déconnecter toutes les entrées d’alimentation avant de procéder à l’entretien.
12. Il est recommandé que l'équipement soit installé que dans une salle de serveur ou de la salle informatique où:
    - L'accès est limité au personnel de maintenance qualifié ou utilisateurs familiers avec les restrictions appliquées à l'emplacement, motifs, et tout les précautions nécessaires, et;
    - L'accès est uniquement assurée par l'utilisation d'un outil ou clé, ou d'autres moyens de sécurité, et est contrôlé par l'autorité responsable de l'emplacement.

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Getting Service

Ask an Expert: http://askanexpert.adlinktech.com

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